ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

MICHAEL ABRACZINSKAS
Director

NORTH CAROLINA
Environmental Quality

June 5, 2019

Jon Kerin
VP CCP Gov. & Op. Support
Duke Energy Progress LLC
410 South Wilmington Street
Raleigh, NC 27601

SUBJECT: Air Quality Permit No. 10583R00
Facility ID: 1900134
Duke Energy Progress LLC - Cape Fear STAR® Facility
Moncure, North Carolina
Chatham County
Fee Class: Title V
PSD Status: Minor

Dear Mr. Kerin:

In accordance with your completed Air Quality Permit Application for a Greenfield facility received July 24, 2018 and addendum received November 9, 2018, we are forwarding herewith Air Quality Permit No. 10583R00 to Duke Energy Progress LLC - Cape Fear STAR® Facility, 500 C P and L Road, Moncure, 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 02Q .0503(8) have been listed for informational purposes as an "ATTACHMENT."

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 NCGS 143-215-108A(b) and received written approval from the Director of the Division of Air Quality to commence construction. Failure to receive an Air Quality Permit or written approval prior to commencing construction is a violation of NCGS 143-215.108A and may subject the Permittee to civil or criminal penalties as described in NCGS 143-215.114A and 143-215.114B.

Chatham County has triggered increment tracking under PSD for PM_{10}, SO_2 and NO_x. This modification will result in an increase of 22.5 pounds per hour of PM_{10}, 25.7 pounds per hour of SO_2, and 50.6 pounds per hour of NO_x.

This Air Quality Permit shall be effective from June 5, 2019 until May 31, 2027, 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 Betty Gatano, P.E., at (919) 707-8736 or Betty.Gatano@ncdenr.gov.

Sincerely yours,

for William D. Willets, P.E., Chief, Permitting Section
Division of Air Quality, NCDEQ

c: EPA Region 4
Ray Stewart, Supervisor, Raleigh Regional Office
Central Files
Connie Horne (Cover letter only)

ATTACHMENT

Insignificant Activities per 15A NCAC 02Q .0102(h)(5)

Emission Source ID	Emission Source Description
I-1	Wet ash receiving (transfer to shed and hopper)
I-3	Unloading pile
I-4	Feed silo with a maximum 125 tons per hour filling rate and maximum 75 tons per hour unloading rate with a bin vent filter
I-10	EHE silo with a maximum 125 tons per hour filling rate and maximum 75 tons per hour unloading rate with a bin vent filter
I-12	Loadout silo with a maximum 75 tons per hour filling rate and maximum 100 tons per hour unloading rate with a bin vent filter
I-13, I-14	Two truck loadout spouts, each with a bin vent filter
I-15	Ash Basin
I-16	Ash Handling
I-19	Screener with 165 tons per hour nominal fly ash processing rate
I-20	Crusher with 165 tons per hour nominal fly ash processing rate
I-21	Haul Roads
I-22 **NSPS IIII GACT ZZZZ**	Screener diesel-fired engine (91 horsepower)
I-24	Ball mill classifier with a process rate of 10 tons per hour, with a baghouse inherent to the process
I-25	Ball mill feed silo with a maximum 15 tons per hour filling rate with a bin vent filter

1. Because an activity is insignificant does not mean that the activity is exempted from an applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement.
2. When applicable, emissions from stationary source activities identified above shall be included in determining compliance with the permit requirements for toxic air pollutants under 15A NCAC 02D .1100 "Control of Toxic Air Pollutants" or 02Q .0711 "Emission Rates Requiring a Permit".
3. For additional information regarding the applicability of GACT see the DAQ page titled "The Regulatory Guide for Insignificant Activities/Permits Exempt Activities". The link to this site is as follows: http://daq.state.nc.us/permits/insig/

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

AIR QUALITY PERMIT

Permit No.	Replaces Permit No.(s)	Effective Date	Expiration Date
10583R00	N/A	June 5, 2019	May 31, 2027

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

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

Permittee:	**Duke Energy Progress, LLC - Cape Fear STAR® Facility**
Facility ID:	**1900134**
Facility Site Location: **City, County, State, Zip:**	**500 C P and L Road** **Moncure, Chatham County, North Carolina 27559**
Mailing Address: **City, State, Zip:**	**410 South Wilmington Street** **Raleigh, Wake County, North Carolina 27601**
Application Number: **Complete Application Date:**	**1900134.18A** **November 9, 2018**
Primary SIC Codes:	**4911**
Division of Air Quality, **Regional Office Address:**	**Raleigh Regional Office** **3800 Barrett Drive, Suite 101** **Raleigh, North Carolina 27609**

Table of Contents

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:

