

Chapter NR 439

REPORTING, RECORDKEEPING, TESTING, INSPECTION AND DETERMINATION OF COMPLIANCE REQUIREMENTS

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Note: Corrections made under s. 13.93 (2m) (b) 7, Stats., Register, December, 1996, No. 492. Corrections made under s. 13.93 (2m) (b) 7, Stats., Register, January, 2001, No. 541.

NR 439.01—Applicability; purpose. (1) APPLICABILITY. This chapter applies to all air contaminant sources and to their owners and operators. For sources subject to an emission standard under chs. NR 460 to 469 or under 40 CFR part 63, the requirements of ch. NR 460 apply in addition to the requirements of this chapter. In the case of any conflict between applicable provisions under chs. NR 460 to 469 and provisions of this chapter, the provisions under chs. NR 460 to 469 shall apply, this chapter not withstanding.

(2) PURPOSE. This chapter is adopted under ss. 285.11, 285.13, 285.17, 285.19 and 285.65, Stats., to establish general reporting, recordkeeping, testing, inspection and determination of compliance requirements for all air contaminant sources. Individual chapters of chs. NR 400 to 499, permits or orders may contain additional requirements.

History: Cr Register, September, 1986, No. 369, eff. 10-1-86; correction in (2) made under s. 13.93 (2m) (b) 7, Stats., Register, August, 1989, No. 404; am Register, May, 1992, No. 437, eff. 6-1-92; am (1), Register, March, 1997, No. 495, eff. 4-1-97; correction in (1) made under s. 13.93 (2m) (b) 7, Stats., Register, August 2001, No. 548.

NR 439.02—Definitions. The definitions contained in chs. NR 400 and 407 apply to the terms used in this chapter. In addition, the following definitions apply to the terms used in this chapter:

(1) “Audit samples” means glass vials, gas cylinders or other materials which contain a known concentration of a pollutant that may be used for the purpose of quality assurance of certain laboratory analyses required for the determination of compliance.

(2) “Baghouse” means a control device in which dust-laden gases are forced through a fabric bag and particulates are retained by direct interception, inertial impaction, diffusion, electrostatic attraction or gravitational settling.

(3) “Compliance emission test” means a performance test required by the department or conducted in cooperation with the department involving the quantitative measurement of air contaminants as they are emitted from a source to determine compliance with an emission limitation.

(4) “Condensible particulate matter” means any material, except uncombined water, that may not be collected in the front half of the particulate emission sampling train but which exists as a solid or liquid at standard conditions.

(5) “Continuous monitoring system” means the total equipment used to sample, to analyze and to provide a permanent record of emissions or process parameters.

(6) “Emission sampling train” means the apparatus used to collect a representative sample in the performance of an emission test.

(8) “Mechanical collector” means a broad class of particulate control devices that separate solid particles from a gas stream by a combination of mechanical forces which include centrifugal, gravitational and inertial. Such devices may include settling chambers, cyclones and multicyclone collectors.

(9) “Monitoring device” means any instrument used to measure the operating parameters of a control device or process.

(11) “Sampling port” means an opening through the wall of a stack or duct that is used to provide access for extraction of a sample.

(12) “Sootblowing” means the cleaning of heat exchanger surfaces by the use of steam or air to dislodge accumulated material.

History: Cr Register, September, 1986, No. 369, eff. 10-1-86; am (intro.), (1) to (12), Register, September, 1987, No. 381, eff. 10-1-87; am (intro.), (3) and (8), r (10), Register, May, 1992, No. 437, eff. 6-1-92; am (intro.), Register, December, 1993, No. 456, eff. 1-1-94; r (7), Register, November, 1999, No. 527, eff. 12-1-99.

NR 439.03—Reporting. (1) (a) When requested by the department, a person shall furnish to the department information to locate and classify air contaminant sources according to the type, level, duration, frequency and other characteristics of emissions and such other information as may be necessary. The information shall be sufficient to evaluate the source's effect on air quality and compliance with chs. NR 400 to 499.

(b) The responsible official for a source which has been issued an operation permit under s. 285.62, Stats., or an order under s. 285.13 (2), Stats., shall submit the results of monitoring required by the permit or order no less often than every 6 months, or more frequently if required by the department. In lieu of submission of all monitoring results, a summary of the monitoring results may be submitted to the department. The summary shall include sufficient data for the department to determine whether the source is in compliance with the applicable requirements to which the monitoring relates. The semiannual monitoring report may be consolidated with the quarterly excess emission report required under s. NR 439.09 when submission of both these reports is required. The department may reduce the frequency of submission of this semiannual monitoring report for non-part 70 sources. In addition to the reporting requirements under subs. (4) to (6), all deviations from and violations of applicable requirements shall be clearly identified in the monitoring reports.

(c) After an operation permit has been issued to a source by the department, the responsible official for the source shall annually, or more frequently if specified in an applicable requirement or in the permit, certify the source's compliance status with the operation permit in accordance with subs. (8) and (10). The methods used to determine compliance status under this paragraph shall be the same methods which are required under s. NR 407.09 (1) (e) 1.

3. When achieving compliance under s. NR 422.04 (1) (b) 2.:
- The name or identification number of each ink applied on each printing line.
 - The volume of each ink applied in gallons, excluding water.
 - The daily volume-weighted average VOC content of all inks applied on each printing line as defined in s. NR 422.04 (1) (b) 2.

History: Renum from NR 154.06 (3), and am Register, September, 1986, No. 369, eff. 10-1-86; renum from NR 439.03 and am Register, September, 1987, No. 381, eff. 10-1-87; am (2), er (3), Register, February, 1990, No. 410, eff. 3-1-90; am (1) (a), Register, May, 1992, No. 437, eff. 6-1-92; am (1) (a) and (2), r and reer (3), er (4) and (5), Register, December, 1993, No. 456, eff. 1-1-94; am (4) (intro) and (5) (a), Register, June, 1994, No. 462, eff. 7-1-94; am (5) (a) (intro), Register, August, 1994, No. 464, eff. 9-1-94; renum (5) (d) (intro) to be (5) (d) 1 intro and am, renum (5) (d) 1 and 2 to be (5) (d) 1 a and b, er (5) (d) 2, am (5) (e) (intro), Register, June, 1995, No. 474, eff. 7-1-95; CR 00-174: am (5) (a) (intro), Register August 2001 No. 548, eff. 9-1-01.

