



North Carolina Department of Environment and Natural Resources
Division of Air Quality

Michael F. Easley, Governor

William G. Ross, Jr., Secretary
B. Keith Overcash, P.E., Director

March 27, 2008

Mr. Wayne Thomann, Ph.D.
Director Occupational & Environmental Safety Office
Duke University
DUMC 3914
Durham, North Carolina 27710

Dear Mr. Thomann:

**SUBJECT: Air Quality Permit No. 03254T25
Facility ID No. 3200144
Duke University
Durham
Durham County
Fee Class: Title V**

In accordance with your completed Air Quality Permit Application 3200144.07B for a minor modification to your Title V permit received December 27, 2007 we are forwarding herewith Air Quality Permit No. **03254T25** to Duke University, 911 Trent Drive, Durham, North Carolina authorizing the construction and operation of the emission source(s) and associated air pollution control device(s) specified herein. Additionally, any emissions activities determined from your Air Quality Permit Application as being insignificant per 15A North Carolina Administrative Code 2Q .0503(8) have been listed for informational purposes as an "ATTACHMENT." Please note the requirements for the annual compliance certification are contained in General Condition P in Section 3 of Part I. **The current owner is responsible for submitting a compliance certification for the entire year regardless of who owned the facility during the year.**

This emission source (ID No. ES-7524) is listed as a minor modification per 15A NCAC 2Q .0515. The compliance certification as described in General Condition P is required. Unless otherwise notified by NC DAQ, the affected Part I terms of this permit (excluding the permit shield as described General Condition R) for this source shall become final on May 27, 2008. Until this date, the affected Part I permit terms herein reflect the proposed operating language that the Permittee shall operate this source under pursuant to 15A NCAC 2Q .0515(f).

Permitting Section
1641 Mail Service Center, Raleigh, North Carolina 27699-1641
2728 Capital Blvd., Raleigh, North Carolina 27604
Phone: 919-715-6235 / FAX 919-733-5317 / Internet: www.ncair.org

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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 request a formal adjudicatory hearing within 30 days following receipt of this permit, identifying the specific issues to be contested. This hearing request must be in the form of a written petition, conforming to NCGS (North Carolina General Statutes) 150B-23, and filed with **both** the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, North Carolina 27699-6714 and the Division of Air Quality, Permitting Section, 1641 Mail Service Center, Raleigh, North Carolina 27699-1641. The form for requesting a formal adjudicatory hearing may be obtained upon request from the Office of Administrative Hearings. Please note that this permit will be stayed in its entirety upon receipt of the request for a hearing. Unless a request for a hearing is made pursuant to NCGS 150B-23, this Air Quality Permit shall be final and binding 30 days after issuance.

You may request modification of your Air Quality Permit through informal means pursuant to NCGS 150B-22. This request must be submitted in writing to the Director and must identify the specific provisions or issues for which the modification is sought. Please note that this Air Quality Permit will become final and binding regardless of a request for informal modification unless a request for a hearing is also made under NCGS 150B-23.

The construction of new air pollution emission source(s) and associated air pollution control device(s), or modifications to the 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 GS 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 GS 143-215.108A and may subject the Permittee to civil or criminal penalties as described in GS 143-215.114A and 143-215.114B.

Mr. Thomann
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This Air Quality Permit shall be effective from March 27, 2008 until January 31, 2012, 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 Kevin Godwin at (919) 715-6255.

Sincerely yours,

Donald R. van der Vaart, Ph.D., P.E.
Chief

Enclosure

c: Gregg Worley, EPA Region 4
Supervisor, Raleigh Regional Office
Central Files

ATTACHMENT:**The following table summarizes changes made to the previous permit (No. 03254T24):**

Page No.	Section	Description of Change
3	Emission Source Table	Updated maximum permitted charging rate for the pathological waste incinerator (ID No. ES-7524) to 135 lb/hr rather than the 250 lb/hr design capacity.
4 and 5	Emission Source Table	Corrected emergency generator hp ratings as per inspection report.
6	Emission Source Table	Corrected footnote under emission source table to refer to NSR avoidance rather than PSD avoidance.
6	Table footnote	Included statement "This emission source (ID No. ES-7524) is listed as a minor modification per 15 A NCAC 2Q .0515. The compliance certification as described in General Condition P is required. Unless otherwise notified by NC DAQ, the affected Part I terms of this permit (excluding the permit shield as described General Condition R) for this source shall become final on May 27, 2008. Until this date, the affected Part I permit terms herein reflect the proposed operating language that the Permittee shall operate this source under pursuant to 15A NCAC 2Q .0515(f)."
7	2.1 A. 1. e.	Included requirement for Permittee to keep daily records of maximum hourly charge rate to the incinerator.
21	2.1 G.	Corrected emergency generator hp ratings as per inspection report.

**ATTACHMENT:
Insignificant Activities Under 15A NCAC 2Q .0503(8)**

Emission Source Description and ID Number

Diesel-fired emergency generator (455 hp), DUMC Parking Garage #1: **I-7538-01**

Diesel-fired emergency generator (449 hp), Clinical Research II: **I-7505-01**

Diesel-fired emergency generator (465 hp), Duke Hospital LSRC II: **I-7776-01**

Diesel-fired emergency generator (415 hp), Duke Hospital S. Main Building: **I-7508-02**

Diesel-fired emergency generator (416 hp), Duke Hospital South: **I-7504-01**

Diesel-fired emergency generator (354 hp), North Building: **I-7756-01**

Diesel-fired emergency generator (349 hp), Rutherford Street: **I-8092-01**

Diesel-fired emergency generator (349 hp), RP #3: **I-7519-01**

Diesel-fired emergency generator (277 hp), Public Policy Building: **I-7725-01**

Diesel-fired emergency generator (300 hp), Duke Hospital S. 57 Addition: **I-7508-01**

Diesel-fired emergency generator (269 hp), Surgical Pavillion (Vivarium): **I-7524-02**

Diesel-fired emergency generator (229 hp), Sands Building: **I-7530-01**

Diesel-fired emergency generator (300 hp), Teer Building: **I-7766-01**

Diesel-fired emergency generator (192 hp), DUMC, Environmental Safety: **I-7577-01**

Diesel-fired emergency generator (165 hp), Lennox Baker Hospital: **I-7583-01**

Diesel-fired emergency generator (156 hp), Duke Hospital S. Cobalt: **I-7508-04**

Diesel-fired emergency generator (135 hp), Jordan Building **I-7196-01**

Diesel-fired emergency generator (86 hp), Aesthetics: **I-7686-01**

Diesel-fired emergency generator (68 hp), Biosciences Building: **I-7758-01**

Diesel-fired emergency generator (65 hp), DUMC, BMT Dialysis: **I-7552-01**

Diesel-fired emergency generator (64 hp), DUMC, RP-1: **I-7517-01**

Diesel-fired emergency generator (50 hp), Perkins Library: **I-7704-01**

Diesel-fired emergency generator (43 hp), Elder Street: **I-7636-01**

Diesel-fired emergency generator (40 hp), Cameron Indoor Stadium: **I-7743-01**

Diesel-fired emergency generator (32 hp), DUMC, CFL: **I-7589-01**

Diesel-fired emergency generator (30 hp), 2 University Place: **I-8025-01**

Diesel-fired emergency generator (18 hp), Finch-Yeager: **I-7740-01**

Diesel-fired emergency generator (250 hp), Schwartz-Butters: **I-7741-01**

Diesel-fired emergency generator (380 hp), Fuqua School: **I-7760-01**

Diesel-fired emergency generator (349 hp), Roxboro Rd.: **I-8092-01**

Diesel-fired emergency generator (155 hp), Divinity Addition: **I-7708-01**

Diesel-fired emergency generator (67 hp), Sanford Addition: **I-7739-01**

Emission Source Description and ID Number

Diesel-fired emergency generator (268 hp), East Dorm Equipment Building: **I-7245-01**

Diesel-fired emergency generator (150 hp), Primate Center: **I-7518-01**

Natural gas-fired emergency generator (155 hp), Nasher Art Museum: **I-7198-01**

Natural gas-fired emergency generator (80 hp), Nursing School: **I-Nursing**

Paint spray booths: **I-030 & I-040**

Fuel storage tank: **I-Tanks**

State of North Carolina,
Department of Environment,
and Natural Resources



Division of Air Quality

AIR QUALITY PERMIT

Permit No.	Replaces Permit No.	Effective Date	Expiration Date
03254T25	03254T24	March 27, 2008	January 31, 2012

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 2D and 2Q, and other applicable Laws.

Pursuant to Title 15A NCAC, Subchapter 2Q, 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 University**
Facility ID: **05/32/0144**

Facility Site Location: **911 Trent Drive**
City, County, State, Zip: **Durham, Durham County, North Carolina 27710**

Mailing Address: **Post Office Box 230**
City, State, Zip: **Durham, North Carolina 27710**

Application Number: **3200144.07B**
Complete Application Date: **December 27, 2007**

Primary SIC Code: **8221/8062**
Division of Air Quality,
Regional Office Address: **Raleigh Regional Office**
3800 Barrett Drive
Raleigh, North Carolina 27609

Permit issued this the 27th day of March, 2008

Donald R. van der Vaart, Ph.D., P.E., Chief, Air Permits Section
By Authority of the Environmental Management Commission

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(Including specific requirements, testing, monitoring, recordkeeping, and reporting requirements)

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(Including specific requirements, testing, monitoring, recordkeeping, and reporting requirements)

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ATTACHMENT

List of Acronyms

PART II

This permit does not include a Part II.

PART I

The Division of Air Quality (DAQ), the United States Environmental Protection Agency (EPA), and citizens as defined under the Federal Clean Air Act have the authority to enforce the terms, conditions, and limitations contained in Part I of this permit unless otherwise specified.

Under Title 15A NCAC 2Q, the operation of emission source(s) and associated air pollution control device(s) and appurtenances listed in Part I of this permit is based on plans, specifications, operating parameters, and other information as submitted in the Air Quality Permit Application.