Page No(s)	Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
4	ES-5	STAR® (Staged Turbulent Air Reactor) ash beneficiation process with a 140 million Btu per hour total maximum firing rate, processing feedstock (fly ash and other ingredient materials) into commercial products and equipped with propane low-NOx start-up burners (60 million Btu per hour maximum total capacity) for use during start-up or when necessary to maintain the desired reactor temperature; an integral cyclone and bagfilter for product recovery	CD-5A CD-5B	Dry FGD scrubber in series with a Baghouse (26,790 square feet of surface area)
8	ES-6	FGD byproduct silo (capacity to be determined)	CD-6	Bin vent filter (259 square feet of surface area)
8	ES-7	FGD hydrate lime silo with a maximum 25 tons per hour filling rate and maximum 0.475 tons per hour unloading rate	CD-7	Bin vent filter (259 square feet of surface area)
8	ES-8	External heat exchanger A with 70 tons per hour nominal capacity	CD-8	Baghouse (20,925 square feet of surface area)
8	ES-9	External heat exchanger B with 70 tons per hour nominal capacity	CD-9	Baghouse (20,925 square feet of surface area)
8	ES-11	Product storage dome with a maximum 75 tons per hour filling rate and maximum 275 tons per hour unloading rate	CD-11	Bin vent filter (2,260 square feet of surface area)
10	ES-23 **NSPS IIII** **GACT ZZZZ**	Crusher diesel-fired engine (300 horsepower)	N/A	N/A

SECTION 2 - SPECIFIC LIMITATIONS AND CONDITIONS

2.1- Emission Source(s) and Control Devices(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. STAR® (Staged Turbulent Air Reactor) ash beneficiation process (ID No. ES-5) equipped with propane low-NOx startup burners controlled by a FGD scrubber (ID No. CD-5A) and a baghouse (ID No. CD-5B)

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	For $P \leq 30$, $E = 4.10 \times P^{0.67}$ For $P > 30$, $E = 55.0 \times P^{0.11} - 40$ Where: E = allowable emission rate in pounds per hour P = process weight in tons per hour	15A NCAC 02D .0515
Sulfur dioxide	2.3 pounds per million Btu heat input	15A NCAC 02D .0516
Visible emissions	20 percent opacity except during startup, shutdown and malfunctions	15A NCAC 02D .0521
Toxic air pollutants	**State Enforceable Only** See Section 2.2 A.3	15A NCAC 02D .1100
Toxic air pollutants	**State Enforceable Only** See Section 2.2 A.4	15A NCAC 02Q .0711
N/A	Submit Title V permit application within one year from the date of beginning operation of applicable sources See Section 2.2 A.7	15A NCAC 02Q .0504

1. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

a. Emissions of particulate matter from this source **(ID No. ES-5)** shall not exceed an allowable emission rate as calculated by the following equation:

$$\text{For } P \leq 30,\ E = 4.10 \times P^{0.67}$$
$$\text{For } P > 30,\ E = 55.0 \times P^{0.11} - 40$$

Where:
E = allowable emission rate in pounds per hour
P = 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 02Q .0308(a)]

b. Under the provisions of NCGS 143-215.108, the Permittee shall demonstrate compliance with the emission limit above by testing the reactor **(ID No. ES-5)** for particulate emissions. Testing shall be performed in accordance with General Condition 17 and with a testing protocol approved by the DAQ. Testing shall be

completed within 90 days of initial startup[1] of the reactor **(ID No. ES-5)**. The final air emission test report shall be submitted to the DAQ not later than 30 days after sample collection, in accordance with 15A NCAC 02D .2602(h).

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

c. Particulate matter emissions from this source **(ID No. ES-5)** shall be controlled by a bagfilter **(ID No. CD-5B).** To ensure 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 are no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
   i. a monthly visual inspection of the system ductwork and material collection unit for leaks;
   ii. a monthly reading of the pressure gauges on the bagfilter **(ID Nos. CD-5B)**; and
   ii. an annual (for each 12-month period following the initial inspection) internal inspection of the bagfilter structural, noting the structural integrity and the condition of the filters.

d. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. the date and time of each recorded action;
   ii. the results of each inspection;
   iii. the results of any maintenance performed on any control device; and
   iv. any variance from manufacturer's recommendations, if any, and corrections made.

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

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

2. 15A NCAC 02D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

a. Emissions of sulfur dioxide from this source **(ID No. ES-5)** 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.

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

b. If emissions testing is required, the testing shall be performed in accordance with General Condition 17.

Monitoring/Recordkeeping [15A NCAC 02Q .0308(a), 15A NCAC 02D .0605, 15A NCAC 02D .0611, 15A NCAC 02D .0613]

c. The Permittee shall operate the FGD scrubber **(ID No. CD-5A)** at any time the reactor is in operation other than during startup, shutdown or malfunction.

d. To ensure compliance, the Permittee shall install a sulfur dioxide continuous emissions monitoring (CEM) system including any required diluent monitor system with the following requirements:
   i. The CEM system shall be installed, calibrated, maintained, tested, and operated in accordance with 40 CFR Part 60, Appendix B.
   ii. Compliance with the sulfur dioxide emission standard shall be demonstrated based on a three-hour rolling average of the sulfur dioxide exhaust gas concentration measured by the CEM system.
   iii. Pursuant to 15A NCAC 02D .0613 "Quality Assurance Program," the Permittee shall develop and implement a written quality assurance program containing information required by 40 CFR Part 60, Appendix F, Section 3, Quality Assurance Procedures.

