

SUBCHAPTER 02D - AIR POLLUTION CONTROL REQUIREMENTS
SECTION 0.1400 NITROGEN OXIDES EMISSIONS

.1401 DEFINITIONS

For the purpose of this Section, the following definitions apply:

- (1) "Acid rain program" means the federal program for the reduction of acid rain including 40 CFR Parts 72, 75, 76, and 77.
- (2) "Actual emissions" means for Rules .1416 through .1422 of this Section, emissions of nitrogen oxides as measured and calculated according to 40 CFR Part 75, Subpart H.
- (3) "Actual heat input" means for Rules .1416 through .1422 of this Section, heat input as measured and calculated according to 40 CFR Part 75, Subpart H.
- (4) "Averaging set of sources" means all the stationary sources included in an emissions averaging plan according to Rule .1410 of this Section.
- (5) "Averaging source" means a stationary source that is included in an emissions averaging plan in accordance to Rule .1410 of this Section.
- (6) "Boiler" means an enclosed fossil or other fuel-fired combustion device used to produce heat and to transfer heat to recirculating water, steam, or other medium.
- (7) "Combined cycle system" means a system consisting of one or more combustion turbines, heat recovery steam generators, and steam turbines configured to improve overall efficiency of electricity generation or steam production.
- (8) "Emergency generator" means a stationary internal combustion engine used to generate electricity only during the loss of primary power at the facility that is beyond the control of the owner or operator of the facility or during maintenance when necessary to protect the environment. An emergency generator may be operated periodically to ensure that it will operate.
- (9) "Diesel engine" means a compression ignited two- or four-stroke engine in which liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition.
- (10) "Dual fuel engine" means a compression ignited stationary internal combustion engine that is burning liquid fuel and gaseous fuel simultaneously.
- (11) "Emergency generator" means a stationary internal combustion engine used to generate electricity only during the loss of primary power at the facility that is beyond the control of the owner or operator of the facility or during maintenance when necessary to protect the environment. An emergency generator may be operated periodically to ensure that it will operate.
- (12) "Emergency use internal combustion engines" means stationary internal combustion engines used to drive pumps, aerators, and other equipment only during the loss of primary power at the facility that is beyond the control of the owner or operator of the facility or during maintenance when necessary to protect the environment. An emergency use internal combustion engine may be operated periodically to ensure that it will operate.
- (13) "Excess emissions" means an emission rate that exceeds the applicable limitation or standard; for the purposes of this definition, nitrogen oxides emitted by a source covered under Rules .1416, .1417, or .1418 of this Section during the ozone season above its allocation, as may be adjusted under Rule .1419 of this Section, are not considered excess emissions.
- (14) "Fossil fuel fired" means
 - (a) For sources that began operation before January 1, 1996, the combination of fossil fuel, alone or

in combination with any other fuel, where fossil fuel actually combusted comprises more than 50 percent of the annual heat input on a Btu basis during 1995, or, if a source had no heat input in 1995, during the last year of operation of the unit before 1995;

(b) For sources that began operation on or after January 1, 1996 and before January 1, 1997, the combination of fossil fuel, alone or in combination with any other fuel, where fossil fuel actually combusted comprises more than 50 percent of the annual heat input on a Btu basis during 1996; or

(c) For sources that began operation on or after January 1, 1997:

(i) Where fossil fuel actually combusted either alone or in combination with any other fuel, comprises more than 50 percent of the annual heat input on a Btu basis during any year; or

(ii) Where fossil fuel combusted either alone or in combination with any other fuel, is projected to comprise more than 50 percent of the annual heat input on a Btu basis during any year, provided that the unit shall be "fossil fuel-fired" as of the date, during such year, on which the source begins combusting fossil fuel.

(15) "Indirect-fired process heater" means an enclosed device using controlled flame where the device's primary purpose is to transfer heat by indirect heat exchange to a process fluid, a process material that is not a fluid, or a heat transfer material, instead of steam, for use in a process.

(16) "Lean-burn internal combustion engine" means a spark ignition internal combustion engine originally designed and manufactured to operate with an exhaust oxygen concentration greater than one percent.

(17) "NO_x" means nitrogen oxides.

(18) "Ozone season" means the period beginning May 31 through September 30 for 2004 and May 1 through September 30 for all other years.

(19) "Potential emissions" means the quantity of NO_x that would be emitted at the maximum capacity of a stationary source to emit NO_x under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit NO_x shall be treated as a part of its design if the limitation is federally enforceable. Such physical or operational limitations include air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed.

(20) "Process heater" means an enclosed device using controlled flame where the device's primary purpose is to transfer heat to a process fluid, a process material that is not a fluid, or a heat transfer material, instead of steam, for use in a process.

(21) "Projected seasonal energy input" means the maximum design heat input per hour times 3300 hours.

(22) "Projected seasonal energy output" means the maximum design energy output per hour times 3300 hours.

(23) "Reasonable assurance" means a demonstration to the Director that a method, procedure, or technique is possible and practical for a source or facility under the expected operating conditions.

(24) "Reasonably Available Control Technology" or "RACT" means the lowest emission limitation for NO_x that a particular source can meet by the application of control technology that is reasonably available considering technological and economic feasibility.

(25) "Reasonable effort" means the proper installation of technology designed to meet the requirements of Rules .1407, .1408, or .1409 of this Section and the utilization this technology, according to the manufacturer's recommendations or other similar guidance for not less than six months, in an effort to meet the applicable limitation for a source.

(26) "Rich-burn internal combustion engine" means a spark ignition internal combustion engine originally designed and manufactured to operate with an exhaust oxygen concentration less than or equal to one percent.