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 and appurtenances:

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES-7524 ¹	Pathological waste incinerator firing supplemental natural gas (135 pounds per hour maximum permitted charge rate)	N/A	N/A
ES-7754-01 CAM	Boiler #1: One coal/natural gas-fired boiler equipped with flue gas recirculation (96.1 million Btu per hour heat input)	CD-7754-01B -and- CD-7754-01A	One dry lime/activated carbon injection system -and- One bagfilter (maximum air-to-cloth ratio of 2.33:1)
ES-7754-02 CAM	Boiler #2: One coal/natural gas-fired boiler equipped with flue gas recirculation (96.1 million Btu per hour heat input)	CD-7754-02B -and- CD-7754-02A	One dry lime/activated carbon injection system -and- One bagfilter (maximum air-to-cloth ratio of 2.33:1)
ES-7754-03 CAM	Boiler #3: One coal/No. 2 fuel oil/recycled oil-fired boiler equipped with flue gas recirculation (99.99 million Btu per hour heat input)	CD-7754-03B -and- CD-7754-03A	One dry lime/activated carbon injection system -and- One bagfilter (maximum air-to-cloth ratio of 2.33:1)
ES-7754-04	Boiler #4: One No. 2 fuel oil/natural gas/recycled oil-fired boiler (69.35 million Btu per hour heat input)	N/A	N/A
ES-7754-05	Boiler #5: One No. 2 fuel oil/natural gas/recycled oil-fired boiler (69.35 million Btu per hour heat input)	N/A	N/A

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
NSPS ES-7754-06	Boiler #6: One natural gas/No. 2 fuel oil-fired boiler (99.0 million Btu per hour heat input)	N/A	N/A
NSPS ES-7754-10	Boiler #7: One natural gas/No. 2 fuel oil-fired boiler (99.0 million Btu per hour heat input) with a low NO _x burner	N/A	N/A
NSPS ES-7754-11	Boiler #8: One natural gas/No. 2 fuel oil-fired boiler (99.0 million Btu per hour heat input) with a low NO _x burner	N/A	N/A
ES-7754-07	Ash handling system (3,545 pounds per hour process rate)	CD-AB903CV133.1 -and- CD-AB903CV133.2 -and- CD-AB903CV133.3	One cyclone (60 inches in diameter); -and- One bagfilter (356 square feet of filter area); -and- One cyclone with wet spray in series
ES-7754-08 ²	Coal handling system	N/A	N/A
ES-7754-12	Ash handling system (1,000 pounds per hour process rate)	CD-7754-12	One bagfilter (maximum air-to-cloth ratio of 4:1)
ES-7754-13	One lime storage silo (4,000 cu. ft.)	CD-7754-13	One bagfilter (maximum air-to-cloth ratio of 4.6:1)
ES-7754-14	One lime storage silo (4,000 cu. ft.)	CD-7754-14	One bagfilter (maximum air-to-cloth ratio of 4.6:1)
ES-7547-06, -07, and -08 ¹	Three ethylene oxide sterilizers, Duke Hospital North Nos. 1, 2, and 3	N/A	N/A
ES-7531-01 and -02 ¹	Two ethylene oxide sterilizers, Duke Eye Center Nos. 1 and 2	N/A	N/A
ES-7547-01, -02, -03, and -04	Four diesel-fired emergency generators (1,115 hp each) Duke Hospital North No. 1	N/A	N/A
ES-7531-03	One diesel-fired emergency generator (968 hp), Duke Eye Center	N/A	N/A
ES-7543-01	One diesel-fired emergency generator (645 hp), Clinical Research III	N/A	N/A
ES-7549-01	One diesel-fired emergency generator (645 hp), DUMC Jones Building	N/A	N/A
ES-7579-01 and -02	Two diesel-fired emergency generators (1,809 hp each), DUMC Bryan Res. Building Nos. 1 and 2	N/A	N/A
ES-7509-01	One diesel-fired emergency generator (1,106 hp), DUMC Bell Building	N/A	N/A
ES-7776-02	One diesel-fired emergency generator (900 hp), Duke University LSRC I (Indoors)	N/A	N/A
ES-7791-01	One diesel-fired emergency generator (800 hp), Bryan Center	N/A	N/A

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES-7746-01	One diesel-fired emergency generator (850 hp), Tel. Com. Building	N/A	N/A
ES-7765-01	One diesel-fired emergency generator (610 hp), Gross Chemistry	N/A	N/A
ES-7754-09	One diesel-fired emergency generator (2,168 hp), Steam Plant	N/A	N/A
ES-7516-01	One diesel-fired emergency generator (2,520 hp), MSRB	N/A	N/A
ES-7593-01	One diesel-fired emergency generator (2,168 hp), North Pavillion	N/A	N/A
ES-7547-05	One diesel-fired emergency generator (2,304 hp), Duke Hospital North	N/A	N/A
ES-7508-03	One diesel-fired emergency generator (1,109 hp), Duke Clinics West Infill	N/A	N/A
ES-7542-01 and -02	Two diesel-fired emergency generators (1,586 hp each), CCIF Nos. 1 and 2)	N/A	N/A
ES-7540-01	One diesel-fired emergency generator (1,591 hp), Center for Human Genetics	N/A	N/A
ES-7526-01	One diesel-fired emergency generator (1,592 hp), Center for Human Genetics	N/A	N/A
ES-7582-01	One diesel-fired emergency generator (516 hp), DUMC Parking Garage #3	N/A	N/A
ES-7764-01	One diesel-fired emergency generator (764 hp), Primate Center	N/A	N/A
ES-7704-02	One diesel-fired emergency generator (764 hp), Perkins Library	N/A	N/A
ES-7777-01	One diesel-fired emergency generator (533 hp), Wilson Rec.	N/A	N/A
ES-7795-01	One diesel-fired emergency generator (749 hp), WEL Dorm	N/A	N/A
ES-7524-03	One diesel-fired emergency generator (765 hp), Surgical Pavillion	N/A	N/A
ES-7735-01	One diesel-fired emergency generator (1,200 hp), CIEMAS Building	N/A	N/A
ES-7514-01	One diesel-fired emergency generator (1,700 hp), MSRB#2	N/A	N/A
ES-7738-01	One diesel-fired emergency generator (2,876 hp), French Science Center	N/A	N/A
ES-7XXA-01	One diesel-fired emergency generator (2,000 hp), A/MC 1	N/A	N/A
ES-7XXB-01	One diesel-fired emergency generator (2,000 hp), A/MC 2	N/A	N/A
ES-7XXC-01	One diesel-fired emergency generator (2,000 hp), A/MC 3	N/A	N/A
ES-7XXD-01	One diesel-fired emergency generator (2,000 hp), A/MC 4	N/A	N/A
ES-7XXE-01	One diesel-fired emergency generator (2,900 hp), A/MC 5	N/A	N/A

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES-7XXG-01	One diesel-fired emergency generator (2,900 hp), A/MC 7	N/A	N/A
ES-7XXH-01	One diesel-fired emergency generator (2,900 hp), A/MC 8	N/A	N/A
ES-7XXI-01	One diesel-fired emergency generator (2,900 hp), A/MC 9	N/A	N/A
ES-7XXJ-01	One diesel-fired emergency generator (2,900 hp), A/MC 10	N/A	N/A
I-7XXK-01 ¹	One diesel-fired emergency generator (499 hp), A/MC 11	N/A	N/A
I-7XXL-01 ¹	One diesel-fired emergency generator (499 hp), A/MC 12	N/A	N/A
I-7XXM-01 ¹	One diesel-fired emergency generator (499 hp), A/MC 13	N/A	N/A
I-7XXN-01 ¹	One diesel-fired emergency generator (499 hp), A/MC 14	N/A	N/A
I-7XXO-01 ¹	One diesel-fired emergency generator (499 hp), A/MC 15	N/A	N/A
I-7XXP-01 ¹	One diesel-fired emergency generator (499 hp), A/MC 16	N/A	N/A

¹This emission source (**ID No. ES-7524**) is listed as a minor modification per 15 A NCAC 2Q .0515. The compliance certification as described in General Condition P is required. Unless otherwise notified by NC DAQ, the affected Part I terms of this permit (excluding the permit shield as described General Condition R) for this source shall become final on May 27, 2008. Until this date, the affected Part I permit terms herein reflect the proposed operating language that the Permittee shall operate this source under pursuant to 15A NCAC 2Q .0515(f).

²These emission sources are insignificant for Title V purposes; however, they are permitted pursuant to state-enforceable only requirements.

¹These emergency generators are considered insignificant sources, but are being permitted since they are included in the NSR avoidance condition (Section 2.1 G.3.)

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) and appurtenances listed below are subject to the following specific terms, conditions, and limitations, including the testing, monitoring, recordkeeping, and reporting requirements as specified herein:

A. Pathological Waste Incinerator (ID No. ES-7524) firing supplemental natural gas

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

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	E = 0.002*P Where, E = allowable emissions (lb/hr) P = charge rate (lb/hr) For refuse charge rate of 0 to 100 pounds, the allowable emission rate is 0.20 pounds per hour	15A NCAC 2D .1208(b)(2) [15A NCAC 2D .0505]
Sulfur dioxide	2.3 pounds per million Btu heat input	15A NCAC 2D .1208(b)(4) [15A NCAC 2D .0516]

Regulated Pollutant	Limits/Standards	Applicable Regulation
Visible emissions	20 percent opacity	15A NCAC 2D .1208(b)(3) [15A NCAC 2D .0521]
Odorous emissions	State-enforceable only: Odorous emissions must be controlled. <i>See Section 2.2 C.1.</i>	15A NCAC 2D .1806

1. 15A NCAC 2D .1208(b)(2)[2D .0505]: CONTROL OF EMISSIONS FROM INCINERATORS [CONTROL OF PARTICULATES FROM INCINERATORS]

- a. Emissions of particulate matter from this source shall not exceed an allowable emission rate as calculated by the following equation: [15A NCAC 2D .1208(b)(2)]

$$E = 0.002 \times P \quad \text{where } E = \text{allowable emission rate in pounds per hour}$$

$$P = \text{refuse charge rate in pounds per hour}$$

For refuse charge rates of 0 to 100 pounds per hour, the allowable emission rate is 0.2 pounds per hour.

Testing [15A NCAC 2D .0501(c)(3)]

- b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ found in Section 3. If the results of this test are above the limit provided in Section 2.1 A.1 a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .1208(b)(2).

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

- c. To ensure proper operation of the incinerator, the combustion gases shall be subjected to a minimum temperature of 1800 degrees Fahrenheit for a period of not less than one second. The temperature of 1800 degrees Fahrenheit shall be maintained at least 55 minutes out of each 60-minute period, but at no time shall the temperature go below 1600 degrees Fahrenheit. To ensure compliance with this requirement, the Permittee shall operate and maintain a continuous temperature monitoring and recording device for the primary and secondary chambers. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1208(b)(2) if the above requirements are not met.
- d. To ensure Medical and Infectious Wastes are not combusted, the Permittee shall maintain a log of the weight and type of waste combusted. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1208(b)(2) if the above requirements are not met.
- e. To ensure the maximum permitted charge rate of 135 lb/hr is not exceeded, the Permittee shall keep daily records of the single highest maximum hourly charge rate. The maximum hourly charge rate shall be recorded and made available to DAQ personnel upon request. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1208(b)(2) if the above records are not maintained.

2. 15A NCAC 2D .1208(b)(4) [2D .0516]: CONTROL OF EMISSIONS FROM INCINERATORS [SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES]

- a. Emissions of sulfur dioxide from this source shall not exceed **2.3 pounds per million Btu heat input**. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard. [15A NCAC 2D .0516]

Testing [15A NCAC 2D .0501(c)(4)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(4) and General Condition JJ found in Section 3. If the results of this test are above the limit provided in Section 2.1 A.2. a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0516.

Monitoring/Recordkeeping/Reporting [15A NCAC 2Q .0508(f) and 15A NCAC 2D .0501]

- c. No monitoring, recordkeeping, or reporting is required for sulfur dioxide emissions from the firing of natural gas.

3. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

- a. Visible emissions from this source (**ID No. ES-7524**) 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. [15A NCAC 2D .0521 (d)]

Testing [15A NCAC 2D .0501(c)(8)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(8) and General Condition JJ. If the results of this test are above the limit given in Section 2.1 A.3. a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521.

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

- c. To assure compliance, **once a day** on days when the source is operational, the Permittee shall observe the emission points of this source for any visible emissions above normal. The daily observation must be made for each day of the calendar year period on days when the source is operational to ensure compliance with this requirement. The Permittee shall be allowed three (3) days of absent observations per semi-annual period. If visible emissions from this source are observed to be above normal, the Permittee shall either:
 - i. take appropriate action to correct the above-normal emissions within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
 - ii. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 2D .0501(c)(8) is below the limit given in Section 2.1 A.3. a. above.
 If the above-normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .0521.