[1] The initial startup is considered to be after the reactor has been through commissioning and turned over to operations.

Reporting [15A NCAC 02Q .0308(a), 15A NCAC 02D .0605, 02D .0611]

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

f. For the CEMs, the Permittee shall submit semiannually an excess emissions and monitoring systems summary report. The report shall be calculated on a quarterly basis in a format as provided by the Director. The report shall include any quality assurance assessments, as stated in the quality assurance program, and shall be submitted by July 30 for the period between January 1 and June 30 and by January 30 for the period between July 1 and December 31 of each year.

g. The Permittee shall submit semiannually an emission report based on CEMs data 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 monthly sulfur dioxide emissions for the previous 17 months. The emissions must be calculated for each of the 12-month periods over the previous 17 months.

3. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from this source **(ID No. ES-5)** shall not be more than 20 percent opacity (except during startups, shutdowns, and malfunctions) when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event, shall the six-minute average exceed 87 percent opacity

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

b. If emissions testing is required, the testing shall be performed in accordance with General Condition 17.

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

c. To ensure compliance, once every month, the Permittee shall observe the STAR® reactor stack for any visible emissions above normal. The Permittee shall establish "normal" for this source in the first 30 days following the effective date of beginning operation. 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 as soon as practicable and 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 02D .2610 (Method 9) for 12 minutes is below the limit given in Section 2.1 A.3.a above.

d. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. the date and time of each visible observation;
   iii. the results of each observation and/or test noting any corrective actions taken to reduce visible emissions; and
   iv. the results of any corrective actions performed.

4. 15A NCAC 02D .0611: MONITORING EMISSIONS FROM OTHER SOURCES

a. Emissions of sulfur dioxide (SO2) from the STAR® (Staged Turbulent Air Reactor) ash beneficiation process **(ID No. ES-5)** shall be controlled by a FGD scrubber **(ID No. CD-5A)** at all times, except during periods of startup, shutdown or malfunction.

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

b. To ensure 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 are no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include an annual (for each 12-month period following

the initial inspection) internal inspection of the dry FGD scrubber, including inspection of the injection nozzles, pumping systems, and associated controls.

c. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. the date and time of each recorded action;
   ii. the results of each inspection;
   iii. the results of any maintenance performed on any control device; and
   iv. any variance from manufacturer's recommendations, if any, and corrections made.

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

d. The Permittee shall submit the results of any maintenance performed on any control device within 30 days of a written request by the DAQ.

5. NCGS 143-215.108: CONTROL OF SOURCES OF AIR POLLUTION; PERMITS REQUIRED

Under the provisions of NCGS 143-215.108, the Permittee shall verify the NOx emission factor specified in Permit Application No. 1900134.18A by testing the reactor **(ID No. ES-5)** for NOx emissions. Testing shall be performed in accordance with General Condition 17 and with a testing protocol approved by the DAQ. Testing shall be completed within 90 days of initial startup[2] of the reactor **(ID No. ES-5)**. The final air emission test report shall be submitted to the DAQ not later than 30 days after sample collection, in accordance with 15A NCAC 02D .2602(h).

[2] The initial startup is considered to be after the reactor has been through commissioning and turned over to operations.

B. FGD byproduct silo (ID No. ES-6) with bin vent filter (ID No. CD-6)

FGD hydrate lime silo (ID No. ES-7) with bin vent filter (ID No. CD-7)

Two external heat exchangers A and B (ID Nos. ES-8 and ES-9) with baghouses (ID Nos. CD-8 and CD-9)

Product storage dome (ID No. ES-11) with bin vent filter (ID No. CD-11)

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	For $P \leq 30$, $E = 4.10 \times P^{0.67}$ For $P > 30$, $E = 55.0 \times P^{0.11} - 40$ Where: E = allowable emission rate in pounds per hour P = process weight in tons per hour	15A NCAC 02D .0515
Visible emissions	20 percent opacity except during startup, shutdown and malfunctions	15A NCAC 02D .0521
Toxic air pollutants	**State Enforceable Only** See Section 2.2 A.3	15A NCAC 02D .1100
Toxic air pollutants	**State Enforceable Only** See Section 2.2 A.4	15A NCAC 02Q .0711
N/A	Submit Title V permit application within one year from the date of beginning operation of applicable sources See Section 2.2 A.7	15A NCAC 02Q .0504

1. 15A NCAC 02D .0515: PARTICULATES FROM MISCELLANEOUS INDUSTRIAL PROCESSES

a. Emissions of particulate matter from these sources **(ID Nos. ES-6 through ES-9 and ES-11)** shall not exceed an allowable emission rate as calculated by the following equation:

For $P \leq 30$, $E = 4.10 \times P^{0.67}$
For $P > 30$, $E = 55.0 \times P^{0.11} - 40$

Where:
E = allowable emission rate in pounds per hour
P = 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 02Q .0308(a)]

b. Under the provisions of NCGS 143-215.108, the Permittee shall demonstrate compliance with the emission limit above by testing either external heat exchangers A or B **(ID Nos. ES-8 or ES-9)** for particulate emissions. Testing shall be performed in accordance with General Condition 17 and with a testing protocol approved by the DAQ. Testing shall be completed within 90 days of initial startup[3] of either source **(ID Nos. ES-8 or ES-9)**. The final air emission test report shall be submitted to the DAQ not later than 30 days after sample collection, in accordance with 15A NCAC 02D .2602(h).