- (27) "Seasonal energy input" means the total energy input of a combustion source during the year beginning May 1 through September 30.
- (28) "Seasonal energy output" means the total energy output of a combustion source during the year beginning May 1 through September 30.
- (29) "Shutdown" means the cessation of operation of a source or its emission control equipment.
- (30) "Source" means a stationary boiler, combustion turbine, combined cycle system, reciprocating internal combustion engine, indirect-fired process heater, or a stationary article, machine, process equipment, or other contrivance, or combination thereof, from which nitrogen oxides emanate or are emitted.
- (31) "Startup" means the commencement of operation of any source that has shutdown or ceased operation for a period sufficient to cause temperature, pressure, process, chemical, or pollution control device imbalance that would result in excess emissions.
- (32) "Stationary internal combustion engine" means a reciprocating internal combustion engine that is not self propelled; however, it may be mounted on a vehicle for portability.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5), (7), (10);
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.1402 APPLICABILITY

- (a) The rules in this Section do not apply except as specifically set out in this Rule.
- (b) The requirements of this Section apply beginning May 1 through September 30.
- (c) Rule .1409(b) of this Section applies statewide.
- (d) Rules .1407 through .1409 and .1413 of this Section apply to facilities with the potential to emit 100 tons per year or more nitrogen oxides per year in the following areas:
 - (1) Cabarrus County;
 - (2) Gaston County;
 - (3) Lincoln County;
 - (4) Mecklenburg County;
 - (5) Rowan County;
 - (6) Union County; and
 - (7) Davidson Township and Coddle Creek Township in Iredell County.

(e) If a violation of the ambient air quality standard for ozone is measured according to 40 CFR 50.9 in Davidson, Forsyth, or Guilford County or that part of Davie County bounded by the Yadkin River, Dutchmans Creek, North Carolina Highway 801, Fulton Creek and back to Yadkin River, the Director shall initiate analysis to determine the control measures needed to attain and maintain the ambient air quality standard for ozone. By the following May 1, the Director shall implement the specific stationary source control measures contained in this Section that are required as part of the control strategy necessary to bring the area into compliance and to maintain compliance with the ambient air quality standard for ozone. The Director shall implement the rules in this Section identified as necessary by the analysis by notice in the North Carolina Register. The notice shall identify the rules that are to be implemented and shall identify whether the rules implemented are to apply in Davidson, Forsyth, or Guilford County or that part of Davie County bounded by the Yadkin River, Dutchmans Creek, North Carolina Highway 801, Fulton Creek and back to Yadkin River or any combination thereof. At least one week before the scheduled publication date of the North Carolina Register containing the Director's notice implementing rules in this Section, the Director shall send written notification to all permitted facilities within the county in which the rules are being implemented that are or may be subject to the requirements of this Section informing them that they are or may be subject to the requirements of this Section. (For Forsyth County, "Director" means for the purpose of notifying permitted facilities in Forsyth County, the Director of the Forsyth County local air pollution control program.) Compliance shall be according to Rule .1403 of this Section.

(f) If a violation of the ambient air quality standard for ozone is measured according to 40 CFR 50.9 in Durham or Wake County or Dutchville Township in Granville County, the Director shall initiate analysis to determine the control measures needed to attain and maintain the ambient air quality standard for ozone. By the following May 1, the Director shall implement the specific stationary source control measures contained in this Section that are required as part of the control strategy necessary to bring the area into compliance and to maintain compliance with the ambient air quality standard for ozone. The Director shall implement the rules in this Section identified as necessary by the analysis by notice in the North Carolina Register. The notice shall identify the rules that are to be implemented and shall identify whether the rules implemented are to apply in Durham or Wake County or Dutchville Township in Granville County or any combination thereof. At least one week before the scheduled publication date of the North Carolina Register containing the Director's notice implementing Rules .1407 through .1409(b) and .1413 of this Section, the Director shall send written notification to all permitted facilities within the county in which the rules are being implemented that are or may be subject to the requirements of this Section informing them that they are or may be subject to the requirements of this Section.

Compliance shall be in according to Rule .1403 of this Section.

(g) If the State nonattainment plan for ozone has failed to attain the ambient air quality standard for ozone and does not qualify for an extension of the attainment date in the Charlotte-Gastonia-Rock Hill ozone nonattainment area, the rules in this Section shall apply to facilities in Cabarrus, Gaston, Lincoln, Mecklenburg, Rowan, and Union Counties and Davidson and Coddle Creek townships in Iredell County with the potential to emit at least 50 tons of nitrogen oxides per year. Once the nonattainment plan for ozone has failed and the area does not qualify for and extension of the attainment date, the Director shall notice the applicability of these rules to these [] facilities in the North Carolina Register and shall send written notification to all permitted facilities within the counties in which the rules are being implemented that are or may be subject to the requirements of this Section informing them that they are or may be subject to the requirements of this Section. (For Mecklenburg County, "Director" means for the purpose of notifying permitted facilities in Mecklenburg County, the Director of the Mecklenburg County local air pollution control program.) Compliance shall be according to Rule .1403 of this Section.

(h) Regardless of any other statement of applicability of this Section, this Section does not apply to any:

- (1) source not required to obtain an air permit under 15A NCAC 02Q .0102 or is an insignificant activity as defined at 15A NCAC 02Q .0103(19);
- (2) incinerator or thermal or catalytic oxidizer used primarily for the control of air pollution;
- (3) emergency generator;
- (4) emergency use internal combustion engine;
- (5) stationary internal combustion engine less than 2400 brake horsepower that operates no more than the following hours between May 1 and September 30:
 - (A) for diesel engines: $t = 833,333/ES$

(B) for natural gas engines: $t = 700,280/ES$

where t equals time in hours and ES equals engine size in horsepower.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5), (7), (10);
Eff. April 1, 1995;

Amended Eff. June 1, 2008; April 1, 1997; July 1, 1995; April 1, 1995;

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.1403 COMPLIANCE SCHEDULES

(a) Applicability. This Rule applies to all sources covered by Paragraph (d), (e), (f) or (g) of Rule .1402 of this Section.

