

JOSH STEIN
Governor

D. REID WILSON
Secretary

MICHAEL ABRACZINSKAS
Director



January 22, 2025

Paul Beatty, Jr.
Operations Supervisor
Duke Energy Corporation LCTS
6769 Old Plank Road
Stanley, NC 28164

SUBJECT: Air Quality Permit No. 07171T18
Facility ID: 5500082
Duke Energy Corporation LCTS
Stanley
Lincoln County
Fee Class: Title V
PSD Class: Major

Dear Mr. Beatty:

In accordance with your completed Air Quality Permit Application for administrative amendment of your Title V permit, we are forwarding, herewith, Air Quality Permit No. 07171T18 authorizing the construction and operation of the emission sources and associated air pollution control devices specified herein. Additionally, any emissions activities determined from your Air Quality Permit Application as being insignificant per 15A North Carolina Administrative Code 02Q .0503(8) have been identified as such in the permit. Please note, the requirements for the annual compliance certification are contained in General Condition P in Section 4. The current owner is responsible for submitting a compliance certification for the entire year regardless of who owned the facility during the year.

As the designated responsible official, it is your responsibility to review, understand, and abide by all of the terms and conditions of the attached permit. It is also your responsibility to ensure that any person who operates any emission source and associated air pollution control device subject to any term or condition of the attached permit reviews, understands, and abides by the condition(s) of the attached permit that are applicable to that particular emission source.

If any parts, requirements, or limitations contained in this Air Quality Permit are unacceptable to you, you have the right to file a petition for a contested case hearing in the North Carolina Office of Administrative Hearings. Information regarding the right, procedure, and time limit for permittees and other persons aggrieved to file such a petition is contained in the attached "Notice Regarding the Right to Contest a Division of Air Quality Permit Decision."

The construction of new air pollution emission source(s) and associated air pollution control device(s), or modifications to existing emission source(s) and air pollution control device(s) described in this permit must be covered under an Air Quality Permit issued by the Division of Air Quality prior to construction unless the Permittee has fulfilled the requirements of NCGS 143-215.108A(b) and received written approval from the Director of the Division of Air Quality to commence construction. Failure to receive an Air Quality Permit or written approval prior to commencing construction is a violation of



North Carolina Department of Environmental Quality | Division of Air Quality
217 West Jones Street | 1641 Mail Service Center | Raleigh, North Carolina 27699-1641
919.707.8400

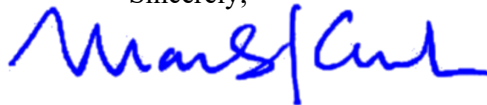
Mr. Paul Beatty, Jr.
January 22, 2025
Page 2

NCGS 143-215.108A and may subject the Permittee to civil or criminal penalties as described in NCGS 143-215.114A and 143-215.114B.

Lincoln County has triggered increment tracking under PSD for PM₁₀, PM_{2.5}, SO₂, and NO_x. This permit modification does not consume or expand increments for any tracked pollutants.

This Air Quality Permit shall be effective from January 22, 2025 until December 31, 2026, is nontransferable to future owners and operators, and shall be subject to the conditions and limitations as specified therein. Should you have any questions concerning this matter, please contact Russell Braswell at 919-707-8731 or russell.braswell@deq.nc.gov.

Sincerely,



Mark J. Cuilla, EIT, CPM, Chief, Permitting Section
Division of Air Quality, NCDEQ

Enclosure

c: Brad Akers, EPA Region 4
Laserfiche (5500082)

NOTICE REGARDING THE RIGHT TO CONTEST A DIVISION OF AIR QUALITY PERMIT DECISION

Right of the Permit Applicant or Permittee to File a Contested Case: Pursuant to NCGS 143-215.108(e), a permit applicant or permittee who is dissatisfied with the Division of Air Quality's decision on a permit application may commence a contested case by filing a petition under NCGS 150B-23 in the Office of Administrative Hearings within 30 days after the Division notifies the applicant or permittee of its decision. If the applicant or permittee does not file a petition within the required time, the Division's decision on the application is final and is not subject to review. The filing of a petition will stay the Division's decision until resolution of the contested case.

Right of Other Persons Aggrieved to File a Contested Case: Pursuant to NCGS 143-215.108(e1), a person other than an applicant or permittee who is a person aggrieved by the Division's decision on a permit application may commence a contested case by filing a petition under NCGS 150B-23 within 30 days after the Division provides notice of its decision on a permit application, as provided in NCGS 150B-23(f), or by posting the decision on a publicly available Web site. The filing of a petition under this subsection does not stay the Division's decision except as ordered by the administrative law judge under NCGS 150B-33(b).

General Filing Instructions: A petition for contested case hearing must be in the form of a written petition, conforming to NCGS 150B-23, and filed with the Office of Administrative Hearings, 1711 New Hope Church Road, Raleigh NC, 27609, along with a fee in an amount provided in NCGS 150B-23.2. A petition for contested case hearing form may be obtained upon request from the Office of Administrative Hearings or on its website at <https://www.oah.nc.gov/hearings-division/filing/hearing-forms>. Additional specific instructions for filing a petition are set forth at 26 NCAC Chapter 03.

Service Instructions: A party filing a contested case is required to serve a copy of the petition, by any means authorized under 26 NCAC 03 .0102, on the process agent for the Department of Environmental Quality:

Daniel S. Hirschman, General Counsel
North Carolina Department of Environmental Quality
1601 Mail Service Center
Raleigh, North Carolina 27699-1601

If the party filing the petition is a person aggrieved other than the permittee or permit applicant, the party **must also** serve the permittee in accordance with NCGS 150B-23(a).

* * *

Additional information is available at <https://www.oah.nc.gov/hearings-division/hearing-process/filing-contested-case>. Please contact the OAH at 984-236-1850 or oah.postmaster@oah.nc.gov with all questions regarding the filing fee and/or the details of the filing process.

Summary of Changes to Permit

The following changes were made to Air Permit No. 07171T17:*

Page No.	Section	Description of Changes
Throughout	Throughout	Updated dates and permit numbers.
4	1.	Removed footnote regarding minor modifications for ES-19 because the date referenced therein (September 24, 2024) has already passed.
28	2.2 B.1.d.ii	Updated emission factor for formaldehyde from turbine ES-19 based on recent emission testing (was 6.12E-05, updated to 9.11E-05).

* This list is not intended to be a detailed record of every change made to the permit but a summary of those changes.



State of North Carolina
Department of Environmental Quality
Division of Air Quality

AIR QUALITY PERMIT

Permit No.	Replaces Permit No.	Effective Date	Expiration Date
07171T18	07171T17	January 22, 2025	December 31, 2026

NOTE: Per General Condition K, a permit application for the renewal of this Title V permit shall be submitted no later than June 30, 2026.

Until such time as this permit expires or is modified or revoked, the below named Permittee is permitted to construct and operate the emission source(s) and associated air pollution control device(s) specified herein, in accordance with the terms, conditions, and limitations within this permit. This permit is issued under the provisions of Article 21B of Chapter 143, General Statutes of North Carolina as amended, and Title 15A North Carolina Administrative Codes (15A NCAC), Subchapters 02D and 02Q, and other applicable Laws.

Pursuant to Title 15A NCAC, Subchapter 02Q, the Permittee shall not construct, operate, or modify any emission source(s) or air pollution control device(s) without having first submitted a complete Air Quality Permit Application to the permitting authority and received an Air Quality Permit, except as provided in this permit.

Permittee: **Duke Energy Corporation LCTS**

Facility ID: **5500082**

Primary SIC Code: **4911**

NAICS Code: **221112**

Facility Site Location: **6769 Old Plank Road - SR 1511**

City, County, State, Zip: **Stanley, Lincoln County, NC 28164**

Mailing Address: **6769 Old Plank Road**

City, State, Zip: **Stanley, NC 28164**

Application Numbers: **5500082.24B**

Complete Application Date: **December 3, 2024**

Division of Air Quality, **Mooreville Regional Office**

Regional Office Address: **610 East Center Avenue**

Mooreville, NC 28115

Permit issued this the 22nd day of January 2025.

A handwritten signature in blue ink, appearing to read 'Mark J. Cuilla', is written over a horizontal line.

Mark J. Cuilla, EIT, CPM, Chief, Air Permitting Section
By Authority of the Environmental Management Commission

Table of Contents

LIST OF ACRONYMS

SECTION 1: PERMITTED EMISSION SOURCE(S) AND ASSOCIATED AIR POLLUTION CONTROL DEVICE(S)

SECTION 2: SPECIFIC LIMITATIONS AND CONDITIONS

- 2.1 Emission Source(s) Specific Limitations and Conditions (Including specific requirements, monitoring/testing, recordkeeping, and reporting requirements)
- 2.2 Multiple Emission Sources Specific Limitations and Conditions (Including specific requirements, monitoring/testing, recordkeeping, and reporting requirements)
- 2.3 Phase II Acid Rain Permit Requirements
- 2.4 Cross State Air Pollution Rule (CSAPR) Requirements

SECTION 3: INSIGNIFICANT ACTIVITIES PER 15A NCAC 02Q .0503(8)

SECTION 4: GENERAL PERMIT CONDITIONS

ATTACHMENT

Acid Rain Permit Application (dated October 5, 2020)

List of Acronyms

AOS	Alternative Operating Scenario
BACT	Best Available Control Technology
BAE	Baseline Actual Emissions
Btu	British thermal unit
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CEDRI	Compliance and Emissions Data Reporting Interface
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COMS	Continuous Opacity Monitoring System
CSAPR	Cross-State Air Pollution Rule
DAQ	Division of Air Quality
DEQ	Department of Environmental Quality
EMC	Environmental Management Commission
EPA	Environmental Protection Agency
FR	Federal Register
GACT	Generally Available Control Technology
GHGs	Greenhouse Gases
HAP	Hazardous Air Pollutant
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
NAA	Non-Attainment Area
NAAQS	National Ambient Air Quality Standards
NAICS	North American Industry Classification System
NCAC	North Carolina Administrative Code
NCGS	North Carolina General Statutes
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standard
NSR	New Source Review
OAH	Office of Administrative Hearings
PAE	Projected Actual Emissions
PAL	Plantwide Applicability Limitation
PM	Particulate Matter
PM_{2.5}	Particulate Matter with Nominal Aerodynamic Diameter of 2.5 Micrometers or Less
PM₁₀	Particulate Matter with Nominal Aerodynamic Diameter of 10 Micrometers or Less
POS	Primary Operating Scenario
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
RACT	Reasonably Available Control Technology
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO₂	Sulfur Dioxide
TAP	Toxic Air Pollutant
tpy	Tons Per Year
VOC	Volatile Organic Compound

SECTION 1 - PERMITTED EMISSION SOURCE(S) AND ASSOCIATED AIR POLLUTION CONTROL DEVICE(S) AND APPURTENANCES

The following table contains a summary of all permitted emission sources and associated air pollution control devices:

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES-1 through ES-16 PSD BACT, NSPS GG, CAM	sixteen natural gas/No. 2 fuel oil-fired simple-cycle internal combustion turbines (1,313 million Btu per hour heat input rate when firing natural gas, 1,247 million Btu per hour heat input rate when firing No. 2 fuel oil), each equipped with dual fuel multi-nozzle combustion burners with combustion air inlet humidification (cooling) system	CD-1 through CD-16	water injection system (one per turbine)
ES-17 and ES-18 PSD BACT	two No. 2 fuel oil fixed-roof storage tanks (5.5 million gallon capacity, each) with atmospheric vents	N/A	N/A
ES-19 PSD BACT, NSPS KKKK, NSPS TTTT	<p>one natural gas/No. 2 fuel oil-fired simple cycle internal combustion turbine equipped with dry low-NOx (DLN) combustors</p> <p>Combustion Turbine Configurations</p> <p>Version A Maximum Nominal Heat Input Rate, million Btu per hour (HHV) 3,668 (natural gas) 3,028 (No. 2 fuel oil)</p> <p>Version B Maximum Nominal Heat Input Rate, million Btu per hour (HHV) 3,764 (natural gas) 3,104 (No. 2 fuel oil)</p> <p>Version C Maximum Nominal Heat Input Rate, million Btu per hour (HHV) 5,224 (natural gas) 4,375 (No. 2 fuel oil)</p>	CD-19a	dilution selective catalytic reduction (DSCR) system (as required)
		CD-19b	oxidation catalyst (as required)
ES-20 PSD BACT	one No. 2 fuel oil fixed-roof storage tank (2.5 million gallon capacity) with conservation vent	N/A	N/A

SECTION 2 - SPECIFIC LIMITATIONS AND CONDITIONS

2.1 Emission Source(s) and Control Device(s) Specific Limitations and Conditions

The emission source(s) and associated air pollution control device(s) listed below are subject to the following specific terms, conditions, and limitations, including the monitoring, recordkeeping, and reporting requirements specifically identified herein as applicable requirements:

A. Sixteen natural gas/No. 2 fuel oil-fired simple-cycle internal combustion turbines (ID Nos. ES-1 through ES-16), each equipped with dual fuel multi-nozzle combustion burners with water injection capability (ID Nos CD-1 through CD-16) and combustion air inlet humidification (cooling) system

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Visible Emissions	20 percent opacity (except during startups, shutdowns, and malfunctions)	15A NCAC 02D .0521
Sulfur Dioxide	0.015 percent by volume at 15 percent oxygen and on a dry basis; -OR- shall not burn any fuel that contains total sulfur in excess of 0.8% by weight.	15A NCAC 02D .0524 (40 CFR Part 60, Subpart GG)
	See Section 2.4 Cross State Air Pollution Rule (CSAPR) requirements	40 CFR Part 97, Subpart CCCCC
Nitrogen Oxides	$STD = 0.0075 \left(\frac{14.4}{Y} \right) + F$ STD, Y, and F are defined by 40 CFR 60.332	15A NCAC 02D .0524 (40 CFR Part 60, Subpart GG)
	See Section 2.1 A.4 Comply with CAM procedures.	15A NCAC 02D .0614
	See Section 2.4 Cross State Air Pollution Rule (CSAPR) requirements	40 CFR Part 97, Subpart AAAAA
	Emissions shall be less than 384.2 tons from the May 1 to September 30 of each year	15A NCAC 02Q .0317 (PSD Avoidance)
Various	See Section 2.1 A.3 Emission limits, operating limits, fuel standards.	15A NCAC 02D .0530
Hazardous Air Pollutants	See Section 2.2 B.1 Facility-wide emission limit	15A NCAC 02Q .0317 (MACT Avoidance)
Nitrogen Oxides	State-enforceable Only Annual NOx report See Section 2.2 B.2	15A NCAC 02D .1425

1. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

- a. Visible emissions from these turbines (**ID Nos. ES-1 through ES-16**) shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 02Q .0508(f)]

- b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 A.1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

Monitoring [15A NCAC 02Q .0508(f)]

- c. To ensure compliance, the Permittee shall perform a Method 9 test for 1 hour using a preapproved protocol to be submitted in accordance with General Condition JJ before the source operates more than 1,100 hours using No. 2 fuel oil. This monitoring protocol shall be repeated before each subsequent 1,100 hours of operation using No. 2 fuel oil from the last test. The hours operated while burning No. 2 fuel oil under the alternative operating scenario as specified in Section 2.1 A.6 below shall count toward the 1,100 hours requirement. The hours of operation using natural gas do not count toward the 1,100 hours requirement. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these monitoring requirements are not met.
- d. No opacity monitoring is required to demonstrate compliance with 15A NCAC 02D .0521 while these turbines (**ID Nos. ES-1 through ES-16**) are burning natural gas.