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

- d. The results of the monitoring shall be maintained in a log (written or electronic format) on-site and made available to an authorized representative upon request. The log 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 2D .0521 if these records are not maintained.

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

- e. The Permittee shall submit a summary report of the observations 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.

B. Boilers No. 1 and 2: Two coal/natural gas-fired boilers equipped with flue gas re-circulation (ID Nos. ES-7754-01 and -02) and associated dry lime/activated carbon injection systems (ID Nos. CD-7754-01B and -02B) and bagfilters (ID Nos. CD-7754-01A and -02A)

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

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	0.226 pounds per million Btu heat input	15A NCAC 2D .0503
Sulfur dioxide	2.3 pounds per million Btu heat input	15A NCAC 2D .0516
Visible emissions	40 percent opacity	15A NCAC 2D .0521
Hazardous air pollutants (HAPs)	MACT Avoidance Requirements <i>See Section 2.2 B.1</i>	15A NCAC 2Q .0317 <i>(15A NCAC 2D .1111)</i>
Particulate matter	Compliance assurance monitoring, See Section 2.2 C.	15A NCAC 2D .0614

1. 15A NCAC 2D .0503: PARTICULATES FROM FUEL BURNING INDIRECT HEAT EXCHANGERS

- a. Emissions of particulate matter from the combustion of coal and natural gas discharged from these boilers (**ID Nos. ES-7754-01 and 02**) into the atmosphere shall not exceed **0.226 pounds per million Btu heat input**. [15A NCAC 2D .0503(a)]

Testing [15A NCAC 2D .0501(c)(3)]

- b. If emissions testing is required, the testing shall be performed in accordance General Condition JJ. If the results of this test are above the limit given in Section 2.1 B.1. a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0503.

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

- c. Particulate matter emissions from the boilers shall be controlled by bagfilters. To assure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there is no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
 - i. an annual (for each 12 month period from initial inspection) internal inspection of the bagfilters' structural integrity; and
 - ii. a monthly external visual inspection of the system ductwork, and material collection unit for leaks.The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0503 if the bagfilters and ductwork is not inspected and maintained,

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

- d. The results of inspection and maintenance shall be maintained in a log (written or electronic format) on-site and made available to an authorized representative upon request. The log shall record the following:
 - i. the date and time of each recorded action;
 - ii. the results of each inspection;
 - iii. a report of any maintenance performed on the bagfilters; and
 - iv. any variance from manufacturer's recommendations, if any, and corrections made.The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0503 if these records are not maintained.

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

- e. Within 30 days of a written request from the DAQ, the Permittee shall submit a report of any maintenance performed on the bagfilters.
- f. 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.

2. 15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

- a. Emissions of sulfur dioxide from these boilers shall not exceed **2.3 pounds per million Btu heat input**. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard. [15A NCAC 2D .0516]

Testing [15A NCAC 2D .0501(c)(4)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(4) and General Condition JJ found in Section 3. If the results of this test are above the limit given in Section 2.1 B.2. a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0516.

Monitoring/Recordkeeping [15A NCAC 2Q .0508(f) and 15A NCAC 2D .0501(c)(4)(A)]

- c. No monitoring/recordkeeping is required for sulfur dioxide emissions from the firing of natural gas in these boilers.
- d. The maximum sulfur content of any coal received and burned in the boilers shall not exceed 1.5 percent by

weight. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0516 if the sulfur content of the coal exceeds this limit.

e. To assure compliance, the Permittee shall monitor the sulfur content of the coal by using coal supplier certification per total shipment received. The coal supplier certification shall be recorded in a log (written or electronic format) per total shipment and include the following information:

- i. the name of the coal supplier;
- ii. the maximum sulfur content of the coal received per total shipment;
- iii. a statement verifying that the methods used to determine the maximum sulfur content of the coal was in accordance with the following:
 - (A) sampling -- ASTM Method D 2234;
 - (B) preparation -- ASTM Method D 2013;
 - (C) gross calorific value (Btu) -- ASTM Method D-2015 or D-3286
 - (D) moisture content --ASTM Method D 3173;
 - (E) sulfur content -- ASTM Method D 3177 or ASTM Method D 4239;

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0516 if the sulfur content of the coal is not monitored and recorded.

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

- f. The Permittee shall submit a summary report of the coal supplier certifications 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 a certified statement signed by the responsible official that the records of coal supplier certification submitted represent all of the coal fired during the reporting period. All instances of deviations from the requirements of this permit must be clearly identified.

3. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

- a. Visible emissions from these boilers (**ID Nos. ES-7754-01 and 02**) shall not be more than 40 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 40 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 90 percent opacity. [15A NCAC 2D .0521(c)]

Testing [15A NCAC 2D .0501(c)(8)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(8) and General Condition JJ. If the results of this test are above the limit given in Section 2.1 B.3. a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521.

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

- c. No monitoring is required for visible emissions from the firing of **natural gas** in the boilers.
- d. To assure compliance, once a day on days when the boilers are operational, the Permittee shall observe the emission points of the boilers when firing **coal** for any visible emissions above normal. The daily observation must be made for each day of the calendar year period when the boilers are operational to ensure compliance with this requirement. The Permittee shall be allowed three (3) days of absent observations per semi-annual period. If visible emissions from this source are observed to be above normal, the Permittee shall either:
 - i. take appropriate action to correct the above-normal emissions within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
 - ii. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 2D .0501(c)(8) is below the limit given in Section 2.1 B.3. a. above.If the above-normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .0521.

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

- e. The results of the monitoring shall be maintained in a log (written or electronic format) on-site and made available to an authorized representative upon request. The log 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 2D .0521 if these records are not maintained.

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

- f. The Permittee shall submit a summary report of the observations 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.

C. Boiler No. 3: One coal/No. 2/recycled No. 2 fuel oil-fired boiler equipped with flue gas recirculation (ID No. ES-7754-03) and associated dry lime/activated carbon injection system (ID No. CD-7754-03B) and bagfilter (ID No. CD-7754-03A).

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

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	0.226 pounds per million Btu heat input	15A NCAC 2D .0503
Sulfur dioxide	2.3 pounds per million Btu heat in put	15A NCAC 2D .0516
Visible emissions	40 percent opacity	15A NCAC 2D .0521
Toxic air pollutants (TAPs)	<i>State-enforceable only</i> Toxics Avoidance Requirements – All recycled fuel oil received and fired shall meet the required specifications. <i>See Section 2.2 A.</i>	15A NCAC 2Q .0317 (15A NCAC 2D .1100)
Hazardous air pollutants (HAPs)	MACT Avoidance Requirements <i>See Section 2.2 B.1.</i>	15A NCAC 2Q .0317 (15A NCAC 2D .1111)
Particulate matter	Compliance assurance monitoring, See Section 2.2 C.	15A NCAC 2D .0614

1. 15A NCAC 2D .0503: PARTICULATES FROM FUEL BURNING INDIRECT HEAT EXCHANGERS

- a. Emissions of particulate matter from the combustion of coal, No. 2 fuel oil, and recycled No. 2 fuel oil that are discharged from this boiler (ID Nos. ES-7754-03) into the atmosphere shall not exceed **0.226 pounds per million Btu heat input**. [15A NCAC 2D .0503(a)]

Testing [15A NCAC 2D .0501(c)(3)]

- b. If emissions testing is required, the testing shall be performed in accordance 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 2D .0503.

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

- c. Particulate matter emissions from the boiler shall be controlled by a bagfilter. To assure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer’s inspection and maintenance recommendations, or if there is no manufacturer’s inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
 - i. an annual (for each 12 month period from initial inspection) internal inspection of the bagfilter's structural integrity; and
 - ii. a monthly external visual inspection of the system ductwork, and material collection unit for leaks.
 The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0503 if the bagfilter and ductwork is not inspected and maintained.

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

- d. The results of inspection and maintenance shall be maintained in a log (written or electronic format) on-site and

made available to an authorized representative upon request. The log shall record the following:

- i. the date and time of each recorded action;
- ii. the results of each inspection;
- iii. a report of any maintenance performed on the bagfilter; and
- iv. any variance from manufacturer's recommendations, if any, and corrections made.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0503 if these records are not maintained.

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

- e. Within 30 days of a written request from the DAQ, the Permittee shall submit a report of any maintenance performed on the bagfilter.
- f. 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.

2. 15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

- a. Emissions of sulfur dioxide from this boiler (**ID Nos. ES-7754-03**) shall not exceed **2.3 pounds per million Btu heat input**. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard. [15A NCAC 2D .0516]

Testing [15A NCAC 2D .0501(c)(4)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(4) and General Condition JJ found in Section 3. If the results of this test are above the limit given in Section 2.1 C.2. a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0516.

Monitoring/Recordkeeping [15A NCAC 2Q .0508(f) and 15A NCAC 2D .0501(c)(4)(A)]

- c. No monitoring/recordkeeping is required for sulfur dioxide emissions from burning No. 2 fuel oil and/or recycled No. 2 fuel oil in this boiler.
- d. The maximum sulfur content of any coal received and burned in the boiler shall not exceed 1.5 percent by weight. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0516 if the sulfur content of the coal exceeds this limit.
- e. To assure compliance, the Permittee shall monitor the sulfur content of the coal by using coal supplier certification per total shipment received. The coal supplier certification shall be recorded in a log (written or electronic format) per total shipment and include the following information:
 - i. the name of the coal supplier;
 - ii. the maximum sulfur content of the coal received per total shipment;
 - iii. a statement verifying that the methods used to determine the maximum sulfur content of the coal was in accordance with the following:
 - (A) sampling -- ASTM Method D 2234;
 - (B) preparation -- ASTM Method D 2013;
 - (C) gross calorific value (Btu) -- ASTM Method D-2015 or D-3286
 - (D) moisture content --ASTM Method D 3173;
 - (E) sulfur content -- ASTM Method D 3177 or ASTM Method D 4239; and

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0516 if the sulfur content of the coal is not monitored and recorded.

3. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

- a. Visible emissions from this boiler (**ID No. ES-7754-03**) shall not be more than 40 percent opacity when averaged over a six-minute period. However, six-minute averaging periods may exceed 40 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 90 percent opacity. [15A NCAC 2D .0521(c)]

Testing [15A NCAC 2D .0501(c)(8)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(8) and General Condition JJ. If the results of this test are above the limit given in Section 2.1 C. 3. a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521.

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

- c. No monitoring is required for visible emissions from the firing of No. 2 fuel oil and/or recycled No. 2 fuel oil in this boiler (**ID Nos. ES-7754-03**).
- d. To assure compliance, **once a day** on days when the boiler is operational, the Permittee shall observe the emission points of this boiler when burning **coal** for any visible emissions above normal. The daily observation must be made for each day of the calendar year period when the boiler is operational to ensure compliance with this requirement. The Permittee shall be allowed three (3) days of absent observations per semi-annual period. If visible emissions from this source are observed to be above normal, the Permittee shall either:
 - i. take appropriate action to correct the above-normal emissions within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
 - ii. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 2D .0501(c)(8) is below the limit given in Section 2.1 C.3. a. above.
 If the above-normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .0521.

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

- e. The results of the monitoring shall be maintained in a log (written or electronic format) on-site and made available to an authorized representative upon request. The log 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 2D .0521 if these records are not maintained.