(b) Contingency plan schedule area and Charlotte ozone nonattainment area contingency plan. The owner or operator of a source subject to this Rule because of the applicability of Paragraph (e) (f), or (g) of Rule .1402 of this Section, shall adhere to the following increments of progress and schedules:

(1) If compliance with this Section is to be achieved through a demonstration to certify compliance without source modification:

(A) The owner or operator shall notify the Director in writing within six months after the Director's notice in the North Carolina Register that the source is in compliance with the applicable limitation or standard;

(B) The owner or operator shall perform any required testing within 12 months after the Director's notice in the North Carolina Register to demonstrate compliance with the applicable limitation according to Rule .1415 of this Section; and

(C) The owner or operator shall implement any required recordkeeping and reporting requirements within 12 months after the Director's notice in the North Carolina Register to demonstrate compliance with the applicable standard according to Rule .1404 of this Section.

(2) If compliance with this Section is to be achieved through the installation of combustion modification technology or other source modification:

(A) The owner or operator shall submit a permit application and a compliance schedule within six months after the Director's notice in the North Carolina Register.

(B) The compliance schedule shall contain the following increments of progress:

(i) a date by which contracts for installation of the modification shall be awarded or orders shall be issued for purchase of component parts;

(ii) a date by which installation of the modification shall begin;

(iii) a date by which installation of the modification shall be completed; and

(iv) if the source is subject to a limitation, a date by which compliance testing shall be completed.

(C) The compliance schedule shall contain the following increments of progress:

(i) a date by which contracts for installation of the modification shall be awarded or orders shall be issued for purchase of component parts;

(ii) a date by which installation of the modification shall begin;

(iii) a date by which installation of the modification shall be completed; and

(iv) if the source is subject to a limitation, a date by which compliance testing shall be completed.

(D) Final compliance shall be achieved within three years after the Director's notice in the North Carolina Register unless the owner or operator of the source petitions the Director for an alternative limitation according to Rule .1412 of this Section. If such a petition is made, final compliance shall be achieved within four years after the Director's notice in the North Carolina Register.

(3) If compliance with this Section is to be achieved through the implementation of an emissions averaging plan as provided for in Rule

- (A) .1410 of this Section: The owner or operator shall abide by the applicable requirements of Subparagraphs (b)(1) or (b)(2) of this Rule for certification or modification of each source to be included under the averaging plan;
- (B) The owner or operator shall submit a plan to implement an emissions averaging plan according to Rule .1410 of this Section within six months after the Director's notice in the North Carolina Register.
- (C) Final compliance shall be achieved within one year after the Director's notice in the North Carolina Register unless implementation of the emissions averaging plan requires the modification of one or more of the averaging sources. If modification of one or more of the averaging sources is required, final compliance shall be achieved within three years.
- (4) If compliance with this Section is to be achieved through the implementation of a seasonal fuel switching program as provided for in Rule .1411 of this Section:
- (A) The owner or operator shall make all necessary modifications according to Subparagraph (b)(2) of this Rule.
- (B) The owner or operator shall include a plan for complying with the requirements of Rule .1411 of this Section with the permit application required under Part (A) of this Subparagraph.
- (C) Final compliance shall be achieved within three years after the Director's notice in the North Carolina Register.
- (5) Increments of progress certification. The owner or operator shall certify to the Director, within five days after each increment ~~deadline~~ of progress in this Paragraph, whether the required increment of progress has been met.
to measure heat input and
- (c) Nonattainment areas. The owner or operator of a source subject to this Rule because of the applicability of Paragraph (d) of Rule .1402 of this Section, shall adhere to the following:
- (1) If compliance with this Section is to be achieved through a demonstration to certify compliance without source modification:
- (A) The owner or operator shall notify the Director in writing by August 1, 2007;
- (B) The owner or operator shall perform any required testing, according to Rule .1415 of this Section, by January 1, 2008 and
- (C) The owner or operator shall implement any required recordkeeping and reporting requirements, according to Rule .1404 of this Section, by January 1, 2008.
- (2) If compliance with this Section is to be achieved through the installation of combustion modification technology or other source modification:
- (A) The owner or operator shall submit a permit application and a compliance schedule by August 1, 2007.
- (B) The compliance schedule shall contain a date by which contracts for installation of the modification shall be awarded or orders shall be issued for purchase of component parts.
- (C) The compliance schedule shall contain a date by which installation of the modification shall begin.
- (D) The compliance schedule shall contain a date by which installation of the modification shall be complete.
- (E) If the source is subject to a limitation, the compliance schedule shall contain, a date by which compliance testing shall be completed.
- (F) Final compliance shall be achieved no later than [1 April. 2009.
- (3) If compliance with this Section is to be achieved through the implementation of an emissions averaging plan as provided for in Rule .1410 of this Section:

(A) The owner or operator shall abide by the applicable requirements of Subparagraph (c)(1) or (c)(2) of this Rule for certification or modification of each source to be included under the averaging plan:

(B) The owner or operator shall submit a plan to implement an emissions averaging plan according to Rule .1410 of this Section by August 1, 2007.

(C) Final compliance shall be achieved within one year no later than January 1, 2008.

(4) If compliance with this Section is to be achieved through the implementation of a seasonal fuel switching program as provided for in Rule .1411 of this Section:

(A) The owner or operator shall make all necessary modifications according to Subparagraph (c)(2) of this Rule.

(C) The owner or operator shall include a plan for complying with the requirements of Rule .1411 of this Section with the permit application required under Part (A) of this Subparagraph.

(C) Final compliance shall be achieved no later than [] April 1, 2009.

(5) Increments of progress certification. The owner or operator shall certify to the Director, within five days after the deadline for each increment of progress in this Paragraph, whether the required increment of progress has been met.

(d) Sources already in compliance.

(1) Maintenance area and Charlotte ozone nonattainment area contingency plan. Paragraph (b) of this Rule shall not apply to sources that are in compliance with applicable rules of this Section when the Director notices the implementation of rules in the North Carolina Register that resolves a violation of the ambient air quality standard for ozone and that have determined and certified compliance to the satisfaction of the Director within six months after the Director notices the implementation of rules in the North Carolina Register that resolves a violation of the ambient air quality standard for ozone.

(2) Nonattainment areas. Paragraph (c) of this Rule shall not apply to sources in an area named in Paragraph (d) of Rule .1402 of this Section that are in compliance with applicable rules of this Section on [] March 1, 2007.

(e) New sources.

