Chapter NR 439

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

NR 439.01 Applicability; purpose. (1) APPLICABILITY. This chapter applies to all air contaminant sources and to all owners or operators of an air contaminant source.

(2) PURPOSE. This chapter is adopted under ss. 144.31, 144.34, 144.38 and 144.394, Stats., to establish general reporting, recordkeeping, testing, inspection and demonstration 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.

NR 439.02 Definitions. In addition to the definitions contained in this section, the definitions contained in ch. NR 400 also apply to the terms used in this chapter.

(1) "Audit samples" means glass vials, gas cyclinders 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 measurement of air contaminants 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.

(7) "Fume incinerator" means a device which destroys organic compounds by combustion. Such devices may include direct flame incinerators, catalytic incinerators, and process boilers.

(8) "Mechanical collector" means a broad class of particulate control devices that separate dust 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.

(10) "Noncriteria pollutant" means any air contaminant for which no ambient air quality standard is set in ch. NR 404.

(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.), cr. (1) to (12), Register, September, 1987, No. 381, eff. 10-1-87.

NR 439.03 Reporting. (1) 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.

(2) The owner or operator of a source requested to submit information under sub. (1) may subsequently be required to submit annually, or at such other intervals as specified by the department, reports detailing any changes in the nature of the source since the previous report and the total quantities of the air contaminants emitted.

(3) When requested by the department, the owner or operator of a source shall submit to the department, within 60 days, a standard operating procedure which includes a detailed description of process and emission control equipment startup, operating and shutdown procedures designed to maintain compliance with emission limitations.

(4) (a) The owner or operator of a source shall report to the department the next business day following the onset, any malfunction or other unscheduled event at the source, not reported in advance to the department, which causes or may cause any emission limitation, including the visual emission limit, to be exceeded with the following exceptions:

1. Hazardous air spills which require immediate notice to the department under s. NR 445.08.

2. Exceedances of visible emission limitations detected by a continuous emission monitor which are less than 10% opacity above the opacity limit for a period not to exceed 30 minutes. These exceedances shall be reported in the quarterly excess emissions reports required under s. NR 439.07 (3) (h).

(b) The person shall report the cause and duration of the exceedance, the period of time considered necessary for correction, and measures taken to minimize emissions during the period.

(5) The owner or operator of a source required to operate a continuous emission monitoring system or monitoring device shall notify the department of any shutdown, breakdown, or malfunction of such device or system which is anticipated to continue in excess of one week. Notice shall occur at the next business day following the onset of the shutdown, breakdown or malfunction.

(6) The owner or operator of a source shall report to the department in advance schedules for planned shutdown and startup of air pollution control equipment and the measures to be taken to minimize the down time of the control equipment while the source is operating. Scheduled maintenance or any other scheduled event, including startup, shutdown or sootblowing procedures which have been approved by the department under s. NR 436.03 (2) (b), which causes an emission limitation to be exceeded shall also be reported in advance to the department. Advance reporting under this subsection does not relieve any person from the duty to comply with any applicable emission limitation.

History: Renum. from NR 154.06 (2) and am. Register, September, 1986, No. 369, eff. 10-1-86; renum. from NR 439.025, r. (4) and (5), renum. and am. (1) to (3), (6) to (8), Register, September, 1987, No. 381, eff. 10-1-87; correction in (4) (a) 1. made under s. 13.93 (2m) (b) 7, Stats., Register, August, 1989, No. 404.

NR 439.04 Recordkeeping. (1) The owner or operator of an air contaminant source to which chs. NR 400 to 499 apply shall maintain the following records:

(a) Records of all testing and monitoring conducted under chs. NR 400 to 499;

(b) Records detailing all malfunctions which cause any applicable emission limitation to be exceeded, including logs to document the implementation of the plan required by s. NR 439.11;

(c) Records detailing all activities specified in any compliance schedule approved by the department under chs. NR 400 to 499; and

(d) Any other records relating to the emission of air contaminants which may be requested in writing by the department.

(2) Copies of all records required under this section shall be retained by the owner or operator for a period of 3 years or for such other period as may be specified by the department.

(3) The owner or operator of an air contaminant source subject to an emission limitation in chs. NR 419 to 424, in addition to maintaining the records required in sub. (1), shall maintain records which demonstrate compliance with applicable emission limitations or eligibility for exemptions in chs. NR 419 to 424. Such records shall, at a minimum:

(a) Be consistent with any averaging periods specified or allowed by the department;

(b) Be in a format acceptable to the department;

(c) Include as-applied formulation and analytical data for all coatings and inks used by the source, coating and ink consumption data, and process information;

(d) Include capture and control equipment performance data when the source is demonstrating compliance through the use of control equipment, and

(e) Include actual applicator transfer efficiency data when the source is demonstrating compliance through the use of a high transfer efficiency coating application system.

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), cr. (3), Register, February, 1990, No. 410, eff. 3-1-90.

NR 439.05 Access to records. No person may deny information or access to records relating to emissions to an authorized representative of the department.

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.