[3]The initial startup is considered to be after these units have been through commissioning and turned over to operations.

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

c. Particulate matter emissions from these sources **(ID Nos. ES-6, ES-7, and ES-11)** shall each be controlled by a bin vent filter **(ID Nos. CD-6, CD-7, and CD-11)** and particulate matter emissions from these sources **(ID Nos. ES-8 and ES-9)** shall each be controlled by a bagfilter **(ID Nos. CD-8 and CD-9)** as described above. To ensure 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 are no manufacturer's inspection and maintenance recommendations, as a minimum, the inspection and maintenance requirement shall include the following:
   i. a monthly visual inspection of the system ductwork and material collection unit for leaks;
   ii. monthly reading of the pressure gauges on the bagfilters **(ID Nos. CD-8 and CD-9)**; and
   iii. annual (for each 12-month period following the initial inspection) internal inspection of the bagfilters **(ID Nos. CD-8 and CD-9)**, noting the structural integrity and the condition of the filters.

d. The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. the date and time of each recorded action;
   ii. the results of each inspection;
   iii. the results of any maintenance performed on any control device; and
   iv. any variance from manufacturer's recommendations, if any, and corrections made.

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

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

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from these sources **(ID Nos. ES-6 through ES-9 and ES-11)** shall not be more than 20 percent opacity (except during startups, shutdowns, and malfunctions) when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event, shall the six-minute average exceed 87 percent opacity.

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

b. If emissions testing is required, the testing shall be performed in accordance with General Condition 17.

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

c. To ensure compliance, once a month the Permittee shall observe the emission points of these sources **(ID Nos. ES-6 through ES-9 and ES-11)** for any visible emissions above normal. The monthly observation must be made for each month of the calendar year period to ensure compliance with this requirement. The Permittee shall establish "normal" for these sources in the first 30 days following the effective date of beginning operation. If visible emissions from these sources are observed to be above normal, the Permittee shall either:
   i. take appropriate action to correct the above-normal emissions as soon as practicable and 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 15ANCAC 02D .2610 (Method 9) for 12 minutes is below the limit given in Section 2.1 B.2.a above.

d. The results of the monitoring shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. the date and time of each recorded action;
   ii. the results of each observation and/or test noting any corrective actions taken to reduce visible emissions; and
   iii. the results of any corrective actions performed.

C. Crusher diesel-fired engine (ID No. ES-23)

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 02D .0516
Visible emissions	20 percent opacity except during startup, shutdown and malfunctions	15A NCAC 02D .0521
NMHC + NO_X Particulate emissions	New Source Performance Standards for stationary internal combustion engines.	15A NCAC 02D .0524 (40 CFR Part 60 Subpart IIII)
Hazardous air pollutants	Comply with the requirements of 40 CFR Part 60, Subpart IIII.	15A NCAC 02D .1111 (40 CFR 63 Subpart ZZZZ)
Toxic air pollutants	**State Enforceable Only** See Section 2.2 A.3	15A NCAC 02D .1100
Toxic air pollutants	**State Enforceable Only** See Section 2.2 A.4	15A NCAC 02Q .0711
N/A	Submit Title V permit application within one year from the date of beginning operation of applicable sources See Section 2.2 A.7	15A NCAC 02Q .0504

1. 15A NCAC 02D .0516: SULFUR DIOXIDE EMISSIONS FROM COMBUSTION SOURCES

a. Emissions of sulfur dioxide from this source **(ID No. ES-23)** 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.

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

b. If emissions testing is required, the testing shall be performed in accordance with General Condition 17.

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

c. No monitoring/recordkeeping/reporting is required for sulfur dioxide emissions from the firing of No. 2 fuel oil in this source **(ID No. ES-23).**

2. 15A NCAC 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from this source **(ID No. ES-23)** shall not be more than 20 percent opacity (except during startup, shutdowns, and malfunctions) when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event, shall the six-minute average exceed 87 percent opacity

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

b. If emissions testing is required, the testing shall be performed in accordance with General Condition 17.

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

c. No monitoring/recordkeeping/reporting is required for visible emissions from the firing of No. 2 fuel oil in this source **(ID No. ES-23).**

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

Applicability [15A NCAC 02Q .0308(a), 40 CFR 60.4200(a)(2)(i)]

a. For this engine **(ID No. ES-23)**, the Permittee shall comply with all applicable provisions, including the requirements for emission standards, notification, testing, reporting, record keeping, and monitoring, contained in Environmental Management Commission Standard 15A NCAC 02D .0524 "New Source Performance Standards (NSPS)" as promulgated in 40 CFR Part 60 Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines," including Subpart A "General Provisions."