Recordkeeping [15A NCAC 02Q .0508(f)]

- e. The results of the monitoring activities given in Section 2.1 A.1.c above shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
 - i. the date and time of each recorded action;
 - ii. the results of each observation and/or test noting those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
 - iii. the results of any corrective actions performed.The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not kept.
- f. The Permittee shall keep records for each turbine (**ID Nos. ES-1 through ES-16**) of the time spent operating on No. 2 fuel oil. The record shall indicate the elapsed time since the previous Method 9 test and the number of hours remaining until another Method 9 test is required. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not kept.

Reporting [15A NCAC 02Q .0508(f)]

- g. The Permittee shall submit the results of the Method 9 test as a part of the semiannual report described in Section 2.1 A.3.1 below. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 02D .0524: NEW SOURCE PERFORMANCE STANDARDS

- a. The Permittee shall comply with all applicable provisions, including the notification, testing, reporting, recordkeeping, and monitoring requirements in accordance with 15A NCAC 02D .0524, "New Source Performance Standards" (NSPS) as promulgated in 40 CFR Part 60, Subpart GG "Standards of Performance for Stationary Gas Turbines," including Subpart A "General Provisions."

NSPS Emissions Limitations [40 CFR 60.332 and 333]

- b. The following permit limits shall not be exceeded:
 - i. Nitrogen oxides (NO_x):

$$STD = 0.0075 \left(\frac{14.4}{Y} \right) + F$$

Where:

STD = allowable NO_x emission concentration (percent by volume at 15 percent oxygen and on a dry basis), corrected as allowed by 40 CFR 60.335(b)(1)

Y = manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour

F = NO_x emission allowance for fuel-bound nitrogen. See 40 CFR 60.332(a)(3) and (4).

- ii. Sulfur dioxide (SO₂):

(A) The Permittee shall not allow any turbine to emit SO₂ in excess of 0.015 percent by volume at 15 percent oxygen and on a dry basis;

-OR-

(B) The Permittee shall not burn any fuel that contains total sulfur in excess of 0.8% by weight.

Testing [15A NCAC 02Q .0508(f), 40 CFR 60.335]

- c. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limits given in Section 2.1 A.2.b above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

- d. In addition to any other monitoring requirements of the EPA, the Permittee is required to maintain records as follows:
- i. The sulfur content of the fuel being fired in each combustion turbine shall be monitored as specified in 40 CFR 60.334(b) to demonstrate compliance with the sulfur dioxide standard in 40 CFR 60.333, using the test methods and procedures in 40 CFR 60.335, except as follows:
 - (A) When firing fuel oil, as an alternate to sampling each occasion that fuel oil is transferred to each storage tank from any other source (as specified in 40 CFR 60.334(b)(1)), the Permittee may sample each tank to determine sulfur content after all shipments have been transferred into the tank and prior to placing the tank in service for supply to the turbines. Samples shall be analyzed for sulfur content in accordance with 40 CFR Part 75, Appendix D or any other DAQ approved method.
 - (B) When firing natural gas, the procedures from 40 CFR Part 75, Appendix D or any other DAQ approved method shall be used to sample and analyze sulfur content.
 - ii. As required by 40 CFR 60.334(a), using the test methods and procedures in 40 CFR 60.335(b) and (c), for each combustion turbine, a continuous monitoring device shall be installed, operated, calibrated, and maintained to monitor and record fuel consumption and the ratio of water-to-fuel being fired. This system shall be accurate to within ± 5.0 percent and must be approved by the DAQ prior to installation. The Permittee shall comply with the requirements of 40 CFR Part 60, Appendix B, Performance Specifications and Appendix F, Quality Assurance Procedures for continuous monitoring systems, installed on the turbines (ID Nos. ES-1 through ES-16).

If the water-to-fuel ratio, sulfur content, and/or the fuel consumption is not monitored as specified above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524.

Reporting [15A NCAC 02Q .0508(f)]

- e. In addition to any other reporting requirements to the EPA, the Permittee is required to REPORT the Regional Supervisor, DAQ, in WRITING, of the following:
- i. The reporting requirement for excess emissions for nitrogen oxides, as included in Section 2.1 A.3.1.iv below, shall be sufficient for the purpose of reports required under 40 CFR 60.7(c).
 - ii. The reporting requirement for excess emissions for sulfur dioxide, as included in Section 2.1 A.3.1.v below, shall be sufficient for the purpose of reports required under 40 CFR 60.7(c).

Alternative Operating Scenario

- f. The Permittee may comply with the requirements of the Alternative Operating Scenario (see Section 2.1 A.6) if the conditions listed in Paragraph 2.1 A.6.b are met.

3. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION

- a. The following Best Available Control Technology (BACT) limits shall not be exceeded:
- i. Short term maximum emission rates for each turbine, equipped with dual fuel multi-nozzle combustion burners and water injection for nitrogen oxides (NOx) emission control, when firing No. 2 fuel oil, shall not exceed:

POLLUTANT	BACT EMISSION LIMITS			
	lb/hr	lb/million Btu	other	BACT CONTROLS
Opacity	---	---	20 %	combustion control
SO ₂	240.70	0.193	---	0.2%w sulfur fuel oil
Particulate/PM-10	34.00	0.027	---	combustion control
NO _x	287.00	0.23	58 ppm	multi-nozzle combustor and maximum water injection
CO	60.00	0.048	---	combustion control

POLLUTANT	BACT EMISSION LIMITS			
	lb/hr	lb/million Btu	other	BACT CONTROLS
VOC	5.00	0.004	---	combustion control
Sulfuric Acid	25.10	0.02	---	0.2 %w sulfur fuel oil
Lead	0.075	0.00006	---	combustion control

- ii. Short term maximum emission rates for each turbine, equipped with dual fuel multi-nozzle combustion burners and water injection for NO_x emission control, when firing natural gas, shall not exceed:

POLLUTANT	BACT EMISSION LIMITS			
	lb/hr	lb/million Btu	other	BACT CONTROLS
Opacity	---	---	20 %	combustion control
SO ₂	0.70	0.0005	---	combustion control
Particulate/PM-10	5.00	0.004	---	combustion control
NO _x	119.00	0.095	25 ppm	multi-nozzle combustor and maximum water injection
CO	59.00	0.05	---	combustion control
VOC	2.00	0.002	---	combustion control

- iii. Long term total maximum emission rates from all turbines when firing either No. 2 fuel oil or natural gas shall not exceed:

POLLUTANT	BACT EMISSION LIMIT (tpy)
SO ₂	1,212.00
Particulate/PM-10	544.00
NO _x	3,600.00
CO	848.00
VOC	72.00
Sulfuric Acid	128.00
Lead	0.94

Testing [15A NCAC 02Q .0508(f)]

- b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limits given in Section 2.1 A.3.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

- c. The maximum annual hours of operation for each combustion turbine shall not exceed 2,500 hours per calendar year.
- d. Total combined hours of operation for all turbines shall not exceed a maximum of 32,000 hours per calendar year.
- e. The Permittee shall maintain records of the actual hours of operation for each combustion turbine. If the actual hours of operation for each combustion turbine are not maintained, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.
- f. The maximum sulfur content of the No. 2 fuel oil used in each combustion turbine shall not exceed 0.2 percent sulfur by weight.
- i. The Permittee shall determine the No. 2 fuel oil sulfur content in accordance with 40 CFR 60.334 at least quarterly or in accordance with written approval of any U.S. EPA approved custom fuel monitoring schedule, and

- ii. The Permittee shall take representative No. 2 fuel oil samples from the fuel oil storage tank designated to supply fuel to the turbines, prior to combustion of the fuel.

If the sulfur content of the No. 2 fuel oil is not monitored or the results of the monitored No. 2 fuel oil is above the limit included in Section 2.1 A.3.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

- g. The maximum fuel bound nitrogen (FBN) content of the No. 2 fuel oil, used in each combustion turbine, shall be less than 0.1 percent by weight (0.04 percent by volume),
 - i. The Permittee shall determine the No. 2 fuel oil nitrogen content in accordance with NSPS requirements contained in 40 CFR 60.334 at least quarterly or in accordance with written approval of any U.S. EPA approved custom fuel monitoring schedule, and
 - ii. The Permittee shall take representative No. 2 fuel oil samples from the fuel oil storage tank designated to supply fuel to the turbines, prior to combustion of the fuel.

If the nitrogen content of the No. 2 fuel oil is not monitored or the results of the monitored No. 2 fuel oil is above the limit included in Section 2.1 A.3.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

- h. The maximum No. 2 fuel oil heat input shall not exceed 1,247 million Btu per hour for each combustion turbine.
 - i. The maximum natural gas heat input shall not exceed a maximum of 1,313 million Btu per hour for each combustion turbine.
 - j. The combined emissions for all 16 combustion turbines shall not exceed a maximum sulfur dioxide emissions rate of 1,540 pounds per hour. To ensure this emission rate is not exceeded, the Permittee is limited to the following operational conditions and stipulations:
 - i. No. 2 fuel oil shall be supplied to the combustion turbines from only one of the two No. 2 fuel oil storage tanks at any one time,
 - ii. Once a tank begins supplying No. 2 fuel oil to the combustion turbines, no additional fuel shall be added to that particular storage tank,
 - iii. The sulfur content of the fuels shall be determined using American Society for Testing & Materials (ASTM) methods as follows:
 - (A) ASTM method D 2880-71, D 1552-90, or another method upon receipt of U.S. EPA written approval, shall be used to determine the sulfur content of the No. 2 fuel oil in each storage tank prior to combustion of the fuel in the combustion turbines, and
 - (B) ASTM D 1072-80, D 3031-81, D 4084-82, D 3246-81, ITT Barton M286, or another method upon receipt of U.S. EPA written approval shall be used to determine the sulfur content of the natural gas.
 - iv. The maximum averaged facility-wide sulfur dioxide emissions rate for any 60-minute period beginning on the hour shall be based on:
 - (A) The actual recorded natural gas and No. 2 fuel oil consumption as determined by requirements of 40 CFR 60.334(a),
 - (B) The sulfur content of the natural gas and No. 2 fuel oil as determined by requirements of 40 CFR 60.335(d),
 - (C) No less than six computer-generated emission calculations per hour, and
 - (D) The combined sulfur dioxide emissions rate for the natural gas and No. 2 fuel oil.
 - v. The Permittee shall determine and record the facility-wide sulfur dioxide emissions rate any time that five or more combustion turbines are being fired simultaneously.
- If the records of the facility-wide sulfur dioxide emissions rate are not maintained, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.
- k. Whenever five or more combustion turbines are in operation, the Permittee shall record the number of combustion turbines operated each hour and the pounds of sulfur dioxide emitted during each hour. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f)]

- l. The Permittee shall submit in writing the following reports, postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June:
 - i. The sulfur and nitrogen content in percent by weight of the No. 2 fuel oil;
 - ii. The maximum number of hours of operation of each combustion turbine for the previous 12-month period;
 - iii. The total combined hours of operation for all turbines for the previous 12 months period;

- iv. The periods of excess emissions for nitrogen oxides for any one-hour period during which the average water-to-fuel ratio, as measured by the continuous monitoring system, falls below the water-to-fuel ratio determined to demonstrate compliance with 40 CFR 60.332 by the performance test required in 40 CFR 60.8 or any period during which the fuel-bound nitrogen is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during the performance test required in 40 CFR 60.8. The excess emission report shall include the average water-to-fuel ratio, average fuel consumption, ambient conditions, gas turbine load, nitrogen content of fuel during the period of excess emissions, and the graphs and figures developed during the initial performance test;
- v. The periods of excess emissions for sulfur dioxide for any daily period during which the sulfur content of the fuel being fired exceeds 0.8 percent by weight; and
- vi. The records associated with Section 2.1 A.3.k above.

Alternative Operating Scenario

- m. The Permittee may comply with the requirements of the Alternative Operating Scenario (see Section 2.1 A.6) if the conditions listed in Paragraph 2.1 A.6.b are met.

4. 15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING

- a. For the sixteen combustion turbines (**ID Nos. ES-1 through ES-16**) and their associated water injection systems (**ID Nos. CD-1 through CD-16**), the Permittee shall comply with 40 CFR Part 64, pursuant to 15A NCAC 2D .0614, to assure that all listed emission sources and control devices comply with the NO_x emission standards listed in Sections 2.1 A.2 (NSPS Subpart GG) and 2.1 A.3 (PSD).

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

- b. The Permittee shall install a continuous monitoring device that monitors the water-to-fuel ratio, as required by Section 2.1 A.2.d.ii above.
- c. The Permittee shall record continuously:
 - i. the water-to-fuel ratio for each turbine, and
 - ii. the load on each turbine
- d. The Permittee shall calculate and record the hourly average water-to-fuel ratio for each turbine.
- e. An exceedance has occurred if the hourly average water-to-fuel ratio is less than the ratio used to determine compliance during the most recent emission testing. Periods of operation when the applicable emission standard is excused will not be considered when determining if an excursion has occurred.
- f. In the event of any exceedance, the Permittee shall take appropriate action to correct the exceedance as soon as practicable.
The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0614 if the monitoring and recordkeeping requirements in Sections 2.1 A.4.b through f are not followed.