NR 439.06 Methods and procedures for determining compliance with emission limitations. When a test is 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 and 439.075 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. 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, 5D or 17 in 40 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484, to determine compliance with a nonfugitive particuate 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) Method 6, 6A, 6B, 6C or 8 in 40 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484, or

(b) Install, calibrate, maintain and operate a continuous emission monitor that meets the applicable performance specifications in 40 C.F.R. part 60, Appendix B, incorporated by reference in ch. NR 484 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; or

(c) Perform periodic fuel sampling and analysis of fossil and nonfossil fuels using the methods and procedures specified in s. NR 439.07 (2).

(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 (100) as having negligible photochemical reactivity, the owner or operator may exclude these compounds when determining compliance with a VOC emission limit. Unless a source achieves compliance through an averaging method specifically authorized by the department, organic compound emission limitations in chs. 419 to 424 shall be achieved on an instantaneous basis.

(a) Method 18, 25, 25A or 25B in 40 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484, shall be used to determine organic compound emission concentrations or emission rates.

(b) Method 24 or 24A in 40 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484, 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 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484, shall be used to detect organic compound emission leaks.

(d) Method 27 in 40 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484, shall be used to verify the vapor tightness of gasoline delivery tanks.

(e) The equations in s. NR 425.05 (1) (b) 2. or (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 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484, 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 (100) shall be treated as water to determine compliance with emission limitations which refer to water.

(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 in 40 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484, or

(b) Install, calibrate, maintain and operate a continuous emission monitor that meets the applicable performance specifications in 40

C.F.R. part 60, Appendix B, incorporated by reference in ch. NR 484, 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 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484, 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 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484, or

(b) Install, calibrate, maintain and operate a continuous emission monitor that meets the applicable performance specifications in 40 C.F.R. part 60, Appendix B, incorporated by reference in ch. NR 484, 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.

(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 16 or 16A in 40 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484, or

(b) Install, calibrate, maintain and operate a continuous emission monitor that meets the applicable performance specifications in 40 C.F.R. part 60, Appendix B, incorporated by reference in ch. NR 484, 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) NONCRITERIA POLLUTANT EMISSIONS. The owner or operator of a source shall use methods and procedures 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 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484, or

2. Install, calibrate, maintain, and operate a continuous emission monitor that meets the performance specifications in 40 C.F.R. part 60, Appendix B, incorporated by reference in ch. NR 484.

(b) The owner or operator of a source shall use Method 22 in 40 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484, 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.

NR 439.07 Methods and procedures for performing stack compliance emission testing, fuel sampling and analysis and continuous emission monitoring. The owner or operator of a source shall comply with all applicable methods and procedures listed in this section.

(1) METHODS AND PROCEDURES FOR EMISSION TESTING. (a) *General.* All emission tests conducted for the purpose of determining compliance with an emission limitation shall be performed according to the test methods established in 40 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484, or according to other test methods approved in writing by the department. All emission testing shall be performed following the methods and 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 practical.

(b) *Test plan.* The department shall be notified in writing at least 20 business days in advance of a compliance emission test 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:

1. A description of the sampling equipment and the test methods and procedures to be used.

2. A description of the process to be tested.

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

4. The date and starting time of the test.

5. 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.

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

(c) *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:

1. 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.

2. 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.

3. Additional tests for the same pollutants to be performed at the same or different operating conditions.

4. A rescheduling of the test to accommodate witnessing or source production schedules.

(d) *Amended test plan.* 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.

(e) *Testing facilities.* The department may require the owner or operator of a source to provide the following emission testing facilities:

1. The installation of sampling ports and safe sampling platforms.

2. A safe work area for the test crew or any witnessing personnel.

3. Safe access to the work area or sampling platform.

4. Utilities for the sampling equipment.

5. Instrumentation to monitor and record emissions data.

(f) *Witnessing requirements.* The department may require that a department representative be present at any compliance emission test. The department representative has the following authority:

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

2. 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.

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

4. 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.

(g) *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:

1. Any equipment used to measure gas velocity.

2. Any equipment used to meter sample gas volume.

3. Any equipment used to regulate sample gas flow.

4. Any equipment used to measure temperature.

5. Any gas sampling nozzle used during the emission test.

6. Any equipment used to determine gas molecular weight.

7. Any other sampling equipment that requires periodic calibration.

(h) *Conducting compliance emission tests.* In conducting any compliance emission test the following procedures apply:

1. Except as provided in subd. 3., 10., 11. or 13., 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 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.

2. 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:

$$E = E_S ((A+B)\ S/AR) + E_{ns} ((R-S)/R - BS/AR)$$

where:

E = weighted average pounds of particulate matter per million BTU heat input.

E_S = pounds of particulate matter per million BTU heat input for test runs during sootblowing.

E_{ns} = arithmetic average pounds of particulate matter per million BTU heat input for test runs with no sootblowing.

A = hours sootblowing during test runs containing sootblowing.

B = hours not sootblowing during test runs containing sootblowing.

R = average hours of boiler operation per 24 hours.

S = average hours of sootblowing per 24 hours.

3. With department approval, compliance 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:

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

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

c. The interruption of the test by unfavorable weather.

d. The accidental loss of a sample.

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

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

5. Method 17, for particulates, in 40 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484, may not be used where stack or duct temperatures exceed 320°F.