NR 439.05—Access to records; inspections. (1) No person may deny information or access to records relating to emissions or any other records required to be kept to an authorized representative of the department.

(2) No person may deny entry or access at any reasonable time to an authorized representative of the department for the purposes of inspection of facilities, equipment, including monitoring and air pollution control equipment, practices or operations regulated or required by the department, or at any time when an air pollution episode condition exists or is believed imminent. No person may obstruct, hamper or interfere with any inspection. The department, if requested, shall furnish to the owner or operator of the premises a report setting forth all facts found which relate to compliance status.

(3) The department may, for the purpose of determining a source's compliance with applicable requirements, sample or monitor at reasonable times production materials or other substances or operational parameters.

History: Renum from NR 154.06 (4) and am Register, September, 1986, No. 369, eff. 10-1-86; renum from NR 439.04 and am Register, September, 1987, No. 381, eff. 10-1-87; renum to be (1), (2) renum from NR 439.09 and am, Register, May, 1992, No. 437, eff. 6-1-92; am (1) and (2), er (3), Register, December, 1993, No. 456, eff. 1-1-94.

NR 439.055—Methods and procedures for determining compliance using instrumentation of air pollution control equipment and source processes. (1) The department may require the owner or operator of a source to install and operate instrumentation to monitor the operation of the source or of air pollution control equipment. Unless otherwise specified by the department, for the following types of air pollution control equipment, the indicated operational variables shall, at a minimum, be monitored:

- Baghouses—pressure drop across the baghouse in inches of water.
- Mechanical collectors—pressure drop across the collector in inches of water.
- Electrostatic precipitators—primary and secondary voltage in volts, primary and secondary current in amps, and sparking rate in sparks per minute.
- Incinerators—temperature in the primary chamber and the afterburner in degrees Fahrenheit or Celsius (centigrade).
- Wet scrubbers for control of particulates—pressure drop across the scrubber and demister in inches of water and scrubber liquor flow in gallons per minute.
- Absorption equipment for control of gases—pressure drop across the absorber and demister in inches of water, and pH of the absorbing fluid, if appropriate.
- Adsorption equipment—pressure drop across the adsorber and prefilter in inches of water, and temperature within the adsorber in degrees Fahrenheit or Celsius (centigrade).

(2) When the department requires instrumentation to monitor the operation of a source or of air pollution control equipment, the

following monitoring and recording frequencies shall, at minimum, be used:

(a) Temperature in the primary chamber and afterburner of an incinerator shall be monitored and recorded every 15 minutes.

(b) The following operational variables shall be measured and recorded once for every 8 hours of source operation or once per day, whichever yields the greater number of measurements:

- Pressure drop across baghouses, mechanical collectors, wet scrubbers, absorption equipment or adsorption equipment.
- Current in electrostatic precipitators.
- Voltage in electrostatic precipitators.
- The sparking rate from electrostatic precipitators.
- Flow of liquor in wet scrubbers used for particulate control.
- pH of absorption scrubbing fluid.

(3) When the department requires instrumentation to monitor the operation of air pollution control equipment, or to monitor source performance, the instrument shall measure operational variables with the following accuracy:

(a) The temperature monitoring device shall have an accuracy of 0.5% of the temperature being measured in degrees Fahrenheit or $\pm 5^{\circ}\text{F}$ of the temperature being measured, or the equivalent in degrees Celsius (centigrade), whichever is greater.

(b) The pressure drop monitoring device shall be accurate to within 5% of the pressure drop being measured or within ± 1 inch of water column, whichever is greater.

(c) The current, voltage, flow or pH monitoring device shall be accurate to within 5% of the specific variable being measured.

(4) All instruments used for measuring source or air pollution control equipment operational variables shall be calibrated yearly or at a frequency based on good engineering practice as established by operational history, whichever is more frequent.

(5) The department may require, in an operation permit or order, the measurement of a greater number of source or air pollution control operational variables, more frequent monitoring of operational variables, more accurate measurement of operational variables or more frequent calibration of monitoring equipment than those required under subs. (1) to (4) if the department determines that these requirements are necessary to ensure that the source does not exceed an applicable emission limit, or to ensure that the requirements of chs. NR 400 to 499 are met.

(6) For any air pollution control equipment or monitoring instrumentation not specifically identified in subs. (1) and (2), the department may require, in an operation permit or order, and after consultation with the owner or operator of the facility, monitoring of air pollution control equipment operational variables and may specify the frequency of the monitoring and the type of monitoring instrumentation.

History: Renum from NR 154.06 (6), Register, September, 1986, No. 369, eff. 10-1-86; renum from NR 439.06 and am Register, September, 1987, No. 381, eff. 10-1-87; renum from NR 439.08 and am, Register, May, 1992, No. 437, eff. 6-1-92; r and reer Register, December, 1993, No. 456, eff. 1-1-94; am (1) (d) and (g) and (3) (a), Register, December, 1996, No. 492, eff. 1-1-97; CR 02-146: am (6) Register October 2003 No. 574.

NR 439.06 Methods and procedures for determining compliance with emission limitations (by air contaminant). When tests or a continuous monitoring system are required by the department, the owner or operator of a source shall use the reference methods listed in this section and in ss. NR 439.07 to 439.095 to determine compliance with emission limitations, unless an alternative or equivalent method is approved, or a specific method is required, in writing, by the department. Any alternative, equivalent or other specific method approved or required by the department for an ozone precursor shall be submitted to, and will not become effective for federal purposes until approved by, the administrator or designee as a source-specific revision to the department's state implementation plan for ozone. The test methods shall include quality control and quality assurance procedures and the data reporting format which are specified

and approved by the department for collection, analysis, processing and reporting of compliance monitoring data. Notwithstanding the compliance determination methods which the owner or operator of a source is authorized to use under this chapter, the department may use any relevant information or appropriate method to determine a source's compliance with applicable emission limitations.

(1) NONFUGITIVE PARTICULATE EMISSIONS. The owner or operator of a source shall use Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H, 5I or 17 in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), and when required, Method 202 in 40 CFR part 51, Appendix M, incorporated by reference in s. NR 484.04 (9), to determine compliance with a nonfugitive particulate emission limitation.

(1m) NONFUGITIVE PM₁₀ PARTICULATE EMISSIONS. The owner or operator of a source shall use Method 201 or 201A in 40 CFR part 51, Appendix M, incorporated by reference in s. NR 484.04 (9), to determine compliance with a nonfugitive PM₁₀ particulate emission limitation.

