Hearing Officer's Report and Recommendations

Duke Energy Progress, LLC – Mayo Electric Generating Plant
Public Hearing April 13, 2021
Conducted Via WebEx

Public Comment Period: March 11, 2021 through April 15, 2021

Pertaining to Draft Air Permit No. 03478T48 for:

Duke Energy Progress, LLC – Mayo Electric Generating Plant

10660 Boston Road
Roxboro, Person County, NC
Facility ID No. 7300045
Fee Class: Title V

Hearing Officer
Brendan G. Davey, P.E., Regional Supervisor, Asheville Regional Office

Hearing Officer's Report
Duke Energy Progress, LLC – Mayo Electric Generating Plant
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I. Background

Duke Energy Progress, LLC (Duke Energy) operates the Mayo Electric Generating Plant (Mayo Plant), a coal-fired electric utility located on the Mayo Reservoir near the North Carolina/Virginia border. This location includes coal combustion residuals (CCR) surface impoundments.

The Coal Ash Management Act (CAMA) establishes criteria for the closure of certain coal combustion residuals (CCR) surface impoundments in North Carolina. The CCR surface impoundment located at Duke Energy - Mayo Plant received a low-risk classification. Therefore, according to N.C. Gen. Stat. § 130A-309.214(a)(3), the closure option for CCR surface impoundments is at the election of the North Carolina Department of Environmental Quality (DEQ) by three principal closure pathways: (a) closure in a manner allowed for a high-risk site, such as excavation and disposal in a lined landfill [CAMA Option A]; (b) closure with a cap-in-place system similar to the requirements for a municipal solid waste landfill [CAMA Option B]; or (c) closure in accordance with the federal CCR rule adopted by EPA [CAMA Option C]. In preparing to make its election, DEQ requested information from Duke Energy related to the above closure options.

On April 1, 2019, the Department of Environmental Quality issued a Coal Combustion Residuals Surface Impoundment Closure Determination pursuant to its authority under CAMA, electing and ordering excavation of the CCR impoundments as the method of closure at six facilities, including the Mayo Plant.

On April 26, 2019 Duke Energy filed a Petition for a Contested Case Hearing challenging this closure determination. Certain Plaintiff-Intervenors were allowed to intervene as Respondent-Intervenors in the proceedings.

On December 31, 2019, DEQ entered into a Settlement Agreement with Duke Energy and other groups regarding closure of certain CCR impoundments. In the agreement Duke Energy agreed to close the Mayo Plant CCR impoundment by excavation of the coal ash and placement in a lined, onsite landfill. Following this agreement, a Consent order was signed on February 5, 2020, requiring Duke Energy to excavate more than 76 million tons of coal ash from open, unlined impoundments at six facilities. Duke Energy submitted its closure plan for the Mayo Plant on December 31, 2019. The plan details full excavation of 6.6 million tons of coal ash from the Mayo Plant CCR impoundment to a lined, onsite landfill. After a thorough review and public comment period, on April 29, 2020 the Department determined that the closure plan submitted by Duke Energy for the Mayo Plant was protective of public health and the environment.

On November 12, 2020, the NC DEQ, Division of Air Quality (DAQ), received an air quality permit application (App. No. 7300045.20A) from Duke Energy – Mayo Plant to close the Mayo Plant Ash Basin and Flue Gas Desulfurization Pond (the Ash Basin) via excavation and place the excavated coal combustion residuals in a new lined Closure Landfill. Pending issuance of the air quality permit, Duke Energy - Mayo Plant plans to:

- Add the 158-acre Ash Basin as a permitted source to account for emissions from wind erosion and ash handling activities during excavation of material from the Ash Basin.

- Add a 58-acre Closure Landfill where excavated ash from the Ash Basin, along with generated ash and off-specification gypsum, will be deposited.

- Add ash and gypsum handling activities at the Closure Landfill.

- Modify Emission Source ID No. HAULRD to reflect the additional haul roads to the Ash Basin and Closure Landfill.

- Decrease the existing Monofill capacity from 118 acres to 31 acres.

- Add a 375 kilowatt (kW) (503 horsepower) diesel-fired emergency generator for emergency power at the new Closure Landfill to the air permit insignificant activities list.

II. Notice of Public Hearing

Pursuant to the North Carolina Coal Ash Management Act, a notice of public hearing was posted in the Roxboro Courier-Times on March 11, 2021 and on the DAQ website on March 8, 2021. The public comment period was from March 11, 2021 through April 15, 2021. Copies of the air quality permit application, permit application review and draft air permit were also posted on the DAQ website for public review. Copies of the air quality permit application and related documents were available for public review in DAQ's Raleigh Regional Office (RRO) and Raleigh Central Office (RCO) throughout the public comment period. The public hearing was held virtually by WebEx at 6:00 PM on April 13, 2021.

A draft Environmental Justice Report dated March 5, 2021 was prepared regarding the air permit application. The conclusions of this report indicated:

"*This Draft EJ Report is an initial evaluation of the demographics and socioeconomics of the community area surrounding the Duke Energy Progress, LLC- Mayo Steam Electric Plant in Roxboro (Person County). This includes information within a determined radius by the Department (two miles for this project) on race and ethnicity (decennial census year), poverty, per capita income, and ability to speak English (most current ACS census range), current N.C. Department of Commerce county tier, and presence or absence of American Indian Tribal areas. The proposed landfill for coal ash disposal at Duke Energy Mayo Steam Power Plant is in an area designated with moderate health factors and outcomes in comparison to other areas of the State. It is also within State designated tribal statistical areas for the Sappony Tribe (Section 6). Person County has higher levels of poverty compared to the State for several subjects, but the local area displays similar or lower percentages of minority residents and poverty when compared to the State. Three potential LEP language groups were identified during this initial screening, however, none of the language groups identified reached the 5 percent threshold for Safe Harbor Guidelines.*

The following additional outreach will be conducted:

- *Informing the Sappony Tribe throughout the permitting process;*
- *Giving additional attention to ensure language data is accurate, and translation or interpretation will be considered if more LEP populations are identified at any point throughout the process; and*

• *Consulting the list of sensitive receptors while considering additional outreach options that may best fit this community's needs."*

III. Air Quality Permit Application and Review

The air permit application is for the first step of a two-step significant modification of the current Title V permit to install and operate a new lined CCR landfill and associated ash handling activities at Duke Energy – Mayo Plant. Edward Martin, P.E., Permit Engineer in the DAQ's RCO, reviewed the application submitted by Duke Energy – Mayo Plant and determined that the facility could comply with all applicable federal and state air quality requirements provided that the specific conditions included in the draft air quality permit are met. Mark Yoder, Meteorologist in DAQ's RCO, provided technical support in the application review process by reviewing site-specific air dispersion modeling analysis of the proposed coal ash handling operations to ensure compliance with the North Carolina air toxics regulations. Mr. Yoder's analysis showed that "*The modified facility-wide emissions of arsenic, beryllium, cadmium, chromium VI, manganese, mercury, and nickel were shown to exceed toxic air pollutant (TAP) emissions rates (TPERs) outlined in 15A NCAC 02Q .0700. Ultimately, the air toxics modeling analysis of facility-wide TAP emissions adequately demonstrated compliance with Acceptable Ambient Levels (AALs) outlined in 15A NCAC 02D.1104, on a source-by-source basis.*"

Unless the public comments received during the public hearing and comment period reveal that DAQ was in error or incomplete in its evaluation of the proposed operations from an air quality standpoint, and if the applicant has met all federal and state laws, and rules for the protection of air quality, the DAQ is obligated to issue an air permit to Duke Energy – Mayo Plant. The following hearing officer responses to written and oral public comments will address issues raised in light of these requirements.

IV. Public Comments

There were no comments, written, oral, or otherwise, submitted in regard to this draft air permit and review.

V. Conclusions and Recommendations

North Carolina General Statute 143.215.108(c)(5a)b. requires that an applicant satisfies to the Department that it "has substantially complied with the air quality and emission control standards applicable to any activity in which the applicant has previously engaged, and has been in substantial compliance with federal and state laws, regulations, and rules for the protection of the environment." The compliance record of the Duke Energy – Mayo Plant suggests that the applicant has met this requirement. A review of this facility's air permit compliance status determined that the only Notice of Violation in the past 15 years was with regard to a late report in calendar year 2008.

The air permit application relies on Duke Energy implementing fugitive dust control measures for the new CCR activities. The draft permit contains General Condition MM (15A NCAC 02D 0540, "Particulates from Fugitive Dust Emission Sources") which prohibits fugitive dust from leaving the property. If dust complaints are substantiated, the DAQ has the authority to require the facility to develop and implement a dust management plan. In addition, the Environmental Protection Agency Coal Combustion Residuals (CCR) rule, 40 CFR 257.80 already requires a dust management plan be developed and implemented.

Also, proposed NCDEQ Waste Management regulations 15A NCAC 13B .2001-2018 will require a dust management plan be developed and implemented. These proposed rules have been through public hearing and public comment, but have not yet been promulgated. Duke Energy has already developed and submitted on February 5, 2021 the most recent copy of the required coal combustion residuals fugitive dust control plan for the Mayo Plant. The plan includes a minimum twice daily visual monitoring and recordkeeping to ensure the implementation of the dust control plan is adequate. The dust control plan will be updated annually. The dust control plan was approved by NCDEQ Waste Management on April 14, 2021 (copy attached) through the approval of the coal ash excavation plan. NCDEQ Waste Management personnel will be conducting compliance inspections and enforcing the fugitive dust control plan implementation.

After considering all the factors addressing whether or not DAQ should issue an air quality permit to Duke Energy Progress, LLC - Mayo Plant to allow the construction and operation of the new CCR lined landfill and associated ash excavation and handling activities at 10660 Boston Road Roxboro, Person County, North Carolina, it is the recommendation of the hearing officer that the Director issue the Air Quality permit as drafted.

Additionally, I recommend DAQ staff remain sensitive to the health of the nearby communities and to the concerns that will remain when the coal ash excavation operation begins. This can be accomplished through thorough frequent inspections and prompt responses to the citizen's air quality concerns and complaints.

Brendan G. Davey, P.E., Hearing Officer

May 4, 2021
Date

Hearing Officer's Report and Recommendations

Duke Energy Progress, LLC – Mayo Electric Generating Plant
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SUPPORTING DOCUMENTATION

Permit Application Review
Draft Permit
Notice of Public Hearing
Public Hearing Attendance Record
Environmental Justice Study
Audio of Public Hearing (on DAQ Sharepoint)
DWM Dust Control Plan Approval

NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date:

Region: Raleigh Regional Office
County: Person
NC Facility ID: 7300045
Inspector's Name: Matthew Mahler
Date of Last Inspection: 07/10/2019
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Duke Energy Progress, LLC - Mayo Electric Generating Plant

Facility Address:
Duke Energy Progress, LLC - Mayo Electric Generating Plant
10660 Boston Road
Roxboro, NC 27574

SIC: 4911 / Electric Services
NAICS: 221112 / Fossil Fuel Electric Power Generation

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: 02D .0530(u)
NSPS: NA
NESHAP: NA
PSD: NA
PSD Avoidance: NA
NC Toxics: 02D .1100
112(r): NA
Other: NA

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Leanne Wilson Sr. EHS Professional (336) 597-7324 10660 Boston Road Roxboro, NC 27574	Tom Copolo General Manager II (336) 597-7307 10660 Boston Road Roxboro, NC 27574	Erin Wallace Lead Environmental Specialist (919) 546-5797 411 Fayetteville Street Raleigh, NC 27601

Application Data

Application Number: 7300045.20A
Date Received: 11/12/2020
Application Type: Modification
Application Schedule: TV-Sign-501(b)(2) Part I

Existing Permit Data
Existing Permit Number: 03478/T47
Existing Permit Issue Date: 09/15/2017
Existing Permit Expiration Date: 11/30/2021

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2019	1123.20	1280.35	22.59	190.69	207.18	6.67	4.51 [Hydrogen chloride (hydrochlori]
2018	1412.60	1583.64	22.17	187.07	209.03	6.56	4.44 [Hydrogen chloride (hydrochlori]
2017	1511.00	1304.68	19.43	164.93	158.58	6.13	4.23 [Hydrogen chloride (hydrochlori]
2016	2736.90	1561.18	28.64	241.96	245.48	7.66	5.01 [Hydrogen chloride (hydrochlori]
2015	2484.20	2590.72	41.32	347.04	331.13	9.91	4.98 [Hydrogen chloride (hydrochlori]

Review Engineer: Ed Martin

Review Engineer's Signature: **Date:**

Comments / Recommendations:
Issue 03478/T48
Permit Issue Date:
Permit Expiration Date:

Chronology

November 12, 2020	Application received and considered complete on this date.
December 4, 2020	Email to Erin Wallace asking about the use of PAEs and PTEs in calculating PSD applicability.
December 9, 2020	Email from Erin Wallace responding to the above request and explaining how the PAEs and PTEs were used in calculating PSD applicability.
December 8, 2020	Email to Tom Anderson to ask to hold off assigning toxics modeling until the proposed emission rates have been verified.
December 11, 2020	Email to Tom Anderson asking to proceed with assigning toxics modeling as the proposed emission rates have been verified.
December 30, 2020	Email to Erin Wallace asking why sources WWTBR, ES-SORB2 and ES-SORB5 were not modeled.
December 31, 2020	Email to Erin Wallace asking if she had received the consistency determination from the Person County Planning Department.
January 5, 2021	Email from Erin Wallace responding to the above request and forwarding the consistency determination from the Person County Planning Department.
January 5, 2021	Email from Erin Wallace responding to the above request asking why sources WWTBR, ES-SORB2 and ES-SORB5 were not modeled. She responded to say to say that WWTBR is a bioreactor and the only toxics emission is H_2S which is not required to be modeled in this application. Also, sources ES-SORB2 and ES-SORB5 were never constructed.
February 10, 2021	Toxics memo received from Mark Yoder showing compliance with the Acceptable Ambient Levels (AALs).
February 15, 2021	The draft permit and review were sent to Erin Wallace at DEP, Matthew Mahler at the Raleigh Regional Office (RRO) and Samir Parekh with SSCB for review.

I. Purpose of Application

Duke Energy Progress, LLC (DEP) is requesting authorization to close the Mayo Plant Ash Basin and Flue Gas Desulfurization Pond (the Ash Basin) via excavation and place the excavated coal combustion residuals (CCR) in a new lined Closure Landfill. The project will result in increased emissions of particulate matter (PM), PM less than 10 micrometers and PM less than 2.5 micrometers in diameter (PM_{10} and $PM_{2.5}$, respectively), NOx, SO_2, CO, VOCs, lead, carbon dioxide as CO_2e, and air toxics.

The following changes are proposed:

- Add the 158-acre Ash Basin as a permitted source to account for emissions from wind erosion and ash handling activities during excavation of material from the Ash Basin.
- Add a 58-acre Closure Landfill where excavated ash from the Ash Basin, along with generated ash and off-specification gypsum, will be deposited.
- Add ash and gypsum handling activities at the Closure Landfill.
- Modify Emission Source ID No. HAULRD to reflect the additional haul roads to the Ash Basin and Closure Landfill.

- Decrease the existing Monofill capacity from 118 acres to 31 acres.

- Add a 375 kilowatt (kW) (503 horsepower) diesel-fired emergency generator for emergency power at the new Closure Landfill to the insignificant activities list.

Historically, ash generated from coal combustion was sluiced and sent to the Ash Basin along with various other waste streams (such as flyash, bottom ash, gypsum, and boiler slag); however, modifications were completed to convert from wet to dry ash handling and ash is currently collected and deposited in the Monofill.

In order to comply with the North Carolina Coal Ash Management Act of 2014, as amended (CAMA), the federal Disposal of Coal Combustion Residuals from Electric Utilities rule (CCR Rule) and the North Carolina Department of Environmental Quality (NC DEQ) Closure Determination of April 1, 2019 mandating closure of the Ash Basin via excavation, DEP plans to dewater and excavate material from the existing Ash Basin. DEP will construct a new, lined Closure Landfill in which the excavated material from the existing Ash Basin will be deposited. In addition, DEP will eventually cease placement of generated ash and off-specification gypsum in the existing Monofill and begin depositing those materials in the new Closure Landfill. As a result, the existing Monofill will not reach the originally permitted capacity of 118 acres and instead will be limited to 31 acres.

Construction of the new Closure Landfill is currently scheduled to begin in the spring of 2021. Excavation of the Ash Basin and initiation of closure of the existing Monofill is scheduled to begin in the first quarter of 2023. Excavation of ash from the Ash Basin will continue through 2028. Once the Ash Basin has been closed, the Closure Landfill will be finished by grading, seeding, and stabilizing. The site arrangement is shown in Figure 1 below.