General Provisions [15A NCAC 02Q .0308(a)]

b. Pursuant to 40 CFR 60 .4218, The Permittee shall comply with the General Provisions of 40 CFR 60 Subpart A as presented in Table 8 of 40 CFR 60 Subpart IIII.

Emission Standards [15A NCAC 02Q .0308(a)]

c. The Permittee shall comply with the emission standards for new nonroad CI engines in 40 CFR 60.4201 for the same model year and maximum engine power for this engine. [40 CFR 60.4204(b)]

Fuel Requirements [15A NCAC 02Q .0308(a)]

d. The Permittee shall use diesel fuel in the engine with:
   i. a maximum sulfur content of 15 ppm; and
   ii. a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent.
   [40 CFR 60.4207(b) and 40 CFR 80.510(b)]

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

e. If emissions testing is required, the testing shall be performed in accordance with General Condition 17.

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

f. The engine, if equipped with a diesel particulate filter, must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached. [40 CFR 60.4209(b)]

Compliance Requirements

g. The Permittee shall:
   i. operate and maintain the engines and control devices according to the manufacturer's emission related-written instructions over the entire life of the engine;
   ii. change only those emission-related settings that are permitted by the manufacturer; and
   iii. meet the requirements of 40 CFR 89, 94 and/or 1068 as applicable.
   [40 CFR 60.4206 and 60.4211(a)]

h. The Permittee shall comply with the emission standards in Section 2.1 C.3.c by purchasing an engine certified to the emission standards in Section 2.1 C.3.c. The engine shall be installed and configured according to the manufacturer's emission-related specifications. [40 CFR 60.4211(c)]

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

i. To ensure compliance, the Permittee shall perform inspections and maintenance on the engine as recommended by the manufacturer per 40 CFR 60.4206 and 40 CFR 60.4211(a). The results of inspection and maintenance shall be maintained in a logbook (written or electronic format) on-site and made available to an authorized representative upon request. The logbook shall record the following:
   i. the date and time of each recorded action;
   ii. the results of each inspection;
   iii. the results of any maintenance performed on the engine;
   iv. any variance from manufacturer's recommendations, if any, and corrections made;

v. if a PM filter is used, records of any corrective action taken after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached [40 CFR 60.4214(c)]; and
vi. documentation from the manufacturer that the engine is certified to meet the emission standards in Section 2.1 C.3.c.

4. 15A NCAC 02D .1111 MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY

Applicability [40 CFR 63.6585, 6590(a)(2)(iii)]

a. For this source (new stationary RICE located at an area source of HAP emissions), the Permittee shall comply with all applicable provisions, including the monitoring, recordkeeping, and reporting contained in Environmental Management Commission Standard 15A NCAC 02D .1111 "Maximum Achievable Control Technology" (MACT) as promulgated in 40 CFR 63, Subpart ZZZZ, "National Emission Standards For Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines" and Subpart A "General Provisions."

Stationary RICE subject to Regulations under 40 CFR Part 60

b. Pursuant to 40 CFR 63.6590(c)(1), this source must meet the requirements of 40 CFR 63 Subpart ZZZZ and Subpart A by meeting the requirements of 40 CFR 60 Subpart IIII. No further requirements apply for these engines under 40 CFR 63 Subpart ZZZZ and Subpart A.

2.2- Multiple Emission Source(s)

A. Facility-wide affected sources

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

Regulated Pollutant	Limits/Standards	Applicable Regulation
N/A	Reporting of excess emissions	15A NCAC 02D .0535
Fugitive dust	Minimize fugitive dust beyond property boundary	15A NCAC 02D .0540
Toxic air pollutants	**State-enforceable only** Modeled emission rates	15A NCAC 02D .1100
Toxic air pollutants	**State-enforceable only** Facility wide emissions limits for toxic air pollutant emission rates	15A NCAC 02Q .0711

1. 15A NCAC 02D .0535 EXCESS EMISSIONS REPORTING AND MALFUNCTION

As required by 15A NCAC 2D .0535, the Permittee of a source of excess emissions that last for more than four hours and that results from a malfunction, a breakdown of process or control equipment or any other abnormal conditions, shall:

a. Notify the Director or his designee 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 describe:
   i. the name and location of the facility,
   ii. the nature and cause of the malfunction or breakdown,
   iii. the time when the malfunction or breakdown is first observed,
   iv. the expected duration, and
   v. an estimated rate of emissions.

b. Notify the Director or his designee immediately when the corrective measures have been accomplished.

This reporting requirement does not allow the operation of the facility in excess of Environmental Management Commission Regulations.