(2) SULFUR DIOXIDE EMISSIONS. The owner or operator of a source shall use one or more of the following methods to determine compliance with a sulfur dioxide emission limitation:

(a) Perform compliance emission testing following Method 6, 6A, 6B, 6C or 8 in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13).

(b) Install, calibrate, maintain and operate a continuous emission monitor that meets the applicable performance specifications in 40 CFR part 60, Appendix B or, for affected units, the performance specifications in 40 CFR part 75, Appendices A to I, incorporated by reference in s. NR 484.04 (21) and (27). The owner or operator of the source shall submit a quality control and quality assurance plan for approval by the department. The monitor shall follow the plan, as approved by the department.

(c) Perform periodic fuel sampling and analysis of fossil and nonfossil fuels using the methods and procedures specified in s. NR 439.08.

(3) ORGANIC COMPOUND EMISSIONS. The owner or operator of a source shall use the test methods and procedures listed in this subsection to determine compliance with an organic compound emission limitation. If a test method inadvertently measures compounds which are listed in s. NR 400.02 (162) as having negligible photochemical reactivity, the owner or operator may exclude these compounds when determining compliance with a VOC emission limit if the amount of these compounds is accurately quantified and the exclusion is approved by the department. As a precondition to excluding these compounds as VOC or at any subsequent time, the department may require an owner or operator to provide monitoring or testing methods and results demonstrating, to the satisfaction of the department, the amount of negligibly reactive compounds in the source's emissions. Unless a source achieves compliance through an averaging method specifically authorized by the department, organic compound emission limitations in chs. NR 419 to 424 shall be achieved on an instantaneous basis.

(a) Method 18, 25, 25A or 25B in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), shall be used to determine organic compound emission concentrations or emission rates.

(am) Method 204, 204A, 204B, 204C, 204D, 204E or 204F in 40 CFR part 51, Appendix M, or the data quality objective method or lower confidence limit method in 40 CFR part 63, Subpart KK, Appendix A, incorporated by reference in s. NR 484.04 (9) and (24), shall be used to determine the capture efficiency of a control system for volatile organic compound emissions. The reporting and recordkeeping recommendations within a test method shall be followed unless alternative reporting or recordkeeping provisions have been approved in writing by the department. When determining the overall emission reduction efficiency of a volatile

organic compound control system, simultaneous measurements of both the capture efficiency of the system and the pollutant reduction efficiency of the control device may be required.

(b) Method 24 or 24A in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), shall be used to determine the organic solvent content, the volume of solids, the weight of solids, the water content and the density of surface coatings and inks.

(c) Method 21 in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), shall be used to detect organic compound emission leaks except as provided in par. (i) 2. or 3.

(d) Method 27 in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), shall be used to verify the vapor tightness of gasoline delivery tanks.

(e) An equation established under s. NR 425.05 (1) (b) 2. or contained in s. NR 425.05 (2) (b) 2. shall be used to determine compliance with an internal offset.

(f) Methods approved by the department shall be used to determine the transfer efficiency of surface coating equipment.

(g) Method 25A in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), shall be used to determine compliance with the aerosol can filling VOC emission limit in s. NR 424.04. If a flame ionization detector is used to test compliance with s. NR 424.04, test equipment calibration shall be conducted with propane. During the testing procedure, the flame ionization detector shall continuously measure VOC emissions for a minimum of one hour per aerosol can filling line with the control device not in operation and for a minimum of one hour with the control device in full operation. Production data taken concurrently with the testing procedure shall be used to calculate the VOC emission rates for the tested aerosol can filling line when the control device is not in operation and when the control device is in full operation.

(h) Compounds identified in s. NR 400.02 (162) as having negligible photochemical reactivity shall be treated as water to determine compliance with emission limitations which refer to water.

(i) The owner or operator of a gasoline dispensing facility shall use the methods in this paragraph to determine compliance of motor vehicle fueling vapor recovery systems required under s. NR 420.045 (7):

1. San Diego Air Pollution Control District Test Procedure TP-91-2, incorporated by reference in s. NR 484.05 (5), shall be used for dynamic backpressure and liquid blockage tests.

2. San Diego Air Pollution Control District Test Procedure TP-91-1, incorporated by reference in s. NR 484.05 (4), shall be used for leak tests.

3. The department may approve the use of alternative test methods for a vapor recovery system only if the manufacturer, installer or operator of the vapor recovery system demonstrates all of the following:

a. The test method in subd. 1. or 2. is not applicable to the vapor recovery system.

b. The proposed test method will provide test results which are similar to those provided by the test method in subd. 1. or 2. in terms of accuracy and validity.

c. The proposed test method has been accepted by another air pollution control agency within the United States.

(j) Notwithstanding par. (b), Method 24 of 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), shall be used to determine the VOC content of lithographic inks, fountain solutions and blanket or roller wash in complying with ss. NR 422.142 and 422.143.

(4) CARBON MONOXIDE EMISSIONS. The owner or operator of a source shall use one of the following methods to determine compliance with a carbon monoxide emission limitation:

(a) Method 10, 10A or 10B in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13).

(b) Install, calibrate, maintain and operate a continuous emission monitor that meets the applicable performance specifications in 40 CFR part 60, Appendix B, incorporated by reference in s. NR 484.04 (21), and follow quality control and quality assurance procedures for the monitor which have been submitted by the owner or operator of the source and approved by the department.

(5) LEAD EMISSIONS. The owner or operator of a source shall use Method 12 in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), to determine compliance with a lead emission limitation.

(6) NITROGEN COMPOUND EMISSIONS. The owner or operator of a source shall use one of the following methods to determine compliance with a nitrogen compound emission limitation:

(a) Method 7, 7A, 7B, 7C, 7D or 7E in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13).

(b) Install, calibrate, maintain and operate a continuous emission monitor that meets the applicable performance specifications in 40 CFR part 60, Appendix B, or, for affected sources, the performance specifications in 40 CFR part 75, Appendices A to I, incorporated by reference in s. NR 484.04 (21) and (27). The owner or operator of the source shall submit and follow the quality control and quality assurance plan for the monitor which has been approved by the department.

