2.121 Large Stationary Combined Cycle Gas Turbines

2.121.1 Applicability and Definition of Affected Facility

(a) The affected facility to which this source category applies is any stationary gas turbine which is subject to the Georgia Rules for Air Quality Control, (Georgia Rule), Chapter 391-3-1.02(2)(nnn), and 391-3-1.02(6)(a)2.(xii).

2.121.2 Compliance and Performance Testing for Nitrogen Oxides

(a) In conducting any required performance test for stationary gas turbines permitted before April 1, 2000, the owner or operator shall use as reference methods and procedures, the test methods in Appendix A of this text or other methods and procedures as specified in this section except as provided in Section 1.2(b). Performance or compliance tests shall be conducted and data reduced in accordance with the following;

(i) Method 1 shall be used for sample point selection.

(ii) Method 7E shall be used to determine the NO_x concentration. The sampling time for each test run shall be at least 60 minutes.

(iii) Method 3B shall be used for the determination of the oxygen concentration. For each run, the multi-point, integrated sampling and analytical procedure of Method 3B shall be used. The sample shall be taken simultaneously with, and at the same location as the NO_x sample. As an alternative to Method 3B, Method 3A may be used.

(iv) The NO_x concentration shall be corrected to 15 percent oxygen using the following equation:

$$C_{corr} = C_{meas} (20.9-15)/(20.9-\%O_2)$$

where:

C_{corr}	=	pollutant concentration corrected to 15 percent oxygen;
C_{meas}	=	pollutant concentration measured on a dry basis;
(20.9-15)	=	20.9 percent oxygen -15 percent oxygen (defined oxygen correction basis);
20.9	=	oxygen concentration in air, percent; and
$\%O_2$	=	oxygen concentration measured on a dry basis, percent.

(b) In conducting any required performance test for stationary gas turbines permitted on or after April 1, 2000, the owner or operator shall conduct the performance test using the continuous monitoring system required by Section 2.121.3 of this text. Performance or compliance tests shall be conducted and data reduced in accordance with the following procedures;

(i) For the initial compliance test, nitrogen oxides from the turbine are monitored for 30 successive operating days and the 30-day average emission rate is used to determine compliance with the nitrogen oxides emission standard under Rule 391-3-1-.02(2)(nnn)1(iii). The 30-day average emission rate is calculated as the average of all hourly emissions data recorded by the monitoring system during the 30-day test period.

(ii) Following the date on which the initial performance test is completed or is required to be completed under Section 1.2, whichever date comes first, the owner or operator of an affected facility shall determine compliance with the nitrogen oxides emissions standards under Rule 391-3-1-.02(2)(nnn)1(iii) on a continuous basis through the use of a 30-day rolling average emission rate. A new 30-day rolling average emission rate is calculated each operating day as the average of all of the hourly nitrogen oxides emission data for the preceding 30 operating days.

(iii) In the event there are less than 30 operating days by the end of the period from May 1 to September 30, then the performance test or monitoring averaging period shall include all the operating days for that period.

(iv) For the purposes of this section, an operating day shall be defined as a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the turbine. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

2.121.3 Emission Monitoring

(a) The owner or operator of a stationary gas turbine permitted on or after April 1, 2000, shall install, calibrate, maintain, and operate a continuous monitoring system for measuring nitrogen oxides and diluent (oxygen or carbon dioxide) concentration and record the output of the system.

(b) The procedures of Section 1.4 of this text shall be followed for the installation, evaluation, and operation of the continuous monitoring systems (CMS).

(i) All CMS shall be operated in accordance with the applicable procedures under Performance Specifications 2 or 3 (Appendix B), or 40 CFR Part 75 Appendix A.

(ii) Quarterly accuracy determinations and calibration drift assessments shall be performed in accordance with Procedure 1, Appendix F, or 40 CFR Part 75 Appendix B. For any quarterly linearity testing exempted due to NOx span values less than 30 ppm, the daily low and high range calibration drift assessments shall be retained as a part of the assessment. Low range out of control (OOC) periods shall be any five consecutive daily calibration error or drift assessments of 0.5 ppm or greater or any single day assessment of 1.0 ppm or greater.

(iii) The low span for the Nitrogen Oxides monitor shall be set between 10 and 30 parts per million (ppm) as appropriate. The facility may also request a lower span with approval from the Administrator.

(c) The continuous monitoring systems required under paragraph (a) of this section shall be operated and data recorded during all periods of operation of the affected facility except for continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments.

(d) The 1-hour average nitrogen oxides emission rates measured by the continuous monitor system required by paragraph (a) of this section shall be expressed in parts per million by volume (ppm) corrected to 15 percent oxygen and shall be used to calculate the average emission rate. Each 1-hour average emission rate must be based upon at least 30 minutes of turbine operation and include at least 2 data points with each representing a 15-minute period.

(e) The owner or operator of the affected facility shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive turbine operating days. If this minimum data requirement is not met with a single monitoring system, the owner or operator of the affected facility shall supplement the emission data with data collected with other monitoring systems as approved by the Director or the test methods and procedures as described in Section 2.121.2 (a) of this text.

2.121.4 Reporting and Recordkeeping Requirements

(a) The owner or operator of an affected facility subject to the nitrogen oxides standard of Rule 391-3-1-.02(2)(nnn)1(iii) shall maintain records of the following information for each operating day:

(1) Calendar date.

(2) The average hourly nitrogen oxides emission rates (expressed as ppm corrected to 15 percent oxygen), unless the affected facility was not in operation for the day.

(3) The 30-day average nitrogen oxides emission rates (expressed as ppm corrected to 15 percent oxygen) calculated at the end of each operating day from the measured hourly nitrogen oxide emission rates for the preceding 30 operating days.

(4) Identification of any operating days when the calculated 30-day average nitrogen oxides emission rates are in excess of the nitrogen oxides emissions limits with the reasons for such excess emissions as well as a description of corrective actions taken.

(5) Identification of any operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken.

(6) Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data.

(7) Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system.

(8) Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3.

(9) Results of daily CMS drift tests and quarterly accuracy assessments as required under 40 CFR 60 Appendix F, Procedure 1, or 40 CFR Part 75 Appendix B. Any low range NOx CEMS shall include daily calibration error or drift assessments as in (1)-(8) above for these same periods. This data shall be maintained in the daily operating records as a data assessment report which shall include all of the RATAs, linearity checks or CGAs (as applicable), and all failed and subsequently passed calibration error or drift assessments.

(b) The owner or operator of any affected facility subject to the continuous monitoring requirements for nitrogen oxides under Section 2.121.3 shall submit a quarterly report containing the information recorded under paragraph (a) of this section with the exception of item (a)(2). All quarterly reports shall be postmarked by the 30th or 60th day (as appropriate) following the end of each calendar quarter.

(c) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of 5 years following the date of such record.