Reporting [15A NCAC 2Q .0508(f)]

- g. The Permittee shall submit a summary report of all monitoring and recordkeeping activities required by Sections 2.1 A.4.c through f above, postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations for the requirements of this permit must be clearly identified. The report shall also include the following information, as applicable:
 - i. Summary information on the number, duration and cause (including unknown cause, if applicable) of exceedances (including periods of startup, shutdown, and AOS), as applicable, and the corrective actions taken; and
 - ii. Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable)

5. 15A NCAC 02Q .0317: AVOIDANCE CONDITIONS

for 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION

- a. In order to avoid the applicability of 15A NCAC 02D .0530 "Prevention of Significant Deterioration," as requested by the Permittee, nitrogen oxides (NO_x) emissions from these turbines (**ID Nos. ES-1 through ES-16**), while using combustion air inlet cooling humidification systems, shall be less than 384.2 tons from the first of May to the end of September of each year.

Testing [15A NCAC 02Q .0508(f)]

- b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 A.5.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

- c. Combustion air inlet cooling humidification systems may only be used from the May 1 to September 30 of each year (i.e., "the restricted period"). The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if the air inlet cooling humidification systems are used outside of the restricted period.
- d. The Permittee shall maintain records of NOx emissions from combustion turbines while using combustion air inlet humidification systems for each month during the restricted period. These records shall be derived from the Acid Rain monitoring data required by the Acid Rain Permit. The Permittee shall keep these records on file (electronic format acceptable) and make them available to DAQ personnel upon request. If the records of the NOx emissions are not maintained, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

Reporting [15A NCAC 02Q .0508(f)]

- e. Each calendar year, the Permittee shall submit a report to the Regional Supervisor, DAQ, postmarked on or before October 30. The report shall include:
 - i. The monthly NOx emissions from combustion turbines during combustion air humidification system use for each month of the restricted period,
 - ii. The cumulative total of NOx emissions from combustion turbines during combustion air humidification system use for each of the five months during the restricted period.

6. ALTERNATIVE OPERATING SCENARIO

- a. Under the alternative operating scenario (AOS), the Permittee shall be allowed to operate the following units at low load operation (1 - 27 MW) without the use of water injection control for intermittent periods of time over a 24-hour period.
 - i. Up to four (4) combustion turbine units if fired on natural gas, OR
 - ii. Up to four (4) combustion turbine units if fired on No. 2 fuel oil with a sulfur content $\leq 0.05\%$ (by weight) verified by an analysis using ASTM methods, OR
 - iii. One combustion turbine unit (except ES-1, ES-2, ES-9 and ES-10) if fired with sulfur content $\leq 0.2\%$ (by weight) verified by an analysis using ASTM methods.
- b. The AOS is necessitated in support of the Duke Power System Blackout Recovery Plan and shall be allowed only in the event of a catastrophic loss of all or a major part of the transmission grid, i.e., system blackout.

Monitoring/Recordkeeping [15A NCAC 2Q .0508(f)]

- c. The sulfur content of the fuels shall be determined using American Society for Testing & Materials (ASTM) method D 2880-71, D 1552-90, or another method upon receipt of U.S. EPA written approval, shall be used to determine the sulfur content of the No. 2 fuel oil in each storage tank prior to combustion of the fuel in the combustion turbines.
- d. The hours of operation for each turbine operated under the AOS shall be applied against the turbine's maximum annual hours of operation listed in Section 2.1 A.3.c.
- e. The combined hours of operation under the AOS shall be applied against the total combined hours of operation listed in Section 2.1 A.3.d.

Reporting [15A NCAC 2Q .0508(f)]

- f. The Permittee shall notify the Regional Supervisor by 9:00 a.m. Eastern Time of the Division's next business when initiating and terminating the AOS.
- g. The Permittee shall submit in writing the following reports postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June:
 - i. The maximum number of hours of operation of each combustion turbine operated under the AOS for the previous 12 months period, and
 - ii. The total combined hours of operation for all turbines operated under the AOS for the previous 12 months period.

B. Two No. 2 fuel oil, fixed-roof storage tanks with atmospheric vents (ID Nos. ES-17 and ES-18)

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Volatile Organic Compounds	13.30 tons per year, combined	15A NCAC 02D .0530
Hazardous Air Pollutants	Facility-wide emission limit See Section 2.2 B.1	15A NCAC 02Q .0317 (MACT Avoidance)

1. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION

- a. The following Best Available Control Technology (BACT) limit shall not be exceeded:
 - i. Long-term maximum emission rates for both storage tanks shall not exceed:

POLLUTANT	BACT EMISSION LIMIT (tpy)
VOC	13.30 total

Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0508(f)]

- b. The requirements of Section 2.1 A.3.d and h shall be sufficient to ensure compliance with the emission limit indicated in Section 2.1 B.1.a.i above. No monitoring/recordkeeping/reporting is required for emissions of volatile organic compounds from this source.

C. One natural gas/No. 2 fuel oil-fired simple cycle internal combustion turbine equipped with dry low-NO_x (DLN) combustors (ID No. ES-19) and associated dilution selective catalytic reduction (DSCR) system (ID No. CD-19a) and oxidation catalyst (ID No. CD-19b)

Combustion Turbine Configurations:

Version A

Maximum Nominal Heat Input Rate, million Btu per hour (HHV)g
3,668 (natural gas)
3,028 (No. 2 fuel oil)

Version B

Maximum Nominal Heat Input Rate, million Btu per hour (HHV)
3,764 (natural gas)
3,104 (No. 2 fuel oil)

Version C

Maximum Nominal Heat Input Rate, million Btu per hour (HHV)
5,224 (natural gas)
4,375 (No. 2 fuel oil)

The following table provides a summary of limits and/or standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Visible Emissions	Developmental Phases (Commissioning, Testing, and Validation) of Each Configuration (Versions A, B, and C) and Post-Developmental Operation 20 percent opacity	15A NCAC 02D .0521
Nitrogen Oxides	Developmental Phases (Commissioning, Testing, and Validation) of Each Configuration (Versions A, B, and C) None ¹ Post-Developmental Operation 15 ppm at 15 percent O ₂ each or 0.43 lb/MWh each [When firing natural gas] 42 ppm at 15 percent O ₂ each or 1.3 lb/MWh each [When firing No. 2 fuel oil] 96 ppm at 15 percent O ₂ each or 4.7 lb/MWh each [When firing natural gas or No. 2 fuel oil, turbine is operating at less than 75 percent peak load or turbine is operating at less than 0°F]	15A NCAC 02D .0524 [NSPS Subpart KKKK]
Sulfur Dioxide	Developmental Phases (Commissioning, Testing, and Validation) of Each Configuration (Versions A, B, and C) and Post-Developmental Operation 0.060 lb/million Btu heat input	15A NCAC 02D .0524 [NSPS Subpart KKKK]
Carbon Dioxide	Developmental Phases (Commissioning, Testing, and Validation) of Each Configuration (Versions A, B, and C) and	15A NCAC 02D .0524 [NSPS Subpart TTTT]

¹ Letter from William Willets, Chief, Permitting Section, Division of Air Quality, NCDEQ, to Michael Brissie, Station Manager, Duke Energy Corporation LCTS, June 8, 2017.

Pollutant	Limits/Standards	Applicable Regulation
	<p>Post-Developmental Operation</p> <p>120 lb CO₂/million Btu for combustion turbine that supplies its design efficiency or 50 percent, whichever is less, times its potential electric output or less as net-electric sales on either a 12-operating month or a 3-year rolling average basis and combusts more than 90% natural gas on a heat input basis on a 12-operating-month rolling average basis</p> <p>120 lb/million Btu to 160 lb/million Btu for combustion turbine that combusts 90% or less natural gas on a heat input basis on a 12-operating-month rolling average basis</p>	
Carbon Monoxide Volatile Organic Compounds (as methane) Nitrogen Oxides (as NO ₂) Particulate Matter PM ₁₀ PM _{2.5}	<p>Developmental Phases (Commissioning, Testing, and Validation) of Each Configuration (Versions A, B, and C) and Post-Developmental Operation</p> <p>See Section 2.2 A.1</p>	15A NCAC 02D .0530
Greenhouse Gases (as CO ₂ e)	<p>Developmental Phases (Commissioning, Testing, and Validation) of Each Configuration (Versions A, B, and C) and Post-Developmental Operation</p> <p>See Section 2.2 A.1</p>	15A NCAC 02D .0544
Nitrogen Oxides	<p>Developmental Phases (Commissioning, Testing, and Validation) of Each Configuration (Versions A, B, and C) and Post-Developmental Operation</p> <p>See Section 2.1 C.4</p>	15A NCAC 02D .1418
Nitrogen Oxides Sulfur Dioxide	<p>See Section 2.4</p> <p>Developmental Phases (Commissioning, Testing, and Validation) of Each Configuration (Versions A, B, and C) and Post-Developmental Operation</p>	40 CFR 97, Subparts AAAAA and CCCCC
Hazardous Air Pollutants	<p>Facility-wide emission limit</p> <p>See Section 2.2 B.1</p>	15A NCAC 02Q .0317 (MACT Avoidance)
Nitrogen Oxides	<p>State-enforceable only</p> <p>Annual NO_x report</p> <p>See Section 2.2 B.2</p>	15A NCAC 02D .1425

1. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

- a. Visible emissions when burning natural gas or No. 2 fuel oil in combustion turbine (**ID No. ES-19**), during developmental phases (commissioning, testing, and validation) of each configuration (Versions A, B, and C) and post-developmental operation, shall not be more than 20 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

Testing [15A NCAC 02Q .0308(a)(1)]

- b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 C.1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0308(a)(1)]

- c. No monitoring/recordkeeping/reporting is required for this source (**ID No. ES-19**) while the source is burning natural gas or No. fuel oil.

2. 15A NCAC 02D .0524: NEW SOURCE PERFORMANCE STANDARDS

- a. The Permittee shall comply with all applicable provisions, including the requirements for emission standards, notification, testing, reporting, record keeping, and monitoring, contained in Environmental Management Commission Standard 15A NCAC 02D .0524 “New Source Performance Standards” (NSPS) as promulgated in 40 CFR Part 60, Subpart KKKK “Standards of Performance for Stationary Combustion Turbines,” including Subpart A “General Provisions.”
- b. The combustion turbine (**ID No. ES-19**) shall be exempt from NO_x standards during developmental phases (commissioning, testing, and validation) of each configuration (Versions A, B, and C) as per the determination.² [40 CFR 60.4310(b)]
- c. Upon commencement of post-developmental operation of combustion turbine (**ID No. ES-19**), the Permittee shall comply with applicable NO_x emission standards, testing, monitoring, recordkeeping, notifications, and reporting requirements. [40 CFR 60.4305(a)]

Emission Limitations [15A NCAC 02Q .0508(b)]

- d. NO_x emissions (except during startup, shutdowns, and malfunction) from the combustion turbine (**ID No. ES-19**) shall not exceed the following: [40 CFR 60.4320 and Table 1 to 40 CFR 60 Subpart KKKK]

Fuel Type	Operating Conditions*	NO _x Limit at 15 percent O ₂
Natural Gas	75 percent of peak load or higher	15 ppm
	when operating at less than 75 percent of peak load or operating at less than 0°F	96 ppm
No. 2 Fuel Oil	75 percent of peak load or higher	42 ppm
	when operating at less than 75 percent of peak load or operating at less than 0°F	96 ppm

* Peak load defined as the design capacity at ISO conditions.

- e. If the total heat input to the combustion turbine (**ID No. ES-19**) is greater than or equal to 50 percent natural gas, the Permittee shall meet the corresponding NO_x emission limit in Section 2.1.C.2.d above for natural gas when the Permittee is burning that fuel. Similarly, when the total heat input to the combustion turbine is greater than 50 percent No. 2 fuel oil, the Permittee shall meet the corresponding emission limit in Section 2.1.C.2.d above for No. 2 fuel oil for the duration of the time that the Permittee burns No. 2 fuel oil. [40 CFR 60.4325]
- f. The Permittee shall not allow any fuel to be burned in the combustion turbine (**ID No. ES-19**), during developmental phases (commissioning, testing, and validation) of each configuration (Versions A, B, and C) and post-developmental operation, which contains total potential sulfur emissions in excess of 0.060 pounds SO₂ per million Btu heat input. [40 CFR 60.4330(a)(2)]

Testing [15A NCAC 02Q .0508(f)]

- g. The following NO_x testing requirements apply:
- The Permittee shall demonstrate compliance with the NO_x emission limits in Section 2.1 C.2.d above by conducting initial and subsequent performance tests as required by 40 CFR 60.8 and 40 CFR 60.4400(b)(5).
 - The initial NO_x performance test shall be conducted within 60 days after achieving the maximum production rate of post-developmental operation at which the affected facility will be operated, but not later than 180 days after initial startup of post-developmental operation for combustion turbine (**ID No. ES-19**). [40 CFR 60.8]
- The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if these testing requirements are not met.

² Letter from William Willets, Chief, Permitting Section, Division of Air Quality, NCDEQ, to Michael Brissie, Station Manager, Duke Energy Corporation LCTS, June 8, 2017.