(7) TOTAL REDUCED SULFUR EMISSIONS. The owner or operator of a source shall use one of the following methods to determine compliance with a total reduced sulfur emission limitation:

(a) Method 15A, 16, 16A or 16B in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13).

(b) Install, calibrate, maintain and operate a continuous emission monitor that meets the applicable performance specifications in 40 CFR part 60, Appendix B, incorporated by reference in s. NR 484.04 (21), and follow quality control and quality assurance procedures for the monitor which have been submitted by the owner or operator of the source and approved by the department.

(8) EMISSIONS OF OTHER AIR CONTAMINANTS. The owner or operator of a source shall use methods and plans approved, in writing, by the department to determine compliance with an emission limitation for an air contaminant not listed in subs. (1) to (7).

(9) METHODS AND PROCEDURES FOR VISIBLE EMISSIONS. (a) The owner or operator of a source shall use one of the following methods to determine compliance with a visible emission limitation:

1. Method 9 in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13).

2. Install, calibrate, maintain and operate a continuous emission monitor that meets the applicable performance specifications in 40 CFR part 60, Appendix B or 40 CFR part 75, Appendices A to I, incorporated by reference in s. NR 484.04 (21) and (27), and follow a quality control and quality assurance plan for the monitor which has been approved by the department.

(b) The owner or operator of a source shall use Method 22 in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), to determine compliance with a no visible emission requirement.

History: Cr Register, September, 1987, No 381, eff 10-1-87; cr (3) (g), Register, April, 1988, No 388, eff 5-1-88; am (intro) (3) and (6) (a), cr (3) (h), Register, February, 1990, No 410, eff 3-1-90; am (intro) and (2) (c), Register, May, 1992, No 437, eff 6-1-92; am (3) (c), cr (3) (i), Register, January, 1993, No 445, eff 2-1-93; am (2) (a) and (3) (intro), Register, May, 1993, No 449, eff 6-1-93; am (intro), (1), (4) (a), (6) (b), (6) (e), (7) (a), (8), (9) (a) 2, cr (1m), Register, December, 1993, No 456, eff 1-1-94; am (1), (1m), (2) (a), (b), (3) (a) to (d), (g), (i) 1, 2, (4) (a), (b), (5), (6) (a), (b), (7) (a), (b), (9) (a) 1, 2, (9) (b), Register, February, 1995, No 470, eff 3-1-95; am (2) (b), Register, April, 1995, No 472, eff 5-1-95; cr (3) (j), Register, June, 1995, No 474, eff 7-1-95; am (3) (intro) and (h), Register, November, 1999, No 527, eff 12-1-99; cr (3) (am), Register, March, 2000, No 531, eff 4-1-00; CR 02-146: am (1) Register October 2003 No 574, eff 11-1-03; CR 08-102: am. (3) (j) Register July 2009 No. 643, eff. 8-1-09.

NR 439.07—Methods and procedures for periodic compliance emission testing. The owner or operator of a source required to conduct emission testing under s. NR 439.075

shall comply with all applicable methods and procedures listed in this section.

(1) GENERAL. All emission tests conducted for the purpose of determining compliance with an emission limitation under chs. NR 400 to 499 shall be performed according to the test methods established in 40 CFR part 60, Appendix A, 40 CFR part 61, Appendix B, and 40 CFR part 63, Appendix A, incorporated by reference in s. NR 484.04 (13), (23), and (25), or according to other test methods approved in writing by the department. The owner, operator or contractor responsible for emission testing shall follow the procedures in this section. Unless the department requires or approves the performance of a test at less than capacity, all compliance emission tests shall be performed with the equipment operating at capacity or as close to capacity as practicable.

(2) EMISSION TEST NOTIFICATION AND TEST PLAN SUBMITTAL. The department shall be notified in writing at least 20 business days in advance of a compliance emission test, including initial certification tests and relative accuracy tests performed under s. NR 439.09, to provide the department an opportunity to have a representative present to witness the testing procedures. The notice shall provide a test plan which includes, but need not be limited to, the following:

(a) A description of the sampling equipment and the test methods and procedures to be used.

(b) A description of the process to be tested.

(c) A description of the process or operation variables which affect the air contaminant source's emissions.

(d) The date and starting time of the test.

(e) A description of the number and location of the sampling ports and sampling points including a sketch showing the distance of the sampling ports from the nearest upstream and downstream flow disturbances and the stack dimensions.

(f) A statement indicating the production rate and the operating conditions at which the test will be conducted.

(3) TEST PLAN EVALUATION. In evaluating the test plan, the department shall respond to the source owner or operator within 10 business days of receipt of the plan and may require the following:

(a) A pre-test conference which includes the owner or operator of the source, the tester and the department to discuss any deficiencies in the plan or settle any test procedure questions the department, the tester or the source owner or operator might have.

(b) Any reasonable stack or duct modification or any change to the sampling method that is deemed necessary by the department to obtain a representative sample.

(c) Additional tests for the same pollutants to be performed at the same or different operating conditions.

(d) A rescheduling of the test to accommodate witnessing or source production schedules.

(4) NOTIFICATION OF TEST PLAN REVISION. The source owner or operator shall notify the department of any modifications to the test plan at least 5 business days prior to the test. In the event the owner or operator is unable to conduct the compliance emission test on the date specified in the test plan, due to unforeseeable circumstances beyond the owner or operator's control, the owner or operator shall notify the department at least 5 business days prior to the scheduled compliance emission test date and specify the date when the test is rescheduled.

(5) TESTING FACILITIES. The department may require the owner or operator of a source to provide the following emission testing facilities:

(a) The installation of sampling ports and safe sampling platforms.

(b) A safe work area for the test crew or any witnessing personnel.

(c) Safe access to the work area or sampling platform.

(d) Utilities for the sampling equipment.

(e) Instrumentation to monitor and record emissions data.

(6) WITNESSING REQUIREMENTS. The department may require that a department representative be present at any compliance emission test. The department representative has the following authority:

(a) The department representative shall, during the test, supply the tester with the appropriate audit samples required in the reference method for quality assurance purposes.

(b) The department representative may require the tester to provide the department a copy of all test data and equipment calibration data prepared or collected for the test.

(c) The department representative may take any or all of the test samples collected during the test for analysis by the department.

(d) The department witness may require the source owner or operator and tester to correct any deficiency in the performance of the test provided that the department witness notifies the source owner or operator and tester of the deficiency as soon as it is discovered. The failure of a source owner or operator and tester to correct any deficiency may result in the department refusing to accept the testing results.