6. 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 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484.

7. Any boiler emission concentration in pounds per million BTU heat input shall be determined using the heat input based on fuel use rate. The emission concentration may be determined using the F-Factor calculation shown in Method 19 in 40 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484, 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 or 3A in 40 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484, shall be collected and analyzed for oxygen and carbon dioxide content. Any other methods used to determine the boiler heat input shall be approved, in writing, by the department.

8. If cyclonic flow is a possiblity 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 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484. 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.

9. The gas flow rate, in dry standard cubic feet per minute, shall be determined during each repetition of an emission test using Methods 1, 2, 3, and 4 in 40 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484.

10. When compliance with a sulfur dioxide emission limitation is determined using Method 6 or 6A in 40 C.F.R., part 60, Appendix A, incorporated by reference in ch. NR 484, 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.

11. When compliance with a sulfur dioxide emission limitation is determined using Method 6B in 40 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484, the test shall consist of 3 24-hour repetitions with the sampling train operating continuously during each 24-hour repetition.

12. When determining the overall emission reduction efficiency of a control system, simultaneous measurements of both the capture efficiency of the system and the pollutant reduction efficiency of the control device are required.

13. When compliance with a nitrogen oxide emission limitation is determined using Method 7, 7A or 7B in 40 C.F.R. part 60, Appendix A, incorporated by reference in ch. NR 484, 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 are analyzed independently. The arithmetic mean of the results of the 4 samples shall be the result of that repetition.

14. The department may require the owner or operator of a source, with the exception of sources affected by the requirements of ch. NR 440, capable of emitting condensible particulate matter to include an analysis of the back half of the Method 5 or 17 stack sampling train in the total particulate catch. This analysis shall be performed by methods and procedures approved, in writing, by the department.

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

(i) *Reporting of test results.* The owner or operator of the source tested 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:

1. A detailed description of the process tested and the sampling procedure employed.

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

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

4. Sample calculations of all the formulas used to calculate the results.

5. The field and laboratory data for each repetition of the test.

6. Calibration data for the components of the sampling train used.

7. The results of quality assurance audit sample analyses required in the reference method.

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

9. A copy of any steam, opacity, or airflow charts made during the test.

10. The report of any fuel analysis performed on the fuel burned during the test.

11. Documentation of any process upset occurring during the test.

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

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

(j) *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:

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

2. Sample calculations of all formulas used to calculate the results.

3. The field and laboratory data for each repetition of the test.

4. Calibration data for the components of the sampling train used.

5. The results of quality assurance audit sample analyses required in the reference method.

6. The report of any visible emission evaluations performed by the department.

7. The report of any fuel analysis performed on the fuel burned during the test.

(2) METHODS AND PROCEDURES FOR FUEL SAMPLING AND ANALYSIS. Where required by the department, the owner or operator of a source shall use the following methods and procedures to obtain a fuel sample and perform analysis for certain properties and constituents. Alternative methods may be used if approved, in writing, by the department.

(a) *Sampling and analysis of coal.* 1. Coal sampling. Coal sampling shall be performed according to ASTM D2234-76, Collection of a Gross Sample of Coal, incorporated by reference in ch. NR 484.

2. Preparing coal for analysis. Preparation of coal sample for analysis shall be performed according to ASTM D2013-72, Preparing Coal Samples for Analysis, incorporated by reference in ch. NR 484.

3. Sulfur content in coal. The sulfur content of a coal sample shall be determined according to ASTM D3177-75, Total Sulfur in the Analysis Sample of Coal and Coke, or ASTM D4239-83, Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods, incorporated by reference in ch. NR 484.

4. Heat content in coal. The heat content of a coal sample shall be determined according to ASTM D2015-77, Gross Calorific Value of Solid Fuel by the Adiabatic Bomb Calorimeter, incorporated by reference in ch. NR 484.

5. Ash content in coal. The ash content of a coal sample shall be determined according to ASTM D3174-82, Standard Test Method for Ash in the Analysis Sample of Coal and Coke, incorporated by reference in ch. NR 484.

6. Moisture content in coal. The moisture content of a coal sample shall be determined according to ASTM D3173-73, Standard Test Method for Moisture in the Analysis Sample of Coal and Coke, incorporated by reference in ch. NR 484.

7. Ultimate analysis of coal. The ultimate analysis of a coal sample shall be determined according to ASTM D3176-84, Ultimate Analysis of Coal and Coke, incorporated by reference in ch. NR 484.

8. 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 following

receipt of the results from the audit program. The results must comply with quality control and quality assurance procedures submitted by the owner or operator of the source and approved by the department.

(b) *Sampling and analysis of liquid fossil fuel.* 1. Liquid fossil fuel sampling. Liquid fossil fuel sampling shall be performed according to ASTM D4057-81, Standard Practice for Manual Sampling of Petroleum and Petroleum Products or ASTM D4177-82, Standard Method for Automatic Sampling of Petroleum and Petroleum Products, incorporated by reference in ch. NR 484.