- h. Since the Permittee has chosen to install and certify a NO_x CEMS pursuant to 40 CFR 60.4345, the Permittee shall perform the initial performance test according to 40 CFR 60.4405 and meet the requirements of Section 2.1 C.2.k below. [40 CFR 60.4405 and 60.4340(b)] The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if these testing requirements are not met.
- i. The following SO₂ testing requirements apply:
 - i. The Permittee shall conduct initial and subsequent performance tests for SO₂ on combustion turbine (**ID No. ES-19**) as required by and in accordance with 40 CFR 60.8 and 60.4415.
 - ii. The initial SO₂ performance test shall be conducted within 180 days of initial start-up, for both natural gas and fuel oil firing, or within 60 days after the unit achieves maximum production for either natural gas or No. 2 fuel oil firing, whichever occurs first, unless an alternate date is approved by the DAQ. [40 CFR 60.8]
 - iii. Subsequent SO₂ performance tests shall be conducted on an annual basis (no more than 14 calendar months following the previous performance test). The three methodologies in 40 CFR 60.4415(a) may be used to conduct the performance tests. [40 CFR 60.4415(a)]
 - iv. The Permittee can opt for fuel sulfur determination as per Section 2.1 C.2.l below to comply with the SO₂ emission limit in lieu of stack testing requirements in this Section 2.1 C.2.i. If the Permittee chooses to opt for fuel sulfur determination to comply with the SO₂ emission limit, the Permittee shall perform monitoring in accordance with Section 2.1 C.2.l below. [40 CFR 60.4415(a)(1)]The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if these testing requirements are not met.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

- j. The Permittee shall operate and maintain the combustion turbines, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown and malfunction. [40 CFR 60.4333]
- k. The Permittee shall comply with the following NO_x monitoring and recordkeeping requirements:
 - i. The Permittee shall install, calibrate, maintain and operate a continuous emissions monitoring system (CEMS) consisting of NO_x and O₂ monitors, to determine the hourly NO_x emission rate in parts per million (ppm). [40 CFR 60.4340(b), and 60.4335(b)]
 - ii. The CEMS shall meet the installation, certification and operating requirements of 40 CFR 60.4345.
 - iii. Hourly average NO_x emission rates shall be calculated pursuant to 40 CFR 60.4350(a) through (f). The hourly average NO_x emission rates shall be used to assess excess emissions on a 4-hour rolling average basis, as described in 40 CFR 60.4380(b)(1). [40 CFR 60.4350(g)]The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if these requirements are not met.
- l. If the Permittee opts to determine fuel sulfur to comply with the limit in Section 2.1 C.2.f above, the Permittee shall monitor total sulfur content of the fuel being fired in the combustion turbine (**ID No. ES-19**), except as provided in 40 CFR 60.4365 (See Section 2.1 C.2.m below). The sulfur content of the fuel shall be determined using total sulfur methods in 40 CFR 60.4415. Alternatively, the Permittee can use the methods listed in 40 CFR 60.4360 if the total sulfur content of the gaseous fuel during the most recent performance test was less than half the fuel sulfur content limit in Section 2.1 C.2.f above. [40 CFR 60.4360]
 - i. For fuel oil, the Permittee shall use one of the total sulfur sampling options and the associated sampling frequency described in sections 2.2.3, 2.2.4.1, 2.2.4.2, and 2.2.4.3 of appendix D to 40 CFR Part 75 (i.e., flow proportional sampling, daily sampling, sampling from the unit's storage tank after each addition of fuel to the tank, or sampling each delivery prior to combining it with fuel oil already in the intended storage tank). [40 CFR 60.4370(a)]
 - ii. The Permittee shall determine sulfur content value of natural gas once per unit operating day if the fuel is supplied without intermediate bulk storage, and the Permittee is not demonstrating fuel sulfur content using the options in 40 CFR 60.4365. [40 CFR 60.4370(b)]
 - iii. The Permittee can develop custom fuel schedules to determine total sulfur content of gaseous fuels or the Permittee can use one of two approved custom schedules in 40 CFR 60.4370(c)(1) and (2) without prior EPA approval. [40 CFR 60.4370(c)]
- m. As an alternate to Section 2.1 C.2.l above, the Permittee can choose not to monitor the total potential sulfur emissions of the fuel combusted in the turbine (**ID Nos. ES-19**), if it can be demonstrated that the potential sulfur emissions do not exceed 0.060 lb SO₂/million Btu emission limit. [40 CFR 60.4365]

- i. The Permittee can perform this demonstration by using the fuel quality characteristics in a current, valid purchase contract, tariff sheet, or transportation contract for the fuel, specifying that the maximum total sulfur content for the oil is 0.05 weight percent (500 ppmw) or less, the total sulfur content for the natural gas is 20 grains of sulfur or less per 100 standard cubic feet and has the potential sulfur emissions of less than 0.060 lb SO₂/million Btu. [40 CFR 60.4365(a)]
- ii. The other option for this demonstration is through representative fuel sampling data showing that the potential sulfur emissions of the fuel do not exceed 0.060 lb SO₂/million Btu. In this case, the Permittee shall provide at a minimum the amount of data in Section 2.3.1.4 or 2.3.2.4. of Appendix D of Part 75. [40 CFR 60.4365(b)]
- n. The Permittee shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. [40 CFR 60.7(b)] The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if these recordkeeping requirements are not met.
- o. The Permittee shall maintain records of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part recorded in a permanent form suitable for inspection. The records shall be retained for at least two years following the date of such measurements, maintenance, reports, and records, except as allowed pursuant to CFR 60.7(f). [40 CFR 60.7(f)] The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if these recordkeeping requirements are not met.

Reporting [15A NCAC 02Q .0508(f)]

- p. The Permittee shall submit a notification of the date of initial start-up of combustion turbine (**ID No. ES-19**) in post-developmental operation, postmarked within 15 days after such date. [40 CFR 60.7(a)(3)]
- q. The Permittee shall provide the DAQ with a notification of the date upon which demonstration of the continuous monitoring system performance commences in accordance with 40 CFR 60.13(c). Notification shall be postmarked not less than 30 days prior to such date. [40 CFR 60.7(a)(5)]
- r. The Permittee shall submit a written report of the results of each performance test before the close of business on the 60th day following the completion of the performance test. [40 CFR 60.4375(b) and 60.8(a)]
- s. The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified. The report shall include:
 - i. An excess emissions and monitor downtime report. Excess emissions must be reported for all periods of unit operation, including start-up, shutdown, and malfunction. The report shall contain the information required pursuant 40 CFR 60.7(c) and (d). The emissions and monitoring system performance results shall be calculated on a quarterly basis. The format for the report will be provided by the DAQ. [40 CFR 60.4375(a), 40 CFR 60.4395, and 40 CFR 60.7(c)]
 - ii. A summary report of the fuel purchase contracts, tariff sheets or transportation contracts indicated in Section 2.1 C.2.m above.
 - iii. If the Permittee chooses the option to monitor the sulfur content of the fuel, excess emissions and monitoring downtime shall be defined as follows:
 - (A) For samples of gaseous fuel, an excess emission occurs each unit operating hour included in the period beginning on the date and hour of any sample for which the sulfur content of the fuel being fired in the combustion turbine exceeds the applicable limit and ending on the date and hour that a subsequent sample is taken that demonstrates compliance with the sulfur limit.
 - (B) If the option to sample each delivery of fuel oil has been selected, the Permittee shall immediately switch to one of the other oil sampling options (i.e., daily sampling, flow proportional sampling, or sampling from the unit's storage tank) if the sulfur content of a delivery exceeds 0.05 weight percent. The Permittee shall continue to use one of the other sampling options until all of the oil from the delivery has been combusted, and the Permittee shall evaluate excess emissions according to this Section 2.1 C.2.s(iii). When all of the fuel from the delivery has been burned, the Permittee may resume using the as-delivered sampling option.
 - (C) A period of monitor downtime begins when a required sample is not taken by its due date. A period of monitor downtime also begins on the date and hour of a required sample, if invalid results are obtained. The period of monitor downtime ends on the date and hour of the next valid sample. [40 CFR 60.4385]
 - iv. For NO_x, excess emissions is defined at 40 CFR 60.4380(b)(1).
 - v. For NO_x, monitor downtime is defined at 40 CFR 60.4380(b)(2).

- vi. For operating periods during which multiple NOx emissions standards apply, the applicable standard is the average of the applicable standards during each hour. For hours with multiple NOx emissions standards, the applicable limit for that hour is determined based on the condition that corresponded to the highest emissions standard. [40 CFR 60.4380(b)(3)].

3. 15A NCAC 02D .0524: NEW SOURCE PERFORMANCE STANDARDS

- a. The Permittee shall comply with all applicable provisions, including the requirements for emission standards, notification, testing, reporting, record keeping, and monitoring, contained in Environmental Management Commission Standard 15A NCAC 02D .0524 “New Source Performance Standards” (NSPS) as promulgated in 40 CFR Part 60, Subpart TTTT “Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units,” including Subpart A “General Provisions.”

Emission Standards [15A NCAC 02D .0524]

- b. The Permittee shall comply with the following standards for Greenhouse Gas emissions from combustion turbine (**ID No. ES-19**), during developmental phases (commissioning, testing, and validation) of each configuration (Versions A, B, and C) and post-developmental operation:

120 lb CO₂/million Btu for combustion turbine that supplies its design efficiency or 50 percent, whichever is less, times its potential electric output or less as net-electric sales on either a 12-operating month or a 3-year rolling average basis and combusts more than 90% natural gas on a heat input basis on a 12-operating-month rolling average basis

120 lb/million Btu to 160 lb/million Btu for combustion turbine that combusts 90% or less natural gas on a heat input basis on a 12-operating-month rolling average basis.

[40 CFR 60.5520(a) and Table 2 to Subpart TTTT]

Monitoring/Recordkeeping/Reporting [15A NCAC 02Q .0308(a)(1)]

- c. The Permittee shall keep purchase records of natural gas and No. 2 fuel oil.
[40 CFR 60.5520(d) and (d)(1), and 60.5535(a)]
- d. The Permittee shall follow all applicable recordkeeping requirements and keep records as required under Subpart F of Part 75 (40 CFR), and submit notifications specified in 40 CFR 75.61, as applicable.
[40 CFR 60.5550(b) and 60.5560(b)(1)]
- e. The records required pursuant to Subpart TTTT shall be in a form suitable and readily available for expeditious review. In addition, the Permittee shall maintain each record for 3 years after the date of conclusion of each compliance period. The Permittee shall maintain each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 60.7. Records that are accessible from a central location by a computer or other means that instantly provide access at the site meet this requirement. The Permittee may maintain the records off site for the remaining year(s) as required by this Subpart.
[40 CFR 60.5565(c)]

4. 15A NCAC 02D .1418: NEW ELECTRIC GENERATING UNITS, LARGE BOILERS, AND LARGE I/C ENGINES

- a.
 - i. NOx emissions from combustion turbine (**ID No. ES-19**) shall not exceed 0.15 lb/million Btu when firing natural gas and 0.18 lb/million Btu when firing No. 2 fuel oil or the NOx emissions from this turbine shall not exceed BACT emission limits established under Section 2.2 A.1.b below, whichever requires the greater degree of reduction.
 - ii. The Permittee shall comply with the NOx emission limits (0.15 lb/million Btu and 0.18 lb/million Btu, as applicable), in Section 2.1 C.5.a for combustion turbine (**ID No. ES-19**) when firing natural gas or No. 2 fuel oil, during developmental phases (commissioning and testing only) of each configuration (Versions A, B, and C).

- iii. The BACT emission limits in Section 2.2 A.1.b below for combustion turbine (ID No. ES-19), when firing natural gas and No. 2 fuel oil, for developmental phase (validation only) of each configuration (Versions A, B, and C) and post-developmental operation, are more stringent than NOx emission limits in Section 2.1 C.4.a above. The Permittee shall comply with NOx emission limits in Section 2.2 A.1.b below during developmental phase (validation only) of each configuration (Versions A, B, and C) and post-developmental operation, instead of emission limits in this Section 2.1 C.4.a.

Testing [15A NCAC 02D .0308(a)(1)]

- b. The NOx testing requirements in Section 2.2 A.1.i below shall be sufficient to demonstrate compliance with 15A NCAC 02D .1418.

Monitoring/Recordkeeping [15A NCAC 02D .1418(d), and 15A NCAC 02D .1404(a) and (d)]

- c. The NOx CEMS requirements in Section 2.2 A.1.m below shall be sufficient to ensure compliance with 15A NCAC 02D .1418. The Permittee shall determine nitrogen oxide emissions from May 1 to September 30 of each year (i.e., the “ozone season”). A 24-hour block average shall be recorded for each day to determine compliance, as described under 15A NCAC 02D .0606, beginning May 1 through September 30.

Reporting [15A NCAC 02D .1404(a)]

- d. The Permittee shall submit the continuous emissions monitoring system data showing the 24-hour daily block values for periods of excess nitrogen oxide emissions postmarked on or before October 30 of each calendar year for the previous ozone season. If no excess emissions were measured during the ozone season, the Permittee shall submit a summary report stating that there were no excess emissions for the ozone season.
- e. CEMS Monitor Availability - The Permittee shall submit the nitrogen oxide CEMS monitor downtime reports, including monitor availability values (as calculated for 40 CFR Part 75) for the last hour of the reporting period, postmarked on or before October 30 of each calendar year for the previous ozone season.

D. One No. 2 fuel oil, fixed-roof storage tank (ID No. ES-20) with conservation vent

The following table provides a summary of limits and standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Volatile Organic Compounds	See Section 2.2 A.1	15A NCAC 02D .0530
Hazardous Air Pollutants	Facility-wide emission limit See Section 2.2 B.1	15A NCAC 02Q .0317 (MACT Avoidance)

2.2 Multiple Emission Source(s) Specific Limitations and Conditions

A. The following Sources:

- One natural gas/No. 2 fuel oil-fired simple cycle internal combustion turbine equipped with dry low-NO_x (DLN) combustors (ID No. ES-19) and associated dilution selective catalytic reduction (DSCR) system (ID No. CD-19a) and oxidation catalyst (ID No. CD-19b)
- One No. 2 fuel oil, fixed-roof storage tank (ID No. ES-20) with conservation vent

The following table provides a summary of limits and/or standards for the emission source(s) described above:

Pollutant	Limits/Standards	Applicable Regulation
Carbon Monoxide Volatile Organic Compounds (as CH ₄) Nitrogen Oxides (as NO ₂) Particulate Matter PM ₁₀ PM _{2.5}	See Section 2.2 A.1	15A NCAC 02D .0530
Greenhouse Gases	See Section 2.2 A.1	15A NCAC 02D .0544

1. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION, and 15A NCAC 02D .0544: PREVENTION OF SIGNIFICANT DETERIORATION FOR GREENHOUSE GASES

- The Permittee shall comply with emission limits, testing, monitoring, recordkeeping, and reporting requirements, in accordance with 15A NCAC 02D .0530, "Prevention of Significant Deterioration of Air Quality" and 02D .0544 "Prevention of Significant Deterioration for Greenhouse Gases".
- The Permittee shall comply with the following Best Available Control Technology (BACT):

EMISSION SOURCE	REGULATED NSR Pollutant	BACT	Control Description
Combustion Turbine (ID No. ES-19)	CO	10 ppmvd @ 15% O ₂ , 24-hour rolling average, using CEMS, natural gas or No. 2 fuel oil firing [Includes all periods of operation (normal, startup, shutdown, and malfunction) during all developmental phases (commissioning, testing, and validation) of each configuration (Versions A, B and C)]* 4 ppmvd @ 15% O ₂ , 24-hour rolling average, using CEMS, natural gas or No. 2 fuel oil firing [Includes all periods of operation (normal, startup, shutdown, and malfunction) during post-developmental operation]**	Good combustion control Good combustion control and oxidation catalyst

EMISSION SOURCE	REGULATED NSR Pollutant	BACT	Control Description
Combustion Turbine (ID No. ES-19)	VOC (as CH ₄)	3 ppmvd @ 15% O ₂ , 3-run stack test average, natural gas or No. 2 fuel oil firing [Includes all periods of operation (normal, startup, shutdown, and malfunction) during all developmental phases (commissioning, testing, and validation) of each configuration (Versions A, B and C)]	Good combustion control
		2 ppmvd @ 15% O ₂ , 3-run stack test average, natural gas or No. 2 fuel oil firing [Includes all periods of operation (normal, startup, shutdown, and malfunction) during post-developmental operation]	Good combustion control and oxidation catalyst
Combustion Turbine (ID No. ES-19)	NO _x (as NO ₂)	45 ppmvd @ 15% O ₂ , 4-hour rolling average, using CEMS, natural gas or No. 2 fuel oil firing [Includes all periods of operation (normal, startup, shutdown, and malfunction) during developmental phases (commissioning and testing only) of each configuration (Versions A, B and C)]	DLN
		9 ppmvd @ 15% O ₂ , 4-hour rolling average, using CEMS, natural gas firing 12 ppmvd @ 15% O ₂ , 4-hour rolling average, using CEMS, No. 2 fuel oil firing [Includes all periods of operation (normal, startup, shutdown, and malfunction) during developmental phase (validation only) of each configuration (Versions A, B and C) and post-developmental operation]	DLN and DSCR
Combustion Turbine (ID No. ES-19)	PM ₁₀ / PM _{2.5}	20.9 lb/hr, 3-run stack test average, natural gas firing 38 lb/hr, 3-run stack test average, No. 2 fuel oil firing [Includes all periods of operation (normal, startup, shutdown, and malfunction) during all developmental phases (commissioning, testing, and validation) of each configuration (Versions A, B and C) and post-developmental operation]	use of clean fuels: natural gas and No. 2 fuel oil (ultra-low sulfur diesel with 15 ppm maximum fuel sulfur), and good combustion control
	PM ³	12.54 lb/hr, 3-run stack test average, natural gas firing 22.80 lb/hr, 3-run stack test average, No. 2 fuel oil firing [Includes all periods of operation (normal, startup, shutdown, and malfunction) during all developmental phases (commissioning, testing, and validation) of each configuration (Versions A, B and C) and post-developmental operation]	use of clean fuels: natural gas and No. 2 fuel oil (ultra-low sulfur diesel with 15 ppm maximum fuel sulfur), and good combustion control

³ Filterable only.