State-Enforceable Only

2. 15A NCAC 02D .0540: PARTICULATES FROM FUGITIVE DUST EMISSION SOURCES

a. For the purpose of this Rule the following definitions shall apply:
   i. "Fugitive non-process dust emission" means particulate matter that is not collected by a capture system and is generated from areas such as pit areas, process areas, haul roads, stockpiles, and plant roads.
   ii. "Substantive complaints" means complaints that are verified with physical evidence acceptable to the DAQ.
b. The Permittee shall not cause or allow fugitive non-process dust emissions to cause or contribute to substantive complaints.
c. If fugitive non-process dust emissions from a facility required complying with this Rule cause or contributing to substantive complaints, the Permittee shall:
   i. Within 30 days upon receipt of written notification from the Director of a second substantive complaint in a 12-month period, submit to the Director a written description of what has been done and what will be done to reduce fugitive non-process dust emissions from that part of the facility that caused the second substantive complaint;
   ii. Within 90 days of receipt of written notification from the Director of a second substantive complaint in a 12-month period, submit to the Director a control plan as described in Section 2.2 A.1.e; and
   iii. Within 30 days after the Director approves the plan, be in compliance with the plan.

d. The Director may require that the Permittee develop and submit a fugitive non-process dust control plan as described in Section 2.2 A.1.e if:
   i. Ambient air quality measurements or dispersion modeling acceptable to the DAQ show violation or a potential for a violation of an ambient air quality standard for particulates in 15A NCAC 02D .0400 "Ambient Air Quality Standards;" or
   ii. If the DAQ observes excessive fugitive non-process dust emissions from the facility beyond the property boundaries.

   The control plan shall be submitted to the Director no later than 90 days after notification. The facility shall be in compliance with the plan within 30 days after the Director approves the plan.

e. The fugitive dust control plan shall:
   i. Identify the sources of fugitive non-process dust emissions within the facility;
   ii. Describe how fugitive non-process dust will be controlled from each identified source;
   iii. Contain a schedule by which the plan will be implemented;
   iv. Describe how the plan will be implemented, including training of facility personnel; and
   v. Describe methods to verify compliance with the plan.

f. The Director shall approve the plan if:
   i. The plan contains all required elements in Section 2.2 A.1.e;
   ii. The proposed schedule contained in the plan will reduce fugitive non-process dust emissions in a timely manner;
   iii. The methods used to control fugitive non-process dust emissions are sufficient to prevent fugitive non-process dust emissions from causing or contributing to a violation of the ambient air quality standards for particulates; and
   iv. The described compliance verification methods are sufficient to verify compliance with the plan.

   If the Director finds that the proposed plan does not meet these requirements, he shall notify the Permittee of any deficiencies in the proposed plan. The Permittee shall have 30 days after receiving written notification from the Director to correct the deficiencies.

g. If, after a plan has been implemented, the Director finds that the plan inadequately controls fugitive non-process dust emissions, the Permittee shall be required to correct the deficiencies in the plan. Within 90 days after receiving written notification from the Director identifying the deficiency, the Permittee shall submit a revision to his plan to correct the deficiencies.

State Enforceable Only

3. 15A NCAC 02D .1100: CONTROL OF TOXIC AIR POLLUTANTS

a. The Permittee has demonstrated compliance with the following permit limits in accordance with the addendum to the completed application (1900134.18A) received November 9, 2018. The Permittee has evaluated all toxic air pollutants (TAPs) covered in 15A NCAC 02D .1104 for all sources at the facility, excluding the sources exempt from evaluation under 15A NCAC 02Q .0702.[4]

Emission Source	Toxic Air Pollutant	Emission Limit
Feed silo (ID No. I-4)	Arsenic	0.115 lb/yr
	Beryllium	0.212 lb/yr
STAR® process (ID No. ES-5)	Arsenic	0.606 lb/yr
	Beryllium	0.751 lb/yr
	Sulfuric Acid	154 lb/hr
		909 lb/day
FGD Byproduct Silo (ID No. ES-6)	Arsenic	1.70E-03 lb/yr
	Beryllium	2.09E-03 lb/yr
FGD hydrated lime silo (ID No. ES-7)	Arsenic	1.70E-02 lb/yr
	Beryllium	2.09E-02 lb/yr

[4] The Permittee elected to include emissions sources exempted by 15A NCAC 02Q .0702(a)(27) in facility-wide air modeling conducted to demonstrate compliance with 15A NCAC 02D .1100.

Emission Source	Toxic Air Pollutant	Emission Limit
EHE A (ID No. ES-8)	Arsenic	73 lb/yr
	Beryllium	135 lb/yr
EHE B (ID No. ES-9)	Arsenic	73 lb/yr
	Beryllium	135 lb/yr
EHE Silo (ID No. I-10)	Arsenic	0.115 lb/yr
	Beryllium	0.212 b/yr
Product Storage Dome (ID No. ES-11)	Arsenic	0.200 lb/yr
	Beryllium	0.371 lb/yr
Loadout Silo (ID No. I-12)	Arsenic	4.30E-02 lb/yr
	Beryllium	7.93E-02 lb/yr
Loadout Silo Spouts (ID No. I-13 and I-14, combined)	Arsenic	0.115 lb/yr
	Beryllium	0.213 lb/yr
Screener diesel-fired engine (ID No. I-22)	Arsenic	0.505 lb/yr
	Benzene	362 lb/yr
	Beryllium	3.30 lb/yr
Crusher diesel-fired engine (ID No. ES-23)	Arsenic	1.67 lb/yr
	Benzene	1,189 lb/yr
	Beryllium	10.8 lb/yr
Wet Ash Transfer (ID No. I-1)	Arsenic	0.152 lb/yr
	Beryllium	0.280 lb/yr
Unloading Pile (ID No. I-3)	Arsenic	1.79E-03 lb/yr
	Beryllium	3.30E-03 lb/yr
Ash Basin (ID No. I-15)	Arsenic	0.509 lb/yr
	Beryllium	0.946 lb/yr
Ash handling (ID No. I-16) (includes windrows, screener/crusher drop and screener/crusher stock pile)	Arsenic	0.213 lb/yr
	Beryllium	0.392 lb/yr
Screener (ID No. I-19)	Arsenic	3.87 lb/yr
	Beryllium	7.16 lb/yr
Crusher (ID No. I-20)	Arsenic	2.11 lb/yr
	Beryllium	3.90 lb/yr
Ball mall classifier (ID No. I-24)	Arsenic	8.48 lb/yr
	Beryllium	15.7 lb/yr
Ball mall feed silo (ID No. I-25)	Arsenic	1.72E-02 lb/yr
	Beryllium	3.18E-02 lb/yr