2. Sulfur content in liquid fossil fuel. The sulfur content of a liquid fossil fuel sample shall be determined according to ASTM D129-64 (1978), Sulfur in Petroleum Products (General Bomb Method) and ASTM D4294-83, Sulfur in Petroleum Products by Nondispersive X-ray Fluorescence Spectrometer, incorporated by reference in ch. NR 484.

3. Heat content in liquid fossil fuel. The heat content of a liquid fossil fuel sample shall be determined according to ASTM D240-76, Heat of Combustion of Liquid Hydrocarbon Fuels by a Bomb Calorimeter, incorporated by reference in ch. NR 484.

(c) *Sampling and analysis of fuels other than coal and liquid fossil fuel.* The owner or operator of a source required by the department to sample and analyze fuel other than coal and liquid fossil fuel shall use methods and procedures approved, in writing, by the department.

(3) METHODS AND PROCEDURES FOR CONTINUOUS EMISSIONS MONITORING SYSTEMS. Where required by the department, the owner or operator of a source shall use the following methods and procedures to install, calibrate, maintain and operate a continuous emissions monitoring system or other methods and procedures approved, in writing, by the department:

(a) Continuous emissions monitoring systems for measuring opacity shall comply with all the provisions and requirements in Performance Specification 1 in 40 C.F.R. part 60, Appendix B, incorporated by reference in ch. NR 484.

(b) Continuous emissions monitoring systems for measuring sulfur dioxide or nitrogen oxides shall comply with all the provisions and requirements in Performance Specification 2 in 40 C.F.R. part 60, Appendix B, incorporated by reference in ch. NR 484.

(c) Continuous emissions monitoring systems for measuring oxygen or carbon dioxide shall comply with all the provisions and requirements in Performance Specification 3 in 40 C.F.R. part 60, Appendix B, incorporated by reference in ch. NR 484.

(d) Continuous emissions monitoring systems for measuring carbon monoxide shall comply with all the provisions and requirements in Performance Specification 4 in 40 C.F.R. part 60, Appendix B, incorporated by reference in ch. NR 484.

(e) Continuous emissions monitoring systems for measuring total reduced sulfur shall comply with all the provisions and requirements in Performance Specification 5 in 40 C.F.R. part 60, Appendix B, incorporated by reference in ch. NR 484.

(f) The owner or operator of a continuous emissions monitoring system shall comply with quality control and quality assurance procedures submitted by the owner or operator of the source and approved by the department.

(g) Continuous emissions monitoring systems shall meet the following minimum frequency of operation requirements:

1. Opacity monitors shall complete one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.

2. Sulfur dioxide, nitrogen oxides, oxygen, carbon dioxide, carbon monoxide, and total reduced sulfur monitors shall complete one cycle of sampling, analyzing, and data recording for each successive 15-minute period. The values recorded will be averaged hourly.

(h) 1. The owner and operator of a continuous emissions monitoring system shall submit quarterly excess emissions reports within 30 days following the end of each calendar quarter. The reports shall contain the following information:

a. The date and starting and ending times of each period of excess emissions including the magnitude of the emissions.

b. The periods of excess emissions that occur during startups, shutdowns, sootblowing, control equipment malfunction, process malfunction, or for unknown causes. The report shall identify the cause of any malfunction and the measures taken to reduce excess emissions.

c. The date and starting and ending time of any period during which the monitoring system was inoperative except for zero and span checks. The report shall identify the repairs or adjustments made to the system.

d. The date and starting and ending time of any period during which the process being monitored was inoperative.

e. When no period of excess emissions occurred during the quarter and the monitoring system had no period of downtime, an excess emissions report shall be filed stating such information.

2. For the purpose of reports required under this paragraph, periods of excess emissions shall be reported as follows:

a. For opacity, any 6-minute period during which the average opacity exceeds the applicable emission limit.

b. For sulfur dioxide, any 24-hour rolling average during which the average sulfur dioxide emissions exceed the applicable emission limitation.

c. For nitrogen oxides, any 24-hour rolling average during which the average nitrogen oxides emissions exceed the applicable emission limitation.

d. For carbon monoxide, any one-hour period during which the average carbon monoxide emissions exceed the applicable emission limitation.

e. For total reduced sulfur, any 24-hour rolling average during which the average total reduced sulfur emissions exceed the applicable emission limitation.

3. For purposes of reporting exceedances on the basis of a 24-hour rolling average under this paragraph, an exceedance shall be based on at least 18 and not more than 24 valid recordings of hourly average concentrations in any 24 hour period. An hourly average may be included in only one 24-hour rolling average exceedance.

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. 410, eff. 3-1-90.

NR 439.075 Compliance emission testing, fuel sampling and analysis and continuous emission monitoring requirements. (1) COMPLIANCE EMISSION TESTING. (a) *Applicability and general requirements.* 1. The owner or operator of a direct stationary source specified in par. (b) which has been issued an air pollution control permit under s. 144.391, Stats., shall comply with the compliance emission testing requirements of this subsection.

2. Nothing in this subsection 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 subsection.

3. All compliance emission tests under this subsection shall be performed according to s. NR 439.07 and chs. NR 445 to 449.

(b) *Affected emission points and air contaminants requiring testing.* 1. Except as provided in par. (d), the owner or operator of a source identified in this subdivision, with an emission point that has allowable emissions of particulate matter, sulfur dioxide, or 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 par. (c).