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

- f. The Permittee shall submit a summary report of the observations 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.

D. Boilers Nos. 4 and 5: Two natural gas/No. 2/recycled No. 2 fuel oil -fired boilers (ID Nos. ES-7754-04 and -05)

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

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	0.234 pounds per million Btu heat input	15A NCAC 2D .0503
Sulfur dioxide	2.3 pounds per million Btu heat input	15A NCAC 2D .0516
Visible emissions	20 percent opacity	15A NCAC 2D .0521
Toxic air pollutants (TAPs)	<i>State-enforceable only</i> Toxics Avoidance Requirements – All recycled fuel oil received and fired shall meet the required specifications. <i>See Section 2.2 A.</i>	15A NCAC 2Q .0317 (15A NCAC 2D .1100)

1. 15A NCAC 2D .0503: PARTICULATES FROM FUEL BURNING INDIRECT HEAT EXCHANGERS

- a. Emissions of particulate matter from the combustion of No. 2 fuel oil, recycled No. 2 fuel oil, and natural gas

that are discharged from these boilers (**ID Nos. ES-7754-04 and -05**) into the atmosphere shall not exceed **0.234 pounds per million Btu heat input**. [15A NCAC 2D .0503(a)]

Testing [15A NCAC 2D .0501(c)(3)]

- b. If emissions testing is required, the testing shall be performed in accordance General Condition JJ. If the results of this test are above the limit given in Section 2.1 D.1. a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0503.

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

- c. No monitoring/recordkeeping/reporting is required for particulate emissions from the firing of No. 2 fuel oil, recycled No. 2 fuel oil, and/or natural gas in these boilers.

2. 15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

- a. Emissions of sulfur dioxide from these boilers (**ID Nos. ES-7754-04 and -05**) shall not exceed **2.3 pounds per million Btu heat input**. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard. [15A NCAC 2D .0516]

Testing [15A NCAC 2D .0501(c)(4)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(4) and General Condition JJ found in Section 3. If the results of this test are above the limit given in Section 2.1 D.2. a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0516.

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

- c. No monitoring/recordkeeping is required for sulfur dioxide emissions from firing No. 2 fuel oil, recycled No. 2 fuel oil, and/or natural gas for these boilers.

3. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

- a. Visible emissions from these boilers (**ID No. ES-7754-04 and -05**) 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. [15A NCAC 2D .0521 (d)]

Testing [15A NCAC 2D .0501(c)(8)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(8) and General Condition JJ. If the results of this test are above the limit given in Section 2.1 D.3. a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521.

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

- c. No monitoring/recordkeeping/reporting is required for visible emissions from the firing of No. 2 fuel oil, recycled No. 2 fuel oil, and/or natural gas in these boilers.

E. Boiler No. 6: One No. 2 fuel oil/natural gas-fired boilers (ID No. ES-7754-06); and, Boiler Nos. 7 and 8: Two No. 2 fuel oil/natural gas-fired boilers with low-NO_x burners (ID Nos. ES-7754-06-10, and -11)

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

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	<i>Boiler No. 6 (ID No. ES-7754-06)</i> 0.214 pounds per million Btu heat input	15A NCAC 2D .0503
	<i>Boiler Nos. 7 and 8 (ID No. ES-7754-10 and -11)</i> 0.197 pounds per million Btu heat input	

Regulated Pollutant	Limits/Standards	Applicable Regulation
Sulfur dioxide	<i>Firing No. 2 fuel oil only:</i> No. 2 fuel oil sulfur content shall not exceed 0.5 percent by weight.	15A NCAC 2D .0524 40 CFR Part 60, Subpart Dc
	<i>Firing natural gas only:</i> 2.3 pounds per million Btu heat input	15A NCAC 2D .0516
Visible emissions	<i>Firing No. 2 fuel oil only:</i> 20 percent opacity	15A NCAC 2D .0524 40 CFR Part 60, Subpart Dc
	<i>Firing natural gas only:</i> 20 percent opacity	15A NCAC 2D .0521
Nitrogen oxides	Non-Attainment NSR Avoidance Condition <i>Boiler Nos. 7 and 8 (ID No. ES-7754-10 and -11)</i> NO _x emissions from the two boilers (combined) shall be limited to less than 40 tons per 12-month period	15A NCAC 2Q .0317 (15A NCAC 2D .0531)
Sulfur dioxide	PSD Avoidance Condition <i>Boiler Nos. 7 and 8 (ID No. ES-7754-10 and -11)</i> SO ₂ emissions from the two boilers (combined) shall be limited to less than 40 tons per 12-month period	15A NCAC 2Q .0317 (15A NCAC 2D .0530)

1. 15A NCAC 2D .0503: PARTICULATES FROM FUEL BURNING INDIRECT HEAT EXCHANGERS

- a. Emissions from the combustion of No. 2 fuel oil and natural gas that are discharged from these boilers into the atmosphere shall not exceed the following limitations:
- Particulate matter emissions from Boiler No. 6 (**ID No. ES-7754-06**) shall not exceed **0.214 pounds per million Btu heat input**.
 - Particulate matter emissions from Boiler Nos. 7 and 8 (**ID Nos. ES-7754-10 and -11**) shall not exceed **0.197 pounds per million Btu heat input**.
[15A NCAC 2D .0503(a)]

Testing [15A NCAC 2D .0501(c)(3)]

- b. If emissions testing is required, the testing shall be performed in accordance General Condition JJ. If the results of this test are above the limit given in Section 2.1 E.1. a.i. or ii. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0503.

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

- c. No monitoring/recordkeeping/reporting is required for particulate emissions from the firing of natural gas or No. 2 fuel oil in this boiler.

When firing No. 2 fuel oil:

2. 15A NCAC 2D .0524: NSPS 40 CFR PART 60 SUBPART Dc

- a. The Permittee shall comply with all applicable provisions, including the notification, testing, recordkeeping, and monitoring requirements contained in Environmental Management Commission Standard 15A NCAC 2D .0524 "New Source Performance Standards (NSPS) as promulgated in 40 CFR Part 60 Subpart Dc, including Subpart A "General Provisions." [15A NCAC 2D .0524]

Emission Limitations [15A NCAC 2D .0524]

- The maximum sulfur content of any fuel oil received and burned in these boilers (**ID Nos. ES-7754-06, -10, and -11**) shall not exceed 0.5 percent by weight.
- When firing No. 2 fuel oil, visible emissions from these boilers (**ID Nos. ES-7754-06, -10, and -11**) shall not be more than 20 percent opacity when averaged over a six-minute period, except for one six-minute period per hour of not more than 27 percent opacity.

Testing [15A NCAC 2D .0501(c)]

- d. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c) and General Condition JJ found in Section 3. If the results of this test are above any limit given in Section 2.1 E.2. b. or c. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0524.

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

- e. In addition to any other recordkeeping required by 40 CFR 60.48c or recordkeeping requirements of the EPA, the Permittee shall record and maintain records of the amounts of each fuel fired during each calendar month. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0524 if these records are not maintained,
- f. The Permittee shall retain a copy of the fuel supplier certification for any No. 2 fuel oil fired at the affected boilers (**ID Nos. ES-7754-06, -10, and -11**). The fuel supplier certification shall include the following information:
 - i. The name of the oil supplier;
 - ii. The sulfur content of the oil (in % by weight); and,
 - iii. A statement from the oil supplier that the oil complies with the specification under the definition of distillate oil in 40 CFR 60.41c.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0524 if the sulfur content of the oil exceeds the limit provided in Section 2.1 E.2. b. of this permit or if fuel supplier certifications are not retained as described above. [40 CFR 60.46c(d), 40 CFR 60.48c(f)]

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

- g. *Semiannual Report.* In addition to any other reporting required by 40 CFR 60.48c or notification requirements to the EPA, the Permittee is required to provide a semiannual summary report, acceptable to the Regional Air Quality Supervisor, of the sulfur content of the distillate fuel oil fired, by 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. The summary report shall include the following information:
 - i. Fuel supplier certification(s) for distillate fuel oil, as provided in Section 2.1 E.2. f. of this permit;
 - ii. A certified statement signed by the owner or operator that the records of fuel supplier certification(s) submitted represents all of the fuel fired at the affected boilers (**ID Nos. ES-7754-06, -10, and -11**) during the semiannual period; and,
 - iii. All instances of deviations from the requirements of this permit must be clearly identified.

When firing natural gas:

3. 15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

- a. Emissions of sulfur dioxide from these boilers (**ID Nos. ES-7754-06, -10, and -11**) shall not exceed **2.3 pounds per million Btu heat input**. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard. [15A NCAC 2D .0516]

Testing [15A NCAC 2D .0501(c)(4)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(4) and General Condition JJ found in Section 3. If the results of this test are above the limit given in Section 2.1 E.3. a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0516.

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

- c. No monitoring/recordkeeping/reporting is required for visible emissions from the firing of natural gas or No. 2 fuel oil.

When firing natural gas:

4. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

- a. When firing natural gas, visible emissions from these boilers (**ID Nos. ES-7754-06, -10, and -11**) 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. [15A NCAC 2D .0521 (d)]

Testing [15A NCAC 2D .0501(c)(8)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(8) and General Condition JJ. If the results of this test are above the limit given in Section 2.1 E.4. a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521.

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

- c. No monitoring/recordkeeping/reporting is required for visible emissions from the firing of natural gas in these boilers (**ID Nos. ES-7754-06, -10, and -11**).

5. 15A NCAC 2Q .0317: AVOIDANCE CONDITIONS**15A NCAC 2D.0531: SOURCES IN NON-ATTAINMENT AREAS**

- a. In order to avoid applicability of 15A NCAC 2D .0531 for major sources and major modifications in non-attainment areas, total nitrogen dioxide emissions from Boiler Nos. 7 and 8 (**ID Nos. ES-7754-10 and -11**) shall not exceed 40 tons during any consecutive 12-month period.

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

- b. The Permittee shall keep monthly records of fuel usage at Boiler Nos. 7 and 8 (**ID Nos. ES-7754-10 and -11**) in a logbook (written or in electronic format), as follows:
- i. The total quantity (in million scf) of natural gas fired at the affected boilers;
 - ii. The total quantity (in 1,000 gal) of No. 2 fuel oil fired at the affected boilers; and,
 - iii. The fuel oil supplier certification for any fuel oil fired at the affected boilers.
- The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0531 if records of the fuel usage are not created and retained as required above.

- c. Each calendar month, the Permittee shall calculate NO_x emissions from Boiler Nos. 7 and 8 (**ID Nos. ES-7754-10 and -11**) for the previous month and previous 12-month period and record calculated emissions in a logbook (written or electronic format), according to the following formulas:
- i. Calculate NO_x emissions from the previous calendar month using the following equation:

$$E_{NO_x} = 20 * Q_{fo2} * \frac{100\% - \zeta_{LNB}}{100\%} + 50 * Q_{ng}$$

Where,

E_{NO_x} = NO_x emissions (in lbs) during the previous calendar month

Q_{fo2} = Quantity of No. 2 fuel oil fired at the affected boilers during the previous calendar month (in 1,000 gal),

ζ_{LNB} = 35%; Control efficiency of the low NO_x burners; and,

Q_{ng} = Quantity of natural gas fired at the affected boilers during the previous calendar month (in million scf).

