

SECTION .1400 – NITROGEN OXIDES

15A NCAC 02D .1401 DEFINITIONS

(a) For the purpose of this Section, in addition to the definitions in G.S. 143-212, G.S. 143-213, and 15A NCAC 02D .0101, the following definitions shall apply. If a term in this Rule is also defined at 15A NCAC 02D .0101, then the definition in this Rule controls.

- (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 15A NCAC 02D .1418, emissions of NO_x as measured and calculated pursuant to 40 CFR Part 75, Subpart H.
- (3) "Actual heat input" means for 15A NCAC 02D .1418, heat input as measured and calculated pursuant to 40 CFR Part 75, Subpart H.
- (4) "Averaging set of sources" means all the stationary sources included in an emissions averaging plan pursuant to 15A NCAC 02D .1410.
- (5) "Averaging source" means a stationary source that is included in an emissions averaging plan pursuant to 15A NCAC 02D .1410.
- (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) "Combustion turbine" means an enclosed fossil or other fuel-fired device that is comprised of a compressor, a combustor, and a turbine, and in which the flue gas resulting from the combustion of fuel in the combustor passes through the turbine, rotating the turbine.
- (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) "EGU" or electric generating unit means a stationary, fossil fuel-fired boiler or combustion turbine that serves a generator with a nameplate capacity greater than 25 MWe producing electricity for sale at any time, except a large non-EGU.
- (12) "Emergency generator" means a stationary internal combustion engine used to generate electricity only during:
 - (A) the loss of primary power at the facility that is beyond the control of the owner or operator of the facility; or
 - (B) maintenance when maintenance is being performed on the power supply to equipment that is essential in protecting the environment or to such equipment itself.An emergency generator may be operated periodically to ensure that it will operate.
- (13) "Emergency use internal combustion engines" means stationary internal combustion engines used to drive pumps, aerators, and other equipment only during:
 - (A) the loss of primary power at the facility that is beyond the control of the owner or operator of the facility; or
 - (B) maintenance when maintenance is being performed on the power supply to equipment that is essential in protecting the environment or to such equipment itself.An emergency use internal combustion engine may be operated periodically to ensure that it will operate.
- (14) "Excess emissions" means an emission rate that exceeds the applicable limitation or standard; for the purposes of this definition, NO_x emitted by a source regulated by 15A NCAC 02D .1418 during the ozone season above its allocation are not considered excess emissions.
- (15) "Fossil fuel fired" means:
 - (A) For sources that began operation before January 1, 1996, where fossil fuel 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 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, where fossil fuel 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 1996; or
- (C) For sources that began operation on or after January 1, 1997:
 - (i) Where fossil fuel 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.
- (16) "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.
- (17) "Large non-EGU" or large non-electric generating unit means a stationary fossil fuel fired boiler or combustion turbine with a maximum heat input greater than 250 MMBtu/hr that either:
 - (A) does not serve at any time a generator producing electricity for sale; or
 - (B) serves at any time a generator producing electricity for sale and qualifies under 40 CFR 72.6(b)(4), that addresses certain cogeneration facilities, as an unaffected unit for purposes of the Acid Rain Program.
- (18) "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.
- (19) "NOx" means nitrogen oxides.
- (20) "NOx SIP Call control period" for the purposes of the NOx SIP Call budgets in 15A NCAC 02D .1425 means the period May 1 through the end of September 30.
- (21) "Ozone season" means the period beginning May 1 and ending September 30.
- (22) "Potential emissions" means the quantity of NOx that would be emitted at the maximum capacity of a stationary source to emit NOx under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit NOx 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.
- (23) "Projected seasonal energy input" means the maximum design heat input per hour times 3300 hours.
- (24) "Projected seasonal energy output" means the maximum design energy output per hour times 3300 hours.
- (25) "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.
- (26) "Reasonably Available Control Technology" or "RACT" means the lowest emission limitation for NOx that a particular source can meet by the application of control technology that is reasonably available considering technological and economic feasibility.
- (27) "Reasonable effort" means the proper installation of technology designed to meet the requirements of 15A NCAC 02D .1407, .1408, or .1409 and the utilization of 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.
- (28) "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.
- (29) "Seasonal energy input" means the total energy input of a combustion source during the period beginning May 1 and ending September 30.
- (30) "Seasonal energy output" means the total energy output of a combustion source during the period beginning May 1 and ending September 30.
- (31) "Shutdown" means the cessation of operation of a source or its emission control equipment.

- (32) "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 NO_x emanate or are emitted.
- (33) "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.
- (34) "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.

(b) Whenever reference is made to the Code of Federal Regulations in this Section, the definitions in the Code of Federal Regulations shall apply unless specifically stated otherwise in a particular rule in this Section.