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

b. Compliance emission testing for sulfur dioxide is required for an emission point subject to an emission limitation in s. NR 417.03, 417.07 (2), (3), (4), or (5), 418.025, 418.03 or 418.04.

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

d. Compliance emission testing for organic compounds is required for an emission point subject to an emission limitation in s. NR 421.03, 421.04, 422.05, 422.06, 422.07, 422.08, 422.09, 422.10, 422.11, 422.12, 422.13, 422.14, 422.15, 422.155, 423.05, 424.03 or 424.04 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.

2. 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 par. (c).

a. Compliance emission testing for mercury is required for an emission point identified in s. NR 446.04 (1), (2) or (3).

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

c. 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 (5) (a) or (b) and to which fugitive emissions are required to be ducted in s. NR 449.07 (2) (a), (b), (e), (f) and 449.09 (2).

d. 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.

3. Except as provided in par. (d), the owner or operator of a source identified in this subdivision 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 par. (c).

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

1) Fossil fuel fired steam generators subject to s. NR 440.19 or 440.20.

2) Incinerators subject to s. NR 440.21.

3) Kilns at Portland cement plants subject to s. NR 440.22.

4) 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.

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

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

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

8) Basic oxygen process furnaces at iron and steel plants subject to s. NR 440.31.

9) Incinerators at sewage treatment plants subject to s. NR 440.32.

10) Dryers at primary copper smelters subject to s. NR 440.33.

11) Sintering machines at primary zinc smelters subject to s. NR 440.34.

12) Blast furnaces, dross reverberatory furnaces, and sintering machines at primary lead smelters subject to s. NR 440.35.

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

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

15) Electric arc furnaces at steel plants subject to s. NR 440.44.

16) Electric arc furnaces and argon-oxygen decarburization vessels at steel plants subject to s. NR 440.445.

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

18) Melting furnaces at glass manufacturing plants subject to s. NR 440.46.

19) Kilns at lime manufacturing plants subject to s. NR 440.51.

20) Dryers, calciners and grinders at phosphate rock plants subject to s. NR 440.54.

21) Ammonium sulfate dryers at ammonium sulfate manufacturing plants subject to s. NR 440.55.

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

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

24) Rotary spun wool fiberglass insulation manufacturing lines at wool fiberglass insulation plants subject to s. NR 440.69.

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

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

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

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

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

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

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

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

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

8) Control devices at bulk gasoline terminals subject to the requirements in s. NR 440.64.

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

d. 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.

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

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

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

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

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

4) Mixers, curing belts on 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.

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

(c) *Testing schedules.* 1. The owner or operator of a direct stationary souce which has received a construction, modification or new operation permit under s. 144.391 (1) (b), (2) (b) or (3) (b), Stats., shall perform the compliance emission tests required under par. (b) 1. during the initial operating period authorized by the permit and shall perform the compliance emission tests required under par. (b) at least once every 24 months thereafter as long as the permit remains valid. Each biennial test shall be performed within 90 days of the anniversary date of release for permanent operation of the affected source or within 90 days of an alternate date specified by the department.

2. The owner or operator of a direct stationary source which has received a mandatory operating permit under s. 144.391 (1) (bm), (2) (bm), or (3) (bm), Stats., shall perform the compliance emission tests required under par. (b) 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.

3. The owner or operator of a direct stationary source which has received an elective operating permit under s. 144.391 (1) (c), (2) (c) or (3) (c), Stats., shall perform the compliance emission tests required under par. (b) 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.

(d) *Exceptions to compliance emission testing requirements.* 1. The following exceptions apply to the testing required under par. (b) 1. or 3.:

a. The department may grant a written waiver of a scheduled test if:

1) 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.

2) 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 the subsection are 50% or less of the applicable emission limitation.

3) 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.

b. No periodic compliance emission test is required under this subsection 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 439.07 (3).

c. No periodic compliance emission test is required under this subsection 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.

2. All requests for waivers under subd. 1 shall be submitted in writing for department review and approval at least 60 days prior to the required test date.

(2) PERIODIC FUEL SAMPLING AND ANALYSIS REQUIREMENTS. (a) *General applicability.* Effective April 1, 1989, the requirements of this subsection apply to all owners or operators of sources described in this subsection, with the following exceptions:

1. Sources affected by the RACT sulfur limitations in s. NR 418.04, 418.05, 418.06, 418.07 or 418.08.

2. Sources with approved RACT variances under s. NR 436.05 affected by the sulfur limitations in s. NR 418.025 or 418.03.

3. Sources which have installed a sulfur dioxide continuous emission monitor that meets the performance specification requirements of s. NR 439.07 (3).

(b) *Requirements for coal burning installations.* 1. The owner or operator of a coal burning installation which has an annual coal burning rate equal to or greater than 250,000 tons per year shall sample coal and submit reports on coal quality in the following manner:

a. Perform coal sampling, using the procedures in ASTM D2234, which result in data at least as reliable as classification I-B-1, defined in ASTM D2234 as automatic sampling — full stream cut — systematic spacing, and analyze these samples for ash content, sulfur content, and heat content according to the applicable methods and procedures in s. NR 439.07 (2).

b. Submit quarterly reports within 30 days following the end of each calendar quarter which include the following information for each day during the calendar quarter:

1) Total quantity of coal burned expressed in tons.