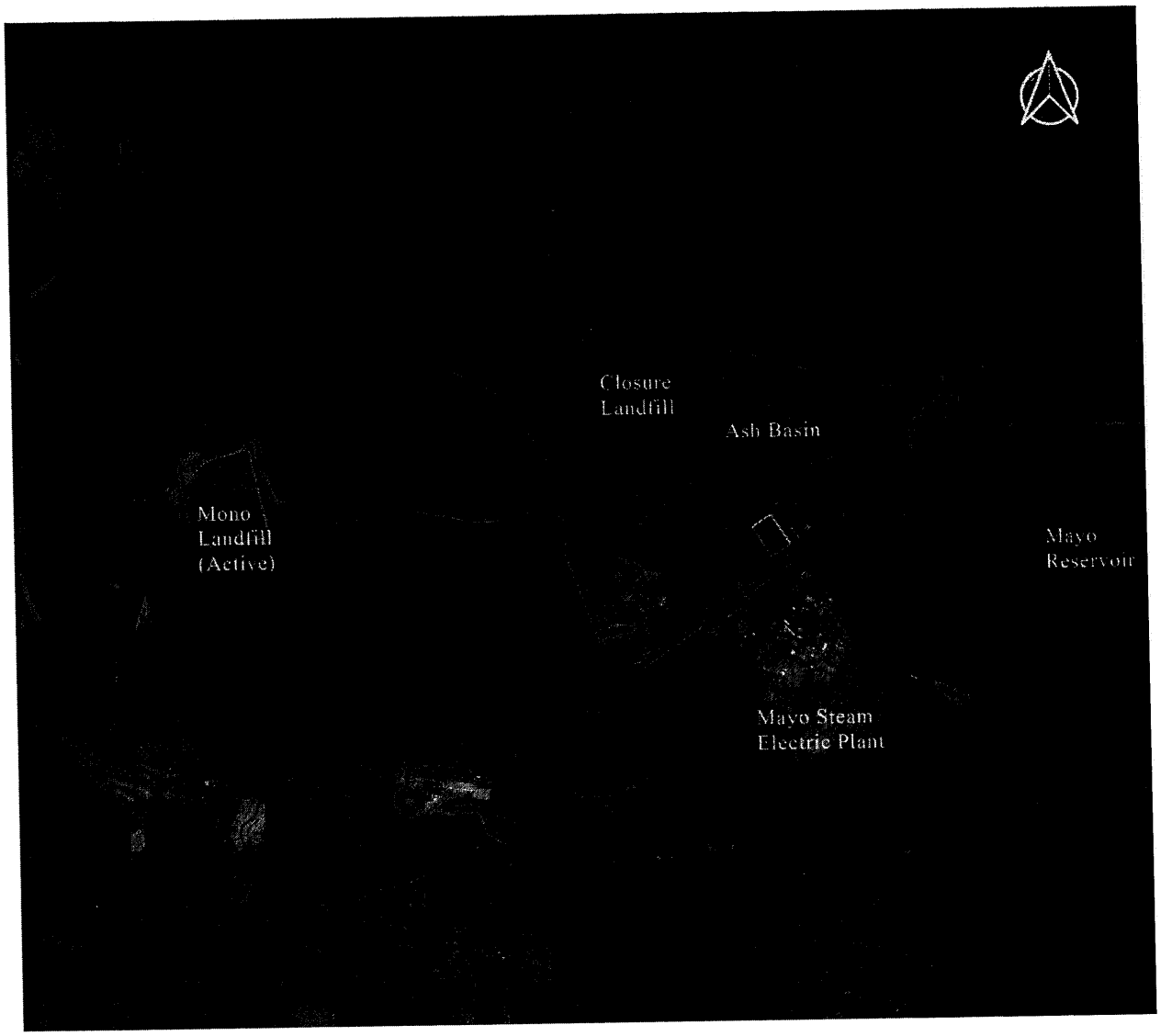

Figure 1 – Mayo Site Arrangement

This is the first step of a significant permit modification pursuant to rule 15A NCAC 02Q .0501(b)(2). Public notice of the draft permit for Title V purposes is not required at this time. The Permittee must file a Title V Air Quality Permit Application pursuant to 15A NCAC 02Q .0504 for these changes within 12 months after the first excavation of ash from the Ash Basin, or the first placement of generated ash or off-specification gypsum in the new Closure Landfill (whichever occurs first) in accordance with General Condition NN.1 of the permit, at which time the changes will go through the second step of the 15A NCAC 02Q .0501(b)(2) Title V permitting process. The permit shield described in General Condition R does not apply to these changes. The only public notice at this time is a notice of public hearing pursuant to the construction and operating permit under rule 15A NCAC 02Q .0300 and the CAMA.

II. DEQ Coal Combustion Residuals Surface Impoundment Closure Determination

The following is taken from the Executive Summary of the Mayo Steam Station "DEQ Coal Combustion Residuals Surface Impoundment Closure Determination" of April 1, 2019.

> *The Coal Ash Management Act (CAMA) establishes criteria for the closure of coal combustion residuals (CCR) surface impoundments. The CCR surface impoundment located at Duke Energy Progress, LLC's (Duke Energy) Mayo Steam Station (Mayo) in Person County, NC has received a low-risk classification. Therefore, according to N.C. Gen. Stat. § 130A-309.214(a)(3), the closure*

option for CCR surface impoundments is at the election of the North Carolina Department of Environmental Quality (DEQ). CAMA provides three principal closure pathways: (a) closure in a manner allowed for a high-risk site, such as excavation and disposal in a lined landfill [CAMA Option A]; (b) closure with a cap-in-place system similar to the requirements for a municipal solid waste landfill [CAMA Option B]; or (c) closure in accordance with the federal CCR rule adopted by EPA [CAMA Option C].

In preparing to make its election, DEQ requested information from Duke Energy related to closure options. By November 15, 2018, Duke Energy provided the following options for consideration: closure in place, full excavation, and a hybrid option that included some excavation with an engineered cap on a smaller footprint of the existing CCR surface impoundment. DEQ held a public information session on January 15, 2019 in Roxboro, NC where the community near Mayo had the opportunity to learn about options for closing coal ash CCR surface impoundments and to express their views about proposed criteria to guide DEQ's coal ash closure decision making process. To evaluate the closure options, the Department considered environmental data gathered as part of the site investigation, permit requirements, ambient monitoring, groundwater modeling provided by Duke Energy and other data relevant to the CAMA requirements.

DEQ elects the provisions of CAMA Option A that require movement of coal ash to an existing or new CCR, industrial or municipal solid waste landfill located on-site or off-site for closure of the CCR surface impoundment at the Mayo facility in accord with N.C. Gen. Stat. § 130A-309-214(a)(3). In addition, DEQ is open to considering beneficiation projects where coal ash is used as an ingredient in an industrial process to make a product as an approvable closure option under CAMA Option A.

DEQ elects CAMA Option A because removing the coal ash from the unlined CCR surface impoundment at Mayo is more protective than leaving the material in place. DEQ determines that CAMA Option A is the most appropriate closure method because removing the primary source of groundwater contamination will reduce uncertainty and allow for flexibility in the deployment of future remedial measures.

Duke Energy will be required to submit a final Closure Plan for the CCR surface impoundment at Mayo by August 1, 2019. The Closure Plan must conform to this election by DEQ.

III. Permit Changes

The following changes were made to Air Quality Permit No. 03478T47:

Page No.	Section	Change
Throughout	Throughout	Updated permit/application numbers and dates.
--	Insignificant Activities List	Added IS-LANDEGEN.
3-6	1, table of permitted emission sources	Revised description of HAULRD, MONO and ES-19. Removed MAMONOH 01 and MAMONOH 02. Added LAND and ASHBASIN. Added footnote 5 and 6.
48-53	2.2.B.1.a	Revised toxic limits.
54	2.2.B.1.b	Added condition for the approved AQAB review memo.
54-55	2.2.C.1	Added 15A NCAC 02D .0530(u) condition.
55	2.2.C.2	Added 02Q .0504 condition for obtaining the Part II permit.
59-68	3	Updated General Conditions to version 5.5, 08/25/2020.

IV. Facility Description

The Mayo Plant consists of two coal and oil-fired utility boilers (Units 1A and 1B). The boilers are each equipped with electrostatic precipitators, selective catalytic reduction (SCR), sorbent injection, and flue gas desulfurization (FGD) for emissions control. Ancillary equipment and activities include fuel oil and other petroleum storage tanks, coal handling and storage, gypsum handling and storage, limestone handling and storage, and emergency engines.

V. Emissions

Emissions increases were calculated for purposes of evaluating whether the modifications trigger Prevention of Significant Deterioration (PSD) and to determine whether air toxics modeling is required. Detailed emission calculations are presented in Appendix B and Appendix D of the application.

Haul Roads

Emissions of PM emissions, including PM_{10} and $PM_{2.5}$, will increase as a result of the project because of the additional hauling of excavated ash from the Ash Basin to the Closure Landfill. DEP calculated emissions from the following haul road activities:

- Hauling generated ash and off-specification gypsum from the plant to the existing Monofill
- Hauling generated ash and off-specification gypsum from the plant to the Closure Landfill
- Hauling excavated ash from the Ash Basin to the Closure Landfill

Emissions from haul roads were calculated using Section 13.2.2 for unpaved roads of the U.S. Environmental Protection Agency's (U.S. EPA's) Compilation of Air Pollutant Emissions Factors (AP-42). DEP used the average silt content of plant roads at a coal mining site, the fleet average vehicle weight, and the haul road distances presented in Figures B-1 and B-2 of Appendix B of the application to calculate emissions.

For purposes of evaluating whether the project emissions increase triggers PSD, DEP determined baseline actual emissions (BAE) for existing haul roads used to transport generated ash and off-specification gypsum to the existing Monofill. DEP determined projected actual emissions (PAE) from haul roads used to transport generated ash and off-specification gypsum to the Closure Landfill instead of to the Monofill (which will be closed). Pre- and post-project vehicle miles traveled for hauling generated ash and off-specification gypsum were calculated using the existing and post-project haul road distances, the average tonnage of generated ash and off-specification gypsum deposited in the existing Monofill in 2018 and 2019, the average fleet capacity of the transport trucks, and 260 operating days per year.

DEP calculated the potential to emit (PTE) from haul roads used to transport excavated ash from the Ash Basin to the Closure Landfill based on post-project vehicle miles calculated using the maximum potential tonnage of excavated ash deposited in the Closure Landfill on an annual basis, the average fleet capacity of the transport trucks, and 260 operating days per year.

For all haul roads, emissions were calculated for the "round-trip" accounting for both the unloaded and loaded portion of the haul route.

Material Handling

DEP calculated emissions of PM, PM10, PM2.5, lead and air toxics from material handling operations including the following:

- Unloading of generated ash and off-specification gypsum at the existing Monofill
- Unloading of generated ash and off-specification gypsum at the Closure Landfill
- Excavation, handling, and loading of ash from the Ash Basin
- Unloading of excavated ash at the Closure Landfill

Emissions from material handling were calculated using Section 13.2.4 for aggregate handling and storage piles from the U.S. EPA's AP-42. DEP used the average windspeed from 2014 to 2018 recorded at the

Danville Meteorological Station, and a conservative moisture content of 10% to calculate an emission factor in pounds per ton of material handled. Emissions of HAP and toxic air pollutants (TAPs) were calculated using elemental analysis for the ash and gypsum. For evaluating PSD applicability, PAE were set equal to BAE for handling generated ash and off specification gypsum because these activities are not changing. DEP calculated the PTE from handling excavated ash from the Ash Basin. Generated ash and off-specification gypsum handling rates were calculated using the average tonnage of generated ash and off-specification gypsum deposited in the existing Monofill in 2018 and 2019. Excavated ash handling rates were based on the maximum potential tonnage of excavated ash deposited in the Closure Landfill annually.

To determine whether air toxics modeling is required, DEP calculated the PTE from all the handling sources using the maximum generation rates of ash and off-specification gypsum and the maximum potential tonnage of excavated ash.

Wind Erosion

For evaluating PSD applicability and to determine whether air toxics modeling is required, DEP calculated emissions of PM, PM10, PM2.5, lead, and air toxics as a result of wind erosion at the existing Monofill, the Closure Landfill, and the Ash Basin.

To evaluate PSD applicability, DEP calculated BAE from wind erosion at the existing Monofill and PTE for the Closure Landfill and the Ash Basin. PAE for the existing Monofill were set equal to zero because the Monofill will be closed as part of the project and emissions from wind erosion were calculated for the entire post project area of the Closure Landfill.

Fugitive emissions from wind erosion of coal, ash, gypsum, and limestone piles were modeled and calculated following the guidance presented in the document titled *Air/Superfund National Technical Guidance Study Series – Volume III – Estimate of Air Emissions from Cleanup Activities at Superfund Sites* (dated January 1989; EPA-450/1-89-003). The methodology is also presented in the *Western Regional Air Partnership (WRAP) Fugitive Dust Handbook* dated September 7, 2006. Speciation of PM emissions to PM10 and PM2.5 was performed using fractions from U.S. EPA's AP-42 emissions factors for industrial wind erosion. HAP and TAP emissions were calculated based on elemental analyses of the ash and gypsum. For conservatism, air toxics emissions were calculated for the existing Monofill, Closure Landfill, and Ash Basin as if they occurred concurrently.

Closure Landfill Emergency Generator

For evaluating PSD applicability and to calculate emissions rates for air toxics modeling, annual emissions were based on 500 hours per year[1] of operation using a combination of applicable emission limits from the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (40 CFR 60, Subpart IIII) and U.S. EPA's AP-42 emission factors for diesel industrial engines.

VI. Regulatory Evaluation – PSD Applicability

The Mayo Steam Electric Plant is an existing Prevention of Significant Deterioration (PSD) "major stationary source" of criteria air pollutants as defined under PSD, per 40 CFR 51.166(b)(1)(i)(a), and is classified as one of the 28 named source categories under the category of "fossil fuel-fired steam electric plants of more than 250 million Btu per hour heat input," which emits or has a potential to emit (PTE) 100 tons per year of any regulated pollutant.

Because the existing facility is a major stationary source, any physical change or a change in the method of operation as calculated pursuant to 40 CFR 51.166(a)(7)(iv) which results in a *net emissions increase* for regulated pollutants in the amounts equal or greater than the significance levels, is subject to PSD review and must meet certain review requirements. Thus, the net emission increase as a result of this modification must be compared to the "significance levels" as listed in 40 CFR 51.166(b)(23)(i) to determine which pollutants must undergo PSD review.

[1] Refer to the memorandum titled "Calculation Potential to Emit (PTE) for Emergency Generators" from John S. Seitz, Director of the Office of Air Quality Planning and Standards, U.S. EPA, dated September 6, 1995.

The Permittee has performed a PSD applicability analysis for the project to determine whether the project results in an emission increase of any regulated NSR pollutant above the applicable significance thresholds listed in 40 CFR 51.166(b)(23)(i). The PSD applicability analysis evaluated all PSD-regulated air pollutants to be emitted, including PM (filterable), PM_{10}, $PM_{2.5}$, NOx, SO_2, CO, VOCs, lead, and carbon dioxide as CO_2e. The following describes the methodology used to determine the increases for the project for the existing and new sources (see Table 1 below). As shown in Table 2, the calculations demonstrate that the PSD requirements are not triggered because project increases are below the PSD significant emissions rates.

Since the project involves both existing and new emission sources, the "hybrid test for projects that involve multiple types of emissions units" is used in accordance with 40 CFR 51.166(a)(7)(iv)(f). A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the emissions increases for each source, using the "actual-to-projected actual applicability test" for the existing sources in accordance with 40 CFR 51.166(a)(7)(iv)(*c*) and the "actual-to-potential test" for the new sources in accordance with 40 CFR 51.166(a)(7)(iv)(*d*), equals or exceeds the significant amount for that pollutant as defined in paragraph 40 CFR 51.166(b)(23) as follows:

A. PSD Applicability Test for Existing Sources

DEP has elected to use the "actual-to-projected actual applicability test" to compare the difference between the *projected actual emissions* (post project), and the *baseline actual emissions* (pre project) in accordance with 40 CFR 51.166(a)(7)(iv)(c) for the existing sources.

For existing emissions sources (i.e., handling and hauling of generated ash and gypsum and wind erosion from the existing Monofill) emissions increases were calculated by comparing BAE to PAE following the Project.

BAE for Existing Sources

In accordance with 15A NCAC 02D .0530(b)(1)(A), *baseline actual emissions* for an existing emissions source are calculated as the average rate, in tons per year, at which the emissions source actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the five-year period immediately preceding the date that a complete permit application is received. However, the Director shall allow a different time period, not to exceed 10 years immediately preceding the date on which a complete permit application is received by the Division, if the owner or operator demonstrates that it is more representative of normal source operation. A different consecutive 24-month period for each regulated NSR pollutant may be used for each regulated NSR pollutant. *Baseline actual emissions* represent the highest historical 24-month average annual emissions in tons per year for each pollutant. For this project, the baseline period is 2018-2019. Table 1 shows the baseline actual emissions for the existing sources.

PAE for Existing Sources

In accordance with 40 CFR 40 51.166(b)(40)(i), *projected actual emissions* means the maximum annual rate, in tons per year, at which an existing emissions unit is projected to emit a regulated NSR pollutant in any one of the 5 years (12-month period) following the date the unit resumes regular operation after the project, or in any one of the 10 years following that date, if the project involves increasing the emissions unit's design capacity or its potential to emit that regulated NSR pollutant, and full utilization of the unit would result in a significant emissions increase, or a significant net emissions increase at the major stationary source.

To determine the maximum annual rate, a source must consider all relevant information, including historical operational data, the company's expected business activity, and the company's highest projections of business activity for the five-year period after implementation of the project. PAE were set equal to BAE for hauling and handling of generated ash and off-specification gypsum and wind erosion from the existing Monofill because the operating rate of the plant, and thus the material generation rates, are not being modified and will not be impacted by the project. The only change in emissions due to the project for existing sources related to ash and off-specification gypsum generation are emissions from the relocation of the haul roads.

The only change in emissions due to the project for the existing sources is the relocation of haulroads to the Closure Landfill instead of to the Monofill for ash and off-specification gypsum generation. PAE were set equal to BAE for handling of generated ash and off-specification gypsum because the operating rate and thus the material generation rates, are not being modified and will not be impacted by the project. DEP has calculated the PAE for the existing sources as shown in Table 1.

B. PSD Applicability Test for New Sources

Emissions for new sources are calculated under the "actual-to-potential test" as the difference between the potential to emit (post-project) as defined by 40 CFR 51.166(b)(4), and the baseline actual emissions (pre-project) as defined by 40 CFR 51.166(b)(47)(iii). Potential to emit means the maximum capacity to emit under its physical and operational design. For a new emissions sources, BAEs are zero.

PTE for New Sources

For new emissions sources, DEP calculated the PTE for excavating ash from the Ash Basin, hauling the ash to the new Closure Landfill, and depositing the excavated ash in the Closure Landfill using the maximum tonnage of ash projected to be excavated and transported in a year. PTE from wind erosion at the Closure Landfill and Ash Basin was calculated based on the maximum active and inactive areas of operation. PTE for the Closure Landfill Emergency Generator was calculated using an annual operation of 500 hours per year. DEP has calculated the PTE for the new sources as shown in Table 1.