- ii. Sum the NO_x emissions from Boiler Nos. 7 and 8 (**ID Nos. ES-7754-10 and -11**) for the previous 12-month period to determine the 12-month rolling emission total.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0531 if records of the monthly calculations listed above are not retained or if the 12-month rolling emission totals are greater than the emission limit provided in Section 2.1 E.5. a. of this permit.

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

- d. Within 30 days after each calendar year half, the Permittee shall report the following information to the Regional Supervisor, Division of Air Quality:
- i. Monthly emissions of NO_x emissions from the affected boilers (**ID Nos. ES-7754-10 and -11**) for the previous 17 months as calculated in Section 2.1 E.5. c.i. of this permit; and,
 - ii. 12-month rolling emissions of NO_x emissions from the affected boilers (**ID Nos. ES-7754-10 and -11**) for each of the six 12-month periods over the previous 17 month period as calculated in Section 2.1 E.5. c.ii. of this permit.

6. 15A NCAC 2Q .0317: AVOIDANCE CONDITIONS**15A NCAC 2D.0530: PREVENTION OF SIGNIFICANT DETERIORATION**

- a. In order to avoid applicability of 15A NCAC 2D .0530 for major sources and major modifications in attainment areas, total sulfur dioxide emissions from Boiler Nos. 7 and 8 (**ID Nos. ES-7754-10 and -11**) shall not exceed 40 tons during any consecutive 12-month period.

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

- b. The Permittee shall keep monthly records of fuel usage at Boiler Nos. 7 and 8 (**ID Nos. ES-7754-10 and -11**) in a logbook (written or in electronic format), as follows:
- i. The total quantity (in million scf) of natural gas fired at the affected boilers;
 - ii. The total quantity (in 1,000 gal) of No. 2 fuel oil fired at the affected boilers; and,
 - iii. The fuel oil supplier certification for any fuel oil fired at the affected boilers, including the sulfur content of the oil (in percent by weight).

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if records of the fuel usage and No. 2 fuel oil sulfur content are not created and retained as required above.

- c. Each calendar month, the Permittee shall calculate SO₂ emissions from Boiler Nos. 7 and 8 (**ID Nos. ES-7754-10 and -11**) for the previous month and previous 12-month period and record calculated emissions in a logbook (written or electronic format), according to the following formulas:
- i. Calculate SO₂ emissions from the previous calendar month using the following equation:

$$E_{SO_2} = 142 * S * Q_{fo2} + 0.6 * Q_{ng}$$

Where,

E_{SO_2} = SO₂ emissions (in lbs) during the previous calendar month

S = Sulfur content in the No. 2 fuel oil (in percent by weight)

Q_{fo2} = Quantity of No. 2 fuel oil fired at the affected boilers during the previous calendar month (in 1,000 gal),

Q_{ng} = Quantity of natural gas fired at the affected boilers during the previous calendar month (in million scf)

- ii. Sum the SO₂ emissions from Boiler Nos. 7 and 8 (**ID Nos. ES-7754-10 and -11**) for the previous 12-month period to determine the 12-month rolling emission total.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0530 if records of the monthly calculations listed above are not retained or if the 12-month rolling emission totals are greater than the emission limit provided in Section 2.1 E.6. a. of this permit.

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

- d. Within 30 days after each calendar year half, the Permittee shall report the following information to the Regional Supervisor, Division of Air Quality:
- i. Monthly emissions of SO₂ emissions from the affected boilers (**ID Nos. ES-7754-10 and -11**) for the previous 17 months as calculated in Section 2.1 E.6. c.i. of this permit; and,
 - ii. 12-month rolling emissions of SO₂ emissions from the affected boilers (**ID Nos. ES-7754-10 and -11**) for each of the six 12-month periods over the previous 17 month period as calculated in Section 2.1 E.6. c.ii. of this permit.

- F. One ash handling system (ID No. ES-7754-07) and associated cyclone, bagfilter, and cyclone with wet spray in series (ID No. CD-AB-903-CV-133); One ash handling system (ID No. ES-7754-12) and associated bagfilter (ID No. CD-7754-12); and, Two lime storage silos (ID Nos. ES-7754-13 and -14) and associated bagfilters (ID Nos. CD-7754-13 and -14).**

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

Regulated Pollutant	Limits/Standards	Applicable Regulation
Particulate matter	$E = 4.10 \times P^{0.67}$ Where, E = allowable emission rate (lb/hr) P = process weight rate (tph)	15A NCAC 2D .0515
Visible emissions	20 percent opacity	15A NCAC 2D .0521

1. 15A NCAC 2D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

- a. Emissions of particulate matter from the ash handling systems (ID Nos. ES-7754-07 and -12) and lime storage silos (ID Nos. ES-7754-13 and -14) shall not exceed an allowable emission rate as calculated by the following equation: [15A NCAC 2D .0515(a)]

$$E = 4.10 \times P^{0.67} \quad \text{Where } E = \text{allowable emission rate in pounds per hour}$$

$$P = \text{process weight in tons per hour}$$

Liquid and gaseous fuels and combustion air are not considered as part of the process weight.

Testing [15A NCAC 2D .0501 (c)(3)]

- 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 F.1. a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515.

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

- c. Particulate matter emissions from the ash handling systems and lime storage silos shall be controlled as described in the emission source description provided above. To assure compliance, the Permittee shall perform inspections and maintenance as recommended by the manufacturer. In addition to the manufacturer's inspection and maintenance recommendations, or if there is no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
- a monthly visual inspection of the each capture and controls system's ductwork and material collection unit for leaks; and
 - an annual (for each 12 month period following the initial inspection) internal inspection of the wet spray system and of each bagfilter's structural integrity shall be performed during the period of seasonal downtime.
- The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515 if the ductwork, cyclones, bagfilters, and wet spray system are not inspected and maintained.
- d. The results of inspection and maintenance shall be maintained in a log (written or electronic format) on-site and made available to an authorized representative upon request. The log shall record the following:
- the date and time of each recorded action;
 - the results of each inspection;
 - the results of any maintenance performed on the bagfilters; and
 - any variance from manufacturer's recommendations, if any, and corrections made.

The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0515 if these records are not

maintained.

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

- e. The Permittee shall submit the results of any maintenance performed on the bagfilters within 30 days of a written request by the DAQ.
- f. 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.

2. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

- a. Visible emissions from the ash handling systems (**ID Nos. ES-7754-07 and -12**) and lime storage silos (**ID Nos. ES-7754-13 and -14**) 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. [15A NCAC 2D .0521 (d)]

Testing [15A NCAC 2D .0501(c)(8)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(8) and General Condition JJ. If the results of this test are above the limit given in Section 2.1 F.2. a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521.

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

- c. To assure compliance, **once a day** when the system is in operation, the Permittee shall observe the emission points of the two ash handling systems (**ID Nos. ES-7754-07 and -12**) and lime storage silos (**ID Nos. ES-7754-13 and -14**) for any visible emissions above normal. The daily observation must be made for each day of the calendar year period when the systems are operational to ensure compliance with this requirement. The Permittee shall be allowed three (3) days of absent observations per semi-annual period. The Permittee shall establish "normal" for the new ash handling system and silos (**ID Nos. ES-7754-12, -13, and -14**) within 30 days of initial startup, not including days that the process does not operate. If visible emissions from this source are observed to be above normal, the Permittee shall either:
 - i. take appropriate action to correct the above-normal emissions within the monitoring period and record the action taken as provided in the recordkeeping requirements below, or
 - ii. demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 2D .0501(c)(8) is below the limit given in Section 2.1 F.2. a. above.If the above-normal emissions are not corrected per (i) above or if the demonstration in (ii) above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 2D .0521.

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

- d. The results of the monitoring shall be maintained in a log (written or electronic format) on-site and made available to an authorized representative upon request. The log 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 2D .0521 if these records are not maintained,

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

- e. The Permittee shall submit a summary report of the observations 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.

G. Diesel-fired emergency generators identified as follows:

ID Number	Size of Generator (horsepower)	Building Location
ES-7547-01	1,115	Duke Hospital North No. 1
ES-7547-02	1,115	Duke Hospital North No. 2
ES-7547-03	1,115	Duke Hospital North No. 3
ES-7547-04	1,115	Duke Hospital North No. 4
ES-7531-03	968	Duke Eye Center
ES-7543-01	645	Clinical Research III
ES-7549-01	645	DUMC, Jones Building
ES-7579-01	1,809	DUMC, Bryan Res. Bldg. No. 1
ES-7579-02	1,809	DUMC, Bryan Res. Bldg. No. 2
ES-7509-01	1,106	DUMC, Bell Building
ES-7776-02	900	Duke University, LSRC I (Indoors)
ES-7791-01	800	Bryan Center
ES-7746-01	850	Tel. Com. Bldg.
ES-7765-01	610	Gross Chemistry
ES-7754-09	2,168	Steam Plant
ES-7516-01	2,520	MSRB
ES-7593-01	2,168	North Pavillion
ES-7547-05	2,304	Duke Hospital North
ES-7508-03	1,109	Duke Clinics West Infill
ES-7542-01	1,586	CCIF No. 1
ES-7542-02	1,586	CCIF No. 2
ES-7540-01	1,591	Center for Human Genetics
ES-7526-01	1,592	Center for Human Disease Models
ES-7764-01	764	Primate Center
ES-7704-02	764	Perkins Library
ES-7735-01	1,200	CIEMAS Building
ES-7582-01	516	DUMC Parking Garage #3
ES-7777-01	533	Wilson Rec.
ES-7795-01	749	WEL Dorm
ES-7524-03	765	Surgical Pavillion
ES-7514-01	1,700	MSRB#2
ES-7738-01	2,876	French Science Center
ES-7XXA-01	2,000	A/MC 1
ES-7XXB-01	2,000	A/MC 2
ES-7XXC-01	2,000	A/MC 3
ES-7XXD-01	2,000	A/MC 4
ES-7XXE-01	2,900	A/MC 5
ES-7XXF-01	2,900	A/MC 6
ES-7XXG-01	2,900	A/MC 7
ES-7XXH-01	2,900	A/MC 8
ES-7XXI-01	2,900	A/MC 9
ES-7XXJ-01	2,900	A/MC 10
I-7XXK-01	499	A/MC 11
I-7XXL-01	499	A/MC 12
I-7XXM-01	499	A/MC 13
I-7XXN-01	499	A/MC 14
I-7XXO-01	499	A/MC 15
I-7XXP-01	499	A/MC 16

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

Regulated Pollutant	Limits/Standards	Applicable Regulation
Sulfur dioxide	2.3 pounds per million Btu heat input	15A NCAC 2D .0516
Visible emissions	20 percent opacity	15A NCAC 2D .0521
Nitrogen oxides (NO _x)	<u>Non-Attainment New Source Review Avoidance</u> Eighteen (18) emergency generators: <i>(ID Nos. ES-7514-01, ES-7738-01, ES-7XXA-01 through ES-7XXJ-01, and I-7XXK-01 through I-7XXP-01):</i> Less than 40 tpy	15A NCAC 2Q .0317 <i>(15A NCAC 2D .0531)</i>

1. 15A NCAC 2D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

- a. Emissions of sulfur dioxide from these emergency generators shall not exceed **2.3 pounds per million Btu heat input**. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard. [15A NCAC 2D .0516]

Testing [15A NCAC 2D .0501(c)(4)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(4) and General Condition JJ found in Section 3. If the results of this test are above the limit given in Section 2.1 G.1. a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0516.