b. No testing/monitoring/recordkeeping/reporting shall be required to demonstrate compliance with 15A NCAC 02D .1100.

State-Enforceable Only

4. 15A NCAC 02Q .0711: EMISSION RATES REQUIRING A PERMIT

a. Pursuant to 15A NCAC 02Q .0711 "Emission Rates Requiring a Permit", for each of the below listed toxic air pollutants (TAPs), the Permittee has made a demonstration that facility-wide actual emissions do not exceed the Toxic Permit Emission Rates (TPERs) listed in 15A NCAC 02Q .0711(a). The facility shall be operated and maintained in such a manner that emissions of any listed TAPs from the facility, including fugitive emissions, will not exceed TPERs listed in 15A NCAC 02Q .0711.

i. A permit to emit any of the below listed TAPs shall be required for this facility if actual emissions from all sources will become greater than the corresponding TPERs.

ii. PRIOR to exceeding any of these listed TPERs, the Permittee shall be responsible for obtaining a permit to emit TAPs and for demonstrating compliance with the requirements of 15A NCAC 02D .1100 "Control of Toxic Air Pollutants".

iii. In accordance with the approved application, the Permittee shall maintain records of operational information demonstrating that the TAP emissions do not exceed the TPERs as listed below:

Pollutant (CAS Number)	Carcinogens	Chronic Toxicants	Acute Systemic Toxicants	Acute Irritants
	(lb/yr)	(lb/day)	(lb/hr)	(lb/hr)
Acetaldehyde (75-07-0)				6.8
Acrolein (107-02-8)				0.02
Benzo(a)pyrene (50-32-8)	2.2			
1, 3-Butadiene (106-99-0)	11			
Cadmium (7440-43-9)	0.37			
Formaldehyde (50-00-0)				0.04
Hydrogen chloride (7647-01-0)				0.18
Hydrogen fluoride (7664-39-3)		0.63		0.064
Manganese		0.63		
Mercury, vapor (7439-97-6)		0.013		
Nickel metal (7440-02-0)		0.13		
Soluble chromate compounds, as chromium (VI) equivalent		0.013		
Toluene (108-88-3)		98		14.4
Xylene (1330-20-7)		57		16.4

Testing/Monitoring/Recordkeeping/Reporting [15A NCAC 02D .0611]

b. No testing/monitoring/recordkeeping/reporting shall be required to demonstrate compliance with 15A NCAC 02Q .0711.

5. 15A NCAC 02Q .0207: ANNUAL EMISSIONS REPORTING

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

6. 15A NCAC 02Q. 0304: APPLICATIONS

The Permittee, at least 90 days prior to the expiration date of this permit, shall request permit renewal by letter in accordance with 15A NCAC 02Q .0304(d) and (f). Pursuant to 15A NCAC 02Q .0203(i), no permit application fee is required for renewal of an existing air permit. The renewal request should be submitted to the Regional Supervisor, DAQ.

7. 15A NCAC 02Q .0504: OPTION FOR OBTAINING CONSTRUCTION AND OPERATION PERMIT

a. The Permittee shall file a Title V Air Quality Permit Application pursuant to 15A NCAC 02Q .0504. to modify the construction and operation permit on or before **12 months after commencing operation of any of the sources listed in this permit.**

Reporting [15A NCAC 02Q .0504]

b. The Permittee shall notify the Regional Office in writing of the date of beginning operation of **any of the sources listed in this permit**, postmarked no later than 30 days after such date.

SECTION 3 - GENERAL CONDITIONS

1. In accordance with G.S. 143-215.108(c)(1), TWO COPIES OF ALL DOCUMENTS, REPORTS, TEST DATA, MONITORING DATA, NOTIFICATIONS, REQUESTS FOR RENEWAL, AND ANY OTHER INFORMATION REQUIRED BY THIS PERMIT shall be submitted to:

   Ray Stewart
   Regional Air Quality Supervisor
   North Carolina Division of Air Quality
   Raleigh Regional Office
   3800 Barrett Drive, Suite 101
   Raleigh, North Carolina 27609
   (919) 791-4289

   For identification purposes, each submittal should include the facility name as listed on the permit, the facility identification number, and the permit number.