(7) EMISSION TESTING EQUIPMENT CALIBRATION REQUIREMENTS. The following components of any emission sampling train or associated sampling equipment shall be calibrated not more than 60 days before the test:

(a) Any equipment used to measure gas velocity.

(b) Any equipment used to meter sample gas volume.

(c) Any equipment used to regulate sample gas flow.

(d) Any equipment used to measure temperature.

(e) Any gas sampling nozzle used during the emission test.

(f) Any equipment used to determine gas molecular weight.

(g) Any other sampling equipment that requires periodic calibration.

(8) PROCEDURES FOR CONDUCTING COMPLIANCE EMISSION TESTS. In conducting any compliance emission test the following procedures apply:

(a) *General provisions.* Except as provided for in par. (c), (d), (f) or (g), an emission test shall consist of a minimum of 3 representative repetitions, as determined by the department, of the applicable test method with a minimum sampling time of one hour per repetition. Shorter sampling times as referenced in par. (g) may be used with the written approval of the department. The arithmetic mean of the results of all repetitions shall be used to determine compliance with an emission limitation. In addition, the following requirements apply:

1. The gas flow rate, in dry standard cubic feet per minute, shall be determined during each repetition of an emission test using Method 1, 1A, 2, 2A, 2B, 2C, 2D, 2E, 2F, 2G, 2H, 3, 3A, 3B and 4 in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), as applicable.

2. A record shall be maintained of all persons who have handled the test samples.

(b) *Particulate matter.* When compliance with a particulate emission limitation is determined using Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H, 5I or 17 in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), the test shall consist of 3 representative repetitions. In addition, the following provisions apply:

1. Sootblowing shall be performed during one repetition of each test for particulate emissions on any boiler that routinely employs sootblowing, unless the boiler uses a continuous sootblowing system. If a continuous sootblowing system is operating during the test, compliance with the emission limitation shall be determined by the arithmetic mean of the results of all repetitions. If a continuous sootblowing system is not operating during the test, the representative average pounds of particulate emissions

per million Btu heat input shall be determined by the following equation:

$$E = E_s ((A + B) S / AR) + E_{ms} ((R - S) / R - (BS / AR))$$

where:

E is the weighted average pounds of particulate matter per million Btu heat input

E_s is the pounds of particulate matter per million Btu heat input for test runs during sootblowing

E_{ms} is the arithmetic average pounds of particulate matter per million Btu heat input for test runs with no sootblowing

A is the hours of sootblowing during test runs containing sootblowing

B is the hours with no sootblowing during test runs containing sootblowing

R is the average hours of boiler operation per 24 hours

S is the average hours of sootblowing per 24 hours

2. Each repetition for a particulate emission test shall have a sample volume of at least 30 dry standard cubic feet.

3. Method 17, for particulates, in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), may not be used where stack or duct temperatures exceed 320°F.

4. Heat input shall be equal to the fuel use rate multiplied by the heat content of the fuel on an as-fired basis. Fuels shall be analyzed for heat content using the procedures in Method 19 in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13).

5. Any boiler emission rate in pounds per million Btu heat input shall be determined using the heat input based on fuel use rate. The emission rate may be determined using the F Factor calculation shown in Method 19 in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), with written approval from the department. If the F Factor method is used, an ultimate fuel analysis shall be performed. An integrated gas sample, using Method 3, 3A or 3B in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), shall be collected and analyzed for oxygen and carbon dioxide content. Other methods for determining the boiler heat input may be used only if approved, in writing, by the department.

6. If cyclonic flow is a possibility at a particulate emission test location, a test for the presence of cyclonic flow shall be performed before the particulate test using the procedures in Method 1 in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13). If cyclonic flow is present, the flow must be straightened before testing can begin unless the source owner or operator demonstrates, to the department's satisfaction, the acceptability of the location using the alternate procedure to Method 1. If cyclonic flow is not present, testing can proceed.

7. The department may require the owner or operator of a source, with the exception of sources subject to the requirements of ch. NR 440, capable of emitting condensable particulate matter to include an analysis of the back half of the stack sampling train catch in the total particulate catch for any emission test using Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H, 5I or 17, in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13). This procedure and analysis shall be performed using Method 202 in 40 CFR part 51, Appendix M, incorporated by reference in s. NR 484.04 (9).

(c) *Sulfur dioxide emissions.* 1. When compliance with a sulfur dioxide emission limitation is determined using Method 6 or 6A in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), the test shall consist of 3 repetitions. A repetition shall consist of 2 20-minute sampling periods with each sampling period followed by a 15-minute fresh air purge. The 2 samples shall be analyzed independently. The arithmetic mean of the results of the 2 samples shall be the result of that repetition.

2. When compliance with a sulfur dioxide emission limitation is determined using Method 6B in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), the test shall consist of 3 24-hour repetitions with the sampling train operating continuously during each 24-hour repetition.

3. When compliance with a sulfur dioxide emission limitation is determined using Method 6C in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), the test shall consist of 3 representative repetitions.

(d) *Nitrogen oxide emissions.* 1. When compliance with a nitrogen oxide emission limitation is determined using Method 7, 7A or 7B in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), the test shall consist of 3 repetitions. A repetition shall consist of 4 2-liter evacuated sample bottles that are filled, one at a time, with stack gas at 15 minute intervals. The 4 samples shall be analyzed independently. The arithmetic mean of the results of the 4 samples shall be the result of that repetition.

2. When compliance with a nitrogen oxide emission limitation is determined using Method 7C, 7D or 7E in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), the test shall consist of 3 representative repetitions.

(e) *Organic compound emissions.* When compliance with an organic compound emission limitation is determined using Methods 18, 25, 25A or 25B in 40 CFR part 60, Appendix A, incorporated by reference in s. NR 484.04 (13), the test shall consist of a minimum of 3 representative repetitions.

(f) *Visible emissions.* When compliance with a visible emission limitation is determined using Method 9 in 40 CFR part 60, Appendix A, 4, incorporated by reference in s. NR 484.04 (13), the test shall be performed based on the either of the following time criteria, unless otherwise specified in any applicable regulation, permit or compliance order:

1. For a new construction permit, operation permit or a renewal of an operation permit, the minimum total time of observations shall be 60 minutes, consisting of 10 6-minute averages.