(1) Maintenance area and Charlotte ozone nonattainment area contingency plan. The owner or operator of any new source of nitrogen oxides not permitted before the date the Director notices in the North Carolina Register according to Paragraph (e), (f), or (g) of Rule .1402 of this Section, shall comply with all applicable rules in this Section upon start-up of the source. The owner or operator of any new source covered under Rules .1407, .1408, .1409, or .1413 of this Section shall comply with all applicable rules in this Section upon start-up of the source.

(2) Nonattainment areas. The owner or operator of any new source of nitrogen oxides not permitted before [] March 1, 2007 in an area identified in Paragraph (d) of Rule .1402 of this-

Section, shall comply with all applicable rules in this Section upon start-up of the source.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.107(a)(5), (7), (10);
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.1404 RECORDKEEPING: REPORTING: MONITORING:

(a) General requirements. The owner or operator of any source subject to the requirements of this Section shall comply with the monitoring, recordkeeping and reporting requirements in Section .0600 of this Subchapter and shall maintain all records necessary for determining compliance with all applicable limitations and standards of this Section for five years.

(b) Submittal of information to show compliance status. The owner or operator of any source shall maintain and, when requested by the Director, submit any information required by this Section to determine the compliance status of an affected source.

(c) Excess emissions reporting. The owner or operator shall report excess emissions following the procedures under Rule .0535 of this Subchapter.

(d) Continuous emissions monitors.

(1) The owner or operator shall install, operate, and maintain a continuous emission monitoring system according to 40 CFR Part 75, Subpart H, with such exceptions as may be allowed under 40 CFR Part 75, Subpart H or 40 CFR Part 96 if the source is covered under Rule .1418 of this Section except internal combustion engines.

(2) The owner or operator of a source that is subject to the requirements of this Section but not covered under Subparagraph (1) of this Paragraph and that uses a continuous emissions monitoring system to measure emissions of nitrogen oxides shall operate and maintain the continuous emission monitoring system according to 40 CFR Part 60, Appendix B, Specification 2, and Appendix F or Part 75, Subpart H. If diluent monitoring is required, 40 CFR Part 60, Appendix B, Specification 3, shall be used. If flow monitoring is required, 40 CFR Part 60, Appendix B, Specification 6, shall be used.

(3) The owner or operator of the following sources is not required to use continuous emission monitors unless the Director determines that a continuous emission monitor is necessary under Rule .0611 of this Subchapter to show compliance with the rules of this Section:

(A) a boiler or indirect-fired process heater covered under Rule .1407 of this Section with a maximum heat input less than or equal to 250 million Btu per hour;

(B) stationary internal combustion engines covered under Rule .1409 and .1418 of this Section.

(e) Missing data.

(1) If data from continuous emission monitoring systems required to meet the requirements of 40 CFR Part 75 are not available at a time that the source is operated, the procedures in 40 CFR Part 75 shall be used to supply the missing data.

(2) For continuous emissions monitors not covered under Subparagraph (1) of this Paragraph, data shall be available for at least 95 percent of the emission sources operating hours for the applicable averaging period, where four equally spaced readings constitute a valid hour. If data from continuous emission monitoring systems are not available for at least 95 percent of the time that the source is operated, the owner or operator of the monitor shall:

(A) use the procedures in 40 CFR 75.33 through 75.37 to supply the missing data; or

(B) document that the combustion source or process equipment and the control device were being properly operated (acceptable operating and maintenance procedures are being used, such as, compliance with permit conditions, operating and maintenance procedures, and preventative maintenance program, and monitoring results and compliance history) when the monitoring measurements were missing.

(f) Quality assurance for continuous emissions monitors.

(1) The owner or operator of a continuous emission monitor required to meet 40 CFR Part 75,

Subpart H, shall follow the quality assurance and quality control requirements of 40 CFR Part 75, Subpart H.

(2) For a continuous emissions monitor not covered under Subparagraph (1) of this Paragraph, the owner or operator of the continuous emissions monitor shall follow the quality assurance and quality control requirements of 40 CFR Part 60, Appendix F, if the monitor is required to be operated annually under another rule. If the continuous emissions monitor is being operated only to satisfy the requirements of this Section, then the quality assurance and quality control requirements of 40 CFR Part 60, Appendix F, shall apply except that:

(A) A relative accuracy test audit shall be conducted after January 1 and before May 1 of each year;

(B) One of the following shall be conducted at least once between May 1 and September 30 of each year:

(i) a linearity test, according to 40 CFR Part 75, Appendix A, Section 3.2, 6.2, and 7.1;

(ii) a relative accuracy audit, according to 40 CFR Part 60, Appendix F, Section 5 and 6; or

(iii) a cylinder gas audit according to 40 CFR Part 60, Appendix F, Section 5 and 6; and

(C) A daily calibration drift test shall be conducted according to 40 CFR Part 60, Appendix F, Section 4.0.

(g) Averaging time for continuous emissions monitors. When compliance with a limitation established for a source subject to the requirements of this Section is determined using a continuous emissions monitoring system, a 24-hour block average as described under Rule .0606 of this Subchapter shall be recorded for each day beginning May 1 through September 30 unless a specific rule requires a different averaging time or procedure. A 24-hour block average described in Rule .0606 of this Subchapter shall be used when a continuous emissions monitoring system is used to determine compliance with a short-term pounds-per-million-Btu standard in Rule .1418 of this Section.

(h) Heat input. Heat input shall be determined:

(1) for sources required to use a monitoring system meeting the requirements of 40 CFR Part 75, using the procedures in 40 CFR Part 75; or

(2) for sources not required to use a monitoring system meeting the requirements of 40 CFR Part 75, using:

(A) 40 CFR Part 75,

(B) a method in 15A NCAC 02D .0501; or

(C) the best available heat input data if approved by the Director (the Director shall grant approval if he finds that the heat input data is the best available).

(i) Source testing. When compliance with a limitation established for a source subject to the requirements of this Section is determined using source testing, the source testing shall follow the procedures of Rule .1415 of this Section.