Table 1 – Source-by-Source Emission Rates for Existing and New source (tpy)

Source	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	CO	VOC	CO_2e	Lead
	BAE for existing sources (2018-2019)								
Existing Ash Haul Roads – Loaded to Monofill	0.15	3.97E-02	3.98E-03	–	–	–	–	–	–
Existing Off-Specification Gypsum Haul Roads – Loaded to Monofill	3.42E-03	8.83E-04	8.84E-05	–	–	–	–	–	–
Unloading of Generated Ash at the Existing Monofill (Truck to Pile)	1.19E-02	1.19E-02	1.19E-02	--	--	--	--	--	8.06E-07
Gypsum at the Existing Monofill (Truck to Pile) Unloading of Off-Specification	2.97E-04	2.97E-04	2.97E-04	--	--	--	--	--	5.93E-10
Wind Erosion at the Existing Monofill	2.18	1.09	0.16	--	--	--	--	--	--
Wind Erosion at the Existing Monofill (Lead)	--	--	--	--	--	--	--	--	4.60E-04
Existing Ash Haul Roads – Unloaded from Monofill	0.10	2.63E-02	2.64E-03	--	--	--	--	--	--
Existing Off-Specification Gypsum Haul Roads – Unloaded from Monofill	2.27E-03	5.85E-04	5.87E-05	--	--	--	--	--	--
Total BAE	2.45	1.17	0.18	--	--	--	--	--	4.61E-04
	POST PROJECT EMISSIONS (PAE + PTE)								
	PAE for existing sources								
Ash Generation to Closure Landfill Haul Roads – Loaded	1.10E-01	2.79E-02	2.79E-03	--	--	--	--	--	--
Off-Spec Gypsum Generation to Closure Landfill Haul Roads–Loaded	2.28E-03	5.89E-04	5.90E-05	--	--	--	--	--	--
Unloading of Generated Ash at the Closure Landfill (Truck to Pile)	1.19E-02	1.19E-02	1.19E-02	--	--	--	--	--	8.06E-07
Unloading of Off-Spec Gypsum at the Closure Landfill (Truck to Pile)	2.97E-04	2.97E-04	2.97E-04	--	--	--	--	--	5.93E-10
Ash Generation to Closure Landfill Haul Roads – Unloaded	7.17E-02	1.85E-02	1.85E-03	--	--	--	--	--	--
Off-Spec Gypsum Generation to Closure Landfill Haul Roads Unloaded	1.51E-03	3.90E-04	3.91E-05	--	--	--	--	--	--
Total PAE	1.97E-01	5.96E-02	1.69E-02	--	--	--	--	--	8.06E-07
	PTE for new sources								
Excavation of Ash Basin (drop points)	1.66	1.66	1.66	--	--	--	--	--	1.12E-04
Ash Basin Haul Roads – Loaded to Closure Landfill	2.51	0.65	6.48E-02	--	--	--	--	--	--
Unloading of Relocated Ash at the Closure Landfill	4.14E-01	4.14E-01	4.14E-01	--	--	--	--	--	2.80E-05
Wind Erosion at the Closure Landfill	4.31	2.16	0.32	--	--	--	--	--	--
Wind Erosion at the Closure Landfill (Lead)	--	--	--	--	--	--	--	--	8.96E-04
Closure Landfill Emergency Generator	4.13E-02	4.13E-02	4.13E-02	1.37E-03	0.83	0.72	0.32	144	7.92E-06
Ash Basin Haul Roads – Unloaded from Closure Landfill	1.73	0.45	4.48E-02	--	--	--	--	--	--
Wind Erosion at the Ash Basin Emissions)	10.93	5.46	0.82	--	--	--	--	--	--
Wind Erosion at the Ash Basin (Lead)	--	--	--	--	--	--	--	--	2.32E-03
Total PTE	21.595	10.83	3.365	1.37E-03	0.83	0.72	0.32	144	3.36E-03

Table 2 shows a summary of the net emissions increases for the project based on the BAE, PAE and PTE emissions shown in Table 1 above. The change in emissions resulting from the proposed project was calculated by subtracting the BAE from the total post project emissions (PAE emissions for existing sources and PTE emissions for new sources).

Since the increase in emissions of regulated NSR pollutants from the project are below the PSD significant emissions rates as defined at 40 CFR 40 CFR 51.166(b)(23)(i), a PSD review is not required for this project.

Table 2 – PSD Applicability Analysis Summary (tpy)

		PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	CO	VOC	CO_2e	Lead
Baseline Actual Emissions (BAE)		2.45	1.17	0.18	--	--	--	--	--	4.61E-04
Post Project Emissions	PAE for existing sources	0.197	0.0596	0.0169	--	--	--	--	--	8.06E-07
	PTE for new sources	21.595	10.83	3.365	1.37E-03	0.83	0.72	0.32	144	3.36E-03
	Total Post Project	21.79	10.89	3.38	1.37E-03	0.83	0.72	0.32	144	3.37E-03
Project emissions increase (PAE + PTE - BAE)		19.34	9.72	3.2	1.37E-03	0.83	0.72	0.32	144	2.91E-03
PSD Significant Emissions Rate		25	15	10	40	40	100	40	75,000	0.6
Is pollutant subject to PSD review?		No	No	No	No	No	No	No	NA	No

DEP has demonstrated that the total project emissions increase (PAE for existing sources and PTE for new sources) for the project minus BAE is less than the *significant emissions increase* (as defined by 40 CFR 40 51.166(b)(23)), as shown in Table 2 for all pollutants.

15A NCAC 02D .0530(u) Condition

DEP has elected to use *projected actual emissions* to determine applicability with PSD requirements. Under the 15A NCAC 02D .0530(u) rule, if the *projected actual emissions*, calculated pursuant to 40 CFR 51.166(b)(40)(ii)(a) and (b), minus baseline actual emissions, is 50 percent or greater of the amount that is a significant emissions increase, without reference to the amount that is a significant net emissions increase, for the regulated NSR pollutant, then a permit condition is required for monitoring, recordkeeping and reporting of the annual emissions related to the project in tons per year, for 10 years following resumption of regular operations after the change if the project involves increasing the emissions unit's design capacity or its potential to emit for the regulated NSR pollutant; otherwise, these records shall be maintained for five years following resumption of regular operations after the change.

All relevant information, including historical operational data, the company's expected business activity, and the company's highest projections of business activity for the five-year period after implementation of the project, along with fugitive emissions, have been considered by DEP. As stated previously, DEP has set PAE equal to BAE for hauling and handling of generated ash and off-specification gypsum and wind erosion from the existing Monofill because the operating rate of the plant, and thus the material generation rates, are not being modified and will not be impacted by the project. All fugitive emissions have been included. Therefore, PAE has been calculated pursuant to 51.166(b)(40)(ii)(a) and (b).

Since, this project does not involve increasing the ash and gypsum generation (design capacity) from the boilers, monitoring is required for five years. DEP's use of PAE in determining applicability with PSD requirements means that the total post project emissions (PAE for existing sources and PTE for new sources) are subject to the above reporting requirement. Since the PAE minus BAE for PM and PM_{10} is 50 percent or greater of the amount that is a significant emissions increase, these pollutants are required to be included in the 02D .0530(u) condition. Accordingly, the following condition is being placed in the permit.

15A NCAC 02D .0530(u): USE OF PROJECTED ACTUAL EMISSIONS TO AVOID APPLICABILITY OF PREVENTION OF SIGNIFICANT DETERIORATION REQUIREMENTS

Monitoring/Recordkeeping/Reporting

The Permittee has used projected actual emissions to avoid applicability of prevention of significant deterioration requirements, pursuant to Application 7300045.20A, for the ash basin closure project shown below. The Permittee shall perform the following:

i. The Permittee shall maintain records of annual emissions in tons per year, on a calendar year basis related to the ash basin closure project, for five years following first placement of ash in the new Closure Landfill after the change is made.
ii. The Permittee shall submit a report to the director within 60 days after the end of each calendar year during which these records must be generated. The report shall contain the items listed in 40 CFR 51.166(r)(6)(v)(a) through (c).
iii. The Permittee shall make the information documented and maintained under this condition available to the Director or the general public pursuant to the requirements in 40 CFR 70.4(b)(3)(viii).
iv. The reported actual emissions (post-construction emissions) for each of the five calendar years will be compared to the projected actual emissions (pre-construction projection) as included below:

Regulated NSR Pollutant	Projected Actual Emissions* (tons per year)
PM	21.79
PM_{10}	10.89

* The projected actual emissions are not enforceable limitations. If the reported actual emissions exceed the projected actual emissions, the Permittee shall include in its annual report an explanation as to why actual emissions exceeded the projected actual emissions. These projected actual emissions include total post project emissions (projected actual emissions for existing sources and potential to emit emissions for new sources) as used in the application.

VII. Facility-wide Toxics Demonstration

State-Only Requirement

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

As a result of this modification to close the Ash Basin and construct a new lined Closure Landfill, which results in an increase in emissions in several toxic air pollutants, a facility-wide toxics modeling demonstration is triggered.

In accordance with 15A NCAC 02Q .0709(a), the owner or operator of a source who is applying for a permit or permit modification to emit toxic air pollutants shall:

i. demonstrate to the satisfaction of the Director through dispersion modeling that the emissions of toxic air pollutants from the facility will not cause any acceptable ambient level listed in 15A NCAC 02D .1104 to be exceeded beyond the premises (adjacent property boundary); or
ii. demonstrate to the satisfaction of the Commission or its delegate that the ambient concentration beyond the premises (adjacent property boundary) for the subject toxic air pollutant shall not adversely affect human health (e.g., a risk assessment specific to the facility) though the concentration is higher than the acceptable ambient level in 15A NCAC 02D .1104.

As required by NCAC 02Q .0706(b), the owner or operator of the facility shall submit a permit application to comply with 15A NCAC 02D .1100 if the modification results in:

i. a net increase in emissions or ambient concentration of any toxic air pollutant that the facility was emitting before the modification; or
ii. emissions of any toxic air pollutant that the facility was not emitting before the modification if such emissions exceed the levels contained in 15A NCAC 02Q .0711.

As required by NCAC 02Q .0706(c), the permit application shall include an evaluation for all toxic air pollutants (TAPs) covered under 15A NCAC 02D .1104 for which there is:

i. a net increase in emissions of any toxic air pollutant that the facility was emitting before the modification; and
ii. emission of any toxic air pollutant that the facility was not emitting before the modification if such emissions exceed the levels contained in 15A NCAC 02Q .0711.

All sources at the facility, excluding sources exempt from evaluation in 15A NCAC 02Q .0702, emitting these toxic air pollutants shall be included in the evaluation.

Note, source WWTBR does not emit a compound affected by this project and therefore it was not modeled, and sources ES-SORB2 and ES-SORB5 were never constructed. The WWTBR toxic emission rate for H_2S had previously been modeled and that emission rate has been included in the emission rate condition.

DEP performed a facility-wide air toxics analysis, for all permitted existing sources, including the Maximum Achievable Control Technology (MACT) sources. Air toxics emissions for the sources in this permit subject to a Part 63 MACT are exempt from air permitting, pursuant to 02Q .0702(a)(27)(B) and the Permittee is not required to model exempt MACT sources. Nevertheless, the Permittee has volunteered to include emissions for all such exempt sources in the modeling analysis. If the Permittee had not included the MACT sources, it would be up to NCDAQ to demonstrate that there is no health risk, but that is not required in this case.

The proposed project will result in an increase in the maximum daily and annual emissions rates of several TAPs. In addition, certain TAP emissions from the facility exceed the 15A NCAC 02Q .0711 Toxic Pollutant Emission Rates (TPERs) requiring a permit. Therefore, a facility-wide air toxics analysis was performed for these TAPs and the TPER analysis indicates the following:

- Arsenic and Inorganic Arsenic Compounds– Annual (Carcinogens) TPER exceeded
- Beryllium (7440-41-7) – Annual (Carcinogens) TPER exceeded
- Cadmium (7440-43-9) – Annual (Carcinogens) TPER exceeded
- Soluble Chromate Compounds, as Chromium (VI) Equivalents – Daily (Chronic Toxicants) TPER exceeded
- Manganese and Compounds – Daily (Chronic Toxicants) TPER exceeded
- Mercury – Daily (Chronic Toxicants) TPER exceeded
- Nickel (7440-02-0) – Daily (Chronic Toxicants) TPER exceeded

Toxics Modeling Analysis

The first step in the toxics analysis, as stated above, is to determine if the modification results in a net increase in emissions or ambient concentration of any toxic air pollutant that the facility was emitting before the modification, or if the modification results in emissions of any toxic air pollutant that the facility was not emitting before the modification if such emissions exceed the levels contained in 15A NCAC 02Q .0711. Table 2 shows the potential emissions for the short-term and annual pollutants for the TAPs for which the modification results in a net increase in emissions that the facility was emitting before the modification. There are no new TAPs being emitted for which the facility was not emitting before the modification.

TEPR Analysis

Once it was determined which TAP emissions were being increased due to the modification, the next step of the modeling analysis is to perform a TPER analysis using total facility-wide potential emissions from the proposed modification (Table 2) to determine if the TPERs in rule 02Q .0711 are exceeded for each TAP emission being increased.

Table 2
Toxic Pollutant Emission Rate (TPER) Analysis

Compound	Facility-wide Potential Emission Rates			TPER			TPER Exceeded?		
	lb/hr	lb/day	lb/yr	lb/hr	lb/day	lb/yr	lb/hr	lb/day	lb/yr
Arsenic			31.5			0.053			yes
Beryllium			7.45			0.28			yes
Cadmium			6.98			0.37			yes
Chromium VI		0.15			0.013			yes	
Manganese		4.61			0.630			yes	
Mercury		0.11			0.013			yes	
Nickel		3.72			0.13			yes	

Air Toxics AAL Analysis

After the toxics exceeding their TPERs were identified (Table 2), a facility-wide air dispersion modeling analysis was completed using potential emissions to determine the resulting modeled ambient concentrations for comparison to the Acceptable Ambient Levels (AALs) in 15A NCAC 02D .1104.

To maximize operational flexibility and to possibly reduce the need for future TAP modeling analyses for these sources at the facility, DEP requested permit limits based on "optimized" emission rates. That is, based on the resulting concentrations from the potential model run, the potential emission rates for each source were increased to optimized rates which result in ambient concentrations that are a greater percent (approximately 98%) of the AALs than for the potential model run while still staying below 100% the AALs. Results of the baseline and optimized modeling analyses are shown in Table 3 and Table 4 respectively, with the resulting impacts and associated averaging period as a percent of the applicable AAL for each toxic.

Table 3
Results of Baseline Modeled Toxics Impacts

Pollutant	Year	Averaging Period	Maximum Impact (µg/m^3)	AAL (µg/m3)	Percent of AAL (%)
Arsenic	2017	Annual	5.32E-04	2.1E-03	25.3
Beryllium	2017	Annual	8.75E-05	4.1E-03	2.1
Cadmium	2017	Annual	1.18E-05	5.5E-03	0.2
Chromium VI	2015	24-hour	2.48E-03	0.62	0.4
Manganese	2015	24-hour	4.10E-02	31	0.1
Mercury	2014	24-hour	1.17E-04	0.6	0.0
Nickel	2015	24-hour	1.52E-02	6	0.3

Table 4
Results of Optimized Modeled Toxics Impacts

Pollutant	Year	Averaging Period	Maximum Impact ($\mu g/m^3$)	AAL ($\mu g/m3$)	Percent of AAL (%)
Arsenic	2017	Annual	2.06E-03	2.1E-03	98.1
Beryllium	2017	Annual	4.02E-03	4.1E-03	98.1
Cadmium	2017	Annual	5.39E-03	5.5E-03	98.0
Chromium VI	2015	24-hour	6.08E-01	0.62	98.0
Manganese	2015	24-hour	30.38	31	98.0
Mercury	2014	24-hour	0.59	0.6	98.0
Nickel	2015	24-hour	5.88	6	98.0

DEP's toxics dispersion modeling analysis was approved by Mark Yoder, AQAB, (see memo to Ed Martin dated February 10, 2021) and adequately demonstrates compliance with the AALs) outlined in 15A NCAC 02D .1104, on a source-by-source basis.

No toxics monitoring, recordkeeping, or reporting is required (except for waste EDTA from Unit 1A Boiler and Unit 1B Boiler) since the resulting impacts and percent of the AAL for all toxics for the potential (baseline) modeling are significantly below those for the optimized modeling.

Detailed toxic emission rates (baseline and optimized) for each source are shown in DEP's application. The permit toxic limits for all sources modeled, except for the MACT sources, which are exempt from toxics permitting, are shown below in Table 5 and in permit condition 2.2.B.1.a.