2. For any other circumstances, the minimum total time of observations shall be 18 minutes, consisting of 3 6-minute averages.

(g) *Exceptions.* With department approval, compliance with pars. (a) to (c) may be determined as the arithmetic mean of 2 representative repetitions if 3 repetitions cannot be used to determine compliance because of any of the following circumstances:

1. A shutdown of the process being tested due to circumstances beyond the control of the source owner or operator.

2. A production cycle that does not allow for 3 repetitions of the test method.

3. The interruption of the test by unfavorable weather.

4. The accidental loss of a sample.

5. Any other circumstances beyond the control of the tester or the owner or operator of the source.

(9) EMISSION TEST REPORTING REQUIREMENTS. The owner or operator of the source tested, including initial certification tests and relative accuracy tests performed under s. NR 439.09, shall submit 2 copies of the emission test report to the department within 60 days after completion of a compliance emission test if no samples were collected by the department witness. If samples were collected by the department, the test report shall be submitted within 30 days after the results from the test samples have been reported to the source owner or operator by the department. If requested, the department may grant an extension of up to 30 days for test report submittal. The failure to include the following information in an emission test report may result in rejection of the test. The emission test report shall include, but need not be limited to, the following information:

(a) A detailed description of the process tested and the sampling procedure employed.

(b) A log of the operating conditions of the process tested and any associated air pollution control device.

(c) A summary of results expressed in units consistent with the emission limitation applicable to the source.

(d) Sample calculations employing all the formulas used to calculate the results.

(e) The field and laboratory data for each repetition of the test.

(f) Calibration data for the components of the sampling train used.

(g) The results of quality assurance audit sample analyses required in the reference method.

(h) The report of any visible emission evaluations performed by the tester or source owner or operator.

(i) A copy of any steam, opacity or airflow charts made during the test.

(j) The report of any fuel analysis performed on the fuel burned during the test.

(k) Documentation of any process upset occurring during the test.

(L) An explanation of any excessive variation in the results when comparing the repetitions of the compliance emission test.

(m) If the compliance emission test being conducted is a retest, the changes made to the process or control device since the last test.

(10) REPORTING OF TEST RESULTS FOR TESTS CONDUCTED BY THE DEPARTMENT. The department shall furnish a report of emission tests it conducts to the source owner or operator within 60 days after the testing is completed. This emission test report shall include, but need not be limited to, the following information:

(a) A summary of results expressed in units consistent with the emission limitation applicable to the source.

(b) Sample calculations employing all formulas used to calculate the results.

(c) The field and laboratory data for each repetition of the test.

(d) Calibration data for the components of the sampling train used.

(e) The results of quality assurance audit sample analyses required in the reference method.

(f) The report of any visible emission evaluations performed by the department.

(g) The report of any fuel analysis performed on the fuel burned during the test.

History: Cr Register, September, 1987, No. 381, eff. 10-1-87; am (1)(c) 1, (i) 12 and 13, (2) (a) 5 and 6, Register, February, 1990, No. 419, eff. 3-1-90; am (intro), renum (1) (a) to (g), (2) and (3) to be (1) to (10), NR 439.08 and 439.09 and am (1), (8) (a), (b), (g), (m), (9) (a) and (10) (b), Register, May, 1992, No. 437, eff. 6-1-92; am (1), (8) (g), (i) and (n), Register, December, 1993, No. 456, eff. 1-1-94; am (1), (8) (b), (c) to (k), (m) and (n), Register, February, 1995, No. 470, eff. 3-1-95; am (4), Register, September, 1997, No. 501, eff. 10-1-97; am (1) and (4), Register, November, 1999, No. 527, eff. 12-1-99; r (8) (L), Register, March, 2000, No. 531, eff. 4-1-00; CR 02-146: am (2) (intro), (8) (a) and (9) (intro), renum (8) (b) to be (b) 1, (8) (d) to (h) to be (8) (b) 2 to 6, (8) (j) to be (8) (c) 1, (8) (k) to be (8) (c) 2, (8) (m) to be (8) (d) 1 and (8) (o) to be (8) (a) 2, cr (8) (b) (intro), (8) (c) 3, (8) (d) 2 and (8) (e) and (f), renumber and am (8) (c) to be (8) (g), (8) (i) to be (8) (a) 1 and (8) (n) to be (8) (b) 7, Register October 2003 No. 574, eff. 11-1-03.

NR 439.075 Periodic compliance emission testing requirements. **(1) APPLICABILITY AND GENERAL REQUIREMENTS.** (a) The owner or operator of a direct stationary source specified in sub. (2) which has been issued an air pollution control permit under s. 285.60, Stats., shall comply with the compliance emission testing requirements of this section.

(b) Nothing in this section may be construed as preventing the department from requiring the performance of additional compliance emission tests on the affected sources or requiring tests for pollutants and sources other than those specified in this section.

(c) All compliance emission tests under this section shall be performed according to s. NR 439.07 and chs. NR 445 to 449.

(2) AFFECTED EMISSION POINTS AND AIR CONTAMINANTS REQUIRING TESTING. (a) Except as provided in sub. (4), the owner

or operator of a source identified in this paragraph, with an emission point that has allowable emissions of particulate matter, sulfur dioxide or volatile organic compounds of 100 tons or more per year or allowable emissions of total reduced sulfur of 25 tons or more per year, shall perform compliance emission testing according to the testing schedules in sub. (3):

1. Compliance emission testing for particulate matter is required for an emission point subject to a particulate emission limitation under ch. NR 405 or in s. NR 415.04 (2) (b) 2. or (c) 1., 415.05, 415.06, 415.07 or 415.08 (3) or (6):

2. Compliance emission testing for sulfur dioxide is required for an emission point subject to a sulfur dioxide emission limitation under ch. NR 405 or in s. NR 417.07 (2), (3), (4) or (5), 418.025, 418.03 or 418.04 or to a more restrictive emission limit as described in s. NR 417.07 (1) (b):

3. Compliance emission testing for total reduced sulfur is required for an emission point subject to an emission limitation in s. NR 417.06:

4. Compliance emission testing for volatile organic compounds is required for an emission point subject to an emission limitation in s. NR 421.03, 421.04, 422.05 to 422.08, 422.09 to 422.155, 423.05 or 424.03 to 424.05 which uses a control device to achieve compliance with the applicable requirements. This test shall include a determination of the overall control efficiency of the control device on the affected emission point.