*History Note: Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5); 143-215.107(a)(7); 143-215.107(a)(10);
Eff. April 1, 1995;
Temporary Amendment Eff. August 1, 2001; November 1, 2000;
Amended Eff. July 18, 2002;
Readopted Eff. October 1, 2020;
Amended Eff. May 1, 2022.*

15A NCAC 02D .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 to all sources May 1 through September 30 of each year.
- (c) Rules 15A NCAC 02D .1409(c), .1418, .1423, .1424, and .1425 apply Statewide.
- (d) Rules 15A NCAC 02D .1407 through .1409(b) and .1413 apply to facilities with potential emissions of NO_x greater than or equal to 100 tons per year or 560 pounds per calendar day beginning May 1 through September 30 of any 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 where 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 the purposes of notifying permitted facilities in Forsyth County, "Director" means the Director of the Forsyth County local air pollution control program. Compliance shall be determined by 15A NCAC 02D .1403.
- (f) If a violation of the ambient air quality standard for ozone is measured according to 40 CFR 50.9 in Durham County, 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 County, 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 15A NCAC 02D .1407 through .1409(b) and 15A NCAC 02D .1413, the Director shall send written notification to all permitted facilities within the county where 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 according to 15A NCAC 02D .1403.
- (g) If the State nonattainment plan for ozone has failed to attain the ambient air quality standard for ozone in 40 CFR 50.9 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 NO_x per year. Once the nonattainment plan for ozone has failed and the area does not qualify for an extension of the attainment date, the Director shall notice the applicability of these Rules to those sources in the North Carolina Register and shall send written notification to all permitted facilities within the counties where 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 the purposes of notifying permitted facilities in Mecklenburg County, "Director" means the Director of the Mecklenburg County local air pollution control program. Compliance shall be according to 15A NCAC 02D .1403.

- (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 pursuant to 15A NCAC 02Q .0102 or is an insignificant activity as defined in 15A NCAC 02Q .0103;
 - (2) incinerator or thermal or catalytic oxidizer used primarily for the control of air pollution;
 - (3) emergency generator;
 - (4) emergency use internal combustion engine; or
 - (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:

$$t = \frac{933,333}{ES}$$
 - (B) for natural gas-fired engines:

$$t = \frac{700,280}{ES}$$
 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); 143.215.107(a)(7); 143.215.107(a)(10); Eff. April 1, 1995; Amended Eff. April 1, 1997; July 1, 1995; April 1, 1995; Temporary Amendment Eff. November 1, 2000; Amended Eff. April 1, 2001; Temporary Amendment Eff. August 1, 2001; Amended Eff. June 1, 2008; July 1, 2007; March 1, 2007; July 18, 2002; Temporary Amendment Eff. December 31, 2008; Temporary Amendment expired September 29, 2009; Amended Eff. January 1, 2010; Readopted Eff. October 1, 2020; Amended Eff. May 1, 2022.

15A NCAC 02D .1403 COMPLIANCE SCHEDULES

(a) Applicability. This Rule applies to sources regulated by 15A NCAC 02D .1402(d), (e), (f), or (g).

(b) Maintenance area and Charlotte ozone nonattainment area contingency plan. The owner or operator of a source subject to this Rule because of the applicability of 15A NCAC 02D .1402(d), (e), (f), or (g) 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, pursuant to 15A NCAC 02D .1415, within 12 months after the Director's notice in the North Carolina Register to demonstrate compliance with the applicable limitation; and
 - (C) The owner or operator shall implement any required recordkeeping and reporting requirements pursuant to 15A NCAC 02D .1404, within 12 months after the Director's notice in the North Carolina Register to demonstrate compliance with the applicable limitation.
- (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) 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 pursuant to 15A NCAC 02D .1412. If a petition has been submitted and approved, 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 pursuant to 15A NCAC 02D .1410;
 - (A) The owner or operator shall abide by the applicable requirements of Subparagraphs (1) or (2) of this Paragraph 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 pursuant to 15A NCAC 02D .1410 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 pursuant to 15A NCAC 02D .1411:
 - (A) The owner or operator shall make all necessary modifications according to Subparagraph (2) of this Paragraph.
 - (B) The owner or operator shall include a plan for complying with the requirements of 15A NCAC 02D .1411 with the permit application required under Part (2)(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.
- (c) Nonattainment areas. The owner or operator of a source subject to this Rule because of the applicability of 15A NCAC 02D .1402(d), 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 15A NCAC 02D .1415, by January 1, 2008; and
 - (C) The owner or operator shall implement any required recordkeeping and reporting requirements, according to 15A NCAC 02D .1404, 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 completed.
 - (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 April 1, 2009.
 - (3) If compliance with this Section is to be achieved through the implementation of an emissions averaging plan as provided for in 15A NCAC 02D .1410:
 - (A) The owner or operator shall abide by the applicable requirements of Subparagraph (1) or (2) of this Paragraph 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 15A NCAC 02D .1410 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 15A NCAC 02D .1411:
 - (A) The owner or operator shall make all necessary modifications according to Subparagraph (2) of this Paragraph.
 - (B) The owner or operator shall include a plan for complying with the requirements of 15A NCAC 02D .1411 with the permit application required under Part (2)(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 the 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 has determined and certified compliance to 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 15A NCAC 02D .1402(d) 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 15A NCAC 02D .1402(e), (f), or (g) shall comply with all applicable rules in this Section upon start-up of the source. The owner or operator of any new source covered by 15A NCAC 02D .1407, .1408, .1409, .1413, or .1418 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 15A NCAC 02D .1402(d) 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); 143.215.107(a)(7); 143.215.107(a)(10);
Eff. April 1, 1995;
Amended Eff. April 1, 1997;
Temporary Amendment Eff. November 1, 2000;
Amended Eff. April 1, 2001;
Temporary Amendment Eff. August 1, 2001;
Amended Eff. July 1, 2007; March 1, 2007; July 18, 2002;
Readopted Eff. October 1, 2020.