EMISSION SOURCE	REGULATED NSR Pollutant	BACT	Control Description
Combustion Turbine (ID No. ES-19)	GHG	<p>120 lb CO₂ per million Btu, 3-run stack test average, natural gas firing (more than 90 percent natural gas on a heat input basis on a 12-month rolling basis)</p> <p>120-160 lb CO₂ per million Btu, 3-run stack test average, multi-fuel firing (i.e., 90 percent or less natural gas firing on a 12-month rolling basis)</p> <p>1,401,411 tons CO₂e per 12-month rolling average</p> <p>[Includes all periods of operation (normal, startup, shutdown, and malfunction) during all developmental phases (commissioning, testing, and validation) of each configuration (Versions A, B and C) and post-developmental operation]</p>	use of clean fuels: natural gas and No. 2 fuel oil (ultra-low sulfur diesel with 15 ppm maximum fuel sulfur), and proper design and operation of combustion turbine
No. 2 Fuel Oil Storage Tank	VOC	<p>1.4 tons per 12-month rolling average</p> <p>[Includes all periods of operation (normal, startup, shutdown, and malfunction)]</p>	use of a light-colored fixed roof tank, submerged fill and a conservation vent, and storage of only low vapor pressure No. 2 fuel oil

* Emissions resulting from startup or shutdown exceeding the CO BACT are permitted provided that optimal operational practices are adhered to and periods of excess emissions are minimized. Periods of excess emissions due to startup and/or shutdown or operation below 50% load shall not exceed 4 hours in any 24-hour block period beginning at midnight when burning natural gas. Periods of excess emissions due to startup and/or shutdown or operation below 70% load shall not exceed 4 hours in any 24-hour block period beginning at midnight when burning fuel oil. Startup is defined as the period from initial firing to 50% load or 70% load, when burning natural gas or fuel oil, respectively. Shutdown is defined as the period from 50% load or 70% load to flame out when burning natural gas or fuel oil, respectively.

** Emissions resulting from startup or shutdown exceeding the CO BACT are permitted provided that optimal operational practices are adhered to and periods of excess emissions are minimized. Periods of excess emissions due to startup and/or shutdown or operation below 50% load shall not exceed 2 hours in any 24-hour block period beginning at midnight when burning natural gas. Periods of excess emissions due to startup and/or shutdown or operation below 70% load shall not exceed 2 hours in any 24-hour block period beginning at midnight when burning fuel oil. Startup is defined as the period from initial firing to 50% load or 70% load, when burning natural gas or fuel oil, respectively. Shutdown is defined as the period from 50% load or 70% load to flame out when burning natural gas or fuel oil, respectively.

- c. The following emission limits shall apply for combustion turbine (**ID No. ES-19**), demonstrating compliance with the National Ambient Air Quality Standards and the PSD increments⁴, as required by 15A NCAC 02D .0530 and 40 CFR 51.166(k):

Pollutant	Fuel	Emission Limit (lb/hr)					Annual average
		1-hr average					
NO ₂		Base Load	80% Load	70% Load	Startup	Shutdown	N/A
	Natural gas	857.8	635.3	251.4	458.8	134.7	
	Fuel oil	719.4	524.97	513.1	679.4	406.0	

- d. The Permittee shall minimize emissions to the maximum extent possible during startup and shutdown periods.

⁴No PSD increments currently exist for NO₂ (1-hour average) for Class I Area, Class II Area, or Class III Area, in accordance with 40 CFR 51.166(c) "Ambient Air Increments and Other Measures".

- e. The Permittee shall limit the operation of combustion turbine (**ID No. ES-19**) to no more than 4,677 combined total full load equivalent hours of operation for natural gas and fuel oil for each configuration (Version A, B, and C) per consecutive 12-month period, during normal operations, startups, shutdowns, malfunctions, commissioning, testing, and validations.
- f. The Permittee shall limit the operation of combustion turbine (**ID No. ES-19**) to no more than 4,677 combined total full load equivalent hours of operation for natural gas and fuel oil firing for post-development operation per consecutive 12-month period, during normal operations, startups, shutdowns, malfunctions, commissioning, testing, and validations.
- g. The maximum throughput for No. 2 fuel oil for storage tank (**ID No. ES-20**) shall not exceed 59,400,000 gallons per consecutive 12-month period.

Testing [15A NCAC 02D .0308(a)(1)]

- h. The Permittee shall demonstrate compliance with the BACT for CO, VOC, NOx, PM, PM10, PM2.5, and GHG, in Section 2.2 A.1.b above, by testing combustion turbine (**ID No. ES-19**) within 180 days of initial start-up of configuration Version A and post-developmental operation. Details of the emissions testing and reporting requirements can be found in General Condition JJ.
 - i. Each performance test shall be conducted at ± 25 percent of 100 percent peak load or at the highest achievable load point if at least 75 percent peak load cannot be achieved in practice. Three runs shall be required for each performance test and each run shall last for a minimum 20 minutes. Separate performance testing is required for each fuel and each pollutant. The Permittee shall not conduct any test run if the ambient temperature is at or below 0°F.
 - ii. During stack testing, the Permittee shall conduct an evaluation for a need to operate an oxidation catalyst, for demonstrating compliance with the BACTs for CO and VOC during each configuration (Versions A, B and C). If the Permittee determines that a continuous operation of oxidation catalyst is required to comply with the BACTs for CO and VOC, during each configuration (Versions A, B and C), the Permittee shall establish minimum inlet temperature to the oxidation catalyst for ensuring continuous compliance with the BACTs for these pollutants.
 - iii. During stack testing, the Permittee shall, if required, establish minimum inlet temperature to the oxidation catalyst for ensuring continuous compliance with the CO and VOC BACTs in Section 2.2 A.1.b above, during all periods of operation (normal, startup, shutdown, and malfunction) in post-developmental operation.
 - iv. No stack testing for VOC BACT shall be required for No. 2 fuel oil storage tank (**ID No. ES-20**).

Monitoring/Recordkeeping [15A NCAC 02Q .0308(a)(1)]

- i. Pursuant to Section 2.2 A.1.e above, the Permittee shall record and maintain records of the actual number of hours of operation for combustion turbine (**ID No. ES-19**) for each configuration (Versions A, B, and C), during normal operations, startups, shutdowns, malfunctions, commissioning, testing, and validation.
- j. Pursuant to Section 2.2 A.1.f above, the Permittee shall record and maintain records of the actual number of hours of operation for combustion turbine (**ID No. ES-19**) for post-developmental operation, during normal operations, startups, shutdowns, and malfunctions.
- k. The Permittee shall monitor NOx emissions from the combustion turbine (**ID No. ES-19**) using a CEMS during all periods of operation (normal, startup, shutdown, and malfunction) in developmental phases (commissioning, testing, and validation) of each configuration (Versions A, B and C) and post-developmental operation. The NOx CEMS shall meet the requirements in 40 CFR 60.4335(b) and 60.4345.
- l. In addition to the NOx emissions monitoring requirement in Section 2.2 A.1.k above, the Permittee shall comply with the following requirements for NOx emissions from the combustion turbine (**ID Nos. ES-19**), during developmental phase (validation only) of each configuration (Versions A, B and C) and post-developmental operation.
 - i. The Permittee shall install and operate an ammonia flow meter to measure and record the ammonia injection rate to the DSCR system associated with the combustion turbine. The ammonia injection rate shall be established during the performance test in Section 2.2 A.1.h above, demonstrating compliance with the NOx BACT in Section 2.2 A.1.b above, and made available to the Division of Air Quality upon request.
 - ii. The DSCR shall operate at all times that the turbine is operating, except during turbine start-up and shutdown periods, to the extent recommended by the manufacturer and operated in a manner so as to minimize ammonia slip.

- iii. During NO_x CEMS downtimes or malfunctions, the Permittee shall operate at ammonia injection rates determined during the performance test in Section 2.2 A.1.h above. In the case of a missing hour in conjunction with a Calibration Error Test or a Quarterly Linearity Test, the ammonia injection rate for the hour following the referenced test shall be adjusted to the injection rate determined during the performance test in Section 2.2 A.1.h above, until a valid data status has been achieved.
- iv. NO_x CEMS data reported to meet the requirements of this section shall include data substituted using the missing data procedures in Subpart D of 40 CFR Part 75 except that unbiased values may be used. The missing data procedure shall be used whenever the emission unit combusts any fuel.
- m. The Permittee shall monitor CO emissions from combustion turbine (**ID No. ES-19**), during all periods of operation (normal, startup, shutdown, and malfunction) in developmental phases (commissioning, testing, and validation) of each configuration (Versions A, B and C) and post-developmental operation, using a CEMS, meeting the requirements in Performance Specification 4A, Appendix B, Part 60, Chapter 40, Code of Federal Regulation, and 15A NCAC 02D .0613.
 - i. A Cylinder Gas Audit (“CGA”) shall be conducted at least once each QA operating quarter on the CO CEMS in accordance with 40 CFR Part 60, Appendix F – Procedure 1, 40 CFR 5.1.2 and 5.2.3(2) instead of once every calendar quarter. A QA operating quarter is defined as a calendar quarter in which the unit operates at least 168 unit operating hours, and an operating hour is a clock hour during which the unit combusts any fuel, either for part of or the entire hour. Regardless of the number of hours of operation, at a minimum, a CGA shall be conducted at least once every four calendar quarters on the CO CEMS consistent with the requirements in 40 CFR Part 75, Appendix B, 40 CFR 2.2.3(f). Notwithstanding these requirements, if the CO span value for a particular monitor range is less than or equal to 30 ppm, that range is exempted from CGA requirements for on-going quality assurance.
 - ii. A Relative Accuracy Test Audit (“RATA”) shall be conducted once every four successive QA operating quarters (as defined above) on the CO CEMS in accordance with 40 CFR Part 60, Appendix F – Procedure 1 40 CFR 5.1.1 and 5.2.3(1) and 40 CFR Part 60, Appendix B - PS-4A 40 CFR 13.2 instead of once every four calendar quarters. Regardless of the number of hours of operation, at a minimum, a RATA shall be conducted at least once every eight calendar quarters on the CO CEMS consistent with the requirements in 40 CFR Part 75, Appendix B 40 CFR 2.3.1.1(a).
 - iii. In the event that a required CGA or RATA is missed on the CO CEMS, the grace period provisions specified by 40 CFR Part 75, Appendix B - 40 CFR 2.2.4 and 2.3.3 shall apply, where applicable.
 - iv. In the event that a non-redundant/like-kind CO monitor is used in lieu of the certified CO monitor, the non-redundant/like-kind analyzer provisions specified by 40 CFR Part 75 40 CFR 72.20(d)(2) shall apply, where applicable, except that a CGA will be performed on the non-redundant/like-kind CO monitor in lieu of a linearity, within 168 unit operating hours of being installed and used as a backup monitor.
 - v. Starting with the first hourly CO emission data that is missing, the Permittee shall substitute the data for that hour and any subsequent hours using the historical CEM data over the previous 2,160 operating hours when combusting the fuel or blend with the highest CO emission rate.
- n. The Permittee shall estimate GHG emissions (tons) as CO₂e, on a monthly basis, for combustion turbine (**ID No. ES-19**), for developmental phases (commissioning, testing, and validation) of each configuration (Versions A, B and C) and post-developmental operation, as follows. The Permittee shall determine each month, consecutive 12-months’ total GHG emissions, using the emissions data for the current month and the previous 11-months.
 - i. The Permittee shall monitor CO₂ emissions from the combustion turbine (**ID No. ES-19**) using a CEMS, meeting the requirements in Appendix G to 40 CFR 75, or monitor CO₂ emissions in accordance with 40 CFR 60.5535(b), (c)(2) or (c)(5) and fuel flow in accordance with 40 CFR 60.5535(c).
 - ii. The Permittee shall monitor N₂O and CH₄ emissions from this combustion turbine, using applicable emissions factors in Table C-2 to Subpart C of 40 CFR 98.
 - iii. The Permittee shall use Global Warming Potentials of N₂O and CH₄, in accordance with Table A-1 to Subpart A of 40 CFR 98, to convert emissions of these gases in the unit of CO₂e.
 - iv. CO₂ CEMS data reported to meet the requirements of this section shall include data substituted using the missing data procedures in Subpart D of 40 CFR Part 75 except that unbiased values may be used. The missing data procedure shall be used whenever the emission unit combusts any fuel.
- o. Monitor downtime:
For each CEMS required by Sections 2.2 A.1.k, m, and n above, monitor downtime:
 - (A) shall not exceed 5.0 percent of the operating time in a calendar quarter;
 - (B) shall be calculated using the following equation:

$$\%MD = \left(\frac{\text{Total Monitor Downtime}}{\text{Total Source Operating Time}} \right) \times 100$$

Where:

“Total Monitor Downtime” is the number of hours in a calendar quarter where an emission source was operating but data from the associated CEMS are invalid, not available, and/or filled with missing data procedure; and

“Total Source Operating Time” is the number of hours in a calendar quarter where the emission source associated with the CEMS was operating.