(b) The owner or operator of a source, subject to the requirements of ch. NR 427 or chs. NR 445 to 449, shall perform compliance emission testing for lead, mercury, beryllium or vinyl chloride according to the testing schedules in sub. (3):

1. Compliance emission testing for mercury is required for an emission point subject to s. NR 446.08 (1) or 446.21 (1), (2) or (3):

2. Compliance emission testing for beryllium is required for an emission point identified in s. NR 448.03 (1):

3. Compliance emission testing for vinyl chloride is required for an emission point identified in s. NR 449.04, 449.05 or 449.06 (1), (2), (3) or (4) and for any control system to which reactor emissions are required to be ducted in s. NR 449.06 (1) (b) or (5) (a) or (b) or to which fugitive emissions are required to be ducted in s. NR 449.07 (2) (a), (b), (c), (e), (f) or (i):

4. Compliance emission testing for lead is required for an emission point with allowable emissions of one ton per year or more that is subject to an emission limitation in s. NR 427.03:

(c) Except as provided in sub. (4), the owner or operator of a source identified in this paragraph which is subject to the requirements of ch. NR 440 shall perform compliance emission testing for the following air contaminants according to the testing schedules in sub. (3):

1. Compliance emission testing for particulate matter is required for the following:

a. Fossil fuel fired steam generators subject to s. NR 440.19 or 440.20:

b. Incinerators subject to s. NR 440.21:

c. Kilns at Portland cement plants subject to s. NR 440.22:

d. Dryers at asphalt concrete plants subject to s. NR 440.25 with a rated capacity of 250 tons per hour or more at 5% moisture removal:

e. Fluid catalytic cracking unit catalyst regenerators and fuel gas combustion devices at petroleum refineries subject to s. NR 440.26:

f. Pot, cupola and reverberatory furnaces at secondary lead smelters subject to s. NR 440.29:

g. Cupola, electric arc and reverberatory furnaces at secondary brass and bronze ingot production plants subject to s. NR 440.30:

h. Basic oxygen process furnaces at iron and steel plants subject to s. NR 440.31:

i. Incinerators at sewage treatment plants subject to s. NR 440.32:

j. Dryers at primary copper smelters subject to s. NR 440.33:

k. Sintering machines at primary zinc smelters subject to s. NR 440.34:

l. Blast furnaces, cross reverberatory furnaces and sintering machines at primary lead smelters subject to s. NR 440.35:

m. Thermal dryers and pneumatic coal cleaning equipment at coal preparation plants subject to s. NR 440.42:

n. Electric arc furnaces and dust handling equipment at ferroalloy production facilities subject to s. NR 440.43:

o. Electric arc furnaces at steel plants subject to s. NR 440.44:

p. Electric arc furnaces and argon oxygen decarburization vessels at steel plants subject to s. NR 440.445:

q. Recovery furnaces, smelt dissolving tanks and lime kilns at kraft pulp mills subject to s. NR 440.45:

r. Melting furnaces at glass manufacturing plants subject to s. NR 440.46:

s. Kilns at lime manufacturing plants subject to s. NR 440.51:

t. Control devices at metallic mineral processing plants with sources subject to the requirements of s. NR 440.525:

u. Dryers, calciners and grinders at phosphate rock plants subject to s. NR 440.54:

v. Ammonium sulfate dryers at ammonium sulfate manufacturing plants subject to s. NR 440.55:

w. Saturators and blowing stills at asphalt processing and asphalt roofing manufacturing plants subject to s. NR 440.59:

x. Rotary spun wool fiberglass insulation manufacturing lines at wool fiberglass insulation plants subject to s. NR 440.69:

2. Compliance emission testing for sulfur dioxide is required for fossil fuel fired steam generators subject to s. NR 440.19 or 440.20:

3. Compliance emission testing for volatile organic compounds, including a determination of the overall control efficiency of any control device, is required for the following:

a. Control devices at facilities subject to the surface coating of metal furniture requirements in s. NR 440.48:

b. Control devices at facilities subject to the automobile and light duty truck surface coating requirements in s. NR 440.53:

c. Control devices at facilities subject to the graphic arts industry requirements in s. NR 440.56:

d. Control devices at facilities subject to the pressure sensitive tape and label surface coating requirements of s. NR 440.565:

e. Control devices at facilities subject to the large appliance surface coating requirements in s. NR 440.57:

f. Control devices at facilities subject to the metal coil surface coating requirements in s. NR 440.58:

g. Control devices at facilities subject to the beverage can surface coating requirements of s. NR 440.63:

h. Control devices at bulk gasoline terminals subject to the requirements in s. NR 440.64:

i. Control devices at facilities subject to the flexible vinyl and urethane coating and printing requirements of s. NR 440.65:

j. Control devices at synthetic organic chemical manufacturing facilities subject to the requirements of s. NR 440.675, 440.686 or 440.705:

k. Control devices at facilities subject to the magnetic tape coating requirements of s. NR 440.71:

l. Control devices at facilities subject to the polymeric coating of supporting substrate requirements of s. NR 440.74:

4. Compliance emission testing for lead is required for grid casting, paste mixing, 3-process operation, lead oxide, lead reclamation and other lead emitting sources at lead acid battery manufacturing plants subject to s. NR 440.52:

5. Compliance emission testing for nitrogen oxides is required for fossil fuel fired steam generators subject to s. NR 440.19 or 440.20.

6. Compliance emission testing for fluorides is required for the following:

a. Reactors, filters, evaporators and hot wells at wet process phosphoric acid plants subject to s. NR 440.37.

b. Evaporators, hot wells, acid sumps and cooling tanks at super phosphoric acid plants subject to s. NR 440.38.

c. Reactors, granulators, dryers, coolers, screens and mills at diammonium phosphate plants subject to s. NR 440.39.

d. Mixers, curing belts or dens, reactors, granulators, dryers, cookers, screens, mills and facilities which store run of pile material at triple superphosphate plants subject to s. NR 440.40.

e. Storage or curing piles, conveyors, elevators, screens and mills at granular triple superphosphate storage facilities subject to s. NR 440.41.

(3) TESTING SCHEDULES. (a) The owner or operator of a direct stationary source which has received a construction permit shall perform the compliance emission tests required under sub. (2)(a) during the initial operating period authorized by the permit.