15A NCAC 02D .1404 RECORDKEEPING: REPORTING: MONITORING:

- (a) General requirements. The owner or operator of any source shall comply with the monitoring, recordkeeping and reporting requirements in 15A NCAC 02D .0600 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 in 15A NCAC 02D .0535.
- (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 by 15A NCAC 02D .1418, with the exception of 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 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, Performance Specification 2, and Appendix F or 40 CFR Part 75, Subpart H. If diluent monitoring is required, 40 CFR Part 60, Appendix B, Performance Specification 3, shall be used. If flow monitoring is required, 40 CFR Part 60, Appendix B, Performance Specification 6, shall be used.
 - (3) The owner or operator of the following sources are not required to use continuous emission monitors unless the Director determines that a continuous emission monitor is necessary pursuant to 15A NCAC 02D .0611 to show compliance with this Section:
 - (A) a boiler or indirect-fired process heater regulated by 15A NCAC 02D .1407 with a maximum heat input less than or equal to 250 million Btu per hour;
 - (B) stationary internal combustion engines regulated by 15A NCAC 02D .1409 except for those engines regulated by 15A NCAC 02D .1409(b) and .1418.
- (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, Subpart D 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 source's 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 when the monitoring measurements were missing. For purposes of this Rule, "properly operated" means that operating and maintenance procedures being used complied with permit conditions, operating and maintenance procedures, preventative maintenance procedures, monitoring results, and compliance history.
- (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, in accordance with 40 CFR Part 75, Appendix A, Section 3.2, 6.2, and 7.1;
 - (ii) a relative accuracy audit, in accordance with 40 CFR Part 60, Appendix F, Section 5 and 6; or
 - (iii) a cylinder gas audit in accordance with 40 CFR Part 60, Appendix F, Section 5.0 and 6.0; and
- (C) A daily calibration drift test shall be conducted in accordance with 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 in 15A NCAC 02D .0606 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 as defined in 15A NCAC 02D .0606 shall be used when a continuous emissions monitoring system is used to determine compliance with a short-term pounds per million Btu standard in 15A NCAC 02D .1418.

(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 on a case-by-case basis if he or she 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 in 15A NCAC 02D .1415.

(j) Alternative monitoring and reporting procedures. The owner or operator of a source covered under this Rule may request alternative monitoring or reporting procedures pursuant to 15A NCAC 02D .0612.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.66; 143.215.107(a)(5); 143.215.107(a)(7); 143.215.107(a)(10); Eff. April 1, 1995; Amended Eff. April 1, 1999; Temporary Amendment Eff. November 1, 2000; Amended Eff. April 1, 2001; Temporary Amendment Eff. August 1, 2001; Amendment Eff. December 1, 2005; January 1, 2005; May 1, 2004; July 15, 2002; Temporary Amendment Eff. December 31, 2008(this amendment replaces the amendment approved by RRC on May 15, 2008); Amended Eff. September 29, 2009(amendment approved by RRC on May 15, 2008); Readopted Eff. October 1, 2020.

15A NCAC 02D .1405 CIRCUMVENTION

(a) An owner or operator subject to this Section shall not build, erect, install or use any article, machine, equipment, process, or method that conceals an emission that would otherwise constitute a violation of a rule in this Section.

(b) Paragraph (a) of this Rule includes the use of gaseous dilutants to achieve compliance and the piecemeal carrying out of an operation to avoid coverage by a rule that applies only to operations larger than a specified size.