2. RECORDS RETENTION REQUIREMENT - In accordance with 15A NCAC 02D .0605, any records required by the conditions of this permit shall be kept on site and made available to DAQ personnel for inspection upon request. These records shall be maintained in a form suitable and readily available for expeditious inspection and review. These records must be kept on site for a minimum of 2 years, unless another time period is otherwise specified.

3. ANNUAL FEE PAYMENT - Pursuant to 15A NCAC 02Q .0203(a), the Permittee shall pay the annual permit fee within 30 days of being billed by the DAQ. Failure to pay the fee in a timely manner will cause the DAQ to initiate action to revoke the permit.

4. EQUIPMENT RELOCATION - In accordance with 15A NCAC 02Q .0301, a new air permit shall be obtained by the Permittee prior to establishing, building, erecting, using, or operating the emission sources or air cleaning equipment at a site or location not specified in this permit.

5. REPORTING REQUIREMENT - In accordance with 15A NCAC 02Q .0309, any of the following that would result in previously unpermitted, new, or increased emissions must be reported to the Regional Supervisor, DAQ:
   a. changes in the information submitted in the application regarding facility emissions;
   b. changes that modify equipment or processes of existing permitted facilities; or
   c. changes in the quantity or quality of materials processed.

   If appropriate, modifications to the permit may then be made by the DAQ to reflect any necessary changes in the permit conditions. In no case are any new or increased emissions allowed that will cause a violation of the emission limitations specified herein.

6. In accordance with 15A NCAC 02Q .0309, this permit is subject to revocation or modification by the DAQ upon a determination that information contained in the application or presented in the support thereof is incorrect, conditions under which this permit was granted have changed, or violations of conditions contained in this permit have occurred. In accordance with G.S. 143-215.108(c)(1), 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 cleaning device(s) and appurtenances.

7. In accordance with G.S. 143-215.108(c)(1), this permit is nontransferable by the Permittee. Future owners and operators must obtain a new air permit from the DAQ.

8. In accordance with G.S. 143-215.108(c)(1), this issuance of this permit in no way absolves the Permittee of liability for any potential civil penalties which may be assessed for violations of State law which have occurred prior to the effective date of this permit.

9. In accordance with G.S. 143-215.108(c)(1), this permit does not relieve the Permittee of the responsibility of complying with all applicable requirements of any Federal, State, or Local water quality or land quality control authority.

10. In accordance with 15A NCAC 02D .0605, reports on the operation and maintenance of the facility shall be submitted by the Permittee to the Regional Supervisor, DAQ at such intervals and in such form and detail as may be required by the DAQ. Information required in such reports may include, but is not limited to, process weight rates, firing rates, hours of operation, and preventive maintenance schedules.

11. A violation of any term or condition of this permit shall subject the Permittee to enforcement pursuant to G.S. 143-215.114A, 143-215.114B, and 143-215.114C, including assessment of civil and/or criminal penalties.

12. Pursuant to North Carolina General Statute 143-215.3(a)(2), no person shall refuse entry or access to any authorized representative of the DAQ who requests entry or access for purposes of inspection, and who presents appropriate credentials, nor shall any person obstruct, hamper, or interfere with any such 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.

13. In accordance with G.S. 143-215.108(c)(1), this permit does not relieve the Permittee of the responsibility of complying with any applicable Federal, State, or Local requirements governing the handling, disposal, or incineration of hazardous, solid, or medical wastes, including the Resource Conservation and Recovery Act (RCRA) administered by the Division of Waste Management.

14. PERMIT RETENTION REQUIREMENT - In accordance with 15A NCAC 02Q .0110, the Permittee shall retain a current copy of the air permit at the site. The Permittee must make available to personnel of the DAQ, upon request, the current copy of the air permit for the site.

15. CLEAN AIR ACT SECTION 112(r) REQUIREMENTS - Pursuant to 15A NCAC 02D .2100 "Risk Management Program," if the Permittee is required to develop and register a risk management plan pursuant to Section 112(r) of the Federal Clean Air Act, then the Permittee is required to register this plan with the USEPA in accordance with 40 CFR Part 68.

16. PREVENTION OF ACCIDENTAL RELEASES - GENERAL DUTY - Pursuant to Title I Part A Section 112(r)(1) of the Clean Air Act "Hazardous Air Pollutants - Prevention of Accidental Releases - Purpose and General Duty," 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. **This condition is federally-enforceable only.**

17. GENERAL EMISSIONS TESTING AND REPORTING REQUIREMENTS - 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 or to demonstrate compliance, the Permittee shall perform such testing in accordance with 15A NCAC 02D .2600 and follow all DAQ procedures including protocol approval, regional notification, report submittal, and test results approval

Permit issued this the 5th day of June, 2019

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION

for

William D. Willets, P.E., Chief, Permitting Section
Division of Air Quality, NCDEQ
By Authority of the Environmental Management Commission