Table 5
Permit Toxic Emission Limits

Permit Source ID	Source Description	Toxic Air Pollutant	Emissions Limit	
			(lb/yr)	(lb/day)
CRUSHER	Coal crusher	ARSENIC	2.70E-01	
		BERYLLIUM	8.27E-01	
		CADMIUM	9.28E-01	
		MANGANESE		4.12E-01
		MERCURY		1.40E-02
		NICKEL		1.68E-01
SILO2 - SILO6	Five coal storage silos	ARSENIC	1.35E+00	
		BERYLLIUM	4.14E+00	
		CADMIUM	4.64E+00	
		MANGANESE		2.06E+00
		MERCURY		6.98E-02
		NICKEL		8.38E-01
PFTS1	Dry flyash pneumatic transfer system	ARSENIC	1.11E+00	
		BERYLLIUM	1.94E+00	
		CADMIUM	2.41E+00	
		CHROMIUM VI		3.73E-02
		MANGANESE		1.65E+00

Permit Source ID	Source Description	Toxic Air Pollutant	Emissions Limit	
			(lb/yr)	(lb/day)
		MERCURY		3.63E-03
		NICKEL		3.77E-01
PFTS2	Dry flyash pneumatic transfer system	ARSENIC	1.11E+00	
		BERYLLIUM	1.94E+00	
		CADMIUM	2.41E+00	
		CHROMIUM VI		3.73E-02
		MANGANESE		1.65E+00
		MERCURY		3.63E-03
		NICKEL		3.77E-01
PFTS3	Dry flyash pneumatic transfer system	ARSENIC	1.11E+00	
		BERYLLIUM	1.94E+00	
		CADMIUM	2.41E+00	
		CHROMIUM VI		3.73E-02
		MANGANESE		1.65E+00
		MERCURY		3.63E-03
		NICKEL		3.77E-01
PFTS4	Dry flyash pneumatic transfer system	ARSENIC	1.11E+00	
		BERYLLIUM	1.94E+00	
		CADMIUM	2.41E+00	
		CHROMIUM VI		3.73E-02
		MANGANESE		1.65E+00
		MERCURY		3.63E-03
		NICKEL		3.77E-01
SILO1	Flyash storage silo	ARSENIC	1.38E+00	
		BERYLLIUM	2.41E+00	
		CADMIUM	3.00E+00	
		CHROMIUM VI		4.64E-02
		MANGANESE		2.06E+00
		MERCURY		4.51E-03
		NICKEL		4.69E-01
SILO1A	Flyash storage silo	ARSENIC	1.38E+00	
		BERYLLIUM	2.41E+00	
		CADMIUM	3.00E+00	
		CHROMIUM VI		4.64E-02
		MANGANESE		2.06E+00
		MERCURY		4.51E-03
		NICKEL		4.69E-01
LSL2HCG	Head chute gate transfer housing for	ARSENIC	8.47E-04	
		BERYLLIUM	1.08E-03	

Permit Source ID	Source Description	Toxic Air Pollutant	Emissions Limit	
			(lb/yr)	(lb/day)
	conveyor L2 transfer to conveyor L3	CADMIUM	2.08E-02	
		MANGANESE		2.54E-02
		MERCURY		2.16E-05
		NICKEL		5.65E-04
LSS1A, LSS1B	Conveyor L3 transfer and storage silo 1A/Head chute gate transfer and storage silo 1B	ARSENIC	8.47E-04	
		BERYLLIUM	1.08E-03	
		CADMIUM	2.08E-02	
		MANGANESE		2.54E-02
		MERCURY		2.16E-05
		NICKEL		5.65E-04
ES-PBTS1	One bottom ash pneumatic transfer system	ARSENIC	4.60E-02	
		BERYLLIUM	6.96E-01	
		CADMIUM	8.87E-01	
		CHROMIUM VI		2.07E-02
		MANGANESE		1.27E+00
		MERCURY		7.23E-04
		NICKEL		2.42E-01
ES-PBTS2	One bottom ash pneumatic transfer system	ARSENIC	4.60E-02	
		BERYLLIUM	6.96E-01	
		CADMIUM	8.87E-01	
		CHROMIUM VI		2.07E-02
		MANGANESE		1.27E+00
		MERCURY		7.23E-04
		NICKEL		2.42E-01
ES-PBTS3	One bottom ash pneumatic transfer system	ARSENIC	4.60E-02	
		BERYLLIUM	6.96E-01	
		CADMIUM	8.87E-01	
		CHROMIUM VI		2.07E-02
		MANGANESE		1.27E+00
		MERCURY		7.23E-04
		NICKEL		2.42E-01
ES-SILO8	One bottom ash storage silo	ARSENIC	4.26E-02	
		BERYLLIUM	6.45E-01	
		CADMIUM	8.22E-01	
		CHROMIUM VI		1.91E-02
		MANGANESE		1.18E+00
		MERCURY		6.70E-04
		NICKEL		2.24E-01
ES-SORB1, ES-	Sorbent silo (ES-	ARSENIC	1.22E-02	

Permit Source ID	Source Description	Toxic Air Pollutant	Emissions Limit	
			(lb/yr)	(lb/day)
SORB4	SORB1), sorbent pneumatic conveying equipment (ES-SORB4)	BERYLLIUM	1.55E-02	
		CADMIUM	2.99E-01	
		MANGANESE		3.66E-01
		MERCURY		3.10E-04
		NICKEL		8.14E-03
EDTA	Unit 1A/1B Boilers when evaporating waste EDTA cleaning solution	ARSENIC	2.84E-01	
		CADMIUM	3.37E+01	
		CHROMIUM VI		3.51E+00
		MANGANESE		1.42E+03
		MERCURY		8.51E+01
		NICKEL		6.56E+02
MONO	Monofill (5 acres active, 26 acres inactive) including wind erosion, generated ash unloading, and off-specification gypsum unloading.	ARSENIC	8.59E+01	
		BERYLLIUM	1.67E+02	
		CADMIUM	2.03E+02	
		CHROMIUM VI		3.70E+00
		MANGANESE		1.85E+02
		MERCURY		4.08E-01
		NICKEL		3.58E+01
LAND	Wind erosion, generated ash unloading, relocated ash unloading, and off-specification gypsum unloading at the Closure Landfill (10 acres active, 48 acres inactive).	ARSENIC	1.67E+02	
		BERYLLIUM	3.25E+02	
		CADMIUM	3.97E+02	
		CHROMIUM VI		7.22E+00
		MANGANESE		3.61E+02
		MERCURY		7.96E-01
		NICKEL		6.98E+01
ASHBASIN	Wind erosion and excavation of ash at the Ash Basin and FGD Pond (25 acres active, 133 acres inactive)	ARSENIC	4.34E+02	
		BERYLLIUM	8.41E+02	
		CADMIUM	1.03E+03	
		CHROMIUM VI		1.87E+01
		MANGANESE		9.34E+02
		MERCURY		2.06E+00
		NICKEL		1.81E+02
ES-DFA Load	Dry flyash silo truck loadout	ARSENIC	3.20E-02	
		BERYLLIUM	5.59E-02	
		CADMIUM	6.97E-02	
		CHROMIUM VI		1.08E-03
		MANGANESE		4.78E-02
		MERCURY		1.05E-04
		NICKEL		1.09E-02
ES-DBA Load	One bottom ash silo	ARSENIC	4.91E-04	

Permit Source ID	Source Description	Toxic Air Pollutant	Emissions Limit	
			(lb/yr)	(lb/day)
	truck load-out	BERYLLIUM	6.87E-03	
		CADMIUM	8.83E-03	
		CHROMIUM VI		2.25E-04
		MANGANESE		1.41E-02
		MERCURY		1.40E-05
COALDUMP	Coal unloading operation with wet suppression	ARSENIC	4.59E-02	
		BERYLLIUM	1.41E-01	
		CADMIUM	1.58E-01	
		MANGANESE		7.00E-02
		MERCURY		2.38E-03
		NICKEL		2.85E-02
CV2, CV5, CV6	Three coal conveyors	ARSENIC	4.59E-02	
		BERYLLIUM	1.41E-01	
		CADMIUM	1.58E-01	
		MANGANESE		7.00E-02
		MERCURY		2.38E-03
		NICKEL		2.85E-02
CV9A, CV9B, CV10A, CV10B	Four coal conveyors	ARSENIC	4.59E-02	
		BERYLLIUM	1.41E-01	
		CADMIUM	1.58E-01	
		MANGANESE		7.00E-02
		MERCURY		2.38E-03
		NICKEL		2.85E-02
CV12A, CV12B, CV13A, CV13B	Four coal conveyors	ARSENIC	4.59E-02	
		BERYLLIUM	1.41E-01	
		CADMIUM	1.58E-01	
		MANGANESE		7.00E-02
		MERCURY		2.38E-03
		NICKEL		2.85E-02
ES-19	Coal Handling/Storage	ARSENIC	7.71E+00	
		BERYLLIUM	2.36E+01	
		CADMIUM	2.65E+01	
		MANGANESE		1.17E+01
		MERCURY		3.99E-01
		NICKEL		4.78E+00
LSRSP	Receiving and Storage Pile Active Area and Inactive Area	ARSENIC	3.30E+00	
		BERYLLIUM	4.19E+00	
		CADMIUM	8.08E+01	
		MANGANESE		9.89E+01
		MERCURY		8.39E-02
		NICKEL		2.20E+00

Permit Source ID	Source Description	Toxic Air Pollutant	Emissions Limit	
			(lb/yr)	(lb/day)
LSL1	Reclaim hopper transfer and belt feeder L1	ARSENIC	1.25E-04	
		BERYLLIUM	1.59E-04	
		CADMIUM	3.06E-03	
		MANGANESE		3.74E-03
		MERCURY		3.18E-06
		NICKEL		8.33E-05
LSL2	Reclaim hopper transfer and belt feeder L2	ARSENIC	1.25E-04	
		BERYLLIUM	1.59E-04	
		CADMIUM	3.06E-03	
		MANGANESE		3.74E-03
		MERCURY		3.18E-06
		NICKEL		8.33E-05
LSL3	Conveyor L3	ARSENIC	1.25E-04	
		BERYLLIUM	1.59E-04	
		CADMIUM	3.06E-03	
		MANGANESE		3.74E-03
		MERCURY		3.18E-06
		NICKEL		8.33E-05
ES-G1A, ES-G1B	Two Gypsum Reversing Conveyors	ARSENIC	1.93E-04	
		BERYLLIUM		
		CADMIUM	5.70E-03	
		MANGANESE		1.01E-02
		MERCURY		5.72E-05
		NICKEL		8.83E-05
ES-G2	Gypsum Conveyor from G1A/B to the Stacking Conveyor	ARSENIC	1.93E-04	
		CADMIUM	5.70E-03	
		MANGANESE		1.01E-02
		MERCURY		5.72E-05
		NICKEL		8.83E-05
ES-G3	Gypsum Stacking Conveyor	ARSENIC	1.93E-04	
		CADMIUM	5.70E-03	
		MANGANESE		1.01E-02
		MERCURY		5.72E-05
		NICKEL		8.83E-05
ES-GTL	Gypsum Truck Loadout	ARSENIC	1.93E-04	
		CADMIUM	5.70E-03	
		MANGANESE		1.01E-02
		MERCURY		5.72E-05
		NICKEL		8.83E-05
ES-GSP	Gypsum Storage Pile	ARSENIC	3.39E+00	

Permit Source ID	Source Description	Toxic Air Pollutant	Emissions Limit	
			(lb/yr)	(lb/day)
	Active Area and Inactive Area	CADMIUM	1.00E+02	
		MANGANESE		1.78E+02
		MERCURY		1.01E+00
		NICKEL		1.55E+00
WWTBR	Wastewater Metals Reduction Bioreactor	HYDROGEN SULFIDE		4.97E+01

VIII. Public Hearing on the Draft Permit

In accordance with the CAMA (HOUSE BILL 630) §130A-309.203, the Department shall hold a public hearing and accept written comment on the draft permit decision for a period of not less than 30 or more than 60 days after the Department issues a draft permit decision.

The public notice requirement is for a construction and operating permit under the 15A NCAC 02Q .0300 procedures. EPA does not review the draft permit for the first step of a two-step 15A NCAC 02Q .0501(b)(2) Title V process. The second step of the 15A NCAC 02Q .0501(b)(2) Title V process will occur on or before 12 months after commencing operation.

IX. Other Requirements

PE Seal
A PE seal is not required since there are no air pollution capture or control systems being added in accordance with 02Q .0112.

Zoning
A Zoning Consistency Determination form was received November 17, 2020, signed by Lori Oakley, Person County Planning Department, stating that the application had been received and that the proposed operation is consistent with applicable zoning ordinances.

Fee Classification
The facility fee classification before and after this modification will remain as "Title V".

Increment Tracking
Person County has been triggered for PSD Increment Tracking for PM_{10} and SO_2. This permit modification will result in an increase of 2.22 pounds per hour of PM_{10} and an increase of 0.005 pounds per hour of SO_2 based on the following:

The emissions increase of PM_{10} is 9.72 tpy and the increase of SO_2 is 0.00137 tpy as shown in Table 2 above. For PM_{10}, the increase is due to various sources including mostly wind erosion at the Ash Basin and Closure Landfill; therefore, the increase is averaged over 8760 hours per year. For SO_2, the increase is due only to the Closure Landfill Emergency Generator; therefore, the increase is based on the worse case hourly operation of 500 hours per year.

For PM_{10}: (9.72 tons/yr x 2000 lb/ton)/8760 hr/yr = 2.22 lb/hr

For SO_2: (0.00137 tons/yr x 2000 lb/ton)/500 hr/yr = 0.005 lb/hr

X. Comments on Draft Permit

The draft permit and review were sent to Erin Wallace at DEP, Matthew Mahler at RRO and Samir Parekh with SSCB on February 15, 2021 for review.

RRO Comments

The following comments were received in an email from Matthew Mahler on February 17, 2021:

Permit Review:
Page 15, put space in at "02D.1104";
Permit:
Page 21, www.epa.gov/cdx is now https://cdx.epa.gov
Page 27, change befre to before;
Page 31, change "shall deemed to" to "shall be deemed to"
Page 49, For LSL2HCG, change "head chute gate for" to "head chute gate transfer housing for"; (this change should be made in Permit Review also);
Page 50, ES-SORB4 is a sorbent pneumatic conveyor equipment; (this change should be made in Permit Review also);
Page 52, ES-19 is "Coal Handling/Storage, plant parking lots, paved roads, unpaved roads, coal pile and ash handling"; (this change should be made in Permit Review also);
For the attached DEP letter (PDF) from 2019 mentions the pending installation of a 100 kW seep collection backup engine; the engine doesn't appear on the insignificant sources list. Was the engine installed?
Page 58, for 112(r), change to "no later than December 20, 2021"
Page 58, for footnote 5, change to "December 20, 2016"

Note, ES-19 above was corrected to "Coal Handling/Storage" in comments received later from DEP above.

These changes were made. DEP was asked about the 100 kW seep collection backup engine and stated that they will be adding the engine and the associated propane tank to the insignificant activities list in the upcoming permit renewal application.

DEP Comments
Comments were received from DEP on February 19, 2021. These include requesting a 02Q .0504 condition for submitting the Part II application and some typo corrections. These changes were made.

SSCB Comments
In an email on February 19, 2021, Samir Parekh confirmed he did not have any comments. When the draft permit was sent to him, it was mentioned that any changes needed for excess emissions, monitor downtime, data substitution, etc. for monitoring or reporting, for example in sections 2.1.A.2.g and h, can be made during the upcoming permit renewal because of the limited processing time for generic changes for this type of application.

XI. Recommendations

Later

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

MICHAEL ABRACZINSKAS
Director

NORTH CAROLINA
Environmental Quality

DRAFT

Mr. Tom Copolo
Plant Manager
Duke Energy Progress, LLC – Mayo Electric Generating Plant
10660 Boston Road
Roxboro, North Carolina 27574

SUBJECT: Air Quality Permit No. 03478T48
Facility ID 7300045
Duke Energy Progress, LLC – Mayo Electric Generating Plant
Roxboro, Person County
Fee Class: Title V
PSD Class: Major

Dear Mr. Copolo:

In accordance with your completed Air Quality Permit Application for a Significant modification of a Title V permit in accordance with 15A NCAC 02Q .0501(b)(2) received November 12, 2020, we are forwarding herewith Air Quality Permit No. 03478T48 to Duke Energy Progress, LLC - Mayo Electric Generating Plant, Roxboro, 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." Please note the requirements for the annual compliance certification are contained in General Condition P in Section 3. The current owner is responsible for submitting a compliance certification for the entire year regardless of who owned the facility during the year.

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

If any parts, requirements, or limitations contained in this Air Quality Permit are unacceptable to you, you have the right to 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.

Person County has been triggered for PSD Increment Tracking for PM_{10} and SO_2. This permit modification will result in an increase of 2.22 pounds per hour of PM_{10} and an increase of 0.005 pounds per hour of SO_2.

This Air Quality Permit shall be effective from _____ until November 30, 2021, 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 Edward L. Martin at 919-707-8739 or ed.martin@ncdenr.gov.

Sincerely yours,

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

Enclosure

c: Heather Ceron, EPA Region 4
Connie Horne (cover letter only)
Raleigh Regional Office
Central Files

ATTACHMENT to Cover Letter to Permit No 03478T48

Insignificant Activities under 15A NCAC 02Q .0503(8)

Emission Source I.D.	Emission Source Description
IS-1	No. 2 fuel oil tank (340,000 gallons maximum capacity)
IS-2.1, IS-2.2, IS-2.3, IS-2.4	Four Lube Oil Tanks
IS-3	Emergency Diesel Generator Fuel Oil Storage Tank (5,000 gallons maximum capacity)
IS-4	Gasoline Storage Tank (1,000 gallons maximum capacity)
IS-6	Emergency Fire Pump Reservoir (220 gallons maximum capacity)
IS-7	Emergency Fire Pump Day Tank (290 gallons maximum capacity)
IS-8	Oily Waste Separator Tank (235 gallons maximum capacity)
IS-9	Used Oil (waste separator) Storage Tank (550 gallons maximum capacity)
IS-10	Kerosene Tank (3,000 gallons maximum capacity)
IS-11	Lube Oil Tank/Bowser (1,150 gallons maximum capacity)
IS-12	Main Turbine Lube Oil Reservoir (14,000 gallons maximum capacity)
IS-13	Fuel Handling Virgin No. 2 Fuel Oil Tank (12,300 gallons maximum capacity)
IS-14	Lube Oil Reservoirs 1A/1B BFP (800 gallons maximum capacity)
IS-15	Cooling towers that do not use chromated chemicals
IS-16	Emergency Diesel Generator Fuel Oil Day Tank (275 gallons maximum capacity)
IS-17	Liquid Caustic Tank (10,000 gallons maximum capacity)
IS-18	Liquid Alum Tank (4,500 gallons maximum capacity)
IS-20 **(NSPS, IIII; MACT, ZZZZ)**	No. 2 fuel oil-fired emergency fire pump (315 horsepower maximum capacity)
IQWP **(NSPS, IIII; MACT, ZZZZ)**	No. 2 fuel oil-fired emergency quench water pump (175 horsepower maximum capacity)
ILSRH	Limestone pile reclaim hopper
IS-29 **(NSPS, JJJJ; MACT, ZZZZ)**	Propane-fired emergency generator (31.9 horsepower maximum capacity)
IS-31	One 10,000 Gallon Off-Road Diesel Fuel Tank at Monofill
IS-32	One 10,000 Gallon On-Road Diesel Fuel Tank at Monofill
IS-33.1 and IS-33.2	Two anhydrous ammonia storage tanks (21,890 gallons maximum capacity, each)
IS-LANDEGEN **(NSPS, IIII; MACT, ZZZZ)**	Closure Landfill Emergency Generator (375 kW)

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://deq.nc.gov/about/divisions/air-quality/air-quality-permits/specific-permit-conditions-regulatory-guide

Changes Made to Previous Permit

The following changes were made to Air Quality Permit No. 03478T47:

Page No.	Section	Change
Throughout	Throughout	Updated permit/application numbers and dates.
--	Insignificant Activities List	Added IS-LANDEGEN.
3-6	1, table of permitted emission sources	Revised description of HAULRD, MONO and ES-19. Removed MAMONOH 01 and MAMONOH 02. Added LAND and ASHBASIN. Added footnote 5 and 6.
48-53	2.2.B.1.a	Revised toxic limits.
54	2.2.B.1.b	Added condition for the approved AQAB review memo.
54-55	2.2.C.1	Added 15A NCAC 02D .0530(u) condition.
55	2.2.C.2	Added 02Q .0504 condition for obtaining the Part II permit.
59-68	3	Updated General Conditions to version 5.5, 08/25/2020.