*History Note: Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5);
Eff. April 1, 1995;
Readopted Eff. October 1, 2020.*

15A NCAC 02D .1406 UTILITY BOILERS

*History Note: Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5);
Eff. April 1, 1995;
Temporary Repeal Eff. November 1, 2000;
Repealed Eff. July 18, 2002.*

15A NCAC 02D .1407 BOILERS AND INDIRECT-FIRED PROCESS HEATERS

- (a) This Rule applies geographically pursuant to 15A NCAC 02D .1402.
- (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 15A NCAC 02D .1414. 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 as required by 15A NCAC 02D .1404.
- (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 NO_x control technology and maintenance, including annual tune-ups and recordkeeping; and
 - (2) compliance through source testing or continuous emission monitoring that the source complies with the following applicable limitation:

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

<u>Fuel/Boiler Type</u>	<u>Firing Method</u>		
	<u>Tangential</u>	<u>Wall</u>	<u>Stoker or Other</u>
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 15A NCAC 02D .1401, or if the requirements of this Rule are not RACT, the owner or operator may petition the Director for an alternative limitation or standard pursuant to 15A NCAC 02D .1412.
- (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 as required by 15A NCAC 02D .0524 or 40 CFR Part 60 to measure emissions of nitrogen oxides; or
 - (2) using annual source testing pursuant to 15A NCAC 02D .1415 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 15A NCAC 02D .1414. If after the Director reduces the frequency of testing, a source test shows that the emission limit in 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 up to once every five years.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.66; 143.215.107(a)(5); 143.215.107(a)(7); 143.215.107(a)(10); Eff. April 1, 1995; Temporary Amendment Eff. August 1, 2001; November 1, 2000; Amended Eff. June 1, 2008; July 18, 2002; Temporary Amendment Eff. December 31, 2008; Temporary Amendment expired September 29, 2009; Readopted Eff. October 1, 2020.

15A NCAC 02D .1408 STATIONARY COMBUSTION TURBINES

(a) This Rule applies geographically pursuant to 15A NCAC 02D .1402.

(b) Unless the owner or operator chooses the option of emission averaging in 15A NCAC 02D .1410, 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 15A NCAC 02D .1401, 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 in accordance with 15A NCAC 02D .1412.

(d) Compliance with the limitation established for a stationary combustion turbine under this Rule shall be determined by using:

- (1) a continuous emissions monitoring system; or
- (2) annual source testing in accordance with 15A NCAC 02D .1415.

(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 is not required for that fuel.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.66; 143.215.107(a)(5); 143.215.107(a)(7); 143.215.107(a)(10); Eff. April 1, 1995; Temporary Amendment Eff. August 1, 2001; November 1, 2000; Amended Eff. June 1, 2008; July 18, 2002; Temporary Amendment Eff. December 31, 2008; Temporary Amendment expired September 29, 2009; Readopted Eff. October 1, 2020.

15A NCAC 02D .1409 STATIONARY INTERNAL COMBUSTION ENGINES

(a) This Rule applies geographically pursuant to 15A NCAC 02D .1402.

(b) The owner or operator of a stationary internal combustion engine with a rated capacity of greater than or equal to 650 horsepower that is not covered under Paragraph (c) of this Rule or 15A NCAC 02D .1418 shall not allow emissions of NOx from the stationary internal combustion engine to exceed the following limitations:

MAXIMUM ALLOWABLE NOx 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 NOx EMISSIONS (tons per ozone season)		
FACILITY	REGULATED SOURCES	ALLOWABLE EMISSIONS
Transcontinental Gas Pipeline Station 150	Mainline engines #12, 13, 14, and 15	76
Transcontinental Gas Pipeline Station 155	Mainline engines #2, 3, 4, 5, and 6	127
Transcontinental Gas Pipeline Station 160	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 (h) 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 applying a reasonable effort as defined in 15A NCAC 02D .1401, 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 pursuant to 15A NCAC 02D .1412.

(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 that meets the applicable requirements of Appendices B and F of 40 CFR part 60 and 15A NCAC 02D .1404; or
- (2) an alternate monitoring and recordkeeping procedure based on actual emissions testing and correlation with operating parameters.

The installation, implementation, and use of an alternate procedure allowed under Subparagraph (2) of this Paragraph shall be approved by the Director before it may be used. The Director shall approve the alternative procedure if he or she 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 pursuant to 15A NCAC 02D .1415. 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 is not 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 pursuant to 15A

NCAC 02D .1415. Each year after that, the owner or operator of the stationary internal combustion engine shall comply with the annual tune-up requirements of 15A NCAC 02D .1414.

(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 15A NCAC 02D or 02Q or Title 40 of the Code of Federal Regulations may 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 15A NCAC 02D or 02Q or Title 40 of the Code of Federal Regulations.

The Director may approve the offset if he or she 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 15A NCAC 02D or 02Q or Title 40 of the Code of Federal Regulations. If the Director approves the offset, he or she 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); 143.215.107(a)(7); 143.215.107(a)(10); Eff. April 1, 1995; Temporary Amendment Eff. August 1, 2001; November 1, 2000; Amended Eff. June 1, 2008; June 1, 2004; July 18, 2002; Temporary Amendment Eff. December 31, 2008; Temporary Amendment expired September 29, 2009; Readopted Eff. October 1, 2020.