(j) Alternative monitoring and reporting procedures. The owner or operator of a source covered under this Rule may request alternative monitoring or reporting procedures under Rule .0612, Alternative Monitoring and Reporting Procedures.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.66; 143-215.107(a)(5), (7), (10);

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.1407 BOILERS AND INDIRECT-FIRED PROCESS HEATERS

(a) This Rule applies according to Rule .1402 of this Section (b)

(b) The owner or operator of a boiler or indirect-fired process heater with a maximum heat input rate of less than or equal to 50 million Btu per hour shall comply with the annual tune-up requirements of Rule .1414 of this Section. The owner or operator of a boiler or indirect-fired process heater subject to the requirements of this Paragraph shall maintain records of all tune-ups performed for each source according to Rule .1404 of this Section.

(c) The owner or operator of a fossil fuel-fired boiler with a maximum heat input rate less than or equal to 250 million Btu per hour but greater than 50 million Btu per hour, a boiler with a maximum heat input greater than 50 million Btu per hour that is not a fossil fuel-fired boiler, or an indirect-fired process heater with a maximum heat input greater than 50 million Btu per hour shall comply by:

(1) installation of, if necessary, combustion modification technology or other NOx control technology and maintenance, including annual tune-ups and recordkeeping; and

(2) demonstration through source testing or continuous emission monitoring that the source complies with the following applicable limitation:

**MAXIMUM ALLOWABLE NOX EMISSION RATES FOR BOILERS AND INDIRECT
PROCESS HEATERS (POUNDS PER MILLION BTU)**

Firing Method

Fuel/Boiler Type	Tangential	Wall	Stoker or Other
Coal (Wet Bottom)	1.0	1.0	N/A
Coal (Dry Bottom)	0.45	0.50	0.40
Wood or Refuse	0.20	0.30	0.20
Oil	0.30	0.30	0.30
Gas	0.20	0.20	0.20

(d) If the emissions are greater than the applicable limitation in Paragraph (c)

of this Rule after reasonable effort as defined in Rule .1401 of this Section, or if the requirements of this Rule are not RACT, the owner or operator may petition the Director for an alternative limitation or standard in accordance with Rule .1412 of this Section.

(e) Compliance with the limitation established for a boiler or indirect-fired process heater under this Rule shall be determined:

(1) using a continuous emission monitoring system if the boiler or indirect-fired process heater is required to use a continuous emissions monitoring system under Rule .0524 of this Section or 40 CFR Part 60 to measure emissions of nitrogen oxides; or

(2) using annual source testing according to Rule .1415 of this Section for boilers or indirect-fired process heaters with a maximum heat input rate less than or equal to 250 million Btu per hour but greater than 50 million BTU per hour with the exception allowed under Paragraph (f) of this Rule.

(f) If a source covered under this rule can burn more than one fuel, the owner or operator of the source may choose not to burn one or more of these fuels during the ozone season. If the owner or operator chooses not to burn a particular fuel, the sources testing required under Subparagraph (e)(2) this Rule shall not be required for that fuel.

(g) If two consecutive annual source tests show compliance, the Director may reduce the frequency of testing up to once every five years. In years that a source test is not done, the boiler or indirect-fired process heater shall comply with the annual tune-up requirements of Rule .1414 of this Section. If after the Director reduces the frequency of testing, a source test shows that the emission limit under this Rule is exceeded, the Director shall require the boiler or indirect-fired process heater to be tested annually until two consecutive annual tests show compliance. Then the Director may again reduce the frequency of testing.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.66; 143-215.107(a)(5),(7), (10);
Temporary Amendment Eff. November 1, 2000;
Eff. ; April 1, 1995;
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.1408 STATIONARY COMBUSTION TURBINES

- (a) This Rule applies according to Rule .1402 of this Section.
- (b) Unless the owner or operator chooses the option of emission averaging under Rule .1410 of this Section, the owner or operator of a stationary combustion turbine with a heat input rate greater than 100 million Btu per hour but less than or equal to 250 million Btu per hour shall comply with the following limitations:
 - (1) Emissions of NOx shall not exceed 75 ppm by volume corrected to 15 percent oxygen for gas-fired turbines, or
 - (2) Emissions of NOx shall not exceed 95 ppm by volume corrected to 15 percent oxygen for oil-fired turbines.If necessary, the owner or operator shall install combustion modification technology or other NOx control technology to comply with the applicable limitation set forth in this Paragraph.
- (c) If the emissions are greater than the applicable limitation in Paragraph (b) of this Rule after reasonable effort as defined in Rule .1401 of this Section, or if the requirements of this Rule are not RACT for the particular stationary combustion turbine, the owner or operator may petition the Director for an alternative limitation or standard according to Rule .1412 of this Section.
- (d) Compliance with the limitation established for a stationary combustion turbine under this Rule shall be determined:
 - (1) using a continuous emissions monitoring system, or
 - (2) using annual source testing according to Rule .1415 of this Section.
- (e) If a source covered under this rule can burn more than one fuel, the owner or operator of the source may choose not to burn one or more of these fuels during the ozone season. If the owner or operator chooses not to burn a particular fuel, the sources testing required under this Rule shall not be required for that fuel.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.66; 143-215.107(a)(5), (7), (10);
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.1409 STATIONARY INTERNAL COMBUSTION ENGINES

(a) This Rule applies according to Rule .1402 of this Section.(b) The owner or operator of a stationary internal combustion engine having a rated capacity of 650 horsepower or more that is not covered under Paragraph (c)_of this Rule or Rule 1418 of this Section shall not allow emissions of NO_x from the stationary internal combustion engine to exceed the following limitations:

MAXIMUM ALLOWABLE NO_x EMISSION RATES FOR STATIONARY INTERNAL COMBUSTION ENGINES (GRAMS PER HORSEPOWER HOUR)

Engine Type	Fuel Type	Limitation
Rich-burn	Gaseous	2.5
Lean-burn	Gaseous	2.5
Compression Ignition	Liquid	8.0

(c) Engines identified in the table in this Paragraph shall not exceed the emission limit in the table during the ozone season.