2) Average percent of the ash content of the coal burned.

3) Average percent of the sulfur content of the coal burned.

4) Average heat content expressed in BTU per pound of coal burned.

5) Average sulfur dioxide emission rate in terms of pounds of sulfur dioxide per million BTU heat input from the coal burned.

2. The owner or operator of a coal burning installation which has an annual coal burning rate equal to or greater than 100,000 but less than 250,000 tons per year shall sample coal and submit reports on coal quality in the following manner:

a. Perform coal sampling using the procedures in ASTM D2234, which result in data at least as reliable as classification I-C-2, defined in ASTM D2234 as automatic sampling — part stream cut — random spacing, and analyze these samples for ash content, sulfur content, and heat content according to the applicable methods and procedures in s. NR 439.07 (2).

b. Submit quarterly reports within 30 days following the end of each calendar quarter which shall include the following information for each week during the calendar quarter:

1) The total quantity of coal burned expressed in tons.

2) Weighted average percent of the ash content of the coal burned.

3) Weighted average percent of the sulfur content of the coal burned.

4) Weighted average heat content expressed in BTU per pound of the coal burned.

5) Weighted average sulfur dioxide emission rate in terms of pounds of sulfur dioxide per million BTU heat input from the coal burned.

3. The owner or operator or a coal burning installation which has an annual coal burning rate equal to or greater than 10,000 tons per year but less than 100,000 tons per year shall sample coal and submit reports on coal quality in the following manner:

a. Perform coal sampling using the procedures in ASTM D2234, which result in data at least as reliable as classification II-D-2, defined in ASTM D2234 as manual sampling — stationary coal sampling — random spacing, and analyze these samples for ash content, sulfur content, and heat content according to the applicable methods and procedures in s. NR 439.07 (2).

b. Submit quarterly reports within 30 days following the end of each calendar quarter which shall include the following information for each month during the calendar quarter:

1) The total quantity of coal burned expressed in tons.

2) Weighted average percent of the ash content of the coal burned.

3) Weighted average percent of the sulfur content of the coal burned.

4) Weighted average heat content expressed in BTU per pound of the coal burned.

5) Weighted average sulfur dioxide emission rate in terms of pounds of sulfur dioxide per million BTU heat input from the coal burned.

4. The owner or operator of a coal burning installation which has an annual coal burning rate equal to or greater than 1,000 tons but less than

10,000 tons per year shall submit, on a quarterly basis, information on coal quality which is calculated from the supplier's analyses for each shipment of coal received at this installation. Each quarterly report is due within 30 days following the end of each calendar quarter. The owner or operator shall obtain certification from the supplier that the applicable methods and procedures in s. NR 439.07 (2) were followed by the supplier. The report shall include the following information for each calendar quarter:

a. The total quantity of coal burned expressed in tons.

b. The weighted average percent of the ash content of coal burned.

c. The weighted average percent of the sulfur content of the coal burned.

d. The weighted average heat content expressed in BTU per pound of coal burned.

e. The weighted average sulfur dioxide emission rate in terms of pounds of sulfur dioxide per million BTU heat input from the coal burned.

5. The owner or operator of a coal burning installation which has an annual coal burning rate less than 1,000 tons per year shall retain copies of the supplier's analyses at the installation for each shipment of coal received. The owner or operator shall obtain certification from the supplier that the applicable methods and procedures in s. NR 439.07 (2) were followed. The supplier's analyses shall include, at a minimum, each shipment's coal quantity, sulfur content, ash content, and heat content.

(c) *Requirements for residual fuel oil burning installations.* 1. The owner or operator of a residual fuel oil burning installation which has an annual residual fuel oil burning rate equal to or greater than 1.5 million gallons per year shall sample residual fuel oil and submit reports on residual fuel oil quality in the following manner:

a. Perform liquid fossil fuel sampling for each storage tank of residual fuel oil and analyze these samples for sulfur content and heat content according to the applicable methods and procedures for sampling and analysis in s. NR 439.07 (2).

b. Submit quarterly reports within 30 days following the end of each calendar quarter which include the following information for each month during the calendar quarter.

1) Total quantity of residual fuel oil burned expressed in thousands of gallons.

2) Weighted average percent of the sulfur content of the residual fuel oil burned.

3) Weighted average heat content expressed in BTU per gallon of residual fuel oil burned.

4) Weighted average sulfur dioxide emission rate in terms of pounds of sulfur dioxide per million BTU heat input from the residual fuel oil burned.