15A NCAC 02D .1410 EMISSIONS AVERAGING

(a) This Rule shall not apply to sources regulated by 15A NCAC 02D .1418. Sources that have obtained an alternative limitation pursuant to 15A NCAC 02D .1412 or that apply seasonal fuel switching pursuant to 15A NCAC 02D .1411 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 15A NCAC 02D .1402 may elect to apply an emissions averaging plan according to Paragraph (c) of this Rule. An emissions 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); 143.215.107(a)(7); 143.215.107(a)(10); Eff. April 1, 1995; Temporary Amendment Eff. August 1, 2001; November 1, 2000; Amended Eff. July 18, 2002; Temporary Amendment Eff. December 31, 2008(this amendment replaces the amendment approved by RRC on May 15, 2008); Amended Eff. September 29, 2009(amendment approved by RRC on May 15, 2008); Readopted Eff. October 1, 2020.

15A NCAC 02D .1411 SEASONAL FUEL SWITCHING

- (a) This Rule shall not apply to sources regulated by 15A NCAC 02D .1418.
- (b) The owner or operator of a coal-fired or oil-fired boiler subject to the requirements of 15A NCAC 02D .1407 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 beginning in 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 throughout the ozone season.

History Note: Authority G.S. 143-215.3(a)(1) 143-215.65; 143.215.107(a)(5); 143.215.107(a)(7); 143.215.107(a)(10); Eff. April 1, 1995; Temporary Amendment Eff November 1, 2000; Amended Eff. April 1, 2001; Temporary Amendment Eff August 1, 2001; Amended Eff. June 1, 2008; July 18, 2002; Temporary Amendment Eff. December 31, 2008; Temporary Amendment expired September 29, 2009; Readopted Eff. October 1, 2020.

15A NCAC 02D .1412 PETITION FOR ALTERNATIVE LIMITATIONS

(a) The owner or operator may petition the Director for an alternative limitation according to Paragraph (b) or (c) of this Rule if the owner or operator of a source subject to the requirements of 15A NCAC 02D .1407, .1408, or .1409(b):

- (1) cannot achieve compliance with the applicable limitation after reasonable effort to satisfy the requirements of 15A NCAC 02D .1407, .1408, or .1409(b) or if the requirements in these Rules 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 pursuant to 15A NCAC 02D .1410.

(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 pursuant to 15A NCAC 02D .0530, 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 or she 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); 143.215.107(a)(7); 143.215.107(a)(10); Eff. April 1, 1995; Temporary Amendment Eff. August 1, 2001; November 1, 2000; Amended Eff. June 1, 2008; July 18, 2002; Readopted Eff. October 1, 2020.

15A NCAC 02D .1413 SOURCES NOT OTHERWISE LISTED IN THIS SECTION

(a) The owner or operator of any source of NO_x, except boilers, indirect-fired process heaters, stationary combustion turbines, or stationary internal combustion engines, at a facility that has the potential to emit 100 tons per year or more of NO_x or 560 pounds per calendar day or more of NO_x from May 1 through September 30, shall apply RACT pursuant to Paragraph (b) of this Rule.

(b) To apply RACT to a source of NO_x regulated pursuant to this Rule, the owner or operator of the source shall submit;

- (1) the name and location of the facility;
- (2) information identifying the source for which RACT is being proposed;
- (3) a demonstration that shows the proposed limitation is RACT for the source; and
- (4) a proposal for demonstrating compliance with the proposed RACT.

(c) The Director shall approve the proposed limitation if he or she finds that:

- (1) the owner or operator of the source has submitted all the information required under Paragraph (b) of this Rule;
- (2) the source is regulated under this Rule; and
- (3) the proposed limitation is RACT for this source.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.66; 143.215.107(a)(5); 143.215.107(a)(7); 143.215.107(a)(10); Eff. April 1, 1995; Temporary Amendment Eff. August 1, 2001; November 1, 2000; Amended Eff. July 18, 2002; Readopted Eff. October 1, 2020.

15A NCAC 02D .1414 TUNE-UP REQUIREMENTS

(a) This Rule applies to boilers and indirect-fired process heaters subject to the requirements of 15A NCAC 02D .1407 or stationary internal combustion engines subject to the requirements of 15A NCAC 02D .1409 that are complying with the annual tune-up requirement.

(b) When a tune-up to a boiler or indirect-fired process heater is required for compliance with this Section, the owner or operator shall at least annually and according to the manufacturer's recommendations:

- (1) inspect each burner and clean or replace any component of the burner as required;
- (2) inspect the flame pattern and make any adjustments to the burner, or burners, necessary to optimize the flame pattern to minimize total emissions of NO_x and carbon monoxide;
- (3) inspect the combustion control system to ensure proper operation and correct calibration of components that control the air to fuel ratio and adjust components to meet the manufacturer's established operating parameters; and
- (4) inspect any other component of the boiler or indirect-fired process heater and make adjustments or repairs as necessary to improve combustion efficiency.