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

AIR QUALITY PERMIT

Permit No.	Replaces Permit No.	Effective Date	Expiration Date
03478T48	03478T47		November 30, 2021

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 – Mayo Electric Generating Plant**
Facility ID: **7300045**

Facility Site Location: **10660 Boston Road**
Roxboro, Person County, NC 27574

Mailing Address: **10660 Boston Road**
City, State, Zip: **Roxboro, NC 27574**

Application Numbers: **7300045.20A**
Complete Application Date: **November 12, 2020**

Primary SIC Code: **4911**
Division of Air Quality, Regional Office Address: **Raleigh Regional Office**
3800 Barrett Drive, Suite 101
Raleigh, NC 27609

Permit issued this the __ day of _____, 2021.

_____
Mark Cuilla, EIT, CPM, Acting Chief, Permitting Section
By Authority of the Environmental Management Commission

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.	Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
7-21, 48-53, 56	Unit 1A Boiler **(NSPS, D; PSD; MACT, 5U)**	Coal/No. 2 fuel oil/recycled No. 2 fuel oil-fired electric utility boiler (4,512.5 million Btu per hour nominally rated heat input) equipped with low-NO_X burner systems, sodium coal conditioning, and alkaline-based fuel additive[1,2]	ESP1 and ESP2	Two electrostatic precipitators
			SCR1A	selective catalytic reduction system
			SORB1A	sorbent injection system
			SCRUBBER	Flue Gas Desulfurization limestone slurry tray tower scrubber
7-21, 48-53, 56	Unit 1B Boiler **(NSPS, D; PSD; MACT, 5U)**	Coal/No. 2 fuel oil/recycled No. 2 fuel oil-fired electric utility boiler (4,512.5 million Btu per hour nominally rated heat input) equipped with low-NO_X burner systems sodium coal conditioning, and alkaline-based fuel additive[1,2]	ESP3 and ESP4	Two electrostatic precipitators
			SCR1B	selective catalytic reduction system
			SORB1B	sorbent injection system
			SCRUBBER	Flue Gas Desulfurization limestone slurry tray tower scrubber
Fly Ash Storage and Handling				
22-24, 48-53	SILO1	Flyash storage silo (76,970 cubic feet capacity)	BF1	Bagfilter (3,810 square feet of filter area)
22-24, 48-53	SILO1A	Flyash storage silo (76,970 cubic feet capacity)	BF1A	Bagfilter (3,810 square feet of filter area)
22-24, 48-53	PFTS1	Dry flyash pneumatic transfer system (19,700 pounds per hour nominal process weight rate)	C1	Flyash deceleration cyclone
			BF4	fabric filter (1,050 square feet of filter area)
22-24, 48-53	PFTS2	Dry flyash pneumatic transfer system (19,700 pounds per hour nominal process weight rate)	C2	Flyash deceleration cyclone
			BF5	fabric filter (1,050 square feet of filter area)
22-24, 48-53	PFTS3	Dry flyash pneumatic transfer system (19,700 pounds per hour nominal process weight rate)	C3	Flyash deceleration cyclone
			BF13	fabric filter (1,050 square feet of filter area)
22-24, 48-53	PFTS4	Dry flyash pneumatic transfer system (19,700 pounds per hour nominal process weight rate)	C4	Flyash deceleration cyclone
			BF14	fabric filter (1,050 square feet of filter area)

Page No.	Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
34-35, 48-53	ES-DFA Load	Dry flyash silo truck loadout	WS1	Wet flyash conditioner
Bottom Ash Storage and Handling				
41-43, 48-53	ES-SILO8	One bottom ash storage silo (39,500 cubic feet capacity)	CD-BF9	Bagfilter (1,037 square feet of filter area)
41-43, 48-53	ES-PBTS1	One bottom ash pneumatic transfer system (25,000 pounds per hour nominal process weight rate)	CD-BF10	Bagfilter (1,280 square feet of filter area)
41-43, 48-53	ES-PBTS2	One bottom ash pneumatic transfer system (25,000 pounds per hour nominal process weight rate)	CD-BF11	Bagfilter (1,280 square feet of filter area)
41-43, 48-53	ES-PBTS3	One bottom ash pneumatic transfer system (25,000 pounds per hour nominal process weight rate)	CD-BF12	Bagfilter (1,280 square feet of filter area)
44-45, 48-53	ES-DBA Load	One bottom ash silo truck load-out	N/A	N/A
Coal Storage and Handling				
25-27, 48-53	SILO2, SILO3, SILO4, SILO5, and SILO6 **(NSPS, Y)**	Five coal storage silos (1,272 tons capacity each)	BF2	Bagfilter (2,464 square feet of filter area)
25-27, 48-53	CRUSHER **(NSPS, Y)**	Coal crusher (3,000 ton per hour nominal rated capacity) with conveyor drop points (ID Nos. CV2, CV9A and CV9B)	BF3	Bagfilter (3,696 square feet of filter area)
28, 48-53	COALDUMP **(NSPS, Y)**	Coal unloading operation with wet suppression	N/A	N/A
28, 48-53	CV2 and CV5 **(NSPS, Y)**	Two coal conveyors (3,000 tons per hour nominal rated capacity each)	N/A	N/A
28, 48-53	CV6 **(NSPS, Y)**	Coal conveyor (3,000 tons per hour nominal rated capacity each)	N/A	N/A
28, 48-53	CV9A, CV9B, CV10A, and CV10B **(NSPS, Y)**	Four coal conveyors (1,500 tons per hour nominal rated capacity each)	N/A	N/A
28, 48-53	CV12A, CV12B, CV13A, and CV13B **(NSPS, Y)**	Four coal conveyors (800 tons per hour nominal rated capacity each)	N/A	N/A
Limestone Receiving, Storage, Transfer, and Grinding				
33, 48-53	LSRSP	Receiving and storage pile	N/A	N/A
30-32, 48-53	LSL1 **(NSPS, OOO)**	Reclaim hopper transfer and belt feeder L1	N/A	N/A

Page No.	Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
30-32, 48-53	LSL2 **(NSPS, OOO)**	Belt feeder L1 transfer and conveyor L2	N/A	N/A
30-32, 48-53	LSL2HCG **(NSPS, OOO)**	Head chute gate transfer housing for conveyor L2 transfer to conveyor L3	CDLSL2HCG	Fabric filter on transfer housing
30-32, 48-53	LSL3 **(NSPS, OOO)**	Conveyor L3	N/A	N/A
30-32, 48-53	LSS1A **(NSPS, OOO)**	Conveyor L3 transfer and storage silo 1A	CDLSS1A	Fabric filter (1,250 square feet of filter area)
30-32, 48-53	LSS1B **(NSPS, OOO)**	Head chute gate transfer and storage silo 1B	CDLSS1A	Fabric filter (1,250 square feet of filter area)
30-32, 48-53	LSG1 **(NSPS, OOO)**	Wet ball mill grinder in preparation building	N/A	N/A
30-33, 48-53	LSG2 **(NSPS, OOO)**	Wet ball mill grinder in preparation building	N/A	N/A
		Miscellaneous		
48-53	WWTBR	Wastewater metals reduction bio-reactor	N/A	N/A
29	EMGEN **(MACT, ZZZZ)**[3]	No. 2 fuel oil-fired emergency-use generator (750 kilowatt maximum capacity)	N/A	N/A
22-24, 48-53	SILO7	Sodium carbonate storage silo (1,700 cubic feet capacity)	BF6	Bin vent filter (120 square feet of filter area)
36-38, 48-53	ES-SORB1	sorbent silo (lime or hydrated lime; 9,550 cubic feet capacity)	BF7	bagfilter (679 square feet of filter area)
36-38	ES-SORB2	sorbent silo (lime or hydrated lime; 9,550 cubic feet capacity)	BF8	bagfilter (679 square feet of filter area)
36-38, 48-53	ES-SORB4 and ES-SORB5	Two sorbent pneumatic conveying equipment	N/A	N/A
39-40	FHSILOA and FHSILOB	Two dry fuel additive receiving silos, No. 1 and No. 2 (9,550 cubic feet capacity, each)	BF-FHSILOA	bagfilter (679 square feet of filter area)
			BF-FHSILOB	bagfilter (679 square feet of filter area)
N/A	HAULRD[6]	Truck Transport including haul roads for generated and excavated ash to the Closure Landfill	N/A	N/A
48-53	MONO[5,6]	Monofill (31 acre capacity)[4] including wind erosion, generated ash unloading, and off-specification gypsum unloading	N/A	N/A

Page No.	Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
48-53	ES-19[6]	Coal Handling/Storage	N/A	N/A
48-53	LAND[6]	Closure Landfill (58 acres total capacity) wind erosion, generated ash unloading, relocated ash unloading, and off-specification gypsum unloading	N/A	N/A
48-53	ASHBASIN[6]	Ash Basin and FGD Pond (158 acres total capacity) wind erosion and excavation of ash	N/A	N/A
48-53	ES-G1A	Gypsum Reversing Conveyor	N/A	N/A
48-53	ES-G1B	Gypsum Reversing Conveyor	N/A	N/A
48-53	ES-G2	Gypsum Conveyor from G1A/B to the Stacking Conveyor	N/A	N/A
48-53	ES-G3	Gypsum Stacking Conveyor	N/A	N/A
48-53	ES-GTL	Gypsum Truck Loadout	N/A	N/A
48-53	ES-GSP 39	Gypsum Storage Pile	N/A	N/A

1 Alkaline-based fuel additive may be used on an as-needed basis not to exceed 4 pounds per ton of coal burned. Fuel additives shall not contain any toxic air pollutants listed in 15A NCAC 02Q .0711. Fuel additive products not equivalent to those specified in Application 7300045.10C are not allowed without permit modification.

2 None of the mercury control devices or techniques shall use halogen containing compounds (e.g. bromide).

3 According to 40 CFR 63.6590, this rule applies to all stationary reciprocating internal combustion engines. However, according to 40 CFR 63.6590(b)(3)(iii), this source does not have to meet the requirements of this rule.

4 For fly ash, bottom ash, gypsum, boiler slag, and other materials, as defined in the Solid Waste Management Facility Permit to Operate 7305- Indus-2012, Duke Energy Progress, LLC - Mayo Electric Generating Plant.

5 MAMONOH-1 and MAMONOH-2 have been incorporated into MONO.

6 The addition of, or changes to, these emission sources (HAULRD, MONO, ES-19, LAND and ASHBASIN) are listed as a 15A NCAC 02Q .0501(b)(2) modification. The Permittee shall file a Title V Air Quality Permit Application on or before 12 months after commencing operation in accordance with General Condition NN.1. The permit shield described in General Condition R does not apply and compliance certification as described in General Condition P is not required.

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. Two coal/No. 2 fuel oil/recycled No. 2 fuel oil-fired electric utility boilers equipped with low-NOx burner systems, sodium coal conditioning, and alkaline-based fuel additive (ID Nos. Unit 1A Boiler and Unit 1B Boiler), each exhausting to two electrostatic precipitators operating in parallel (ID Nos. ESP1 and 2 and ESP3 and 4), a selective catalytic reduction system (ID Nos. SCR1A and SCR1B), a sorbent injection system (ID Nos. SORB1A and SORB1B), and a common flue gas desulfurization system (ID No. SCRUBBER)

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	See Section 2.1 A.1.a	15A NCAC 02D .0524 (40 CFR Part 60 Subpart D)
	See Section 2.1 A.2.a	15A NCAC 02D .0530 (PSD)
	Phase II Acid Rain Permit Requirements (see Section 2.4)	15A NCAC 02Q .0402 (40 CFR Part 72)
	Federally-Enforceable Only Cross State Air Pollution Rule	40 CFR Part 97, Subpart BBBBB
Nitrogen Oxides	**When burning only coal** 1.8 pounds per million Btu heat input	15A NCAC 02D .0519
	When burning only oil 0.8 pounds per million Btu heat input	
	When burning both coal and oil See Section 2.1.A.3.	
	See Section 2.1 A.1.a	15A NCAC 02D .0524 (40 CFR Part 60 Subpart D)
	See Section 2.1 A.2.a	15A NCAC 02D .0530 (PSD)
	Phase II Acid Rain Permit Requirements (see Section 2.4)	15A NCAC 02Q .0402 (40 CFR Part 72)
	Federally-Enforceable Only Cross State Air Pollution Rule	40 CFR Part 97, Subparts AAAAA and CCCCC
Particulate Matter	0.03 pounds per million Btu heat input	15A NCAC 02D .0524 (40 CFR Part 60 Subpart Da via 40 CFR Part 60 Subpart D)
	0.10 pounds per million Btu heat input	15A NCAC 02D .0530 (PSD)
Toxic Air Pollutants	See Section 2.2 B.1. applicable only when evaporating waste EDTA cleaning solution State-enforceable only	15A NCAC 02D .1100

Regulated Pollutant	Limits/Standards	Applicable Regulation
HAPs	See Section 2.1 A.8.	15A NCAC 02D .1111 (40 CFR 63 Subpart UUUUU)
$PM_{2.5}$	See Section 2.1 A.6.	15A NCAC 02Q .0317 (Avoidance of PSD)
n/a	See Section 2.1 A.7. State-enforceable only	15A NCAC 02Q .0308

1. 15A NCAC 02D .0524: NEW SOURCE PERFORMANCE STANDARDS (40 CFR PART 60, SUBPART D)

a. The Permittee shall comply with all applicable provisions, including the notification, testing, reporting, recordkeeping, and monitoring requirements in accordance with 15A NCAC 02D .0524, "New Source Performance Standards (NSPS) as promulgated in 40 CFR Part 60, Subpart D, including Subpart A "General Provisions."
b. The following emissions limits shall not be exceeded:

POLLUTANT	EMISSION LIMIT (Pounds per million Btu)
Sulfur Dioxide [40 CFR 60.43]	[y (0.80)+z (1.2)]/(y+z)*
Nitrogen Oxides (as NO_2) [40 CFR 60.44]	[y (0.30)+z (0.70)]/(y+z)*
Particulate Matter [40 CFR 60.42Da via 40 CFR 60.42]	0.03

* Where:
y = percentage of total heat input derived from liquid fossil fuel, and
z = percentage of total heat input derived from solid fossil fuel

c. Any use of the electrostatic precipitator high voltage control Energy Management System (EMS) feature requires a revision to this permit.

Testing [15A NCAC 02Q .0508(f)]
d. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ, except that notification of testing shall be given 30 days prior to testing in accordance with 40 CFR 60 Subpart D.
e. A stack test shall be conducted once per calendar year for particulate matter in accordance with either Method 5 at a sample temperature of 320° ± 25° F as described in §63.10010(i)(1) or Method 5B of Appendix A of 40 CFR Part 60. In the event that a boiler exceeds 80 percent of its particulate emission limit during the stack test, the Permittee shall schedule and conduct another stack test within six months. Upon demonstration that the source is operating under 80 percent of its particulate limit, as shown by three consecutive semiannual stack tests, the source may resume annual stack tests.

If the result of any test is greater than the limit given in Section 2.1 A.1.b above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524.

Monitoring/Recordkeeping [15A NCAC 02Q .0508(f)]
f. The Permittee shall install, maintain, and operate a continuous emission monitor system (CEMS) for measuring sulfur dioxide emissions, nitrogen oxide emissions, particulate matter emissions, and either oxygen or carbon dioxide, as per the requirements of 40 CFR Part 75.
g. Compliance with SO_2 and NO_x emission limits in Section 2.1 A.1.b above shall be determined by averaging hourly continuous emission monitoring system values over any three-hour (rolling) period. The three-hour average shall be the arithmetic average of three contiguous one-hour periods of sulfur dioxide or nitrogen oxides as measured by the continuous emission monitoring system. Missing data shall not be filled nor shall the data

be bias adjusted in accordance with 40 CFR Part 75. The minimum number of data points, equally spaced, required to determine a valid hour value shall be determined by 40 CFR Part 75. If any three-hour average exceeds emission limits of Section 2.1 A.1.b above (except during periods of startup, shutdown and malfunction) or records are not maintained, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524. [40 CFR 60.8 and 60.45]

h. Compliance with the particulate matter limit in Section 2.1 A.1.b shall be determined using the PM CEMS.
   i. Each PM CEMS shall meet the requirements of Performance Specification PS-11 of Appendix B of 40 CFR Part 60; and shall be installed, evaluated, operated, and maintained according to the applicable requirements in §60.49Da(v), §§60.45(b)(5), and (g)(4). The Permittee shall have on file with the director an approved quality assurance program, and shall submit to the director within the time period of his request for his approval a revised quality assurance program to include the provisions of 40 CFR 60, Appendix F, Procedure 2 for the PM CEMS.
   ii. The PM emission rate shall be determined based on a 24-hour daily (block) average of the hourly arithmetic average emissions concentrations using the CEMS outlet data each boiler operating day, except for data obtained during startup, shutdown, and malfunction. Averages are only calculated for boiler operating days that have valid data for at least 18 hours of unit operation during which the standard applies. Instead, all of the valid hourly emission rates of the operating day(s) not meeting the minimum 18 hours valid data daily average requirement are averaged with all of the valid hourly emission rates of the next boiler operating day with 18 hours or more of valid PM CEMS data to determine compliance. The 24-hour block arithmetic average emission concentration shall be calculated using EPA Reference Method 19 of Appendix A of 40 CFR Part 60, section 12.4.1.
   iii. At a minimum, valid PM CEMS hourly averages shall be obtained for 75 percent of all operating hours on a 30-day rolling average basis. Valid PM CEMS hourly averages shall be obtained for 90 percent of all operating hours on a 30-day rolling average basis. At least two data points per hour shall be used to calculate each 1-hour arithmetic average.
   iv. The 1-hour arithmetic averages of PM CEMS data shall be expressed in pounds per million Btu and shall be used to calculate the boiler operating day daily arithmetic average emission concentrations. The 1-hour arithmetic averages shall be calculated using the data points required under §60.13(e)(2) of Subpart A of 40 CFR Part 60.
   v. All valid PM CEMS data shall be used in calculating average emission concentrations even if the minimum CEMS data requirements of paragraph iii above are not met.
   vi. When PM emissions data are not obtained because of PM CEMS breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by the DAQ or EPA Reference Method 19 of Appendix A of 40 CFR Part 60 to provide, as necessary, valid emissions data for a minimum of 90 percent of all operating hours per 30-day rolling average.

   If the results of the 24-hour daily arithmetic average PM CEMS concentration exceeds the limit in Section 2.1 A.1.b or any of the above requirements are not met, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524.