SUM OF MAXIMUM ALLOWABLE OZONE SEASON NO_x EMISSIONS
(tons per ozone season)

FACILITY	REGULATED SOURCES	ALLOWABLE EMISSIONS
Transcontinental Gas Pipeline	Mainline engines #12, 13, 14, and 15	76
Transcontinental Gas Pipeline	Mainline engines #2, 3, 4, 5, and 6	127
Transcontinental Gas Pipeline	Mainline engines #11, 12, 13, 14, and 15	149

Compliance shall be determined by summing the actual emissions from the engines listed in the table at each facility for the ozone season and comparing those sums to the limits in the table. Compliance may be achieved through trading under Paragraph (g) of this Rule if the trades are approved before the ozone season.

(d) If the emissions from a stationary internal combustion engine are greater than the applicable limitation in Paragraph (b) of this Rule after reasonable effort as defined in Rule .1401 of this Section, or if the requirements of this Rule are not RACT for the particular stationary internal combustion engine, the

owner or operator may petition the Director for an alternative limitation or standard according to Rule .1412 of this Section.

(e) For the engines identified in Paragraph (c) of this Rule and any engine involved in emissions trading with one or more of the engines identified in Paragraph (c) of this Rule, the owner or operator shall determine compliance using:

- (1) a continuous emissions monitoring system which meets the applicable requirements of Appendices B and F of 40 CFR part 60 and Rule .1404 of this Section; or
- (2) an alternate monitoring and recordkeeping procedure based on actual emissions testing and correlation with operating parameters.

The installation, implementation, and use of this alternate procedure allowed under Subparagraph (e)(2) of this Paragraph shall be approved by the Director before it may be used. The Director may approve the alternative procedure if he finds that it can show the compliance status of the engine.

(f) If a stationary internal combustion engine is permitted to operate more than 475 hours during the ozone season, compliance with the limitation established for a stationary internal combustion engine under Paragraph (b) of this Rule shall be determined using annual source testing according to Rule .1415 of this Section. If a source covered under this rule can burn more than one fuel, then the owner or operator of the source may choose not to burn one or more of these fuels during the ozone season. If the owner or operator chooses not to burn a particular fuel, the source testing required under this Rule shall not be required for that fuel.

(g) If a stationary internal combustion engine is permitted to operate no more than 475 hours during the ozone season, the owner or operator of the stationary internal combustion engine shall show compliance with the limitation under Paragraph (b) of this Rule with source testing during the first ozone season of operation according to Rule .1415 of this Section. Each year after that, the owner or operator of the stationary internal combustion engine shall comply with the annual tune-up requirements of Rule .1414 of this Section.

(h) The owner or operator of a source covered under Paragraph (c) of this Rule may offset part or all of the emissions of that source by reducing the emissions of another stationary internal combustion engine at that facility by an amount equal to or greater than the emissions being offset. Only actual decreased emissions that have not previously been relied on to comply with Subchapter 2D or 2Q of this Title or Title 40 of the Code of Federal Regulations can be used to offset the emissions of another source.

The person requesting the offset shall submit the following information to the Director:

- (1) identification of the source, including permit number, providing the offset and what the new allowable emission rate for the source will be;
- (2) identification of the source, including permit number, receiving the offset and what the new allowable emission rate for the source will be;
- (3) the amount of allowable emissions in tons per ozone season being offset;
- (4) a description of the monitoring, recordkeeping, and reporting that shall be used to show compliance; and
- (5) documentation that the offset is an actual decrease in emissions that has not previously been relied on to comply with Subchapter 2D or 2Q of this Title or Title 40 of the Code of Federal Regulations.

The Director may approve the offset if he finds that all the information required by this Paragraph has been submitted and that the offset is an actual decrease in emissions that have not previously been relied on to comply with Subchapter 2D or 2Q of this Title or Title 40 of the

Code of Federal Regulations. If the Director approves the offset, he shall put the new allowable emission rates in the respective permits.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.66; 143-215.107(a)(5), (7), (10);
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.1410 EMISSIONS AVERAGING

(a) This Rule shall not apply to sources covered under Rule .1418 of this Section. Sources that have obtained an alternative limitation as provided by Rule .1412 of this Section or that apply seasonal fuel switching as provided by Rule .1411 of this Section are not eligible to participate in an emissions averaging plan under this Rule.

(b) With the exceptions in Paragraph (a) of this Rule, the owner or operator of a facility with two or more sources with comparable plume rise and subject to the requirements of this Section for all such sources as determined by Rule .1402 of this Section may elect to apply an emissions averaging plan according to

Paragraph (c) of this Rule. An emission averaging plan may be used if the total NOx emissions from the averaged set of sources based on the total heat input are equal to or less than the NOx emissions that would have occurred if each source complied with the applicable limitation.

(c) To request approval of an emissions averaging plan to comply with the requirements of this Section, the owner or operator of a facility shall submit a written request to the Director including the following information:

- (1) the name and location of the facility;
- (2) information identifying each source to be included under the averaging plan;
- (3) the maximum heat input rate for each source;
- (4) the fuel or fuels combusted in each source;
- (5) the maximum allowable NOx emission rate proposed for each averaging source;
- (6) a demonstration that the nitrogen oxide emissions of the sources being averaged when operated together at the maximum daily heat input rate, will be less than or equal to the total NOx emissions if each source complied with the applicable limitation of this Section individually;
- (7) an operational plan to provide reasonable assurance that the sources being averaged will satisfy Subparagraph (5) of this Paragraph when the combined maximum daily heat input rate is less than the permitted maximum heat input rate; and
- (8) the method to be used to determine the actual NOx emissions from each source.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.107(a)(5), (7), (10); Temporary Amendment Eff. August 1, 2001; November 1, 2000; Eff; April 1, 1995; Amended Eff. January 1, 2009; July 15, 2002.