The owner or operator shall perform the tune-up according to a unit-specific protocol approved by the Director. The Director shall approve the protocol if it meets the requirements of this Rule.

(c) When a tune-up to a stationary internal combustion engine is required for compliance with this Section, the owner or operator shall at least annually inspect, adjust, and repair or replace according to the manufacturer's recommendation, the following, as equipped:

- (1) engine air cleaners, fuel filters, and water traps;
- (2) turbochargers and superchargers;
- (3) spark plugs;
- (4) valve lash;
- (5) ignition systems, including ignition coils and wiring;
- (6) aftercooler cores;
- (7) any other component of the engine as necessary to improve engine efficiency; and
- (8) emission control systems.

The owner or operator shall perform the tune-up according to a unit-specific protocol, including inspection, maintenance, and performance procedures as recommended by the manufacturer and approved by the Director. The Director shall approve the protocol if it meets the requirements of this Rule.

(d) The owner or operator shall maintain records of tune-ups performed to comply with this Section pursuant to 15A NCAC 02D .1404. The following information shall be included for each source:

- (1) identification of the source;
- (2) the date and time the tune-up started and ended;
- (3) the person responsible for performing the tune-up;
- (4) for boilers and indirect-fired process heaters, the checklist for inspection of the burner, flame pattern, combustion control system, and all other components of the boiler or indirect-fired process heater identified in the protocol, noting any repairs or replacements made;
- (5) for stationary internal combustion engines, the checklist for engine air cleaners, turbochargers, sparkplugs, valve lash, ignition coils and wiring, aftercooler cores, and all other components of the engine identified in the protocol, noting any repairs or replacements made;
- (6) any stack gas analyses performed after the completion of all adjustments to show that the operating parameters of the boiler, indirect-fired process heater, or stationary internal combustion engine have been optimized with respect to fuel consumption and output. These parameters shall be within the range established by the equipment manufacturer to ensure that the emission limitation for nitrogen oxides has not been exceeded; and
- (7) any other information requested by the Director to show that the boiler, indirect-fired process heater, or stationary internal combustion engine is being operated and maintained in a manner to minimize the emissions of nitrogen oxides.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.66; 143.215.107(a)(5); 143.215.107(a)(7); 143.215.107(a)(10); Eff. April 1, 1995; Temporary Amendment Eff. August 1, 2001; November 1, 2000; Amended Eff. July 18, 2002; Readopted Eff. October 1, 2020.

15A NCAC 02D .1415 TEST METHODS AND PROCEDURES

(a) When source testing is used to determine compliance with rules in this Section, the methods and procedures in 15A NCAC 02D .2600 shall be used.

(b) The owner or operator shall maintain records of tests performed to demonstrate compliance with this Section as required by 15A NCAC 02D .1404.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.66; 143.215.107(a)(5); 143.215.107(a)(7); 143.215.107(a)(10); Eff. April 1, 1995; Temporary Amendment Eff. August 1, 2001; November 1, 2000; Amended Eff. June 1, 2008; July 18, 2002; Readopted Eff. October 1, 2020.

15A NCAC 02D .1416 EMISSION ALLOCATIONS FOR UTILITY COMPANIES

*History Note: Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5), (7), (10);
Temporary Adoption Eff. November 1, 2000;
Eff. April 1, 2001;
Temporary Amendment Eff. August 1, 2001;
Amended Eff. June 1, 2004; July 18, 2002;
Temporary Amendment Eff. December 31, 2008(this amendment replaces the repeal approved by RRC on
May 15, 2008);
Repealed Eff. September 29, 2009(repeal approved by RRC on May 15, 2008).*

15A NCAC 02D .1417 EMISSION ALLOCATIONS FOR LARGE COMBUSTION SOURCES

*History Note: Authority G.S. 143-215.3(a)(1); 143-215.107(a)(5), (7), (10);
Temporary Adoption Eff. November 1, 2000;
Temporary Adoption Eff. August 1, 2001;
Eff. July 18, 2002;
Amended Eff. June 1, 2004;
Temporary Amendment Eff. December 31, 2008(this amendment replaces the repeal approved by RRC on
May 15, 2008);
Repealed Eff. September 29, 2009(repeal approved by RRC on May 15, 2008).*

15A NCAC 02D .1418 NEW ELECTRIC GENERATING UNITS, BOILERS, COMBUSTION TURBINES, AND I/C ENGINES

(a) Electric generating units. Emissions of NO_x 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 meet the applicable requirement:

- (1) 0.15 pounds per million Btu for gaseous and solid fuels and 0.18 pounds per million Btu for liquid fuels if it is not regulated by 15A NCAC 02D .0530 or .0531;
- (2) if regulated by 15A NCAC 02D .0530, meet the best available control technology requirements in 15A NCAC 02D .0530 or 0.15 pounds per million Btu for gaseous and solid fuels and 0.18 pounds per million Btu for liquid fuels, whichever requires the greater degree of reduction; or
- (3) if regulated by 15A NCAC 02D .0531, meet the lowest available emission rate technology requirements in 15A NCAC 02D .0531.