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

i. The Permittee shall submit excess emissions and monitoring system performance reports for the sulfur dioxide, nitrogen oxide, and particulate matter CEMS. The reports shall be postmarked on or before the 30th day following the end of each calendar year quarter and shall include, as a minimum, the information required in 40 CFR 60.7(c), as follows:
   i. **Sulfur Dioxide** - Report all three-hour periods of excess emissions (pounds per million Btu) during the reporting period including periods exempted during startup, shutdown and malfunction. Monitor availability values (as calculated for 40 CFR Part 75) for the last hour of the reporting period shall be included.
   ii. **Nitrogen Oxides** - Report all three-hour periods of excess emissions (pounds per million Btu) during the reporting period including periods exempted during startup, shutdown and malfunction. Monitor availability values (as calculated for 40 CFR Part 75) for the last hour of the reporting period shall be included.
   iii. **Particulate Matter** – Report all 24-hour daily (block) average excess emissions (pounds per million Btu) using the CEMS outlet data, including periods exempted during startup, shutdown, and malfunction; within 15 days of a written request, report all PM CEMS hourly averages (in written or electronic format) to show,

at a minimum, that valid PM CEMS hourly averages have been obtained for 90 percent of all operating hours on a 30-day rolling average basis.

j. The results of any stack test shall be reported within 30 days, and the test report shall be submitted within 60 days after the test.

k. All instances of deviations from the requirements of this permit must be clearly identified.

2. 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION

a. The Permittee shall comply with all applicable provisions, including the notification, testing, reporting, recordkeeping, and monitoring requirements in accordance with 15A NCAC 02D .0530, "Prevention of Significant Deterioration" as promulgated in 40 CFR 51.166.

b. The following emission limits shall not be exceeded:

POLLUTANT	EMISSION LIMIT (pounds/million Btu)
Sulfur Dioxide	[y(0.80) + z(1.2)]/(y+z)*
Nitrogen Oxides (as NO_2)	[y(0.30) + z(0.70)]/(y+z)*
Particulate Matter	0.10

* Where:
y = percentage of total heat input derived from liquid fossil fuel, and
z = percentage of total heat input derived from solid fossil fuel

c. To ensure compliance with the above limits, flyash shall not be reinjected into the boilers.

d. Any use of the electrostatic precipitator high voltage control Energy Management System (EMS) feature requires a revision to this permit.

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

e. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limits given in Section 2.1 A.2.b., above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

f. A stack test shall be conducted for particulate matter in accordance with Section 2.1 A.1.e. If the result of any test is greater than the limit given in Section 2.1 A.2.b above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

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

g. The Permittee shall comply with the applicable monitoring and recordkeeping requirements in Sections 2.1 A.1.f through h. to demonstrate compliance with the sulfur dioxide, nitrogen oxides, and particulate matter limits in Section 2.1 A.2.b above. If any three-hour average SO_2 or NO_x emission rate as determined in Section 2.1 A.1.g exceeds the emission limits in Section 2.1 A.2.b above (except during periods of startup, shutdown and malfunction), or the results of the 24-hour daily arithmetic average PM CEMS concentration as determined in Section 2.1 A.1.h exceeds the limit in Section 2.1 A.2.b above, or any of the requirements in Section 2.1 A.1.h are not met, or records are not maintained, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

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

h. The Permittee shall comply with the reporting requirements in Sections 2.1 A.1.i through k.

3. 15A NCAC 02D .0519: CONTROL OF NITROGEN OXIDES EMISSIONS

a. Emissions of nitrogen oxides from these sources when burning coal and oil (No. 2 fuel oil or recycled No.2 fuel oil) shall be calculated by the following equation:

$$E = \frac{(E_C)(Q_C) + (E_O)(Q_O)}{Q_t}$$

Where:

E = emission limit for combined burning of coal and oil in **pounds per million Btu heat input**
Ec = 1.8 pounds per million Btu heat input for coal only
Eo = 0.8 pounds per million Btu heat input for oil only
Qc = coal heat input in Btu per hour
Qo = oil heat input in Btu per hour
Qt = Qc + Qo

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

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ, except that notification of testing shall be given 30 days prior to testing in accordance with 40 CFR Part 60, Subpart D. If the results of this test are above the limit given in Section 2.1 A.3.a. the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0519.

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

c. The monitoring, recordkeeping, and reporting requirements specified under 15A NCAC 02D .0524 in Sections 2.1 A.1.g and 2.1 A.1.j.ii shall satisfy this requirement. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0519 if the monitoring and recordkeeping requirements in Section 2.1 A.1.g are not performed.

STATE-ONLY REQUIREMENT:

4. 15A NCAC 02Q .0317: AVOIDANCE CONDITIONS (Avoidance of 15A NCAC 02Q .0700: TOXIC AIR POLLUTANT PROCEDURES)

a. 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 burn recycled No. 2 fuel oil for light-off and flame stabilization in the Unit 1A and 1B Boilers. The approved recycled No. 2 fuel oil shall be equivalent to unadulterated fossil fuel by meeting the following criteria:

Constituent/Property	Allowable Level
Arsenic	1 ppm maximum
Cadmium	2 ppm maximum
Chromium	5 ppm maximum
Lead	100 ppm maximum
Total Halogens	1,000 ppm maximum
Flash Point	100°F minimum
Sulfur	0.5 % maximum (by weight)
Ash	1.0 % maximum

It is the Permittee's responsibility to ensure that the recycled No. 2 fuel oil meets the approved criteria for unadulterated fuel and the Permittee will be held responsible for any discrepancies discovered by Division of Air Quality as a result of any sampling and analysis of the used oil.

Testing [15A NCAC 02D .0605]

b. 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 02D .0605]

c. The Permittee shall maintain accurate records of the actual amount of vendor approved recycled fuel oil delivered to, and combusted at the facility on an annual basis. These records shall be retained at the facility for a minimum of three years and shall be made available to representatives of the Division of Air Quality upon request.

d. The Permittee shall maintain records of the results of the analytical testing of the vendor approved recycled No. 2 fuel oil as it is sampled and tested by the supplier (vendor). These records shall be retained at the facility for a

minimum of three years and shall be made available to representatives of the Division of Air Quality upon request.

Reporting [15A NCAC 02D .0605]

e. No reporting is required to demonstrate compliance with this avoidance condition.

Federal-Enforceable Only

5. Cross State Air Pollution Rule Requirements (40 CFR Part 97, Subparts AAAAA, BBBBB, and CCCCC)

For the two electric utility boilers **(ID Nos. Unit 1A-Boiler and Unit 1B-Boiler)**, the Permittee shall comply with all applicable requirements of 40 CFR Part 97, Subpart AAAAA "TR NOx Annual Trading Program", Subpart BBBBB "TR NOx Ozone Season Trading Program", and Subpart CCCCC "TR SO_2 Group 1 Trading Program".

6. 15A NCAC 02Q .0317: AVOIDANCE CONDITIONS (Avoidance of 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION)

a. In order to avoid applicability of 15A NCAC 02D .0530(g), the emissions sources (**ID Nos. Unit 1A Boiler and Unit 1B Boiler**) shall discharge into the atmosphere less than 10 tons of $PM_{2.5}$[1] emissions per consecutive 12-month period when injecting activated carbon or similar sorbent in the flue gases of these sources.

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

b. If emissions testing is required, the Permittee shall perform such testing in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.A.6.a., above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530.

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

c. Calculations of $PM_{2.5}$ emissions per month, when injecting activated carbon or similar sorbent in the flue gases of the sources (**ID Nos. Unit 1A Boiler and Unit 1B Boiler**), shall be made at the end of each month. PM_{25} emissions per month, when injecting activated carbon or similar sorbent in the flue gases of these sources, shall be determined to be equivalent to the amount of activated carbon or similar sorbent injected during the month. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if the amount of activated carbon or similar sorbent injected in the flue gases of these sources or the $PM_{2.5}$ emissions when injecting activated carbon or similar sorbent in the flue gases of these sources are not monitored and recorded.

d. Calculations and the total amount of $PM_{2.5}$ emissions, when injecting activated carbon or similar sorbent in the flue gases of these sources, shall be recorded monthly in a logbook (written or electronic format). The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0530 if the $PM_{2.5}$ emissions exceed this limit.

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

e. The Permittee shall submit a semi-annual summary report[2], 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:
   i. The monthly $PM_{2.5}$ emissions, when injecting activated carbon or similar sorbent in the flue gases of these sources, for the previous 17 months; and;
   ii. The rolling 12-month total $PM_{2.5}$ emissions for each reported month.

State-only Requirement

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1 All particulate matter (PM) emissions assumed to be $PM_{2.5}$.

2 Semi-annual reports shall only be required when the activated carbon or similar sorbent was actually injected during any semi-annual period.

7. 15A NCAC 02Q .0308: FINAL ACTION ON PERMIT APPLICATIONS

a. The Permittee, subject to the conditions and stipulations stated herein, is allowed to burn the following as supplemental fuels in the Unit 1A and 1B Boilers:
   i. Oils, either petroleum-derived or synthetic, used as a lubricant, hydraulic fluid, metal working fluid and insulating fluid or coolant,
   ii. Solvents, including acetone, methanol, methyl ethyl ketone, toluene, varsol, xylene, and waste solvent mixtures containing less than 10 percent (by volume) of any non-halogenated solvent not listed above as referenced by 40 CFR 261.31, and
   iii. Waste ethylene glycol solution antifreeze.

b. The burning of any of the above materials as supplemental fuel is limited to the following conditions and stipulations:
   i. Only those supplemental fuels generated on site may be burned,
   ii. Total halogen content shall not exceed 1,000 micrograms per gram (parts per million),
   iii. Total lead content shall not exceed 250 micrograms per gram (parts per million),
   iv. Total PCB content of any insulating fluid or coolant shall not exceed 49 parts per million,
   v. Supplemental fuels shall not be burned during periods of start-up, shutdown, or malfunctions,
   vi. Total supplemental fuel feed rate shall not exceed 300 gallons per hour, and 30,000 gallons per calendar year, and
   vii. Total supplemental flyash fuel shall be limited to 15,000 tons per calendar year.

c. The Permittee, subject to the conditions and stipulations stated herein, is allowed to burn waste ammonia/citric acid boiler cleaning solution in the Unit 1A and 1B Boilers. The waste ammonia/citric acid boiler cleaning solution shall be limited to the following maximum injection rates per unit:
   i. Unit 1A Boiler: 275 gallons per minute
   ii. Unit 1B Boiler: 275 gallons per minute

Monitoring/Recordkeeping/Reporting [15A NCAC 02D .0605]

d. i. A daily record of the amount of supplemental fuels burned in the boilers shall be maintained on file and open for review by DAQ personnel upon request.
   ii. Chemical analysis conducted on supplemental fuels burned at this facility shall be maintained on file and open for review by DAQ personnel upon request.
   iii. The total amount of waste ammonia/citric acid cleaning solution injected in each boiler must be recorded on a daily basis and the record kept on file for a minimum of two years.
   iv. The Permittee shall notify the DAQ, Raleigh Regional Office, at least five days prior to waste boiler cleaning solution burning.

8. 15A NCAC 02D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY (40 CFR PART 63, SUBPART UUUUU)

a. The Permittee shall comply with all applicable provisions, including the requirements for emission limitations, work practice standards, operating limits, testing and initial compliance, continuous compliance, monitoring, recordkeeping, notification, and reporting, contained in Environmental Management Commission Standard 15A NCAC 02D .1111 Maximum Achievable Control Technology (MACT) as promulgated in the most current version of 40 CFR Part 63 Subpart UUUUU, including Subpart A General Provisions.

b. The Permittee shall comply with all applicable requirements of the Subpart by no later than April 16, 2016. [§63.9984(b)]

c. The Permittee shall comply with the General Provisions as applicable pursuant to Table 9 to the Subpart. [§63.10040]

Emission Limitations, Work Practice Standards, and Operating Limits [40 CFR 63.9991(a)(1)]

d. The Permittee shall:
   i. 1. limit the emissions of filterable particulate matter (PM) to 3.0E-2 lb/MMBtu or 3.0E-1 lb/MWh; or
      2. limit the emissions of total non-Hg HAP metals to 5.0E-5 lb/MMBtu or 5.0E-1 lb/GWh; or

3. limit the emissions of individual HAP metals to:

Excerpt from Table 2 to 40 CFR Part 63, Subpart UUUUU

Constituent	Allowable Level
Antimony (Sb)	8.0E-1 lb/TBtu or 8.0E-3 lb/GWh*
Arsenic (As)	1.1E0 lb/TBtu or 2.0E-2 lb/GWh
Beryllium (Be)	2.0E-1 lb/TBtu or 2.0E-3 lb/GWh
Cadmium (Cd)	3.0E-1 lb/TBtu or 3.0E-3 lb/GWh
Chromium (Cr)	2.8E0 lb/TBtu or 3.0E-2 lb/GWh
Cobalt (Co)	8.0E-1 lb/TBtu or 8.0E-3 lb/GWh
Lead (Pb)	1.2E0 lb/TBtu or 2.0E-2 lb/GWh
Manganese (Mn)	4.0E0 lb/TBtu or 5.0E-2 lb/GWh
Nickel (Ni)	3.5E0 lb/TBtu or 4.0E-2 lb/GWh
Selenium (Se)	5.0E0 lb/TBtu or 6.0E-2 lb/GWh

* Gross output

ii. 1. limit the emissions of hydrogen chloride (HCl) to 2.0E-3 lb/MMBtu or 2.0E-2 lb/MWh; or
2. limit the emissions of sulfur dioxide (SO_2) to 2.0E-1 lb/MMBtu or 1.5E0 lb/MWh.

iii. limit the emissions of mercury (Hg) to 1.2E0 lb/TBtu or 1.3E-2 lb/GWh.

[§63.9991(a)(1) and Table 2 to the Subpart]

e. During periods of startup of an EGU:
i. The Permittee has chosen to comply using the following work practice standards. By choosing to comply using paragraph (1) of the definition of "startup" in §63.10042, the Permittee shall operate all continuous monitoring systems (CMS) during startup. Startup means either the first-ever firing of fuel in a boiler for the purpose of producing electricity, or the firing of fuel in a boiler after a shutdown event for any purpose. Startup ends when any of the steam from the boiler is used to generate electricity for sale over the grid or for any other purpose (including on site use). For startup of a unit, clean fuels must be used as defined in §63.10042 for ignition. Once the Unit converts to firing coal, the Permittee shall engage all of the applicable control technologies except dry scrubber and SCR. The Permittee shall start the dry scrubber and SCR systems, if present, appropriately to comply with relevant standards applicable during normal operation. The Permittee shall comply with all applicable emissions limits at all times except for periods that meet the applicable definitions of startup and shutdown in this Subpart. The Permittee shall keep records during startup periods. The Permittee shall provide reports concerning activities and startup periods, as specified in §63.10011(g) and §63.10021(h) and (i).
ii. If the Permittee chooses to use just one set of sorbent traps to demonstrate compliance with Hg emission limits, the Permittee shall comply with all applicable Hg emission limits at all times; otherwise, the Permittee shall comply with all applicable emission limits at all times except for startup or shutdown periods conforming to this practice.
iii. The Permittee shall collect monitoring data during startup periods, as specified in §63.10020(a) and (e).

Any fraction of an hour in which startup occurs constitutes a full hour of startup. The Permittee shall provide reports concerning activities and startup periods, as specified in §§63.10011(g), 63.10021(i), and 63.10031. [§63.9991(a)(1) and Table 3 to the Subpart]

f. Shutdown begins either when none of the steam from the boiler is used to generate electricity for sale over the grid or for any other purpose (including onsite use), or at the point of no fuel being fired in the boiler, whichever is earlier. Shutdown ends when there is both no electricity being generated and no fuel being fired in the boiler. During periods of shutdown of an EGU:
   i. The Permittee shall operate all CMS during shutdown. The Permittee shall also collect appropriate data, and shall calculate the pollutant emission rate for each hour of shutdown. While firing coal during shutdown, the Permittee shall vent emissions to the main stack(s) and operate all applicable control devices and continue to operate those control devices after the cessation of coal being fed into the EGU and for as long as possible thereafter considering operational and safety concerns. The Permittee shall operate controls when necessary to comply with other applicable standards to the EGU that require operation of the control devices.
   ii. If, in addition to the fuel used prior to initiation of shutdown, another fuel must be used to support the shutdown process, that additional fuel shall be one or a combination of the clean fuels defined in §63.10042 and shall be used to the maximum extent possible.
   iii. The Permittee shall comply with all applicable emission limits at all times except during startup periods and shutdown periods, at which time the Permittee shall collect monitoring data during shutdown periods as specified in §63.10020(a). The Permittee shall keep records during shutdown periods, as provided in §§63.10032 and 63.10021(h). Any fraction of an hour in which shutdown occurs constitutes a full hour of shutdown. The Permittee shall provide reports concerning activities and shutdown periods, as specified in §§63.10011(g), 63.10021(i), and 63.10031.