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.1411 SEASONAL FUEL SWITCHING

- (a) This Rule shall not apply to sources covered under Rule.1418 of this Section.
- (b) The owner or operator of a coal-fired or oil-fired boiler subject to the requirements of Rule .1407 of this Section may elect to comply by applying seasonal combustion of natural gas according to Paragraph (c) of this Rule. This option is not available to a boiler that used natural gas as its primary fuel in or since 1990. Compliance with this Section according to this Rule does not remove or reduce any applicable requirement of the Acid Rain Program.
- (c) The owner or operator electing to comply with the requirements of this Section through the seasonal combustion of natural gas shall establish a NOx emission limit beginning October 1 and ending April 30 that will result in annual NOx emissions of less than or equal to the NOx that would have been emitted if the source complied with the applicable limitation for the combustion of coal for the entire calendar year. Compliance with this Section according to this Rule does not remove or reduce any applicable requirement of the Acid Rain Program.
- (d) To comply with the requirements of this Section through the seasonal combustion of natural gas, the owner or operator shall submit to the Director the following information:
 - (1) the name and location of the facility;
 - (2) information identifying the source to use seasonal combustion of natural gas for compliance;
 - (3) the maximum heat input rate for each source;
 - (4) a demonstration that the source will comply with the applicable limitation for the combustion of coal during the ozone season
 - (5) a demonstration that the source will comply with the NOx emission limitation established under Paragraph (c) of this Rule beginning October 1 and ending April 30; and
 - (6) a written statement from the natural gas supplier providing reasonable assurance that the fuel will be available beginning during the ozone season.

History Note: Authority G.S. 143-215.3(a)(1) 143-215.65; 143-215.107(a)(5), (7), (10);
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.1412 PETITION FOR ALTERNATIVE LIMITATIONS

(a) If the owner or operator of a source subject to the requirements of Rule .1407, .1408, or .1409(b) of this Section:

- (1) cannot achieve compliance with the applicable limitation after reasonable effort to satisfy the requirements of Rules .1407, .1408, or .1409 of this Section or if the requirements of Rules .1407, .1408, or .1409 of this Section are not RACT for the particular source; and
- (2) cannot provide reasonable assurance for overall compliance at a facility through the implementation of an emissions averaging plan as provided for in Rule .1410 of this Section;

the owner or operator may petition the Director for an alternative limitation according to Paragraph (b) or

(c) of this Rule.

(b) To petition the Director for an alternative limitation, the owner or operator of the source shall submit;

- (1) the name and location of the facility;
- (2) information identifying the source for which an alternative limitation is being requested;
- (3) the maximum heat input rate for the source;
- (4) the fuel or fuels combusted in the source;
- (5) the maximum allowable NOx emission rate proposed for the source for each fuel;
- (6) a demonstration that the source has satisfied the requirements to apply for an alternative limitation under Paragraph (a) of this Rule; and
- (7) a demonstration that the proposed alternative limitation is RACT for that source.

(c) If the source is required to comply with best achievable control technology under Rule .0530, Prevention of Significant Deterioration, of this Subchapter, the owner or operator of the source shall provide the information required under Subparagraphs (b)(1) through (6) of this Rule and documentation that the source is required to use best available control technology and is complying with that requirement.

For this source, its best available control technology shall be considered RACT without any further demonstrations.

(d) The Director shall approve the alternative limitation if he finds that:

- (1) all the information required by Paragraph (b) of this Rule has been submitted,
- (2) the requirements of Paragraph (a) of this Rule have been satisfied, and
- (3) the proposed alternative limitation is RACT for that source.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.107(a)(5), (7), (10); Eff. April 1, 1995; Temporary Amendment Eff. August 1, 2001; November 1, 2000; Amendment Eff. _____ ; July 15, 2002.

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.1415 TEST METHODS AND PROCEDURES

(a) When source testing is used to determine compliance with rules in this Section, the methods and procedures in Section .2600 of this Subchapter shall be used.

(c) The owner or operator shall maintain records of tests performed to demonstrate compliance with this Section according to Rule .1404 of this Section.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.66; 143-215.107(a)(5), (7), (10);

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.1418 NEW ELECTRIC GENERATING UNITS, LARGE BOILERS, AND LARGE I/C ENGINES

(a) Electric generating units. Emissions of nitrogen oxides from any fossil fuel-fired stationary boiler, combustion turbine, or combined cycle system permitted after October 31, 2000, serving a generator with a nameplate capacity greater than 25 megawatts electrical and selling any amount of electricity shall not exceed:

- (1) 0.15 pounds per million Btu if it is not covered under Rule .0530 (prevention of significant deterioration) or .0531 (nonattainment area major new source review) of this Subchapter;
- (2) 0.15 pounds per million Btu or best available control technology requirements of Rule .0530 of this Subchapter, whichever requires the greater degree of reduction, if it is covered under Rule .0530 of this Subchapter; or
- (3) lowest available emission rate technology requirements of Rule .0531 of this Subchapter if it is covered under Rule .0531 of this Subchapter.

(b) Large boilers. Emissions of nitrogen oxides from any fossil fuel-fired stationary boiler, combustion turbine, or combined cycle system having a maximum design heat input greater than 250 million Btu per hour which is permitted after October 31, 2000, and not covered under Paragraph (a) of this Rule, shall not exceed:

- (1) 0.17 pounds per million Btu if it is not covered under Rule .0530 (prevention of significant deterioration) or .0531 (nonattainment area major new source review) of this Subchapter;
- (2) 0.17 pounds per million Btu or best available control technology requirements of Rule .0530 of this Subchapter, whichever requires the greater degree of reduction, if it is covered under Rule .0530 of this Subchapter; or
- (3) lowest available emission rate technology requirements of Rule .0531 of this Subchapter if it is covered under Rule .0531 of this Subchapter.