- p. If operation of oxidation catalyst is required to comply with the CO and VOC BACTs in Section 2.2 A.1.b above, the Permittee shall continuously monitor the inlet temperature to oxidation catalyst and maintain the 3-hour rolling average of the inlet temperature higher than the minimum inlet temperature established in Section 2.2 A.1.h above.
- q. No monitoring or recordkeeping shall be required for emissions of PM, PM10, and PM2.5, from combustion turbine (**ID No. ES-19**), during all periods of operation (normal, startup, shutdown, and malfunction) in developmental phases (commissioning, testing, and validation) of each configuration (Versions A, B and C) and post-developmental operation.
- r. The Permittee shall keep records for No. 2 fuel oil throughput for storage tank (**ID No. ES-20**) on a monthly basis in a written or electronic format. The Permittee shall determine each month, consecutive 12-months’ total No. 2 fuel oil throughput, using the fuel oil throughput data for the current month and the previous 11-months.

Reporting [15A NCAC 02Q .0308(a)(1)]

- s. The Permittee shall submit a written report of the results of each performance test required in Section 2.2 A.1.h above, before the close of business on the 30th day following the completion of the performance test unless otherwise extended as allowed by General Condition JJ.
- t. For combustion turbine (**ID No. ES-19**), the Permittee shall submit reports of excess emissions and monitor downtime in accordance with 40 CFR 60.7(c). The Permittee shall report excess emissions for all periods of operation, including start-up, shutdown, and malfunction. These reports shall be postmarked by the 30th day following the end of each 6-month period. Records of excess emissions and monitor downtime for the associated CEMS in the format approved by DAQ Technical Services Section for the combustion turbine (**ID No. ES-19**).
 - i. For NO_x CEM, excess emissions and monitor downtime for combustion turbine (**ID No. ES-19**) firing natural gas or No. 2 fuel oil, shall be defined as below:
 - (A) An excess emission is any unit operating period in which the 4-hour rolling average NO_x emission rate exceeds the emission limit in Section 2.2 A.1.b above. 4-hour rolling average NO_x emission rate is the arithmetic average of the average NO_x emission rate in ppm measured by the continuous emission monitoring equipment for a given hour and the three unit operating hour average NO_x emission rates immediately preceding that unit operating hour. Calculate the rolling average if a valid NO_x emission rate is obtained for at least 3 of the 4 hours. The 4-hour rolling average is calculated using only actual operating hours (periods of non-operations shall not be considered in emissions averaging).
 - (B) A period of monitor downtime is any unit operating hour in which the data for any of the following parameters are either missing or invalid: NO_x concentration, CO₂ or O₂ concentration, fuel flow rate, or megawatts. The steam flow rate, steam temperature, and steam pressure are only required if you will use this information for compliance purposes.
 - ii. For CO CEM, excess emissions and monitor downtime shall be defined as below:
 - (A) An excess emission is any unit operating period in which the 24-hour rolling average CO emission rate exceeds the emission limit in Section 2.2 A.1.b above. A “24-hour rolling average CO emission rate” is the arithmetic average of all hourly CO emission data in ppm measured by the continuous emission monitoring equipment for a given hour and the twenty-three unit operating hours immediately preceding that unit operating hour. A new 24-hour average is calculated each unit operating hour as the average of all hourly CO emissions rates for the preceding 24 unit operating hours if a valid CO emission rate is obtained for at least 75 percent of all operating hours. The 24-hour rolling average is calculated using only actual operating hours (periods of non-operations shall not be considered in emissions averaging).
 - (B) A period of monitor downtime is any unit operating hour in which the data for any of the following parameters are either missing or invalid: CO concentration, CO₂ or O₂ concentration, fuel flow rate, or megawatts. The steam flow rate, steam temperature, and steam pressure are only required if you will use this information for compliance purposes.
 - iii. For VOC emissions, excess emissions and monitor downtime shall be defined as below:

- (A) Excess emissions for VOC shall be defined any unit operating hour for which the 3-hour rolling average of the catalyst inlet temperature is below the minimum inlet temperature established in Section 2.2 A.1.h above. The 3-hour rolling average is calculated using only actual operating hours (periods of non-operations shall not be considered in temperatures averaging).
 - (B) A period of monitor downtime shall be defined as any unit operating hour in which catalyst inlet temperature data are unavailable or invalid.
- u. The Permittee shall submit a written report, postmarked on or before the 30th day following the end of each 6-month period:
 - i. Emissions (tons) of GHG as CO₂e per consecutive 12-month periods, for combustion turbine (**ID No. ES-19**), during developmental phases (commissioning, testing, and validation) of each configuration (Versions A, B, and C) and post-developmental operation. Excess emissions and monitor downtimes for CO₂ (lb/million Btu) in accordance with 40 CFR 60.5535, 60.5540, and 60.5555, as applicable.
 - ii. No. 2 fuel oil throughput per consecutive 12-month periods for storage tank (**ID No. ES-20**).
 - iii. Combined total hours of operations for both natural gas and fuel oil firing for combustion turbine (**ID No. ES-19**) for each configuration (Versions A, B, and C) per consecutive 12-month period, during normal operations, startups, shutdowns, malfunctions, commissioning, testing, and validation.
 - iv. Combined total hours of operations for both natural gas and fuel oil firing for post-developmental operation for combustion turbine (**ID No. ES-19**) per consecutive 12-month period, during normal operations, startups, shutdowns, malfunctions, commissioning, testing, and validation.
 - v. No reporting for PM, PM₁₀, and PM_{2.5} emissions from combustion turbine (**ID No. ES-19**) shall be required.
 - w. The Permittee shall submit to the DAQ sufficient design data for emission control systems, DSCR (**ID No. CD-19a**) and oxidation catalyst (**ID No. CD-19b**), to evaluate their environmental performance, before commencing construction of combustion turbine (**ID No. ES-19**) in configuration Version A. The Permittee shall also provide to the DAQ any revisions to the design data for these environmental controls (**ID Nos. CD-19a and CD-19b**), for the subsequent configuration Versions B and C of the combustion turbine, before commencing construction. The DAQ may require a permit revision pursuant to an appropriate provision in 15A NCAC 02Q .0500, upon its review of the design parameters of the environmental controls (**ID Nos. CD-19a and CD-19b**) for each of the Versions A, B, and C.

B. Facility-wide Emission Sources

1. 15A NCAC 02Q .0317: AVOIDANCE CONDITIONS for 15A NCAC 02D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

- a. In order to avoid the applicability of 15A NCAC 02D .1111 “Maximum Achievable Control Technology,” as requested by the Permittee, emissions of hazardous air pollutants (HAP) from this facility shall be less than:
 - i. 10 tons of any individual HAP per consecutive 12-month period; and
 - ii. 25 tons of total combined HAP per consecutive 12-month period.

Testing [15A NCAC 02Q .0508(f)]

- b. The Permittee shall conduct emission testing in order to establish the following site-specific emission factors:
 - i. Formaldehyde emitted from the sixteen turbines (**ID Nos. ES-1 through ES-16**) while firing natural gas.
 - ii. Formaldehyde emitted from the turbine (**ID No. ES-19**) while firing natural gas.If the results of any required test indicate that the limits in Section 2.2 B.1.a are exceeded, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111.
- c. When performing any required emission testing:
 - i. For the turbine (**ID No. ES-19**), any site-specific emission factor is only valid for the development phase (i.e., Version A, Version B, Version C, and post-development) of the turbine when the test was conducted. The Permittee must establish new emission factors for each new development phase.
 - ii. Testing shall be performed at full load (within $\pm 10\%$ of 100% of maximum operating capacity).
 - iii. The Permittee shall conduct emission testing on the turbine (**ID No. ES-19**) within 180 days of commencing operation of Version C, or another date as approved by DAQ. If the unit is not operating on the required date to complete testing, the test must be conducted within 30 calendar days of startup.
 - iv. The Permittee shall re-test the turbine (**ID No. ES-19**) within 180 days of transitioning to the post-development phase, unless a different date is approved by DAQ.
 - v. For the sixteen turbines (**ID Nos. ES-1 through ES-16**) and the post-development phase of the turbine (**ID No. ES-19**), the Permittee shall conduct subsequent testing no more than 61 months after the previous test, unless a different date is approved by DAQ.
 - vi. When conducting subsequent testing for the sixteen turbines (**ID Nos. ES-1 through ES-16**), the Permittee shall test one of the turbines and the results will be used for each of the turbines. Each subsequent test shall be performed on a unit other than the previously tested unit.
 - vii. The emission testing shall be performed in accordance with General Condition JJ.
- d.
 - i. For the sixteen turbines (**ID No. ES-1 through ES-16**), if the results of any required test indicate a formaldehyde emission factor greater than 8.6 E-05 pounds per million Btu (as included in application 5500082.23A and stack test 2022-300ST) when burning natural gas, the Permittee shall submit a permit application pursuant to 15A NCAC 02Q .0514 “Administrative Permit Amendments” within 60 days of conducting a test in order to demonstrate that the tested emission factor does not result in an exceedance of the emission limits in Section 2.2 B.1.a above.
 - ii. For the turbine (**ID No. ES-19**), if the results of any required test indicate a formaldehyde emission factor greater 9.11 E-05 pounds per million Btu (as included in application 5500082.24B and stack test report review memorandum 2024-242ST) when burning natural gas, the Permittee shall submit a permit application pursuant to 15A NCAC 02Q .0514 “Administrative Permit Amendments” within 60 days of conducting a test in order to demonstrate that the tested emission factor does not result in an exceedance of the emission limits in Section 2.2 B.1.a above.
 - iii. If the results of any test indicate a formaldehyde emission factor is less than the values in Sections 2.2 B.1.d.i or ii, above, the Permittee may request to revise the formaldehyde emission factor above pursuant to 15A NCAC 02Q .0515 “Minor Permit Modifications.”

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]

- e. In order to ensure compliance with the emission limits in Section 2.2 B.1.a, above, the actual hours of operation for the sixteen turbines (**ID Nos. ES-1 through ES-16**) shall be less than the amount allowed by Section 2.1 A.3.d, above (i.e., less than 32,000 hours per year, combined). The recordkeeping activities in Section 2.1 A.3.e, above, shall be sufficient to ensure compliance with this requirement.
- f. In order to ensure compliance with the emission limits in Section 2.2 B.1.a, above, the actual hours of operation for the turbine (**ID No. ES-19**) shall be less than the amounts allowed by Sections 2.2 A.1.e or 2.2 A.1.f, as appropriate (i.e., less than 4,677 combined total full load equivalent hours per year for any of Versions A, B, and C, and post-

development operation). The recordkeeping activities in Section 2.2 A.1.i and 2.2 A.1.j, above, shall be sufficient to ensure compliance with this requirement.

If the required monitoring and recordkeeping activities are not performed, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111.

Reporting [15A NCAC 02Q .0508(f)]

- g. The reporting requirements in Section 2.1 A.3.l and Section 2.2 A.1.u, above, shall be sufficient to ensure compliance with this requirement.

State-enforceable only

2. 15A NCAC 02D .1425: NOX SIP CALL BUDGET

The Permittee shall submit a report to the DAQ no later than January 30 of the calendar year after the NOx SIP Call control period (as defined in 15A NCAC 02D .1401(a)) listing the NOx emissions from the turbines (**ID Nos. ES-1 through ES-16 and ES-19**) 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.

2.3 Phase II Acid Rain Permit Requirements

ORIS code: 7277

1. Statement of Basis

Statutory and Regulatory Authorities: In accordance with the provisions of Article 21B of Chapter 143, General Statutes of North Carolina as amended and Titles IV and V of the Clean Air Act, the Division of Air Quality issues this permit pursuant to Title 15A North Carolina Administrative Codes, Subchapter 02Q .0400 and 02Q .0500, and other applicable Laws.

2. SO₂ Allowance Allocations and NO_x Requirements for each affected unit

Unit ID Nos. 1 through 16 (ID Nos. ES-1 through ES-16), and Unit ID No. 17 (ID No. ES-19)	SO ₂ allowances, under Tables 2, 3, or 4 of 40 CFR part 73.	SO ₂ allowances are not allocated by U.S. EPA for new units under 40 CFR Part 72.
	NO _x limit	Does not apply to gas or oil-fired units.

3. Comments, Notes and Justifications

None.

2.4 Cross State Air Pollution Rule (CSAPR) Requirements

For combustion turbines (ID Nos. ES-1 through ES-16 and ES-19), the Permittee shall comply with all applicable requirements of 40 CFR Part 97, Subpart AAAAA “CSAPR NO_x Annual Trading Program” and Subpart CCCCC “CSAPR SO₂ Group 1 Trading Program.”

SECTION 3 – INSIGNIFICANT ACTIVITIES PER 15A NCAC 02Q .0503(8)

Emission Source ID No.	Emission Source Description ^{1,2}
I-1	Welding shop
I-2	Contained bead blast room
I-6	150 gallon sodium hydroxide storage tank
I-7	150 gallon sulfuric acid storage tank
I-8	250 gallon sulfuric acid storage/measuring tank
I-9	400 gallon sodium hydroxide storage/measuring tank
I-10	500 gallon diesel fuel storage tank and associated dispensing area
I-11	500 gallon gasoline fuel storage tank and associated dispensing area
I-12	560 gallon fuel oil storage/day tank
I-13	1,000 gallon used oil storage tank
I-14	Sixteen 3,300 gallon turbine lubricating oil storage tanks for units 1 through 16
I-15	4,000 gallon sulfuric acid bulk storage tank
I-16	4,500 gallon sodium hydroxide bulk storage tank
I-17	9,000 gallon turbine lubricating oil storage tank/holdup tank used for maintenance purposes only, normally empty
I-18 GAFT ZZZZ	diesel-fired fire protection system (370 horsepower maximum capacity)
I-19	Main transformers containing oil with total capacity of 130,800 gallons
I-20	CCV transformers containing oil with total capacity of 400 gallons
I-22	Miscellaneous gas cylinders containing: acetylene, argon, chlorine, oxygen or sulfur dioxide for wastewater treatment dichlorination
I-23	Miscellaneous CFC and HCFC refrigerant cylinders
I-24	Miscellaneous non-CFC and non-HCFC refrigerant cylinders
I-refueling	Gasoline Refueling Operations

¹ Because an activity is insignificant does not mean that the activity is exempted from an applicable requirement (Federal or State) or that the Permittee is exempted from demonstrating compliance with any applicable requirement.