   [§63.9991(a)(1), §63.10042, and Table 3 to the Subpart]

General Compliance Requirements [40 CFR 63.10000 and .10001]

g. The Permittee shall be in compliance with the emission limits and operating limits in the Subpart. These limits shall apply at all times except during periods of startup and shutdown; however, for coal-fired EGUs, the Permittee shall be required to meet the work practice requirements in Table 3 to the Subpart during periods of startup or shutdown. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not meet the applicable emission limits, operating limits, or work practice requirements in this Section 2.1 A.8. g. [§63.10000(a)]
h. At all times, the Permittee shall operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the EPA Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not meet the requirements in this Section 2.1 A.8.h. [§63.10000(b)]
i. For coal-fired units, initial performance testing is required for all pollutants for the affected EGUs to demonstrate compliance with the applicable emission limits. The Permittee can use the provision in §63.10005(h) to determine whether the EGU is a low emitting EGU (LEE) for one or more pollutants with certain exemptions. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not perform initial performance testing for all pollutants, as applicable. [§63.10000(c)(1)]
j. If the coal-fired EGU does not qualify as a LEE for total non-mercury HAP metals, individual non-mercury HAP metals, or filterable particulate matter (PM), the Permittee shall demonstrate compliance through an initial performance test and the Permittee shall monitor continuous performance a PM continuous emission monitoring system (CEMS) or, for an existing EGU, compliance performance testing repeated quarterly. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not demonstrate initial

compliance through stack testing, or does not demonstrate continuous compliance through either quarterly performance testing or with a PM CEMS. [§63.10000(c)(1)(iv)]

k. If the coal-fired EGU does not qualify as a LEE for hydrogen chloride (HCl), the Permittee may choose one of the following options:
   i. the Permittee may demonstrate initial and continuous compliance through use of an HCl CEMS, installed and operated in accordance with Appendix B to the Subpart; or
   ii. the Permittee may demonstrate initial and continuous compliance by conducting an initial and periodic quarterly performance stack test for HCl; or
   iii. the Permittee may demonstrate initial and continuous compliance by installing and operating a sulfur dioxide (SO_2) CEMS installed and operated in accordance with Part 75 of the Chapter to demonstrate compliance with the applicable SO_2 emissions limit.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if the HCl CEMS is not installed and operated, or if the initial and periodic quarterly stack tests for HCl are not performed, or if the SO_2 CEMS is not installed an operated. [§63.10000(c)(1)(v)]

l. If the coal-fired EGU does not qualify as a LEE for Hg, the Permittee shall demonstrate initial and continuous compliance through use of a Hg CEMS or a sorbent trap monitoring system, in accordance with Appendix A to the Subpart. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not demonstrate initial or continuous compliance through use of a Hg CEMS or a sorbent trap monitoring system. [§63.10000(c)(1)(vi)]

m. As part of demonstration of continuous compliance, the Permittee shall perform periodic tune-ups of affected EGUs, according to §63.10021(e). The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not perform periodic tune-ups of affected EGUs. [§63.10000(e)]

n. The Permittee shall install, certify, operate, maintain, and quality-assure each monitoring system necessary for demonstrating compliance with the work practice standards for PM or non-mercury HAP metals during startup periods and shutdown periods. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if monitoring system for PM or non-mercury HAP metals does not meet the requirements of this Section 2.1 A.8.n.

o. The Permittee shall collect, record, report, and maintain data obtained from these monitoring systems during startup periods and shutdown periods. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if the Permittee does not collect, record, report, and maintain data meeting the requirements of this Section 2.1.A.8.o. [§63.10000(l)]

Testing and Initial Compliance Requirements [40 CFR 63.10005, .10006, and .10011]

p. If the Permittee installs, certifies, and operates a PM CEMS to demonstrate compliance with a filterable PM emissions limit for coal-fired EGUs, the Permittee shall conduct all applicable periodic emissions tests for filterable PM, individual, or total HAP metals emissions according to Table 5 to the Subpart, §63.10007, and §63.10000(c), except as otherwise provided in §63.10021(d)(1). The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not meet the requirements for periodic emissions tests for filterable PM, or individual or total HAP metals emissions in this Section 2.1 A.8.p. [§63.10006(c)]

q. If the Permittee does not use an SO_2 CEMS to monitor compliance with the alternate equivalent SO_2 emission limit, the Permittee shall conduct all applicable periodic HCl emissions tests according to Table 5 to the Subpart and §63.10007 at least quarterly, except as otherwise provided in §63.10021(d)(1).
   i. If the Permittee demonstrates that HCl emissions are less than 50% of the emission limit in Table 2 for 3 consecutive years using testing requirements in §63.10007, the unit may qualify for LEE status and reduced testing frequency.
   ii. If the unit qualifies as a LEE for HCl, the Permittee shall conduct a performance test at least once every 36 calendar months to demonstrate continued LEE status. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not meet the requirements for periodic emissions tests for HCl emissions in this Section 2.1 A.8.q. [§63.10006(d)]

r. The Permittee shall determine the fuel whose combustion produces the least uncontrolled emissions, taking safety considerations into account, *i.e.*, the cleanest fuel, either natural gas or distillate oil, that is available on site or accessible nearby for use during periods of startup or shutdown. The Permittee shall be deemed in

noncompliance with 15A NCAC 02D .1111 if he/she does not determine the cleanest fuel meeting the requirements of this Section 2.1 A.8.r. [§§63.10011(f)(1) and (2)]

s. The Permittee shall follow the startup or shutdown requirements as given in Table 3 to the Subpart for each coal-fired EGU and comply with all applicable requirements in §63.10011(g). The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not follow startup or shutdown requirements in this Section 2.1 A.8.s. [§§63.10005(j) and 63.10011(g)]

Continuous Compliance Requirements [40 CFR 63.63.10020 and .10021]

t. The Permittee shall monitor and collect data according to §63.10020. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not monitor or collect data as per the requirements in this Section 2.1 A.8.t. [§63.10020(a)]

u. he Permittee shall operate the monitoring system and collect data at all required intervals at all times that the affected EGU is operating, except for periods of monitoring system malfunctions or out-of-control periods (see 40 CFR 63.8(c)(7)), and required monitoring system quality assurance or quality control activities, including, as applicable, calibration checks and required zero and span adjustments. The Permittee is required to affect monitoring system repairs in response to monitoring system malfunctions and to return the monitoring system to operation as expeditiously as practicable. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not operate the monitoring system or collect data as per the requirements of this Section 2.1 A.8.u. or the monitoring system does not meet the requirements in this Section. [§63.10020(b)]

v. Except for periods of monitoring system malfunctions or monitoring system out-of-control periods, repairs associated with monitoring system malfunctions or monitoring system out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks and required zero and span adjustments, any failure to collect required data is a deviation from the monitoring requirements and the Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111. [§63.10020(d)]

w. The Permittee shall demonstrate continuous compliance with each emissions limit, operating limit, and work practice standard in Tables 1 through 4 to the Subpart that applies to the affected unit, according to the monitoring specified in Tables 6 and 7 to the Subpart and paragraphs (b) through (g) of §63.10021(a). The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not demonstrate continuous compliance through the requirements in this Section 2.1 A.8.w. [§63.10021(a)]

x. Except as otherwise provided in §63.10020(c), if the Permittee uses a CEMS to measure SO_2, PM, or Hg emissions, or uses a sorbent trap monitoring system to measure Hg emissions, the Permittee shall demonstrate continuous compliance by using all quality-assured hourly data recorded by the CEMS (or sorbent trap monitoring system) and the other required monitoring systems (e.g., flow rate, CO_2, O_2, or moisture systems) to calculate the arithmetic average emissions rate in units of the standard on a continuous 30-boiler operating day (or, if alternate emissions averaging is used for Hg, 90-boiler operating day) rolling average basis, updated at the end of each new boiler operating day. The Permittee shall use Equation 8 to the Subpart to determine the 30- (or, if applicable, 90) boiler operating day rolling average.

$$\text{Boiler operating day average} = \frac{\sum_{i=1}^{n} Her_i}{n} \quad (Eq. 8)$$

Where:
Her_i is the hourly parameter value for hour i and n is the number of valid hourly parameter values collected over 30 boiler operating days.

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not meet the requirements in this Section 2.1 A.8.x. [§63.10021(b)]

y. If the Permittee uses quarterly performance testing to demonstrate compliance with one or more applicable emissions limits in Table 1 or 2 to the Subpart, the Permittee shall comply with all applicable requirements of

§63.10021(d). The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not meet the requirements in this Section 2.1 A.8.y. [§63.10021(d)]

z. The Permittee shall conduct periodic performance tune-ups of the affected EGU(s), as specified in paragraphs (e)(1) through (9) of §63.10021. Following the first tune-up, the Permittee shall perform an inspection of the burner at least once every 36 calendar months. If your EGU is offline when a deadline to perform the tune-up passes, you shall perform the tune-up work practice requirements within 30 days after the re-start of the affected unit. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not meet the requirements of performance tune-ups included in this Section 2.1 A.8.aa. [§63.10021(e)]

Monitoring [40 CF 63.10010, .10021]

aa. When an affected unit utilizes a common stack with one or more other affected units, but no non-affected units, the Permittee shall either install the required CEMS and sorbent trap monitoring systems in the duct leading to the common stack from each unit; or install the required CEMS, PM CPMS, and sorbent trap monitoring systems in the common stack. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not meet the requirements in this Section 2.1 A.8.aa. [§63.10010(a)(1)]

bb. If the Permittee uses an oxygen (O_2) or carbon dioxide (CO_2) CEMS to convert measured pollutant concentrations to the units of the applicable emissions limit, the O_2 or CO_2 concentrations shall be monitored at a location that represents emissions to the atmosphere, *i.e.,* at the outlet of the EGU, downstream of all emission control devices. The Permittee shall install, certify, maintain, and operate the CEMS according to Part 75 of the Chapter. The Permittee shall use only quality-assured O_2 or CO_2 data in the emissions calculations and shall not use Part 75 substitute data values. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not meet the requirements in this Section 2.1 A.8.bb. [§63.10010(b)]

cc. If the Permittee is required to use a stack gas flow rate monitor (either for routine operation of a sorbent trap monitoring system or to convert pollutant concentrations to units of an electrical output-based emission standard in Table 1 or 2 to the Subpart), the Permittee shall install, certify, operate, and maintain the monitoring system and conduct on-going quality-assurance testing of the system according to Part 75 of the Chapter. The Permittee shall use only unadjusted, quality-assured flow rate data in the emissions calculations. The bias adjustment factors do not apply to the flow rate data and the Permittee shall not use substitute flow rate data in the calculations. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not meet the requirements in this Section 2.1 A.8.cc. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not meet the stack gas flow rate monitoring system requirements in this Section 2.1 A.8.cc. [§63.10010(c)]

dd. If the Permittee is required to make corrections for stack gas moisture content when converting pollutant concentrations to the units of an emission standard in Table 1 of 2 to the Subpart, the Permittee shall install, certify, operate, and maintain a moisture monitoring system in accordance with Part 75 of the Chapter. Alternatively, the Permittee may use appropriate fuel-specific default moisture values from §75.11(b) of the Chapter to estimate the moisture content of the stack gas or the Permittee may petition the Administrator under §75.66 of the Chapter for use of a default moisture value for non-coal-fired units. If the Permittee installs and operates a moisture monitoring system, the Permittee shall not use substitute moisture data in the emissions calculations. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not meet the moisture monitoring system requirements in this Section 2.1 A.8.dd. [§63.10010(d)]

ee. If the Permittee uses a Hg CEMS or a sorbent trap monitoring system, the Permittee shall install, certify, operate, maintain and quality-assure the data from the monitoring system in accordance with Appendix A to the Subpart. The Permittee shall comply with all applicable requirements in §63.10010(g) for Hg CEMS. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not meet the Hg CEMS requirements in this Section 2.1 A.8.ee. [§63.10010(g)]

ff. If the Permittee chooses to comply with the PM filterable emissions limit in lieu of metal HAP limits, the Permittee may choose to install, certify, operate, and maintain a PM CEMS and record the output of the PM CEMS in accordance with §63.10010(i). The compliance limit will be expressed as a 30-boiler operating day rolling average of the numerical emissions limit value applicable to the affected unit in Table 2 to the Subpart.

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not meet the PM CEMS requirements in this Section 2.1 A.8.ff. [§63.10010(i)]

gg. The Permittee shall demonstrate continuous compliance with each emissions limit, operating limit, and work practice standard in Tables 1 through 4 to the Subpart that applies to the affected unit, according to the monitoring specified in Tables 6 and 7 to the Subpart and paragraphs (b) through (g) of §63.10021. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not meet the requirements in this Section 2.1 A.8.gg. [§63.10021(a)]

hh. The Permittee shall follow the startup or shutdown requirements as given in Table 3 to the Subpart for each coal-fired EGU. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not meet the startup or shutdown requirements in this Section 2.1 A.8.hh. [§63.10021(h)]

Recordkeeping [40 CFR 63.10020, .10032, .10033]

ii. The Permittee shall keep all applicable records for each period of start-up and each period of shut-down in accordance with the requirements in §63.10020(e). [§63.10020(e)]

jj. The Permittee shall keep records according to paragraphs (a)(1) and (2) of §63.10032. If the Permittee is required to (or elect to) continuously monitor Hg and/or HCl and/or HF emissions, the Permittee shall also keep the records required under Appendix A and/or Appendix B to the Subpart. [§63.10032(a)]

kk. For each CEMS, the Permittee shall keep records according to paragraphs (b)(1) through (4) of §63.10032. [§63.10032(b)]

ll. For each EGU subject to an emission limit, the Permittee shall keep the records in paragraphs (d)(1) through (3) of §63.10032. [§63.10032(d)]

mm. The Permittee shall keep records of the occurrence and duration of each malfunction of an operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment. [§63.10032(g)]

nn. The Permittee shall keep records of actions taken during periods of malfunction to minimize emissions in accordance with §63.10000(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. [§63.10032(h)]

oo. The Permittee shall keep records of the type(s) and amount(s) of fuel used during each startup or shutdown. [§63.10032(i)]

pp. The Permittee shall keep records in a form suitable and readily available for expeditious review, according to §63.10(b)(1). [§63.10033(a)]

qq. The Permittee shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The Permittee shall keep each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record. The Permittee can keep the records off site for the remaining 3 years. [§63.10033(b), §63.10033(c), and §63.10(b)(1)]

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .1111 if he/she does not keep the records as included in Sections 2.1 A. 8. ii. through qq. above, or these records are not kept in a form suitable and readily available for expeditious review, or each record is not kept for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

Reporting [40 CFR 63.10006, .10021, .10030, .10031]

rr. The Permittee shall report the results of performance tests and performance tune-ups within 60 days after the completion of the performance tests and performance tune-ups. The reports for all subsequent performance tests shall include all applicable information required in §63.10031. [§63.10006(j)]

ss. The Permittee shall submit the reports required under §63.10031 and, if applicable, the reports required under appendices A and B to the Subpart. The electronic reports required by appendices A and B to the Subpart shall be sent to the Administrator electronically in a format prescribed by the Administrator, as provided in §63.10031. CEMS data (except for PM CEMS and any approved alternative monitoring using a HAP metals CEMS) shall be submitted using EPA's Emissions Collection and Monitoring Plan System (ECMPS) Client Tool. Other data, including PM CEMS data, HAP metals CEMS data, and CEMS performance test detail

reports, shall be submitted in the file format generated through use of EPA's Electronic Reporting Tool, the Compliance and Emissions Data Reporting Interface, or alternate electronic file format, all as provided for under §63.10031. [§63.10021(f)]

tt. The Permittee shall report each instance in which the Permittee did not meet an applicable emissions limit or operating limit in Tables 1 through 4 to the Subpart or failed to conduct a required tune-up. These instances are deemed violations from the requirements of the Subpart and shall be reported according to §63.10031. [§63.10021(g)]

uu. The Permittee shall submit all of the notifications in §§63.7(b) and (c), 63.8 (e), (f)(4) and (6), and 63.9 (b) through (h), as applicable, by the dates specified. [§63.10030(a)]

vv. When the Permittee is required to conduct a performance test, the Permittee shall submit a Notification of Intent to conduct a performance test at least 30 days before the performance test is scheduled to begin. [§63.10030(d)]

ww. The Permittee shall submit each report in Table 8 to the Subpart, as applicable. If the Permittee is required to (or elect to) continuously monitor Hg and/or HCl and/or HF emissions, the Permittee shall also submit the electronic reports required under appendix A and/or appendix B to the Subpart, at the specified frequency. [§63.10031(a)]

xx. Unless the Administrator has approved a different schedule for submission of reports under §63.10(a), the Permittee shall submit each report by the date in Table 8 to the Subpart and according to the requirements in paragraphs (b)(1) through (5) of §63.10031. [§63.10031(b)]

yy. The compliance report shall contain the information required in paragraphs (c)(1) through (5) of §63.10031. For each excess emissions occurring at an affected source where the Permittee is using a CMS to comply with that emission limit or operating limit, the Permittee shall also include the information required in §63.10(e)(3)(v) in the compliance report specified in §63.10031. [§63.10031(c) and §63.10031(d)]

zz. Each affected source that has obtained a Title V operating permit pursuant to Part 70 or Part 71 of the Chapter shall report all deviations as defined in the Subpart in the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a compliance report pursuant to Table 8 to the Subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the compliance report includes all required information concerning deviations from any emission limit, operating limit, or work practice requirement in the Subpart, submission of the compliance report satisfies any obligation to report the same deviations in the semiannual monitoring report. Submission of a compliance report does not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority. [§63.10031(e)]

aaa. On or after April 16, 2017, within 60 days after the date of completing each performance test, the Permittee shall submit the performance test reports required by the Subpart to EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (https://cdx.epa.gov). The Permittee shall comply with all applicable requirements in §63.10031(f). [§63.10031(f)]

bbb. If the Permittee had a malfunction during the reporting period, the compliance report shall include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. [§63.10031(g)]

ccc. 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.

B.

- **Flyash storage silo (ID No. SILO1) and associated bagfilter (ID No. BF1),**
- **Flyash storage silo (ID No. SILO1A) and associated bagfilter (ID No. BF1A),**
- **Sodium carbonate storage silo (ID No. SILO7) with bin vent filter (ID No. BF6),**
- **Dry flyash pneumatic transfer system (ID No. PFTS1) with deceleration cyclone (ID No C1) and fabric filter (ID No. BF4),**
- **Dry flyash pneumatic transfer system (ID No. PFTS2) with deceleration cyclone (ID No C2) and fabric filter (ID No. BF5),**
- **Dry flyash pneumatic transfer system (ID No. PFTS3) with deceleration cyclone (ID No C3) and fabric filter (ID No. BF13), and**
- **Dry flyash pneumatic transfer system (ID No. PFTS4) with deceleration cyclone (ID No C4) and fabric filter (ID No. BF14)**

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 $P \leq 30$, $E = 4.10\ (P)^{0.67}$ For $P > 30$, $E = 55.0\ (P)^{0.11} - 40$ Where: E = allowable particulate emission rate in pounds per hour P = process weight rate in tons per hour	15A NCAC 02D .0515
Visible Emissions	20 percent opacity	15A NCAC 02D .0521
Toxic Air Pollutants	See Section 2.2 B.1. State-enforceable only	15A NCAC 02D .1100

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

a. Emissions of particulate matter from this source shall not exceed an allowable emission rate as calculated by the following equations:

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

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 .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 B.1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

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

c. Particulate matter emissions from these emissions sources shall be controlled as delineated above. To ensure that optimum control efficiency is maintained, the Permittee shall perform inspections and maintenance as

recommended by the manufacturer implemented in the plant's Work Management System. 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 must include the following:

i. An annual (for each 12-month period following the initial inspection) internal inspection of the baghouse structural integrity and fabric filters; and
ii. A monthly visual inspection of each system ductwork and material collection units for leaks.