2. The owner or operator of a residual fuel oil burning installation which has an annual residual fuel oil burning rate equal to or greater

than 150,000 gallons but less than 1.5 million gallons per year shall submit, on a quarterly basis, information on residual fuel oil quality which is calculated from the supplier's analyses for each shipment of residual fuel oil received at the installation. Each quarterly report is due within 30 days following the end of each calendar quarter. The owner or operator of the installation shall obtain certification from the supplier that the applicable methods and procedures in s. NR 439.07 (2) were followed by the supplier. The report shall include the following information for each calendar quarter:

a. Total quantity of residual fuel oil burned expressed in thousands of gallons.

b. Weighted average percent of the sulfur content of the residual fuel oil burned.

c. Weighted average heat content expressed in BTU per gallon of residual fuel oil burned.

d. Weighted average sulfur dioxide emission rate in terms of pounds of sulfur dioxide per million BTU heat input from the residual fuel oil burned.

3. The owner or operator of a residual fuel oil burning installation which has an annual residual fuel oil burning rate less than 150,000 gallons per year shall retain copies of the supplier's analyses at the installation for each shipment of residual fuel oil received. The owner or operator shall obtain certification from the supplier that the applicable methods and procedures in s. NR 439.07 (2) were followed. The supplier's analyses shall include, at a minimum, each shipment's residual fuel oil quantity, sulfur content, and heat content.

(3) CONTINUOUS EMISSION MONITORING REQUIREMENTS. (a) *General requirements.* Except as provided in par. (b), the owner or operator of a direct stationary source listed in this paragraph shall install, calibrate, operate, and maintain all monitoring equipment necessary for continuously monitoring the pollutants specified in this paragraph for the applicable source. The sources and their respective monitoring requirements are:

1. Fossil fuel fired steam generators identified in par. (e) shall be monitored for opacity, nitrogen oxide emissions, sulfur dioxide emissions, and oxygen or carbon dioxide.

2. Fluid bed catalytic cracking unit catalyst regenerators identified in par. (e) shall be monitored for opacity.

3. Sulfuric acid plants identified in par. (e) shall be monitored for sulfur dioxide emissions.

4. Nitric acid plants identified in par. (e) shall be monitored for nitrogen oxide emissions.

(b) *Exemptions.* The department may grant an exemption from any monitoring requirement of this subsection for any source which is:

1. Subject to a monitoring requirement under a new source performance standard in ch. NR 440; or

2. Scheduled for retirement prior to 5 years after October 1, 1987 if the source demonstrates, to the satisfaction of the department, that the source will cease operations prior to the scheduled retirement date.

(c) *Installation deadlines.* The owner or operator of a source which is required under par. (a) to install continuous monitoring equipment shall complete the installation and performance tests of the equipment and begin monitoring and recording not later than April 1, 1989. The department may grant requests for extensions of the time provided for installation of monitors for facilities unable to meet the prescribed time frame if the owner or operator of the facility demonstrates that good faith efforts have been made to obtain and install the devices within the prescribed time frame.

(d) *Monitoring system malfunction.* The department may grant a temporary exemption from the monitoring and reporting requirements of this subsection during any period of monitoring system malfunction if the source owner or operator shows, to the satisfaction of the department, that the malfunction was unavoidable and is being repaired as expeditiously as practicable.

(e) *Minimum monitoring requirement.* The department shall, as a minimum, require the owner or operator of the following sources to meet the monitoring requirements of this paragraph and par. (a).

1. Fossil fuel fired steam generating facilities. The owner or operator of fossil fuel fired steam generating facilities subject to par. (a) shall comply with the monitoring requirements in this subdivision.

a. Opacity. The owner or operator of any steam generating facility which has a total heat input capacity equal to or greater than 250 million BTU per hour shall install, calibrate, maintain and operate a continuous monitoring system which meets the performance specifications of par. (f) for the measurement of opacity from each stack serving a coal fired boiler that has a coal burning rate of 25,000 tons or more per year, unless the source utilizes an alternative method of compliance determination approved, in writing, by the department.

b. Sulfur dioxide. The owner or operator of any steam generating facility shall install, calibrate, maintain and operate a continuous monitoring system for the measurement of sulfur dioxide which meets the performance specifications of par. (f) if:

1) The facility total heat input capacity is equal to or greater than 250 million BTU per hr and the facility has a control system which reduces sulfur dioxide emissions by more than 5% of the uncontrolled sulfur dioxide rate; or

2) The coal burning rate of all boilers at the facility which emit to a stack without a sulfur dioxide control system is equal to or greater than 100,000 tons of coal per year, unless the source utilizes an alternative method of compliance determination approved, in writing, by the department which meets the requirements of sub. (2).

c. Nitrogen oxides. The owner or operator of a fossil fuel fired steam generator with a capacity greater than 1000 million BTU per hour heat input which is located in a nonattainment area for nitrogen oxides shall install, calibrate, maintain and operate a continuous monitoring system on the generator for the measurement of nitrogen oxides which meets the

performance specifications of par. (f), unless the source owner or operator demonstrates by a compliance emission test that the source emits nitrogen oxides at levels 30% or more below the applicable emission limit.

d. Oxygen or carbon dioxide. The owner or operator of a fossil fuel fired steam generator where measurement of oxygen or carbon dioxide in the flue gas is required to convert either sulfur dioxide or nitrogen oxides continuous emission monitoring data, or both, to units of the applicable emission limitation shall install, calibrate, operate and maintain a continuous monitoring system for the measurement of percent oxygen or carbon dioxide which meets the performance specifications of par. (f).