² When applicable, emissions from stationary source activities identified above shall be included in determining compliance with the permit requirements for toxic air pollutants under 15A NCAC 02D .1100 “Control of Toxic Air Pollutants” or 02Q .0711 “Emission Rates Requiring a Permit.”

SECTION 4 - GENERAL CONDITIONS (version 8.0, 07/10/2024)

This section describes terms and conditions applicable to this Title V facility.

A. **General Provisions** [NCGS 143-215 and 15A NCAC 02Q .0508(i)(16)]

1. Terms not otherwise defined in this permit shall have the meaning assigned to such terms as defined in 15A NCAC 02D and 02Q.
2. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are binding and enforceable pursuant to NCGS 143-215.114A and 143-215.114B, including assessment of civil and/or criminal penalties. Any unauthorized deviation from the conditions of this permit may constitute grounds for revocation and/or enforcement action by the DAQ.
3. This permit is not a waiver of or approval of any other Department permits that may be required for other aspects of the facility which are not addressed in this permit.
4. This permit does not relieve the Permittee from liability for harm or injury to human health or welfare, animal or plant life, or property caused by the construction or operation of this permitted facility, or from penalties therefore, nor does it allow the Permittee to cause pollution in contravention of state laws or rules, unless specifically authorized by an order from the North Carolina Environmental Management Commission.
5. Except as identified as state-only requirements in this permit, all terms and conditions contained herein shall be enforceable by the DAQ, the EPA, and citizens of the United States as defined in the Federal Clean Air Act.
6. Any stationary source of air pollution shall not be operated, maintained, or modified without the appropriate and valid permits issued by the DAQ, unless the source is exempted by rule. The DAQ may issue a permit only after it receives reasonable assurance that the installation will not cause air pollution in violation of any of the applicable requirements. A permitted installation may only be operated, maintained, constructed, expanded, or modified in a manner that is consistent with the terms of this permit.

B. **Permit Availability** [15A NCAC 02Q .0507(k) and .0508(i)(9)(B)]

The Permittee shall have available at the facility a copy of this permit and shall retain for the duration of the permit term one complete copy of the application(s) and any information submitted in support of the application package. The permit and application shall be made available to an authorized representative of the Department of Environmental Quality upon request.

C. **Severability Clause** [15A NCAC 02Q .0508(i)(2)]

In the event of an administrative challenge to a final and binding permit in which a condition is held to be invalid, the provisions in this permit are severable so that all requirements contained in the permit, except those held to be invalid, shall remain valid and must be complied with.

D. **Submissions** [15A NCAC 02Q .0507(e) and 02Q .0508(i)(16)]

Except as otherwise specified herein, one copy of all documents, reports, test data, monitoring data, notifications, request for renewal, and any other information required by this permit shall be submitted to the appropriate Regional Office. Refer to the Regional Office address on the cover page of this permit. For continuous emissions monitoring systems (CEMS) reports, continuous opacity monitoring systems (COMS) reports, quality assurance (QA)/quality control (QC) reports, acid rain CEM certification reports, and NOx budget CEM certification reports, one copy shall be sent to the appropriate Regional Office and one copy shall be sent to:

Supervisor, Stationary Source Compliance
North Carolina Division of Air Quality
1641 Mail Service Center
Raleigh, NC 27699-1641

All submittals shall include the facility name and Facility ID number (refer to the cover page of this permit).

E. **Duty to Comply** [15A NCAC 02Q .0508(i)(3)]

The Permittee shall comply with all terms, conditions, requirements, limitations and restrictions set forth in this permit. Noncompliance with any permit condition except conditions identified as state-only requirements constitutes a violation of the Federal Clean Air Act. Noncompliance with any permit condition is grounds for enforcement action, for permit termination, revocation and reissuance, or modification, or for denial of a permit renewal application.

F. **Circumvention** - STATE ENFORCEABLE ONLY

The facility shall be properly operated and maintained at all times in a manner that will effect an overall reduction in air pollution. Unless otherwise specified by this permit, no emission source may be operated without the concurrent operation of its associated air pollution control device(s) and appurtenances.

G. **Title V Permit Modifications**

1. Administrative Permit Amendments [15A NCAC 02Q .0514]
The Permittee shall submit an application for an administrative permit amendment in accordance with 15A NCAC 02Q .0514.
2. Transfer in Ownership or Operation and Application Submittal Content [15A NCAC 02Q .0524 and 02Q .0505]
The Permittee shall submit an application for an ownership change in accordance with 15A NCAC 02Q.0524 and 02Q .0505.
3. Minor Permit Modifications [15A NCAC 02Q .0515]
The Permittee shall submit an application for a minor permit modification in accordance with 15A NCAC 02Q .0515.
4. Significant Permit Modifications [15A NCAC 02Q .0516]
The Permittee shall submit an application for a significant permit modification in accordance with 15A NCAC 02Q .0516.
5. Reopening for Cause [15A NCAC 02Q .0517]
The Permittee shall submit an application for reopening for cause in accordance with 15A NCAC 02Q .0517.

H. **Changes Not Requiring Permit Modifications**

1. Reporting Requirements [15A NCAC 02Q .0508(f)]
Any of the following that would result in new or increased emissions from the emission source(s) listed in Section 1 must be reported to the Regional Supervisor, DAQ:
 - a. changes in the information submitted in the application;
 - b. changes that modify equipment or processes; or
 - c. changes in the quantity or quality of materials processed.If appropriate, modifications to the permit may then be made by the DAQ to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause a violation of the emission limitations specified herein.
2. Section 502(b)(10) Changes [15A NCAC 02Q .0523(a)]
 - a. "Section 502(b)(10) changes" means changes that contravene an express permit term or condition. Such changes do not include changes that would violate applicable requirements or contravene federally enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements.
 - b. The Permittee may make Section 502(b)(10) changes without having the permit revised if:
 - i. the changes are not a modification under Title I of the Federal Clean Air Act;
 - ii. the changes do not cause the allowable emissions under the permit to be exceeded;
 - iii. the Permittee notifies the Director and EPA with written notification at least seven days before the change is made; and
 - iv. the Permittee shall attach the notice to the relevant permit.
 - c. The written notification shall include:
 - i. a description of the change;
 - ii. the date on which the change will occur;
 - iii. any change in emissions; and
 - iv. any permit term or condition that is no longer applicable as a result of the change.
 - d. Section 502(b)(10) changes shall be made in the permit the next time that the permit is revised or renewed, whichever comes first.
3. Off Permit Changes [15A NCAC 02Q .0523(b)]
The Permittee may make changes in the operation or emissions without revising the permit if:
 - a. the change affects only insignificant activities and the activities remain insignificant after the change; or
 - b. the change is not covered under any applicable requirement.
4. Emissions Trading [15A NCAC 02Q .0523(c)]
To the extent that emissions trading is allowed under 15A NCAC 02D, including subsequently adopted maximum achievable control technology standards, emissions trading shall be allowed without permit revision pursuant to 15A NCAC 02Q .0523(c).

I.A. Reporting Requirements for Excess Emissions [15A NCAC 02D .0535(f) and 02Q .0508(f)(2)]

1. "Excess Emissions" - means an emission rate that exceeds any applicable emission limitation or standard allowed by any rule in Sections .0500, .0900, .1200, or .1400 of Subchapter 02D; or by a permit condition; or that exceeds an emission limit established in a permit issued under 15A NCAC 02Q .0700. *(Note: Definitions of excess emissions under 02D .1110 and 02D .1111 shall apply where defined by rule.)*
2. If a source is required to report excess emissions under NSPS (15A NCAC 02D .0524), NESHAPS (15A NCAC 02D .1110 or .1111), or the operating permit provides for periodic (e.g., quarterly) reporting of excess emissions, reporting shall be performed as prescribed therein.
3. If the source is not subject to NSPS (15A NCAC 02D .0524), NESHAPS (15A NCAC 02D .1110 or .1111), or these rules do NOT define "excess emissions," the Permittee shall report excess emissions in accordance with 15A NCAC 02D .0535 as follows:
 - a. Pursuant to 15A NCAC 02D .0535, if excess emissions last for more than four hours resulting from a malfunction, a breakdown of process or control equipment, or any other abnormal condition, the owner or operator shall:
 - i. notify the Regional Supervisor or Director of any such occurrence by 9:00 a.m. Eastern Time of the Division's next business day of becoming aware of the occurrence and provide:
 - name and location of the facility;
 - nature and cause of the malfunction or breakdown;
 - time when the malfunction or breakdown is first observed;
 - expected duration; and
 - estimated rate of emissions;
 - ii. notify the Regional Supervisor or Director immediately when corrective measures have been accomplished; and
 - iii. submit to the Regional Supervisor or Director within 15 days a written report as described in 15A NCAC 02D .0535(f)(3).

I.B. Reporting Requirements for Permit Deviations [15A NCAC 02D .0535(f) and 02Q .0508(f)(2)]

1. "Permit Deviations" - for the purposes of this condition, any action or condition not in accordance with the terms and conditions of this permit including those attributable to upset conditions as well as excess emissions as defined above lasting less than four hours.
2. Pursuant to 15A NCAC 02Q .0508(f)(2), the Permittee shall report deviations from permit requirements (terms and conditions) quarterly by notifying the Regional Supervisor or Director of all other deviations from permit requirements not covered under 15A NCAC 02D .0535. A written report to the Regional Supervisor shall include the probable cause of such deviation and any corrective actions or preventative actions taken. The responsible official shall certify all deviations from permit requirements.

I.C. Other Requirements under 15A NCAC 02D .0535

The Permittee shall comply with all other applicable requirements contained in 15A NCAC 02D .0535, including 15A NCAC 02D .0535(c) as follows:

1. Any excess emissions that do not occur during start-up and shut-down shall be considered a violation of the appropriate rule unless the owner or operator of the sources demonstrates to the Director that the excess emissions are a result of a malfunction. The Director shall consider, along with any other pertinent information, the criteria contained in 15A NCAC 02D .0535(c)(1) through (7).
2. 15A NCAC 02D .0535(g). Excess emissions during start-up and shut-down shall be considered a violation of the appropriate rule if the owner or operator cannot demonstrate that excess emissions are unavoidable.

J. RESERVED

K. Permit Renewal [15A NCAC 02Q .0508(e) and 02Q .0513(b)]

This 15A NCAC 02Q .0500 permit is issued for a fixed term not to exceed five years and shall expire at the end of its term. Permit expiration terminates the facility's right to operate unless a complete 15A NCAC 02Q .0500 renewal application is submitted at least six months before the date of permit expiration. If the Permittee or applicant has complied with 15A NCAC 02Q .0512(b)(1), this 15A NCAC 02Q .0500 permit shall not expire until the renewal permit has been issued or denied. Permit expiration under 15A NCAC 02Q .0400 terminates the facility's right to operate unless a complete 15A NCAC 02Q .0400 renewal application is submitted at least six months before the date of permit expiration for facilities subject to 15A NCAC 02Q .0400 requirements. In either of these events, all terms and conditions of these permits shall remain in effect until the renewal permits have been issued or denied.

L. **Need to Halt or Reduce Activity Not a Defense** [15A NCAC 02Q .0508(i)(4)]

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

M. **Duty to Provide Information (submittal of information)** [15A NCAC 02Q .0508(i)(9)]

1. The Permittee shall furnish to the DAQ, in a timely manner, any reasonable information that the Director may request in **writing** to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit.
2. The Permittee shall furnish the DAQ copies of records required to be kept by the permit when such copies are requested by the Director. For information claimed to be confidential, the Permittee may furnish such records directly to the EPA upon request along with a claim of confidentiality.

N. **Duty to Supplement** [15A NCAC 02Q .0507(f)]

The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information to the DAQ. The Permittee shall also provide additional information as necessary to address any requirement that becomes applicable to the facility after the date a complete permit application was submitted but prior to the release of the draft permit.

O. **Retention of Records** [15A NCAC 02Q .0508(f) and 02Q .0508(l)]

The Permittee shall retain records of all required monitoring data and supporting information for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Supporting information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring information, and copies of all reports required by the permit. These records shall be maintained in a form suitable and readily available for expeditious inspection and review. Any records required by the conditions of this permit shall be kept on site and made available to DAQ personnel for inspection upon request.

P. **Compliance Certification** [15A NCAC 02Q .0508(n)]

The Permittee shall submit to the DAQ and the EPA (Air Enforcement Branch, EPA, Region 4, 61 Forsyth Street SW, Atlanta, GA 30303 or through the EPA CEDRI) postmarked on or before March 1 a compliance certification (for the preceding calendar year) by a responsible official with all terms and conditions in the permit (including emissions limitations, standards, or work practices), except for conditions identified as being State-enforceable Only. It shall be the responsibility of the current owner to submit a compliance certification for the entire year regardless of who owned the facility during the year. The compliance certification shall comply with additional requirements as may be specified under Sections 114(a)(3) or 504(b) of the Federal Clean Air Act. The compliance certification shall specify:

1. the identification of each term or condition of the permit that is the basis of the certification;
2. the compliance status (with the terms and conditions of the permit for the period covered by the certification);
3. whether compliance was continuous or intermittent;
4. the method(s) used for determining the compliance status of the source during the certification period;
5. each deviation and take it into account in the compliance certification; and
6. as possible exceptions to compliance, any periods during which compliance is required and in which an excursion or exceedance as defined under 40 CFR Part 64 (CAM) occurred.

Q. **Certification by Responsible Official** [15A NCAC 02Q .0520]

A responsible official shall certify the truth, accuracy, and completeness of any application form, report, or compliance certification required by this permit. All certifications shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

R. **Permit Shield for Applicable Requirements** [15A NCAC 02Q .0512]

1. Compliance with the terms and conditions of this permit shall be deemed compliance with applicable requirements, where such applicable requirements are included and specifically identified in the permit as of the date of permit issuance.
2. A permit shield shall not alter or affect:
 - a. the power of the Commission, Secretary of the Department, or Governor under NCGS 143-215.3(a)(12), or EPA under Section 303 of the Federal Clean Air Act;
 - b. the liability of an owner or operator of a facility for any violation of applicable requirements prior to the effective date of the permit or at the time of permit issuance;
 - c. the applicable requirements under Title IV; or

- d. the ability of the Director or the EPA under Section 114 of the Federal Clean Air Act to obtain information to determine compliance of the facility with its permit.
3. A permit shield does not apply to any change made at a facility that does not require a permit or permit revision made under 15A NCAC 02Q .0523.
4. A permit shield does not extend to minor permit modifications made under 15A NCAC 02Q .0515.