(b) Boilers and combustion turbines. Emissions of NO_x 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 permitted after October 31, 2000, and not regulated under Paragraph (a) of this Rule, shall meet the applicable requirement:

- (1) 0.17 pounds per million Btu for gaseous and solid fuels and 0.18 pounds per million Btu for liquid fuels if it is not regulated by 15A NCAC 02D .0530 or .0531;
- (2) if regulated by 15A NCAC 02D .0530, meet the best available control technology requirements in 15A NCAC 02D .0530 or 0.17 pounds per million Btu for gaseous and solid fuels and 0.18 pounds per million Btu for liquid fuels, whichever requires the greater degree of reduction; or
- (3) if regulated by 15A NCAC 02D .0531, meet the lowest available emission rate technology requirements in 15A NCAC 02D .0531.

(c) Internal combustion engines. The following reciprocating internal combustion engines permitted after October 31, 2000, shall comply with the applicable requirements in 15A NCAC 02D .1423 if the engine is not regulated by 15A NCAC 02D .0530 or .0531:

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

If the engine is regulated by 15A NCAC 02D .0530, it shall comply with the requirements of 15A NCAC 02D .1423 or the best available control technology requirements of 15A NCAC 02D .0530, whichever requires the greater degree of reduction. If the engine is regulated by 15A NCAC 02D .0531, it shall comply with lowest available emission rate technology requirements of 15A NCAC 02D .0531.

(d) Monitoring. The owner or operator of a source subject to this Rule, except for internal combustion engines, shall show compliance using a continuous emission monitor that meets the requirements of 15A NCAC 02D .1404(d). Internal combustion engines shall comply with the monitoring requirements in 15A NCAC 02D .1423. 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.

History Note: Authority G.S. 143-215.3(a)(1); 143.215.107(a)(5); 143.215.107(a)(7); 143.215.107(a)(10); Temporary Adoption Eff. August 1, 2001; November 1, 2000; Eff. July 18, 2002; Amended Eff. June 1, 2004; Temporary Amendment Eff. December 31, 2008(this amendment replaces the amendment approved by RRC on May 15, 2008); Amended Eff. September 29, 2009(amendment approved by RRC on May 15, 2008); Readopted Eff. October 1, 2020.

15A NCAC 02D .1419 NITROGEN OXIDE BUDGET TRADING PROGRAM
15A NCAC 02D .1420 PERIODIC REVIEW AND REALLOCATIONS
15A NCAC 02D .1421 ALLOCATIONS FOR NEW GROWTH OF MAJOR POINT SOURCES
15A NCAC 02D .1422 COMPLIANCE SUPPLEMENT POOL CREDITS

*History Note: Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.66; 143-215.107(a)(5), (7), (10);
Temporary Adoption Eff. August 1, 2001; November 1, 2000;
Eff. July 18, 2002;
Amended Eff. June 1, 2004;
Temporary Amendment Eff. December 31, 2008(this amendment replaces the repeal approved by RRC
on May 15, 2008);
Repealed Eff. September 29, 2009(repeal approved by RRC on May 15, 2008).*

15A NCAC 02D .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 15A NCAC 02D .1418 but are not subject to 15A NCAC 02D .0530 or .0531:

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

(b) Emission limitation. The owner or operator of a stationary internal combustion engine shall not cause to be emitted into the atmosphere NOx in excess of the following applicable limit, expressed as NOx in parts per million by volume corrected to 15 percent oxygen on a dry basis, averaged over a rolling 30-day period, as may be adjusted pursuant to Paragraph (c) of this Rule:

MAXIMUM ALLOWABLE NOx EMISSION CONCENTRATION FOR
STATIONARY INTERNAL COMBUSTION ENGINES
(parts per million)

Engine Type	Limitation
Rich-burn	110
Lean-burn	125
Diesel	175
Dual fuel	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)

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

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)

$$E = \frac{(\text{Manufacturer's rated efficiency at LHV}) \cdot (\text{LHV})}{\text{HHV}}$$

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 that meets the applicable requirements of 40 CFR part 60, Appendices B and F, excluding data obtained during periods specified in Paragraph (g) of this Rule and 15A NCAC 02D .1404; 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 shall approve the alternative procedure if he or she 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; and

- (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 any maintenance and repairs;
 - (4) the 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 were 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; and
 - (2) regularly scheduled maintenance activities.