(b) Unless otherwise required by statute, rule or permit condition, the owner or operator of a direct stationary source which has received an operation permit shall perform the compliance emission tests required under sub. (2) every 24 months as long as the permit remains valid. Each biennial test shall be performed within 90 days of the anniversary date of the issuance of the permit or within 90 days of an alternate date specified by the department.

(c) The owner or operator of a direct stationary source which has received an elective operation permit under s. 285.60 (2)(b); Stats., shall perform the compliance emission tests required under sub. (2) every 24 months as long as the permit remains valid. Each biennial test shall be performed within 90 days of the anniversary date of the issuance of the permit or within 90 days of an alternate date specified by the department.

(4) EXCEPTIONS TO COMPLIANCE EMISSION TESTING REQUIREMENTS. (a) The following exceptions apply to the testing required under sub. (2)(a) or (c):

1. The department may grant a written waiver of a scheduled test if any of the following applies:

a. The direct stationary source associated with the emission point subject to the testing requirement will be ceasing operation within one year of a scheduled test.

b. The most recently completed test results from a test conducted according to the methods and procedures specified in s. NR 439.07 for the direct stationary source demonstrate that the emissions of the air contaminant for which compliance emission testing is required under this section are 50% or less of the applicable emission limitation.

c. The direct stationary source associated with the emission point subject to the testing requirement has not operated more than 360 hours in the previous 12 month period prior to the scheduled test date.

d. The most recently completed test, conducted according to the methods and procedures specified in s. NR 439.07, was conducted less than 12 months prior to the date that testing would be required under par. (b):

2. No periodic compliance emission test is required under this section for any affected emission point equipped with a continuous emission monitor for the air contaminants requiring testing if the monitor meets the performance specification requirements of s. NR 439.09.

3. No periodic compliance emission test is required under this section for any affected emission point of a fuel burning installation that only fires natural gas, propane or distillate fuel oil or any combination of these fuels.

4. The department may grant an extension of up to 180 days for compliance emission testing if the owner or operator of a direct stationary source requests an extension, in writing, and can demonstrate that a representative emissions test cannot be performed within the time frames specified in sub. (3)(b):

5. No periodic compliance emission testing for sulfur dioxide emissions is required under this section for any affected emission point which performs periodic fuel sampling and analysis under s. NR 439.085, according to s. NR 439.08.

(b) All requests for waivers under par. (a) shall be submitted in writing for department review and approval at least 60 days prior to the required test date.

History: Cr Register, September, 1987, No 381, eff 10-1-87; am (1) (b) 1 d, Register, April, 1988, No 388, eff 5-1-88; am (1) (d) 1 d, Register, August, 1989, No 404, eff 9-1-89; renum from NR 439 12 and am (1) (b) 3 f and (d) 1 b, Register, February, 1990, No 410 eff 3-1-90; renum (1) (b) 3 a 16 and 17) to be 17) and 16), am (1) (b) 3 a 23) and c 6), Register, July, 1990, No 415, eff 8-1-90; renum (1) (a) to (d), (2) and (3) to be (1) to (4), NR 439 085 and NR 439 095 and am, Register, May, 1992, No 437, eff 6-1-92; renum (2) (c) 1 t to w and 3 d to f to be (2) (c) 1 u, v, w and t, and 3 e, f and d, cr (2) (c) 3 j, k and L, Register, May, 1993, No 449, eff 6-1-93; am (3) (a) to (c), (4) (a) 1 c, cr (4) (a) 1 d, Register, December, 1993, No 456, eff 1-1-94; am (2) (a) 4, Register, June, 1994, No 462, eff 7-1-94; am (2) (a) (intro), 4, Register, December, 1995, No 480, eff 1-1-96; am (4) (a) 1 (intro), Register, December, 1996, No 492, eff 1-1-97; CR 02-146: cr (4) (a) 4 and 5 Register October 2003 No 574, eff 11-1-03; CR 01-081: am (2) (b) 1 Register September 2004 No 585, eff 10-1-04; CR 07-036: am (2) (b) 1 Register November 2008 No 635, eff 12-1-08; CR 08-114: am. (2) (c) 3, Register July 2009 No. 643, eff. 8-1-09

NR 439.08 Methods and procedures for periodic fuel sampling and analysis. The owner or operator of a source required to conduct fuel sampling and analysis under s. NR 439.085 shall use the methods and procedures listed in this section to obtain fuel samples and perform analyses for certain properties and constituents. Alternative methods may be used if approved, in writing, by the department.

(1) SAMPLING AND ANALYSIS OF COAL. (a) *Coal sampling.* Coal sampling shall be performed according to ASTM D2234-02, Standard Practice for Collection of a Gross Sample of Coal, incorporated by reference in s. NR 484.10 (33):

(b) *Preparing coal for analysis.* Preparation of a coal sample for analysis shall be performed according to ASTM D2013-01, Standard Method of Preparing Coal Samples for Analysis, incorporated by reference in s. NR 484.10 (30):

(c) *Sulfur content in coal.* The sulfur content of a coal sample shall be determined according to ASTM D3177-02, Standard Test Methods for Total Sulfur in the Analysis Sample of Coal and Coke, or ASTM D4239-04a, Standard Test Methods for Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods, both incorporated by reference in s. NR 484.10 (45) and (53):

(d) *Heat content in coal.* The heat content of a coal sample shall be determined according to ASTM D5865-04, Standard Test Method for Gross Calorific Value of Coal and Coke, incorporated by reference in s. NR 484.10 (55g):

(e) *Ash content in coal.* The ash content of a coal sample shall be determined according to ASTM D3174-04, Standard Test Method for Ash in the Analysis Sample of Coal and Coke from Coal, incorporated by reference in s. NR 484.10 (43):

(f) *Moisture content in coal.* The moisture content of a coal sample shall be determined according to ASTM D3173-02, Standard Test Method for Moisture in the Analysis Sample of Coal and Coke, incorporated by reference in s. NR 484.10 (42):

(g) *Ultimate analysis of coal.* The ultimate analysis of a coal sample shall be determined according to ASTM D3176-89, Standard Practice for Ultimate Analysis of Coal and Coke, incorporated by reference in s. NR 484.10 (44):

(h) *Coal audit samples.* The owner or operator of a source shall be required to participate at least once every 6 months in an interlaboratory coal audit program acceptable to the department. The results of the audit shall be reported to the department in the quarterly report on coal quality required under s. NR 439.085 (2)