S. **Termination, Modification, and Revocation of the Permit** [15A NCAC 02Q .0519]

The Director may terminate, modify, or revoke and reissue this permit if:

1. the information contained in the application or presented in support thereof is determined to be incorrect;
2. the conditions under which the permit or permit renewal was granted have changed;
3. violations of conditions contained in the permit have occurred;
4. the EPA requests that the permit be revoked under 40 CFR 70.7(g) or 70.8(d); or
5. the Director finds that termination, modification, or revocation and reissuance of the permit is necessary to carry out the purpose of NCGS Chapter 143, Article 21B.

T. **Insignificant Activities** [15A NCAC 02Q .0503]

Because an emission source or activity is insignificant does not mean that the emission source or activity is exempted from any applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement. The Permittee shall have available at the facility at all times and made available to an authorized representative upon request, documentation, including calculations, if necessary, to demonstrate that an emission source or activity is insignificant.

U. **Property Rights** [15A NCAC 02Q .0508(i)(8)]

This permit does not convey any property rights in either real or personal property or any exclusive privileges.

V. **Inspection and Entry** [15A NCAC 02Q .0508(l) and NCGS 143-215.3(a)(2)]

1. Upon presentation of credentials and other documents as may be required by law, the Permittee shall allow the DAQ, or an authorized representative, to perform the following:
 - a. enter the Permittee's premises where the permitted facility is located or emissions-related activity is conducted, or where records are kept under the conditions of the permit;
 - b. have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;
 - c. inspect at reasonable times and using reasonable safety practices any source, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
 - d. sample or monitor substances or parameters, using reasonable safety practices, for the purpose of assuring compliance with the permit or applicable requirements at reasonable times.

Nothing in this condition shall limit the ability of the EPA to inspect or enter the premises of the Permittee under Section 114 or other provisions of the Federal Clean Air Act.

2. No person shall refuse entry or access to any authorized representative of the DAQ who requests entry for purposes of inspection, and who presents appropriate credentials, nor shall any person obstruct, hamper, or interfere with any such authorized representative while in the process of carrying out his official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.

W. **Annual Fee Payment** [15A NCAC 02Q .0508(i)(10)]

1. The Permittee shall pay all fees in accordance with 15A NCAC 02Q .0200.
2. Payment of fees may be by check or money order made payable to the N.C. Department of Environmental Quality. Annual permit fee payments shall refer to the permit number.
3. If, within 30 days after being billed, the Permittee fails to pay an annual fee, the Director may initiate action to terminate the permit under 15A NCAC 02Q .0519.

X. **Annual Emission Inventory Requirements** [15A NCAC 02Q .0207]

The Permittee shall report by **June 30 of each year** the actual emissions of each air pollutant listed in 15A NCAC 02Q .0207(a) from each emission source within the facility during the previous calendar year. The report shall be in or on such form as may be established by the Director. The accuracy of the report shall be certified by a responsible official of the facility.

- Y. **Confidential Information** [15A NCAC 02Q .0107 and 02Q .0508(i)(9)]
Whenever the Permittee submits information under a claim of confidentiality pursuant to 15A NCAC 02Q .0107, the Permittee may also submit a copy of all such information and claim directly to the EPA upon request. All requests for confidentiality must be in accordance with 15A NCAC 02Q .0107.
- Z. **Construction and Operation Permits** [15A NCAC 02Q .0100 and .0300]
A construction and operating permit shall be obtained by the Permittee for any proposed new or modified facility or emission source which is not exempted from having a permit prior to the beginning of construction or modification, in accordance with all applicable provisions of 15A NCAC 02Q .0100 and .0300.
- AA. **Standard Application Form and Required Information** [15A NCAC 02Q .0505 and .0507]
The Permittee shall submit applications and required information in accordance with the provisions of 15A NCAC 02Q .0505 and .0507.
- BB. **Financial Responsibility and Compliance History** [15A NCAC 02Q .0507(d)(3)]
The DAQ may require an applicant to submit a statement of financial qualifications and/or a statement of substantial compliance history.
- CC. **Refrigerant Requirements (Stratospheric Ozone and Climate Protection)** [15A NCAC 02Q .0501(d)]
 1. If the Permittee has appliances or refrigeration equipment, including air conditioning equipment, which use Class I or II ozone-depleting substances such as chlorofluorocarbons and hydrochlorofluorocarbons listed as refrigerants in 40 CFR Part 82 Subpart A Appendices A and B, the Permittee shall service, repair, and maintain such equipment according to the work practices, personnel certification requirements, and certified recycling and recovery equipment specified in 40 CFR Part 82 Subpart F.
 2. The Permittee shall not knowingly vent or otherwise release any Class I or II substance into the environment during the repair, servicing, maintenance, or disposal of any such device except as provided in 40 CFR Part 82 Subpart F.
 3. The Permittee shall comply with all reporting and recordkeeping requirements of 40 CFR 82.166. Reports shall be submitted to the EPA or its designee as required.
- DD. **Prevention of Accidental Releases - Section 112(r)** [15A NCAC 02Q .0508(h)]
If the Permittee is required to develop and register a Risk Management Plan with EPA pursuant to Section 112(r) of the Clean Air Act, then the Permittee is required to register this plan in accordance with 40 CFR Part 68.
- EE. **National Emission Standards Asbestos – 40 CFR Part 61, Subpart M** [15A NCAC 02D .1110]
The Permittee shall comply with all applicable standards for demolition and renovation activities pursuant to the requirements of 40 CFR Part 61, Subpart M. The permittee shall not be required to obtain a modification of this permit in order to perform the referenced activities.
- FF. **Title IV Allowances** [15A NCAC 02Q .0508(i)(1)]
This permit does not limit the number of Title IV allowances held by the Permittee, but the Permittee may not use allowances as a defense to noncompliance with any other applicable requirement. The Permittee's emissions may not exceed any allowances that the facility lawfully holds under Title IV of the Federal Clean Air Act.
- GG. **Air Pollution Emergency Episode** [15A NCAC 02D .0300]
Should the Director of the DAQ declare an Air Pollution Emergency Episode, the Permittee will be required to operate in accordance with the Permittee's previously approved Emission Reduction Plan or, in the absence of an approved plan, with the appropriate requirements specified in 15A NCAC 02D .0300.
- HH. **Registration of Air Pollution Sources** [15A NCAC 02D .0202]
The Director of the DAQ may require the Permittee to register a source of air pollution. If the Permittee is required to register a source of air pollution, this registration and required information will be in accordance with 15A NCAC 02D .0202(b).
- II. **Ambient Air Quality Standards** [15A NCAC 02D .0501(c)]
In addition to any control or manner of operation necessary to meet emission standards specified in this permit, any source of air pollution shall be operated with such control or in such manner that the source shall not cause the ambient air quality standards in 15A NCAC 02D .0400 to be exceeded at any point beyond the premises on which the source is located. When

controls more stringent than named in the applicable emission standards in this permit are required to prevent violation of the ambient air quality standards or are required to create an offset, the permit shall contain a condition requiring these controls.

JJ. General Emissions Testing and Reporting Requirements [15A NCAC 02Q .0508(i)(16)]

Emission compliance testing shall be by the procedures of Section .2600, except as may be otherwise required in Rules .0524, .1110, or .1111 of Subchapter 02D. If emissions testing is required by this permit or the DAQ or if the Permittee submits emissions testing to the DAQ to demonstrate compliance for emission sources subject to Rules .0524, .1110, or .1111, the Permittee shall provide and submit all notifications, conduct all testing, and submit all test reports in accordance with the requirements of 15A NCAC 02D .0524, .1110, or .1111, as applicable. Otherwise, if emissions testing is required by this permit or the DAQ or if the Permittee submits emissions testing to the DAQ to demonstrate compliance, the Permittee shall perform such testing in accordance with 15A NCAC 02D .2600 and follow the procedures outlined below:

1. The owner or operator of the source shall arrange for air emission testing protocols to be provided to the Director prior to air pollution testing. Testing protocols are not required to be pre-approved by the Director prior to air pollution testing. The Director shall review air emission testing protocols for pre-approval prior to testing if requested by the owner or operator at least **45 days** before conducting the test.
2. Any person proposing to conduct an emissions test to demonstrate compliance with an applicable standard shall notify the Director at least **15 days** before beginning the test so that the Director may at his option observe the test.
3. The owner or operator of the source shall arrange for controlling and measuring the production rates during the period of air testing. The owner or operator of the source shall ensure that the equipment or process being tested is operated at the production rate that best fulfills the purpose of the test. The individual conducting the emission test shall describe the procedures used to obtain accurate process data and include in the test report the average production rates determined during each testing period.
4. Two copies of the final air emission test report shall be submitted to the Director not later than **30 days** after sample collection unless otherwise specified in the specific conditions. The owner or operator may request an extension to submit the final test report. The Director shall approve an extension request if he finds that the extension request is a result of actions beyond the control of the owner or operator.
 - a. The Director shall make the final determination regarding any testing procedure deviation and the validity of the compliance test. The Director may:
 - i. Allow deviations from a method specified under a rule in this Section if the owner or operator of the source being tested demonstrates to the satisfaction of the Director that the specified method is inappropriate for the source being tested.
 - ii. Prescribe alternate test procedures on an individual basis when he finds that the alternative method is necessary to secure more reliable test data.
 - iii. Prescribe or approve methods on an individual basis for sources or pollutants for which no test method is specified in 15A NCAC 02D .2600 if the methods can be demonstrated to determine compliance of permitted emission sources or pollutants.
 - b. The Director may authorize the DAQ to conduct independent tests of any source subject to a rule in 15A NCAC 02D to determine the compliance status of that source or to verify any test data submitted relating to that source. Any test conducted by the Division of Air Quality using the appropriate testing procedures described in 15A NCAC 02D .2600 has precedence over all other tests.

KK. Reopening for Cause [15A NCAC 02Q .0517]

1. A permit shall be reopened and revised under the following circumstances:
 - a. additional applicable requirements become applicable to a facility with remaining permit term of three or more years;
 - b. additional requirements (including excess emission requirements) become applicable to a source covered by Title IV;
 - c. the Director or EPA finds that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit; or
 - d. the Director or EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.
2. Any permit reopening shall be completed or a revised permit issued within 18 months after the applicable requirement is promulgated. No reopening is required if the effective date of the requirement is after the expiration of the permit term unless the term of the permit was extended pursuant to 15A NCAC 02Q .0513(c).

3. Except for the state-enforceable only portion of the permit, the procedures set out in 15A NCAC 02Q .0507, .0521, or .0522 shall be followed to reissue the permit. If the State-enforceable only portion of the permit is reopened, the procedures in 15A NCAC 02Q .0300 shall be followed. The proceedings shall affect only those parts of the permit for which cause to reopen exists.
4. The Director shall notify the Permittee at least 60 days in advance of the date that the permit is to be reopened, except in cases of imminent threat to public health or safety the notification period may be less than 60 days.
5. Within 90 days, or 180 days if the EPA extends the response period, after receiving notification from the EPA that a permit needs to be terminated, modified, or revoked and reissued, the Director shall send to the EPA a proposed determination of termination, modification, or revocation and reissuance, as appropriate.

LL. Reporting Requirements for Non-Operating Equipment [15A NCAC 02Q .0508(i)(16)]

The Permittee shall maintain a record of operation for permitted equipment noting whenever the equipment is taken from and placed into operation. When permitted equipment is not in operation, the requirements for testing, monitoring, and recordkeeping are suspended until operation resumes.

MM. Fugitive Dust Control Requirement [15A NCAC 02D .0540]

As required by 15A NCAC 02D .0540 "Particulates from Fugitive Dust Emission Sources," the Permittee shall not cause or allow fugitive dust emissions to cause or contribute to substantive complaints or excess visible emissions beyond the property boundary. If substantive complaints or excessive fugitive dust emissions from the facility are observed beyond the property boundaries for six minutes in any one hour (using Reference Method 22 in 40 CFR, Appendix A), the owner or operator may be required to submit a fugitive dust plan as described in 02D .0540(f).

"Fugitive dust emissions" means particulate matter from process operations that does not pass through a process stack or vent and that is generated within plant property boundaries from activities such as: unloading and loading areas, process areas, stockpiles, stock pile working, plant parking lots, and plant roads (including access roads and haul roads).

NN. Specific Permit Modifications [15A NCAC 02Q .0501 and .0523]

1. For modifications made pursuant to 15A NCAC 02Q .0501(b)(2), the Permittee shall file a Title V Air Quality Permit Application for the air emission source(s) and associated air pollution control device(s) on or before 12 months after commencing operation.
2. For modifications made pursuant to 15A NCAC 02Q .0501(c)(2), the Permittee shall not begin operation of the air emission source(s) and associated air pollution control device(s) until a Title V Air Quality Permit Application is filed and a construction and operation permit following the procedures of Section .0500 (except for Rule .0504 of this Section) is obtained.
3. For modifications made pursuant to 502(b)(10), in accordance with 15A NCAC 02Q .0523(a)(1)(C), the Permittee shall notify the Director and EPA (Air Permitting Branch, EPA, Region 4, 61 Forsyth Street SW, Atlanta, GA 30303 or through the EPA CEDRI) in writing at least seven days before the change is made.
 - a. The written notification shall include:
 - i. a description of the change at the facility;
 - ii. the date on which the change will occur;
 - iii. any change in emissions; and
 - iv. any permit term or condition that is no longer applicable as a result of the change.
 - b. In addition to this notification requirement, with the next significant modification or Air Quality Permit renewal, the Permittee shall submit a page "E5" of the application forms signed by the responsible official verifying that the application for the 502(b)(10) change/modification, is true, accurate, and complete. Further note that modifications made pursuant to 502(b)(10) do not relieve the Permittee from satisfying preconstruction requirements.

OO. Third Party Participation and EPA Review [15A NCAC 02Q .0521, .0522 and .0525(7)]

For permits modifications subject to 45-day review by the federal EPA, EPA's decision to not object to the proposed permit is considered final and binding on the EPA and absent a third party petition, the failure to object is the end of EPA's decision-making process with respect to the revisions to the permit. The time period available to submit a public petition pursuant to 15A NCAC 02Q .0518 begins at the end of the 45-day EPA review period.

ATTACHMENT

Phase II Acid Rain Permit Application (attached)

The Phase II Permit Application submitted for this facility, as approved by the Division of Air Quality, is part of this permit. The owners and operators of these Phase II acid rain sources must comply with the standard requirements and special provisions set forth in the following attached application.