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

- c. No monitoring/recordkeeping is required for sulfur dioxide emissions from burning diesel fuel in these emergency generators.

2. 15A NCAC 2D .0521: CONTROL OF VISIBLE EMISSIONS

- a. Visible emissions from these emergency generators 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. [15A NCAC 2D .0521 (d)]

Testing [15A NCAC 2D .0501(c)(8)]

- b. If emissions testing is required, the testing shall be performed in accordance with 15A NCAC 2D .0501(c)(8) and General Condition JJ. If the results of this test are above the limit given in Section 2.1 G.2. a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .0521.

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

- c. No monitoring/recordkeeping/reporting is required for visible emissions from the firing of diesel fuel in these emergency generators.

3. 15A NCAC 2Q .0317: AVOIDANCE CONDITIONS**15A NCAC 2D.0531: SOURCES IN NON-ATTAINMENT AREAS**

- a. In order to avoid applicability of this regulation, the eighteen (18) emergency generators identified above shall discharge into the atmosphere less than 40 tons of NO_x per consecutive 12-month period. [15A NCAC 2D .0531]

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

- b. Each month, the Permittee shall calculate the total NO_x emissions from the eighteen affected emergency generators for the previous calendar month and the previous 12-month period. The NO_x emissions shall be calculated using either:
- Manufacturer-supplied NO_x emission factors, if available, or,
 - The most current uncontrolled NO_x emission factors listed in U.S. EPA's AP-42 (AP-42, Volume 1, Fifth Edition – January 1995 currently lists these as 2.4×10^{-2} lb/hp-hr for generators greater than 600 hp or 3.10×10^{-2} lb/hp-hr for generators less than 600 hp).
- NO_x emissions shall be determined based on run time and operating horsepower. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0531 if the emergency generators' runtime, operating horsepower, and NO_x emissions are not monitored and recorded.
- c. The Permittee shall maintain documentation of each manufacturer-provided NO_x emission factor used in the monthly NO_x compliance demonstration. Manufacturer-supplied equipment specifications with emissions data may be used as documentation. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0531 if the documentation of manufacturer-supplied emissions factors used in the required compliance demonstration is not retained as described above.
- d. Calculations and the total amount of NO_x emissions shall be recorded monthly in a log (written or electronic format). The Permittee shall be deemed in noncompliance with 15A NCAC 2D .0531 if the NO_x emissions exceed this limit.

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

- e. The Permittee shall submit a semi-annual summary report, acceptable to the Regional Air Quality Supervisor, 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. The report shall contain the following:
- f. The monthly NO_x emissions for the previous 17 months. The emissions must be calculated for each of the 12-month periods over the previous 17 months.

2.2 - Multiple Emission Source(s) Specific Limitations and Conditions

- A. Boiler No. 3: One coal/No. 2/recycled No. 2 fuel oil-fired boiler equipped with flue gas recirculation (ID No. ES-7754-03) and associated dry lime/activated carbon injection system (ID No. CD-7754-03B) and bagfilter (ID No. CD-7754-03A); and, Boilers Nos. 4 and 5: Two natural gas/No. 2/recycled No. 2 fuel oil-fired boilers (ID Nos. ES-7754-04 and 05).**

STATE-ONLY REQUIREMENT

- 1. 15A NCAC 2Q .0317: AVOIDANCE CONDITIONS – Recycled Fuel Oil (No. 2 Equivalent) Requirements to Avoid Toxic Air Pollutant Control Rules [Avoidance of 15A NCAC 2D .1100]**
- a. In accordance with Rule 2Q .0317, the Permittee is avoiding the applicability of Rule 2Q .0700 by using recycled fuels which are equivalent to their virgin counterparts. The Permittee is allowed to use the recycled fuel oil(s) supplied by a DAQ-approved vendor as follows: [15A NCAC 2Q .0702]

Specifications - The recycled fuel oil(s) shall be equivalent to unadulterated fossil fuel by meeting the following criteria:

Constituent/Property	Allowable Level
Arsenic	1.0 ppm maximum
Cadmium	2.0 ppm maximum
Chromium	5.0 ppm maximum
Lead	100 ppm maximum
Total Halogens	1000 ppm maximum
Flash Point	
No. 2	100°F minimum
No. 4	130°F minimum
No. 5	175°F minimum
No. 6	175°F minimum
Sulfur	
No. 2	0.5% maximum (by weight)
No. 4	2.0% maximum (by weight)
No. 5	2.0% maximum (by weight)
No. 6	2.0% maximum (by weight)
Ash	1.0% maximum

Testing [15A NCAC 2D .0605]

The DAQ reserves the right to require additional testing and/or monitoring of the recycled fuel oil(s) on an annual basis or without notice.

Monitoring/Recordkeeping [15A NCAC 2D .0605]

- b. The Permittee is responsible for ensuring that the recycled fuel oil(s), as received at the site, meet(s) the approved criteria for unadulterated fuel. The Permittee is held responsible for any discrepancies discovered by DAQ as a result of any sampling and analysis of the fuel oil(s).
- c. The Permittee shall maintain at the facility for a minimum of three years, and shall make available to representatives of the DAQ upon request, accurate records of the following:
- i. The actual amount of recycled fuel oil(s) delivered to, and combusted at the facility on an annual basis.
 - ii. Each load of recycled fuel oil received shall include the following:
 - A. A delivery manifest document clearly showing the shipment content and amount, its place and date of loading, and place and date of destination;
 - B. A batch specific analytical report that contains an analysis for all constituents/properties listed above. Analytical results of the samples representative of the recycled oil shipment from the vendor shall be no more than one year old when received;
 - C. Batch signature information consisting of the following: a batch number, tank identification with batch volume of recycled oil, date and time the batch completed treatment, and volume(s) delivered; and
 - D. A certification indicating that the recycled fuel oil does not contain detectable PCBs (< 2 ppm).

Reporting [15A NCAC 2D .0605]

- d. Within 30 days after each calendar year, regardless of the amount received or combusted, the Permittee shall submit in writing to the Regional Supervisor, DAQ, the following:
- i. A summary of the results of the analytical testing for the previous 12 months; and
 - ii. The total gallons of recycled fuel oil(s) from each approved vendor and combusted at the facility for the previous 12 months.

- B. Boilers No. 1 and 2: Two coal/natural gas-fired boilers equipped with flue gas recirculation (ID Nos. ES-7754-01 and -02) and associated dry lime/activated carbon injection systems (ID Nos. CD-7754-01B and -02B) and bagfilters (ID Nos. CD-7754-01A and -02A) and, Boiler No. 3: One coal/No. 2/recycled No. 2 fuel oil-fired boiler equipped with flue gas recirculation (ID No. ES-7754-03) and associated dry lime/activated carbon injection system (ID No. CD-7754-03B) and bagfilter (ID No. CD-7754-03A)**

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

Regulated Pollutant	Limits/Standards	Applicable Regulation
HAPs	Facility-wide HAP emissions shall be less than: 10 tpy of any individual HAP; and, 14.5 tpy HCl and HF, combined.	15A NCAC 2Q .0317

1. 15A NCAC 2Q. 0317: AVOIDANCE CONDITIONS – LIMITATION TO AVOID BEING MAJOR FOR HAZARDOUS AIR POLLUTANTS [Avoidance of 15A NCAC 2D .1111]

- a. In order to remain classified a minor source for hazardous air pollutants and avoid applicability of MACT standards, including 40 CFR 63 Subparts ZZZZ and DDDDD, combined emissions from Boiler Nos. 1, 2, and 3 (ID Nos. ES-7754-01, -02, and -03) shall be less than the following limitations:
- i. 10 tons per year of hydrogen chloride (HCl);
 - ii. 14.5 tons per year of hydrogen chloride (HCl) and hydrogen fluoride (HF), combined.

Testing Requirements

- b. A ~~three-run~~ performance test on one of the affected boilers (ID Nos. ES-7754-01, -02, and -03) shall be conducted. The performance test shall determine the following:
- i. Hydrogen chloride (HCl) emission rate (in lb/MMBtu) using Test Method 26 or 26A, or other test method approved by the DAQ;
 - ii. Hydrogen fluoride (HF) emission rate (in lb/MMBtu) using Test Method 13A or 13B, or other test method approved by the DAQ;
 - iii. Maximum chlorine fuel input to the boiler during the performance test; and
 - iv. Minimum sorbent rates as follows:
 - A. Collect sorbent injection rate data every 15 minutes during the entire period of the performance tests;
 - B. Determine the average sorbent injection rate by computing the average of all the 15-minute readings taken during each test run.

The Permittee shall only fire coal in tested boiler during the performance test. The test shall be performed in accordance with General Condition JJ, including all required notifications and reports.

- c. Following the initial performance test, the Permittee shall submit an application for a compliance assurance monitoring (CAM) plan. Following the initial performance test, the Permittee shall conduct a performance test of at least one of the affected boilers **every five years**. The Permittee shall rotate the test boilers to that each boiler is tested at least once every fifteen years. The performance tests shall be performed in accordance with General Condition JJ, including all required notifications and reports. If the required test is not conducted, the Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111.

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

- d. The Permittee shall monitor and record the 3-hour average sorbent injection rate at each of the dry lime/activated carbon injection systems (ID Nos. CD-7754-01B, -02B, and -03B). For the purposes of determining compliance with these HAP emission limitations, the Permittee shall assume that no emissions reductions are achieved by the control devices for the duration of any event meeting one or more of the following descriptions:
- i. Periods prior to the initial performance test of the dry lime injection systems;
 - ii. Periods during which the 3-hour average sorbent injection rate is less than the minimum rate established during the most recent performance test; and,
 - iii. Periods during which the sorbent injection rate is not monitored and recorded.

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

- e. **HCl Emissions Calculations.** Each month the Permittee shall calculate the hydrogen chloride (HCl) emissions from the three affected boilers (**ID Nos. ES-7754-01, -02, and -03**) during the previous calendar month and during the previous consecutive 12-months according to the following equations:

- i. Monthly emissions shall be calculated as follows:

$$E_{HCl} = \frac{(Q_{B1} + Q_{B2} + Q_{B3}) * H * F_{HCl}}{10^6} + \frac{(N_{B1} + N_{B2} + N_{B3}) * 1.2}{2,000}$$

Where:

- E_{HCl} = HCl emissions (in tons/month);
- Q_{B1} = Quantity of coal fired in Boiler No. 1 (**ID No. ES-7754-01**) during the previous calendar month while operating the associated dry lime/activated carbon injection system (**ID No. CD-7754-01**), except as described in Section 2.2 B.1. d.i-iii. of this permit (in ton/month);
- Q_{B2} = Quantity of coal fired in Boiler No. 2 (**ID No. ES-7754-02**) during the previous calendar month while operating the associated dry lime/activated carbon injection system (**ID No. CD-7754-02**), except as described in Section 2.2 B.1. d.i-iii. of this permit (in ton/month);
- Q_{B3} = Quantity of coal fired in Boiler No. 3 (**ID No. ES-7754-03**) during the previous calendar month while operating the associated dry lime/activated carbon injection system (**ID No. CD-7754-03**), except as described in Section 2.2 B.1. d.i-iii. of this permit (in ton/month);
- H = Heating value of coal fired in the three affected boilers during the previous calendar month (in Btu/lb);
- F_{HCl} = HCl emission factor (in lb/MMBtu) as established in the most recent performance test (in lb/MMBtu);
- N_{B1} = Quantity of coal fired in Boiler No. 1 (**ID No. ES-7754-01**) during the previous calendar month without operating the associated dry lime/activated carbon injection system (**ID No. CD-7754-01**), or during periods described in Section 2.2 B.1. d.i-iii. of this permit (in ton/month);
- N_{B2} = Quantity of coal fired in Boiler No. 2 (**ID No. ES-7754-02**) during the previous calendar month without operating the associated dry lime/activated carbon injection system (**ID No. CD-7754-02**), or during periods described in Section 2.2 B.1. d.i-iii. of this permit (in ton/month); and,
- N_{B3} = Quantity of coal fired in Boiler No. 3 (**ID No. ES-7754-03**) during the previous calendar month without operating the associated dry lime/activated carbon injection system (**ID No. CD-7754-03**), or during periods described in Section 2.2 B.1. d.i-iii. of this permit (in ton/month).