*History Note: Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.66; 143.215.107(a)(5); 143.215.107(a)(7); 143.215.107(a)(10);
Temporary Adoption Eff. August 1, 2001;
Eff. July 18, 2002;
Readopted Eff. October 1, 2020.*

15A NCAC 02D .1424 LARGE NON-ELECTRIC GENERATING UNITS

(a) General requirements. The owner or operator of a large non-EGU shall comply with the monitoring, recordkeeping and reporting requirements in 15A NCAC 02D .0600, with the exception of .0604 and .0612. For a period of five years, the owner or operator shall maintain all records necessary for determining compliance with all applicable limitations and standards of this Section.

(b) The owner or operator of a large non-EGU covered by this Rule may request alternative monitoring procedures if the source is not required by 15A NCAC 02D .1418 or any other federal regulation to comply with 40 CFR Part 75.

(c) For a source subject to 40 CFR Part 60 Subpart D or Subpart Db, the source shall determine NO_x mass emissions using the NO_x emission rate, total heat input derived, and time interval from each type of fuel during the NO_x SIP Call control period.

(d) For a large non-EGU requesting an alternative monitoring procedure, one of the following monitoring options shall be used to determine NO_x emissions.

- (1) For sources with at least five years of historical CEMS operational data, the NO_x mass emissions shall be determined using the following formula:

$$M = K * C * Q * t / 2000$$

where;

M is the NO_x mass emissions in tons;

K is the conversion constant equal to 1.194E-7 pounds per standard cubic feet-parts per million volume (lb/scf-ppmv);

C is the average NO_x concentration of the unit as demonstrated by previous 40 CFR Part 75 monitoring in parts per million volume (ppmv);

Q is the average flow rate of the unit under normal operating conditions as demonstrated by previous 40 CFR Part 75 monitoring in standard cubic feet per hour (scf/hr);

t is the total operating time in hours during the ozone season; and

2000 pounds per ton (2000 lb/ton).

- (2) For sources with at least five years of historical CEMS emissions data, the NO_x mass emissions shall be determined as follows:

$$M = R * HI * t / 2000$$

where;

M is the NO_x mass emissions in tons,

R is the average NO_x mass emission rate in pounds per million Btu (lb/MMBtu),

HI is the average heat input rate per hour in million British thermal units per hour (MMBtu/hr),

t is the operating time in hours during ozone season, and

2000 pounds per ton (2000 lb/ton).

- (3) For sources without historical CEMS operational data or the CEMS data do not represent current operating conditions, the large non-EGU source shall test utilizing 40 CFR Part 60, Appendix A, Methods 1-4 and 7 or 7e to determine initial NO_x concentration and flow rate factors prior to the ozone season.

(A) The NO_x concentration and flow rate factors determined from the testing and the number of hours operated during the ozone season will be used to determine NO_x emissions for that ozone season.

(B) After a total of three years of testing, the source shall use the average NO_x concentration and flow rate factors for subsequent ozone season NO_x emissions reporting.

(C) Sources shall use the equation in Subparagraph (1) of this Paragraph to calculate their NO_x mass emissions in tons.

(e) A stack test shall be performed periodically in accordance with 40 CFR 51.121(i)(2) to verify NO_x concentration and flow factors for use in computing NO_x mass emissions.

(f) If the approved alternative monitoring or reporting requirements differ from those specified in a corresponding rule in Subchapters 02D or 02Q of this Chapter, the permit shall contain conditions stating the monitoring or reporting requirements.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.66; 143.215.107(a)(5); 143.215.107(a)(7); 143.215.107(a)(10);
Eff. May 1, 2022.

15A NCAC 02D .1425 NOX SIP CALL BUDGET

(a) This Rule establishes general provisions and reporting requirements for the NOx SIP Call control period budgets pursuant to 40 CFR 51.121 through 51.122.

(b) The owner or operator of an EGU or large non-EGU as defined in 15A NCAC 02D .1401 shall submit a report to the Division no later than January 30 of the calendar year after the NOx SIP Call control period listing the NOx emissions from these sources during the NOx SIP Call control period. The NOx emissions in this report shall be determined in accordance with 40 CFR Part 75 for EGUs and large non-EGUs subject to 15A NCAC 02D .1418, and in accordance with 15A NCAC 02D .1424 for large non-EGUs using alternative monitoring.

(c) The information provided by the EGU and large non-EGU sources will be used to evaluate state level NOx budgets in Paragraph (d) of this Rule. The sum of the tons of NOx emitted from all such units in each control period beginning after the effective date of this rule shall not exceed this budget amount.

(d) For North Carolina's NOx Budget Program, the following budgets shall apply:

- (1) The total NOx SIP Call control period budget for EGUs is 31,212 tons; and
- (2) The total NOx SIP Call control period budget for large non-EGUs is 2,329 tons.

History Note: Authority G.S. 143-215.3(a)(1); 143-215.65; 143-215.66; 143.215.107(a)(5); 143.215.107(a)(7); 143.215.107(a)(10); Eff. May 1, 2022.