(c) Internal combustion engines. The following reciprocating internal combustion engines permitted after October 31, 2000, shall comply with the applicable requirements in Rule .1423 of this Section if the engine is not covered under Rule .0530 (prevention of significant deterioration) or .0531 (nonattainment area major source review) of this Subchapter:

- (1) rich burn stationary internal combustion engines rated at equal to or greater than 2,400 brake horsepower,
- (2) lean burn stationary internal combustion engines rated at equal to or greater than 2,400 brake horsepower,
- (3) diesel stationary internal combustion engines rated at equal to or greater than 3,000 brake horsepower, or
- (4) dual fuel stationary internal combustion engines rated at equal to or greater than 4,400 brake horsepower,

If the engine is covered under Rule .0530 of this Subchapter, it shall comply with the requirements of Rule .1423 of this Section or the best available control technology requirements of Rule .0530 of this Subchapter, whichever requires the greater degree of reduction. If the engine is covered under Rule .0531 of this Subchapter, it shall comply with lowest available emission rate technology requirements of Rule .0531 of this Subchapter.

(d) Monitoring. The owner or operator of a source subject to this Rule except internal combustion engines shall show compliance using a continuous emission monitor that meets the requirements of Rule .1404(d) of 40 CFR Part 75, Subpart H, with such exceptions as allowed under 40 CFR Part 75, Subpart H or 40 CFR Part 96. Internal combustion engines shall comply with the monitoring requirements in Rule .1423 of this Section. Monitors shall be installed before the first ozone season in which the source will operate and shall be operated each day during the ozone season that the source

operates. Sources covered under this Rule, except internal combustion engines, that begin operating before September 30, 2003, shall be determined heat input for the 2003 ozone season according to 40 CFR Part 75, Subpart H.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5), (7), (10);
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.1423 LARGE INTERNAL COMBUSTION ENGINES

(a) Applicability. This Rule applies to the following internal combustion engines permitted after October 30, 2000 that are subject to Rule .1418 of this Section but are not subject to Rules .0530 (prevention of significant deterioration) or .0531 (nonattainment area major new source review) of this Subchapter;

- (1) rich burn stationary internal combustion engines rated at equal or greater than 2,400 brake horsepower;
- (2) lean burn stationary internal combustion engines rated at equal or greater than 2,400 brake horsepower;
- (3) diesel stationary internal combustion engines rated at equal or greater than 3,000 brake horsepower; or
- (4) dual fuel stationary internal combustion engines rated at equal or greater than 4,400 brake horsepower.

(b) Emission limitation. The owner or operator of a stationary internal combustion engine shall cause to be emitted into the atmosphere nitrogen oxides in excess of the following applicable limit, expressed as nitrogen dioxide corrected to 15 percent parts per million by volume (ppmv) stack gas oxygen on a dry basis, averaged over a rolling 30-day period, as may be adjusted under Paragraph (c) of this Rule:

MAXIMUM ALLOWABLE EMISSION CONCENTRATION FOR STATIONARY INTERNAL COMBUSTION ENGINES

(parts per million)

Engine Type	Limitation
Rich-burn	110
Lean-burn	125
Diesel	175
Dualfuel	125

(c) Adjustment. Each emission limit expressed in Paragraph (b) of this Rule may be multiplied by X, where X equals the engine efficiency (E) divided by a reference efficiency of 30 percent. Engine efficiency (E) shall be determined using one of the methods specified in Subparagraphs (1) or (2) of this Paragraph, whichever provides a higher value. However, engine efficiency (E) shall not be less than 30 percent. An engine with an efficiency lower than 30 percent shall be assigned an efficiency of 30 percent.

(1)

$$E = \frac{(\text{Engine output}) \times (100)}{\text{Energy input}}$$

where energy input is determined by a fuel measuring device accurate to plus or minus 5 percent and is based on the higher heating value (HHV) of the fuel. Percent efficiency (E) shall be averaged over 15 consecutive minutes and measured at peak load for the applicable engine.

(2)

$$E = \frac{\text{Manufacturer's Rated Efficiency [continuous] at LHV} \times (\text{LHV})}{\text{HHV}}$$

where LHV is the lower heating value of the fuel; and HHV is the higher heating value of the fuel.

(d) Compliance determination and monitoring. The owner or operator of an internal combustion engine subject to the requirements of this Rule shall determine compliance using:

- (1) a continuous emissions monitoring system (CEMS) which meets the applicable requirements of Appendices B and F of 40 CFR part 60, excluding data obtained during periods specified in Paragraph

(g) of this Rule and .1404 of this Section; or

(2) an alternate calculated and recordkeeping procedure based on actual emissions testing and correlation with operating parameters.

The installation, implementation, and use of this alternate procedure shall be approved by the Director before it may be used. The Director may approve the alternative procedure if he finds that it can show the compliance status of the engine.

(e) Reporting requirements. The owner or operator of a stationary internal combustion engine subject to this Rule shall submit:

(1) a report documenting the engine's total nitrogen oxide emissions beginning May 1 and ending September 30 of each year to the Director by October 31 of each year, beginning with the year of first ozone season that the engine operates;

(2) an excess emissions and monitoring systems performance report, according to the requirements of 40 CFR 60.7(c) and 60.13, if a continuous emissions monitoring system is used.

(f) Recordkeeping requirements. The owner or operator of a stationary internal combustion engine subject to this Rule shall maintain all records necessary to demonstrate compliance with the Rule for two calendar years at the facility at which the engine is located. The records shall be made available to the Director upon request. The owner or operator shall maintain records of the following information for each day the engine operates:

(1) identification and location of the engine;

(2) calendar date of record;

(3) the number of hours the engine operated during each day, including startups, shutdowns, and malfunctions, and the type and duration of maintenance and repairs;

(4) date and results of each emissions inspection;

(5) a summary of any emissions corrective maintenance taken;

(6) the results of all compliance tests; and

(7) if a unit is equipped with a continuous emission monitoring system:

(A) identification of time periods during which nitrogen oxide standards are exceeded, the reason for the excess emissions, and action taken to correct the excess emissions and to prevent similar future excess emissions; and

(B) identification of the time periods for which operating conditions and pollutant data were not obtained including reasons for not obtaining sufficient data and a description of corrective actions taken.

(g) Exemptions. The emission standards of this Rule shall not apply to the following periods of operation:

(1) start-up and shut-down periods and periods of malfunction, not to exceed 36 consecutive hours;

(2) regularly scheduled maintenance activities.

History Note: Statutory Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.66; 143-215.107(a)(5), (7), (10);

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