2. Nitric acid plants. The owner or operator of a nitric acid plant of greater than 300 tons per day production capacity, expressed as 100% acid, which is located in a nonattainment area for nitrogen oxides shall install, calibrate, maintain and operate a continuous monitoring system for the measurement of nitrogen oxides which meets the performance specifications of par. (f) for each nitric acid producing unit within the plant.

3. Sulfuric acid plants. The owner or operator of a sulfuric acid plant of greater than 300 tons per day production capacity, expressed as 100% acid, shall install, calibrate, maintain and operate a continuous monitoring system for the measurement of sulfur dioxide which meets the performance specifications of par. (f) for each sulfuric acid producing unit within the plant.

4. Fluid bed catalytic cracking unit catalyst regenerators at petroleum refineries. The owner or operator of a catalyst regenerator for fluid catalytic cracking units of greater than 20,000 barrels per day fresh feed capacity shall install, calibrate, maintain and operate a continuous monitoring system for the measurement of opacity which meets the performance specifications of par. (f).

(f) *Performance specification.* The owner or operator of monitoring equipment installed to comply with this subsection shall install, calibrate, maintain and operate the continuous emission monitor in accordance with the performance specifications in 40 C.F.R. part 60, Appendix B, incorporated by reference in ch. NR 484, and the requirements in s. NR 439.07 (3).

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.

NR 439.08 Instrumentation for air pollution control equipment and sources. The department may require an owner or operator to install instrumentation to monitor the operation of a source or control equipment.

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.

NR 439.09 Inspections. No person may deny entry or access at any reasonable time to an authorized representative of the department who requests entry for purposes of inspection, 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.

History: Renum. from NR 154.06 (7), Register, September, 1986, No. 369, eff. 10-1-86; renum. from NR 439.07 and am. Register, September, 1987, No. 381, eff. 10-1-87.

NR 439.10 Circumvention. No persons may cause, allow or permit the installation or use of any article, machine, equipment, process, or method, which conceals an emission which would otherwise constitute a violation of an applicable rule unless written approval has been obtained from the department. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance and the unnecessary separation of an operation into parts to avoid coverage by a rule that applies only to operations larger than a specified size.

History: Renum. from NR 154.06 (8), Register, September, 1986, No. 369, eff.10-1-86; renum. from NR 439.08 and am. Register, September, 1987, No. 381, eff. 10-1-87.

NR 439.11 Malfunction prevention and abatement plans. (1) The owner or operator of any direct or portable source which may emit hazardous substances or emits more than 15 pounds in any day or 3 pounds in any hour of any air contaminant for which emission limits have been adopted shall prepare a malfunction prevention and abatement plan to prevent, detect and correct malfunctions or equipment failures which may cause any applicable emission limitation to be violated or which may cause air pollution. The plan shall be in writing and updated as needed, and shall include:

(a) Identification of the individual responsible for inspecting, maintaining, and repairing the air pollution control equipment.

(b) The maximum intervals for inspection and routine maintenance.

(c) A description of the items or conditions that will be checked.

(d) A listing of materials and spare parts that will be maintained in inventory.

(e) An identification of the source and air pollution control equipment operation variables that will be monitored in order to detect a malfunction or failure; the correct operating range of these variables; and a description of the method of monitoring or surveillance procedures, or a reference to specific pages containing this information in manuals or other documents kept by the owner or operator. Where appropriate, the following operation variables shall be monitored for the specified air pollution control equipment:

1. Baghouses - pressure drop across the baghouse.

2. Mechanical collectors - pressure drop across the collector.

3. Electrostatic precipitators - primary and secondary voltage, primary and secondary current, and sparking rate.

4. Fume incinerator - temperature in the primary chamber and the afterburner.

5. Wet scrubber for particulates - pressure drop across the scrubber and demister, scrubber recycle liquor flow, pump discharge pressure, and pump motor current.

6. Absorption equipment for gases - pressure drop across the absorber and demister.

7. Adsorption equipment - pressure drop across adsorber and prefilter, and temperature within the adsorber.

(f) A description of the corrective procedures that will be taken in the event of a malfunction or failure, which results in the exceedance of the applicable emission limitation, in order to achieve and maintain compliance with the applicable emission limitations as expeditiously as possible but not longer than the time necessary to discontinue operation of the source consistent with safe operating procedures.

(g) A description of the activities and maximum intervals for inspection and routine maintenance of instrumentation installed and operated to monitor the operation of air pollution control equipment required in par. (e).

(h) Such other information as the department may deem pertinent.

(2) The department may order any owner or operator to submit the plan required by sub. (1) for review and approval. The department may amend the plan if deemed necessary for malfunction prevention or the reduction of excess emissions during malfunctions.

(3) No owner or operator may fail to carry out a plan required under sub. (1) or as amended under sub. (2).

(4) All air pollution control equipment shall be operated and maintained in conformance with good engineering practices to minimize the possibility for the exceedance of any emission limitations.

History: Renum. from NR 154.06 (9) and am. Register, September, 1986, No. 369, eff. 10-1-86; renum. from NR 439.09 and am. Register, September, 1987, No. 381, eff. 10-1-87.