The *first* monthly emission calculation shall be required for the *earliest* of the following months: (1) the month of initial startup for Boiler No. 7 (**ID No. ES-7754-06-10**); (2) the month of initial startup for Boiler No. 8 (**ID No. ES-7754-06-11**); or (3) September 2007.

- ii. 12-month rolling emissions shall be calculated by summing the monthly emissions (E_{HCl}) from the previous consecutive 12 months. The *first* 12-month rolling emission calculation shall be required 12 months following the first monthly calculation, as described above.

The results of the monthly and 12-month rolling emissions calculations shall be recorded in a logbook (written or electronic format) and retained for a period of **at least five years**. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if the emissions calculations are not recorded as provided above, or if the 12-month rolling HCl emissions exceed 10 tons.

- f. **HF Emissions Calculations.** Each month the Permittee shall calculate the hydrogen fluoride (HF) emissions from the three affected boilers (**ID Nos. ES-7754-01, -02, and -03**) during the previous calendar month and during the previous consecutive 12-months according to the following equations:

- i. Monthly emissions shall be calculated as follows:

$$E_{HF} = \frac{(Q_{B1} + Q_{B2} + Q_{B3}) * H * F_{HF}}{10^6} + \frac{(N_{B1} + N_{B2} + N_{B3}) * 0.15}{2,000}$$

Where:

- E_{HF} = HF emissions (in tons/month); and,
 F_{HF} = HF emission factor (in lb/MMBtu) as established in the most recent performance test (in lb/MMBtu).

The *first* monthly emission calculation shall be required for the *earliest* of the following months: (1) the month of initial startup for Boiler No. 7 (**ID No. ES-7754-06-10**); (2) the month of initial startup for Boiler No. 8 (**ID No. ES-7754-06-11**); or (3) September 2007.

- ii. 12-month rolling emissions shall be calculated by summing the monthly emissions (E_{HF}) from the previous consecutive 12 months. The *first* 12-month rolling emission calculation shall be required 12 months following the first monthly calculation, as described above.

The results of the monthly and 12-month rolling emissions calculations shall be recorded in a logbook (written or electronic format) and retained for a period of **at least five years**. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if the emissions calculations are not recorded as provided above.

- g. **HCl/HF Emissions Calculations.** Each month the Permittee shall calculate the total HCl and HF emission from the three affected boilers (**ID Nos. ES-7754-01, -02, and -03**) during the previous consecutive 12-months by summing the values calculated according to Section 2.2 B.1. e.ii. and f.ii. of this permit. The results of the 12-month rolling emissions calculations shall be recorded in a logbook (written or electronic format) and retained for a period of **at least five years**. The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if the emissions calculations are not recorded as provided above, or if the 12-month rolling emissions of HCl and HF combined exceed 14.5 tons.
- h. The Permittee shall keep a record of the applicability determination on site at the source for a period of five years after the determination, or until the source becomes an affected source. The determination must include the analysis demonstrating why the Permittee believes the source is unaffected pursuant to 40 CFR Part 63.10(b)(3). The Permittee shall be deemed in noncompliance with 15A NCAC 2D .1111 if the records are not maintained.

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

- i. The Permittee shall submit a semiannual summary report, acceptable to the Regional Air Quality Supervisor, 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 on or before July 30 of each calendar year for months between January and June. The report shall contain the following information:
- i. Monthly HCl and HF emission totals for the previous 17 months; and,
 ii. 12-month rolling HCl and HCl/HF combined emissions for each of the six consecutive 12-month periods ending during the previous calendar half.

C. Boilers No. 1, No. 2, and No. 3 (ID Nos. ES-7754-01, 02 and 03)^{1, 2} and associated bagfilters (ID Nos. 4570A, 4571A, and 2168A)

When firing coal in the boilers:

15A NCAC 2D .0614 “Compliance Assurance Monitoring”

1. Pursuant to 40 CFR Part 64 and 15A NCAC 2D .0614, when firing coal in the boilers, the Permittee shall comply with the following:

¹ HAP emissions from the boilers will be controlled by dry lime/activated carbon injection systems. Following installation, the control systems will be tested to establish acceptable operating parameters. Within 180 days after testing, the Permittee must submit a CAM plan for the control systems pursuant to 15A NCAC 2D .0614.

² When boiler No. 3 is firing coal and boilers No. 4, No. 5, or No. 6 are firing oil, a visible emissions excursion cannot be determined since these boilers share a common stack.

2. Background

- a. Emission units: two coal/natural gas-fired boilers (**ID Nos. ES-7754-01 and 02**), and one coal/No. 2 fuel oil-fired boiler (**ID No. ES-7754-03**)
- b. Applicable regulations: 15A NCAC 2D .0503 and 2D .0521
 Emission limits: 0.226 pounds per million Btu heat input (2D .0503, particulate matter)
 20 percent opacity (2D .0521, visible emissions)
 Control Technology: bagfilters (**ID Nos. 4570A, 4571A, and 2168A**)

3. Monitoring Approach The key elements of the monitoring approach are presented in the following table.

	Indicator No. 1	Indicator No. 2	Inspection/Maintenance
Indicator [64.6(c)(1)(i)]	Pressure drop (ΔP) across each <i>bagfilter</i>	Visible emissions	Monthly maintenance and structural integrity inspection. Maintenance performed as needed.
Measurement Approach [64.6(c)(1)(ii)]	A pressure drop indicator shall be used to measure ΔP across the each <i>bagfilter</i> .	Visible emissions will be monitored daily using EPA Reference Method 9.	
Indicator Range [64.6(c)(2)]	An excursion for the <i>bagfilter</i> is defined as any operating condition where the ΔP is less than 0.5" H ₂ O or greater than 8" H ₂ O based on an hourly average .	An excursion for visible emissions is defined as the presence of any visible emissions above normal.	
Bypass [64.3(a)(2)]	If the ΔP falls below 0.5" H ₂ O, the possibility of bypass is investigated.		
QIP Threshold [64.8]	Hourly average ΔP readings outside range 3 times within a 6-month period	Visible emissions greater than normal for more than 30 minutes 3 times within a 6-month period	

	Indicator No. 1	Indicator No. 2	Inspection/Maintenance
Performance criteria/data representativeness [64.6(c)(1)(iii)]	ΔP : minimum acceptable accuracy of pressure drop indicator per manufacturers specifications	Measurements are made at the exhaust stack exit	Inspections are made at the control system
Verification of operational status [64.3(b)(1)]	N/A	N/A	
QA/QC Practices and Criteria [64.3(b)(3)]	ΔP : visual inspections and routine maintenance per manufacturers recommendations <i>bagfilter</i> : inspect and maintain per manufacturers recommendations	The observer will be certified in Method 9 procedures.	Qualified personnel perform inspection
Monitoring frequency [64.3(b)(4)]	ΔP measured continuously	A six-minute Method 9 is performed daily	Monthly inspection
Data collection procedures [64.3(b)(4)]	Recorded manually once per day	Visible emission observation is documented by observer	Records are maintained to document monthly inspections and required maintenance

	Indicator No. 1	Indicator No. 2	Inspection/Maintenance
Recordkeeping and Reporting [64.9]	Excursion reports and corrective actions, boiler shift reports, I&M logs for ΔP monitoring and recording system, bagfilter inspection and maintenance reports Semi-annual reports include: Investigative and corrective action report, Date, time, and duration of excursion, Cause of and corrective actions taken to eliminate excursion, and Measures taken to prevent re-occurrence A description of the actions taken to implement a QIP (as applicable)	Excursion reports and corrective actions, visible emission observation logs Semi-annual reports include: Investigative and corrective action report, Date, time, and duration of excursion Cause of and corrective actions taken to eliminate excursion, and Measures taken to prevent re-occurrence A description of the actions taken to implement a QIP (as applicable)	

D. Facility-wide sources

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

Regulated Pollutant	Limits/Standards	Applicable Regulation
Odorous emissions	State-enforceable only: Odorous emissions must be controlled	15A NCAC 2D .1806

STATE-ONLY REQUIREMENT

1. 15A NCAC 2D .1806: CONTROL AND PROHIBITION OF ODOROUS EMISSIONS

- a. The Permittee shall not operate the facility without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary.

E. Compression Ignition Internal Combustion Engines Ordered, Modified, or Reconstructed³ after July 11, 2005

1. 15A NCAC 2D .0524: NEW SOURCE PERFORMANCE STANDARDS [40 CFR 60.4200 SUBPART IIII]⁴

- 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 2D .0524 "New Source Performance Standards (NSPS)" as promulgated in

³ As each generator affected by 40 CFR 60, Subpart IIII is installed, modified, or reconstructed the Permittee shall submit an application to administratively amend the permit. The application shall include the generator maximum power output, the displacement of each cylinder, and a statement indicating its primary use (i.e. emergency or non-emergency).

⁴ The permit shield described in General Condition R does not apply to this condition.

40 CFR Part 60 Subpart IIII, including Subpart A "General Provisions." [15A NCAC 2D .0524]

2.3 - Permit Shield for Non-Applicable Requirements

The Permittee is shielded from the following non-applicable requirements [15A NCAC 2Q .0512(a)(1)(B)].

- A. 15A NCAC 2D .0524 (**40 CFR Part 60, Subpart Ce**) is not applicable to the Pathological Waste Incinerator (**ID No. ES-7524**) because the incinerator burns more than 90% by weight pathological waste.
- B. 15A NCAC 2D .0524 (**40 CFR Part 60, Subpart Dc**) is not applicable to Boiler No. 1 (**ID No. ES-7754-01**), Boiler No. 2 (**ID No. ES-7754-02**), and Boiler No. 3 (**ID No. ES-7754-03**) because construction commenced before June 9, 1989.
- C. 15A NCAC 2D .0524 (**40 CFR Part 60, Subpart Dc**) is not applicable to Boiler No. 4 (**ID No. ES-7754-04**), because construction commenced before June 9, 1989.
- D. 15A NCAC 2D .1111 (**40 CFR Part 63, Subpart O**) is not applicable to the ethylene oxide sterilizers (**ID Nos. ES-7547-06, -07, and -08, ES-7531-01 and -02**) because the sterilizers are located at a medical facility.

SECTION 3 - GENERAL CONDITIONS

This section describes terms and conditions applicable to this Title V facility. All references to the "permit" in this section apply only to Part I of the permit.

- A. **General Provisions** [NCGS 143-215 and 15A NCAC 2Q .0508(aa)]
 1. Terms not otherwise defined in this permit shall have the meaning assigned to such terms as defined in 15A NCAC 2D and 2Q.
 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 2Q .0507(k) and .0508(aa)]

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 and any information submitted in support of the application package. The permit and application shall be made available to an authorized representative of Department of Environment and Natural Resources upon request.
- C. **Severability Clause** [15A NCAC 2Q .0508(i)]

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 2Q .0507(c)]

Except as otherwise specified herein, two copies 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

- E. **Duty to Comply** [15A NCAC 2Q .0508(j)]
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. **Permit Modifications**
1. Administrative Permit Amendments [15A NCAC 2Q .0514]
The Permittee shall submit an application for an administrative permit amendment in accordance with 15A NCAC 2Q .0514.
 2. Transfer in Ownership or Operation and Application Submittal Content [15A NCAC 2Q .0524 and 2Q .0505]
The Permittee shall submit an application for an ownership change in accordance with 15A NCAC 2Q.0524 and 2Q .0505.
 3. Minor Permit Modifications [15A NCAC 2Q .0515]
The Permittee shall submit an application for a minor permit modification in accordance with 15A NCAC 2Q .0515.
 4. Significant Permit Modifications [15A NCAC 2Q .0516]
The Permittee shall submit an application for a significant permit modification in accordance with 15A NCAC 2Q .0516.
 5. Reopening for Cause [15A NCAC 2Q .0517]
The Permittee shall submit an application for reopening for cause in accordance with 15A NCAC 2Q .0517.
- H. **Changes Not Requiring Permit Modifications**
1. Section 502(b)(10) Changes [15A NCAC 2Q .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.
2. Off Permit Changes [15A NCAC 2Q .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.
3. Emissions Trading [15A NCAC 2Q .0523(c)]

To the extent that emissions trading is allowed under 15A NCAC 2D, including subsequently adopted maximum achievable control technology standards, emissions trading shall be allowed without permit revision pursuant to 15A NCAC 2Q .0523(c).

I.A. Reporting Requirements for Excess Emissions and Permit Deviations

[15A NCAC 2D .0535(f) and 2Q .0508(f)(2)]

“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 2D; or by a permit condition; or that exceeds an emission limit established in a permit issued under 15A NCAC 2Q .0700. *(Note: Definitions of excess emissions under 2D .1110 and 2D .1111 shall apply where defined by rule.)*

“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.

Excess Emissions

1. If a source is required to report excess emissions under NSPS (15A NCAC 2D .0524), NESHAPS (15A NCAC 2D .1110 or .1111), or the operating permit provides for periodic (e.g., quarterly) reporting of excess emissions, reporting shall be performed as prescribed therein.
2. If the source is not subject to NSPS (15A NCAC 2D .0524), NESHAPS (15A NCAC 2D .1110 or .1111), or these rules do NOT define "excess emissions," the Permittee shall report excess emissions in accordance with 15A NCAC 2D .0535 as follows:
 - a. Pursuant to 15A NCAC 2D .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 2D .0535(f)(3).

Permit Deviations

3. Pursuant to 15A NCAC 2Q .0508(f)(2), the Permittee shall report deviations from permit requirements (terms and conditions) as follows:
 - a. Notify the Regional Supervisor or Director of all other deviations from permit requirements not covered under 15A NCAC 2D .0535 on the next business day after becoming aware of the deviation. A written report shall be submitted within two business days to the Regional Supervisor and shall include the probable cause of such deviation and any corrective actions or preventative actions taken. All reports of deviations from permit requirements shall be certified by a responsible official.

I.B. Other Requirements under 15A NCAC 2D .0535

The Permittee shall comply with all other applicable requirements contained in 15A NCAC 2D .0535, including 15A

NCAC 2D .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 2D .0535(c)(1) through (7).
2. 15A NCAC 2D .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. **Emergency Provisions** [40 CFR, 70.6 (g)]

The Permittee shall be subject to the following provisions with respect to emergencies:

1. An emergency means any situation arising from sudden and reasonably unforeseeable events beyond the control of the facility, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the facility to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error.
2. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions specified in 3. below are met.
3. The affirmative defense of emergency shall be demonstrated through properly signed contemporaneous operating logs or other relevant evidence that include information as follows:
 - a. an emergency occurred and the Permittee can identify the cause(s) of the emergency;
 - b. the permitted facility was at the time being properly operated;
 - c. during the period of the emergency the Permittee took all reasonable steps to minimize levels of emissions that exceeded the standards or other requirements in the permit; and
 - d. the Permittee submitted notice of the emergency to the DAQ within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, steps taken to mitigate emissions, and corrective actions taken.
4. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
5. This provision is in addition to any emergency or upset provision contained in any applicable requirement specified elsewhere herein.

K. **Permit Renewal** [15A NCAC 2Q .0513(b)]

This permit is issued for a fixed term of five years for facilities subject to Title IV requirements and for a term not to exceed five years in the case of all other facilities. This permit shall expire at the end of its term. Permit expiration terminates the facility's right to operate unless a complete renewal application is submitted at least nine months before the date of permit expiration. If the Permittee or applicant has complied with 15A NCAC 2Q .0512(b)(1), this permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of this permit shall remain in effect until the renewal permit has been issued or denied.

L. **Need to Halt or Reduce Activity Not a Defense** [15A NCAC 2Q.0508(k)]

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 2Q.0508(n)]

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 2Q .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 2Q .0508(f)]

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 2Q .0508(t)]

The Permittee shall submit to the DAQ and the EPA (Air and EPCRA Enforcement Branch, EPA, Region 4, 61 Forsyth Street, Atlanta, GA 30303) postmarked on or before **March 1** a compliance certification (for the preceding calendar year) by a responsible official with all federally-enforceable terms and conditions in the permit, including emissions limitations, standards, or work practices. 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; and
4. the method(s) used for determining the compliance status of the source during the certification period.

Q. **Certification by Responsible Official** [15A NCAC 2Q .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 2Q .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 2Q .0523.
4. A permit shield does not extend to minor permit modifications made under 15A NCAC 2Q .0515.

S. **Termination, Modification, and Revocation of the Permit** [15A NCAC 2Q .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 2Q .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 2Q .0508(m)]

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

V. **Inspection and Entry** [15A NCAC 2Q .0508(r) 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 2Q .0508(o)]

1. The Permittee shall pay all fees in accordance with 15A NCAC 2Q .0200.
2. Payment of fees may be by check or money order made payable to the N.C. Department of Environment and Natural Resources. 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 2Q .0519.

X. **Annual Emission Inventory Requirements** [15A NCAC 2Q .0207]

The Permittee shall report by **June 30 of each year** the actual emissions of each air pollutant listed in 15A NCAC 2Q .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 2Q .0107 and 2Q. 0508(n)]

Whenever the Permittee submits information under a claim of confidentiality pursuant to 15A NCAC 2Q .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 2Q .0107.

Z. **Construction and Operation Permits** [15A NCAC 2Q .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 2Q .0100 and .0300.

AA. **Standard Application Form and Required Information** [15A NCAC 2Q .0505 and .0507]

The Permittee shall submit applications and required information in accordance with the provisions of 15A NCAC 2Q .0505 and .0507.

BB. **Financial Responsibility and Compliance History** [15A NCAC 2Q .0507(d)(4)]

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 2Q .0501(e)]

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 2Q .0508(g)]

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. Prevention of Accidental Releases General Duty Clause - Section 112(r)(1) -

FEDERALLY-ENFORCEABLE ONLY

Although a risk management plan may not be required, if the Permittee produces, processes, handles, or stores any amount of a listed hazardous substance, the Permittee has a general duty to take such steps as are necessary to prevent the accidental release of such substance and to minimize the consequences of any release.

FF. Title IV Allowances [15A NCAC 2Q .0508(h)]

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 2D .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 2D .0300.

HH. Registration of Air Pollution Sources [15A NCAC 2D .0200]

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 2D .0202(b).

II. Ambient Air Quality Standards [15A NCAC 2D .0501(e)]

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 2D .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 2Q .0508(aa)]

If emissions testing is required by this permit or the DAQ or if the Permittee submits emissions testing to the DAQ in support of a permit application, the Permittee shall perform such testing in accordance with the appropriate EPA reference method(s) as approved by the DAQ and follow the procedures outlined below. The Permittee must request **in writing** and receive approval from the DAQ for an alternate test method or procedure.

1. The Permittee shall submit a completed Protocol Submittal Form to the DAQ Regional Supervisor at least 45 days prior to the scheduled test date. A copy of the Protocol Submittal Form may be obtained from the Regional

Supervisor.

2. The Permittee shall notify the Regional Supervisor of the specific test dates at least 15 days prior to testing in order to afford the DAQ the opportunity to have an observer on-site during the sampling program.
3. During all sampling periods, the Permittee shall operate the emission source(s) under maximum normal operating conditions or alternative operating conditions as deemed appropriate by the Regional Supervisor or his delegate.
4. The Permittee shall submit **two** copies of the test report to the DAQ. The test report shall contain at a minimum the following information:
 - a. a certification of the test results by sampling team leader and facility representative;
 - b. a summary of emissions results and text detailing the objectives of the testing program, the applicable state and federal regulations, and conclusions about the testing and compliance status of the emission source(s);
 - c. a detailed description of the tested emission source(s) and sampling location(s) process flow diagrams, engineering drawings, and sampling location schematics should be included as necessary;
 - d. all field, analytical, and calibration data necessary to verify that the testing was performed as specified in the applicable test methods;
 - e. example calculations for at least one test run using equations in the applicable test methods and all test results including intermediate parameter calculations; and
 - f. documentation of facility operating conditions during all testing periods and an explanation relating these operating conditions to maximum normal operation. If necessary, provide historical process data to verify maximum normal operation.
5. The testing requirement(s) shall be considered satisfied only upon written approval of the test results by the DAQ.
6. The DAQ will review emission test results with respect exclusively to the specified testing objectives as proposed by the Permittee and approved by the DAQ. The use of the test results beyond the stated objectives remains subject to the approval of the DAQ.

KK. Reopening for Cause [15A NCAC 2Q .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 2Q .0513(c).
3. Except for the state-enforceable only portion of the permit, the procedures set out in 15A NCAC 2Q .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 2Q .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 2Q .0508(f)]

The Permittee shall maintain a record of operation for permitted equipment noting whenever the equipment is taken from and placed into operation. During operation the monitoring recordkeeping and reporting requirements as prescribed by the permit shall be implemented within the monitoring period.

ATTACHMENT

List of Acronyms

AOS	Alternate Operating Scenario
BACT	Best Available Control Technology
Btu	British thermal unit
CEM	Continuous Emission Monitor
CFR	Code of Federal Regulations
CAA	Clean Air Act
DAQ	Division of Air Quality
DENR	Department of Environment and Natural Resources
EMC	Environmental Management Commission
EPA	Environmental Protection Agency
FR	Federal Register
GACT	Generally Available Control Technology
HAP	Hazardous Air Pollutant
MACT	Maximum Achievable Control Technology
NCAC	North Carolina Administrative Code
NCGS	North Carolina General Statutes
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standard
OAH	Office of Administrative Hearings
PM	Particulate Matter
PM₁₀	Particulate Matter with Nominal Aerodynamic Diameter of 10 Micrometers or Less
POS	Primary Operating Scenario
PSD	Prevention of Significant Deterioration
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO₂	Sulfur Dioxide
tpy	Tons Per Year
VOC	Volatile Organic Compound