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515, if the ductwork, collection cyclone, and fabric filters are not inspected and maintained.

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

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 actions recorded;
   ii. The results of each inspection;
   iii. The results of any maintenance performed on the duct work, collection cyclone, and fabric filter; and
   iv. Any variance from manufacturer's recommendations, if any, and corrections made.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if these records are not maintained.

Reporting [15A NCAC 02Q .0508(f) and 15A NCAC 02Q .0308]

e. The Permittee shall submit the results of any maintenance performed on the systems 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 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from these sources shall not be more than **20 percent opacity** (except during startup, shutdowns, and malfunctions approved as such according to procedures approved under 15A NCAC 02D .0535) when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

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

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 B.2.a., above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

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

c. To assure compliance, once a month the Permittee shall observe the emission points of these sources for any visible emissions above normal. If visible emissions from these sources are observed to be above normal, the Permittee shall either:
   i. Immediately shutdown the source and repair the malfunction,
   ii. Be deemed to be in noncompliance with 15A NCAC 02D .0521 or
   iii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 30 minutes is below the limit given in Section 2.1 B.2.a., above.

   If the demonstration in Paragraph iii., above, cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521.

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

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 those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
iii. The results of any corrective actions performed.

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not maintained.

Reporting [15A NCAC 02Q .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.

C.

- **Five coal storage silos (ID Nos. SILO2 through SILO6) with bagfilter (ID No. BF2), and**
- **Coal crusher (ID No. CRUSHER) and three conveyor drop points (ID Nos. CV2, CV9A and CV9B) with bagfilter (ID No. BF3)**

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 $P \leq 30$, $E = 4.10\ (P)^{0.67}$ For $P > 30$, $E = 55.0\ (P)^{0.11} - 40$ Where: E = allowable particulate emission rate in pounds per hour P = process weight rate in tons per hour	15A NCAC 02D .0515
Visible Emissions	20 percent opacity except during periods of startup, shutdown and malfunction	15A NCAC 02D .0524 (40 CFR Part 60, Subpart Y)
Toxic Air Pollutants	See Section 2.2 B.1. State-enforceable Only	15A NCAC 02D .1100

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

a. Emissions of particulate matter from these sources shall not exceed an allowable emission rate as calculated by the following equation:

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

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 .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 C.1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

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

c. Particulate matter emissions from these emission sources shall be controlled as delineated above. To ensure that optimum control efficiency is maintained, the Permittee shall perform inspections and maintenance as recommended by the manufacturer implemented in the plant's Work Management System. 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 must include the following:
   i. An annual (for each 12-month period following the initial inspection) internal inspection of the bagfilters' structural integrity; and
   ii. A monthly visual inspection of the system ductwork, and material collection unit for leaks.

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if the ductwork and bagfilters are not inspected and maintained.

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

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 actions recorded;
ii. The results of each inspection;
iii. The results 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 02D .0515 if these records are not maintained.

Reporting [15A NCAC 02Q .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 02D .0524: NEW SOURCE PERFORMANCE STANDARDS (40 CFR PART 60, SUBPART Y)

a. The Permittee shall comply with all applicable provisions, including the notification, testing, reporting, recordkeeping, and monitoring requirements in accordance with 15A NCAC 02D .0524, "New Source Performance Standards (NSPS) as promulgated in 40 CFR Part 60, Subpart Y, including Subpart A "General Provisions."
b. Visible emissions shall not exceed 20% opacity except during periods of startup, shutdown and malfunction.

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

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

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

d. To assure compliance, once a month the Permittee shall observe the emission points of these sources for any visible emissions above normal. If visible emissions from these sources are observed to be above normal, the Permittee shall either:
i. Immediately shutdown the source and repair the malfunction,
ii. Deemed to be in noncompliance with 15A NCAC 02D .0524 or
iii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 30 minutes is below the limit given in Section 2.1 C.2.b above.
If the demonstration in Paragraph iii. above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0524.

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

e. 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 those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
iii. The results of any corrective actions performed.
The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if these records are not maintained.

Reporting [15A NCAC 02Q .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.

- **Coal unloading operation with wet suppression (ID No. COALDUMP),**
- **Eleven coal conveyors (ID Nos. CV2, CV5, CV6, CV9A, CV9B, CV10A, CV10B, CV12A, CV12B, CV13A and CV13B)**

The following table provides a summary of limits and standards for the emission sources described above:

Regulated Pollutant	Limits/Standards	Applicable Regulation
Visible Emissions	20 percent opacity except during periods of startup, shutdown and malfunction	15A NCAC 02D .0524 (40 CFR Part 60, Subpart Y)
Toxic Air Pollutants	See Section 2.2 B.1. State-only requirement	15A NCAC 02D .1100

1. 15A NCAC 02D .0524: NEW SOURCE PERFORMANCE STANDARDS (40 CFR PART 60, SUBPART Y)

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

b. Visible emissions shall not exceed 20 percent except during periods of startup, shutdown and malfunction.

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

c. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 D.1.b above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524.

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

d. To assure compliance, once a month the Permittee shall observe the emission points of these sources for any visible emissions above normal. If visible emissions from this source are observed to be above normal, the Permittee shall either:
   i. Immediately shutdown the source and repair the malfunction,
   ii. Be deemed to be in noncompliance with 15A NCAC 02D .0524 or
   iii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 30 minutes is below the limit given in Section 2.1 D.1.b above.

   If the demonstration in Paragraph iii. above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0524.

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

e. 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 those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if these records are not maintained.

Reporting [15A NCAC 02Q .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.

E. No. 2 fuel oil-fired emergency diesel generator (ID No. EMGEN)

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	15A NCAC 02D .0521

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

a. Emissions of sulfur dioxide from this source **(ID No. EMGEN)** 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 .0508(f)]

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

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

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

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

a. Visible emissions from this source **(ID No. EMGEN)** shall not be more than 20 percent opacity (except during startup, shutdowns, and malfunctions approved as such according to procedures approved under 15A NCAC 02D .0535) when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

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

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 E.2.a., above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

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

c. No monitoring/recordkeeping/reporting is required to demonstrate compliance for visible emissions from this source **(ID No. EMGEN)**.

F. Limestone, Receiving, Storage, Transfer, and Grinding:

- **Reclaim hopper transfer and belt feeder L1 (ID No. LSL1)**
- **Belt feeder L1 transfer and conveyor L2 (ID No. LSL2)**
- **Head chute gate transfer housing for conveyor L2 transfer to conveyor L3 (ID No. LSL2HCG) with fabric filter (ID No. CDLSL2HCG)**
- **Conveyor L3 (ID No. LSL3)**
- **Conveyor L3 transfer and storage silo (ID No. LSS1A) with fabric filter (ID No. CDLSS1A)**
- **Head chute gate transfer and storage silo (ID No. LSS1B) with fabric filter (ID No. CDLSS1A)**
- **Wet ball mill grinders in preparation building (ID Nos. LSG1 and LSG2)**

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	See Section 2.2 A.1	15A NCAC 02D .0510
	0.022 grains per dry standard cubic foot for stack emissions and building vents	15A NCAC 02D .0524 40 CFR Part 60, Subpart OOO
	Control requirements for non-process fugitive dust See Section 2.2 A.2	15A NCAC 02D .0540
Visible Emissions	Seven percent opacity for stack emissions and building vents	15A NCAC 02D .0524 40 CFR Part 60, Subpart OOO
	10 percent opacity for fugitive emissions (Excludes truck dumping to storage pile transfer point and truck and front end loader dumping into feed bin)	15A NCAC 02D .0524 40 CFR Part 60, Subpart OOO
	No visible emissions from buildings, excluding building vents	15A NCAC 02D .0524 40 CFR Part 60, Subpart OOO
Toxic Air Pollutants	See Section 2.2 B.1. State-enforceable Only	15A NCAC 02D .1100

1. 15A NCAC 02D .0524: NEW SOURCE PERFORMANCE STANDARDS 40 CFR PART 60, SUBPART OOO

a. The Permittee shall not allow to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any stack emissions that:
   i. Contain particulate matter in excess of 0.05 g/dscm (0.022 gr/dscf) [40 CFR 60.672(a)(1)]; and
   ii Exhibit greater than 7 percent opacity [40 CFR 60.672(a)(2)].
   iii. Emission sources with stack emissions affected by these requirements include:
      1. Head chute gate transfer housing for conveyor L2 transfer to conveyor L3 (ID No. LSL2HCG) with fabric filter (ID No. CDLSL2HCG),
      2. Conveyor L3 transfer and storage silo 1A (ID No. LSS1A) with fabric filter (ID No. CDLSS1A),
      3. Storage silo 1B (ID No. LSS1B) with fabric filter (ID No. CDLSS1A)
      4. Any vent of any building enclosing any affected emission source including; the below grade enclosure for LSL1 and LSL2, the silo transfer structure, and the reagent preparation building.

b. The Permittee shall not allow to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any fugitive emissions that exhibit greater than 10 percent opacity.

c. The Permittee shall not allow to be discharged into the atmosphere from any building enclosing any transfer point on a conveyor belt or any other affected facility any visible fugitive emissions. Affected buildings include; the below grade enclosure for LSL1 and LSL2, the silo transfer structure, and the reagent preparation building.

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

d. The Permittee has completed the initial performance test required by 40 CFR 60.675.[3]
e. In addition to initial performance testing, emissions testing may be subsequently required to demonstrate compliance with an applicable permit condition. 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.b above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524.

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

f. Particulate matter from emission sources shall be controlled by fabric filter as delineated in the equipment list. 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 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 bag house for leaks; and
   ii. An (for each 12-month period following the initial inspection) annual internal inspection of the bag house and ducting for structural integrity.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if the ductwork, baghouse, and fabric filters are not inspected and maintained.
g. For each emission sources, as listed above in Section 2.1 F., subject to an opacity standard listed, including building enclosures, once a month the Permittee shall observe the emissions point(s) for any visible emissions above normal to assure compliance. If visible emissions from this source are observed to be above normal, the Permittee shall either:
   i. Immediately shutdown the source and repair the malfunction,
   ii. Be deemed to be in noncompliance with 15A NCAC 02D .0524 or
   iii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2601 (Method 9) for 30 minutes is below the limit given above in Section 2.1 F.1. a.ii., b., and c.

   If compliance with the applicable limit cannot be demonstrated, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0524.

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

h. 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 fabric filters, duct work, or baghouse; and
   iv. Any variance from manufacturer's recommendations, if any, and corrections made.
i. 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 those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0524 if the records in Paragraphs h. and i., above, are not maintained.

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

j. The Permittee shall provide the DAQ at least 30 days prior notice of any performance test to afford the DAQ the opportunity to have an observer present. If after 30 days notice for an initially scheduled performance test, there is a delay (due to operational problems, etc.) in conducting the scheduled performance test, the Permittee shall notify the DAQ as soon as possible of any delay in the original test date, either by providing at least seven days prior notice of the rescheduled date of the performance test, or by arranging a rescheduled date with the DAQ by

3 Test conducted July 14, 2009. Reference number 2009-045ST.

mutual agreement.
[40 CFR 60.8(d)]

k. The Permittee shall submit written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in this permit, including reports of opacity observations made using Method 9 and Method 22 to demonstrate compliance. [40 CFR 60.676(f)]

l. The Permittee shall submit a summary report of the 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.

G. Limestone Receiving and Storage Pile (ID No. LSRSP)

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	See Section 2.2 A.1	15A NCAC 02D .0510
Visible Emissions	20 percent opacity	15A NCAC 02D .0521
Particulate Matter	See Section 2.2 A.2.	15A NCAC 02D .0540
Toxic Air Pollutants	See Section 2.2 B.1. State-enforceable Only	15A NCAC 02D .1100

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

a. Visible emissions from this source **(ID No. LSRSP)** 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 .0508(f)]

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

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

c. To assure compliance, once a month the Permittee shall observe the emission point (**ID Nos. LSRSP**) for any visible emissions above normal. If visible emissions from these sources are observed to be above normal, the Permittee shall either:
   i. Immediately shutdown the source and repair the malfunction,
   ii. Be deemed to be in noncompliance with 15A NCAC 02D .0521 or
   iii. Demonstrate that the percent opacity from the emission points of the emission sources in accordance with 15A NCAC 02D .2610 (Method 9) for 30 minutes is below the limit given in Section 2.1 G.1.a above.

   If the demonstration in Paragraph iii. above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521.

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

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 those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not maintained.

Reporting [15A NCAC 02Q .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.

H. Dry Flyash Silo Truck Loadout (ID No. ES-DFA Load) and associated Wet Flyash Conditioner (ID No. WS1) [loadout operations from either source ID No. SILO1 or ID No. SILO1A]

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 $P \leq 30$, $E = 4.10\ (P)^{0.67}$ For $P > 30$, $E = 55.0\ (P)^{0.11} - 40$ Where: E = allowable emission rate in pounds per hour P = process weight rate in tons per hour	15A NCAC 02D .0515
Visible Emissions	20 percent opacity (except during startups, shutdowns, and malfunctions)	15A NCAC 02D .0521
Toxic Air Pollutants	See Section 2.2 B.1. State-enforceable Only	15A NCAC 02D .1100

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

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

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

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 .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 H. 1. a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

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

c. No monitoring/recordkeeping/reporting is required for emissions from this source **(ID No. ES-DFA Load)**.

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

a. Visible emissions from this source **(ID No. ES-DFA Load)** 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 .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 H.2.a., above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

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

c. To assure compliance, once a month the Permittee shall observe the emission points of this source (ID No. ES-DFA Load) for any visible emissions above normal. If visible emissions from this source are observed to be above normal, the Permittee shall either:
   i. Immediately shutdown the source and repair the malfunction,
   ii. Be deemed to be in noncompliance with 15A NCAC 02D .0521 or
   iii. Demonstrate that the percent opacity from the emission points of the emission sources in accordance with 15A NCAC 02D .2610 (Method 9) for 30 minutes is below the limit given in Section 2.1 H.2.a., above.

   If the demonstration in Paragraph iii. above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521.

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

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 the source with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not maintained.

Reporting [15A NCAC 02Q .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.

I.

- **Two Sorbent (lime or hydrated lime) Silos (ID Nos. ES-SORB1 and ES-SORB2) and associated Bagfilters (ID Nos. BF7 and BF8), and**
- **Sorbent Pneumatic Conveying Equipment (ID No. ES-SORB4 and ES-SORB5)**

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 $P \leq 30$, $E = 4.10\ (P)^{0.67}$ For $P > 30$, $E = 55.0\ (P)^{0.11} - 40$ Where: E = allowable emission rate in pounds per hour P = process weight rate in tons per hour	15A NCAC 02D .0515
Visible Emissions	20 percent opacity (except during startups, shutdowns, and malfunctions)	15A NCAC 02D .0521
Toxic Air Pollutants	See Section 2.2 B.1. State-enforceable Only	15A NCAC 02D .1100

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

a. Emissions of particulate matter from these sources **(ID Nos. ES-SORB1, ES-SORB2, ES-SORB4 and ES-SORB5)** shall not exceed an allowable emission rate as calculated by the following equations:

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

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 .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.I.1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

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

c. Particulate matter emissions from the sources (**ID Nos. ES-SORB1 and ES-SORB2**) shall be controlled by the associated bagfilters (**ID Nos. BF7 and BF8**). To ensure that optimum control efficiency is maintained, the Permittee shall perform inspections and maintenance as recommended by the manufacturer implemented in the plant's Work Management System. 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 must include the following:
   i. An annual (for each 12-month period following the initial inspection) internal inspection of the bagfilters' structural integrity; and
   ii. A monthly visual inspection of the system ductwork, and material collection unit for leaks.

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if the ductwork and bagfilters are not inspected and maintained.

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

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 actions recorded;
ii. The results of each inspection;
iii. The results 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 02D .0515 if these records are not maintained.

Reporting [15A NCAC 02Q .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 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from these sources **(ID Nos. ES-SORB1, ES-SORB2, ES-SORB4 and ES-SORB5)** 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 .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 I.2.a., above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

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

c. To assure compliance, once a month the Permittee shall observe the emission points of these sources **(ID Nos. ES-SORB1, ES-SORB2, ES-SORB4 and ES-SORB5)** for any visible emissions above normal. If visible emissions from these sources are observed to be above normal, the Permittee shall either:
i. Immediately shutdown the sources and repair the malfunction,
ii. Be deemed to be in noncompliance with 15A NCAC 02D .0521 or
iii. Demonstrate that the percent opacity from the emission points of the emission sources in accordance with 15A NCAC 02D .2610 (Method 9) for 30 minutes is below the limit given in Section 2.1 I.2.a., above.
If the demonstration in iii. above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521.

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

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 those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
iii. The results of any corrective actions performed.
The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not maintained.

Reporting [15A NCAC 02Q .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.

J. Two dry fuel additive receiving silos (ID Nos. FHSILOA and FHSILOB) and associated bagfilters (ID Nos. BF-FHSILOA and BF-FHSILOB)

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 $P \leq 30$, $E = 4.10\ (P)^{0.67}$ For $P > 30$, $E = 55.0\ (P)^{0.11} - 40$ Where: E = allowable emission rate in pounds per hour P = process weight rate in tons per hour	15A NCAC 02D .0515
Visible Emissions	20 percent opacity (except during startups, shutdowns, and malfunctions)	15A NCAC 02D .0521

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

a. Emissions of particulate matter from these sources (**ID Nos. FHSILOA and FHSILOB**) shall not exceed an allowable emission rate as calculated by the following equations:

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

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 .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1.J.1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

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

c. Particulate matter emissions from the sources (**ID Nos. FHSILOA and FHSILOB**) shall be controlled by the associated bagfilters (**ID Nos. BF-FHSILOA and BF-FHSILOB**). To ensure that optimum control efficiency is maintained, the Permittee shall perform inspections and maintenance as recommended by the manufacturer implemented in the plant's Work Management System. 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 must include the following:
   i. An annual (for each 12-month period following the initial inspection) internal inspection of the bagfilters' structural integrity; and
   ii. A monthly visual inspection of the system ductwork, and material collection unit for leaks.

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if the ductwork and bagfilters are not inspected and maintained.

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

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 actions recorded;
   ii. The results of each inspection;
   iii. The results 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 02D .0515 if these records are not maintained.

Reporting [15A NCAC 02Q .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 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from these sources (**ID Nos. FHSILOA and FHSILOB**) 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 .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 J.2.a., above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

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

c. To assure compliance, once a month the Permittee shall observe the emission points of these sources (**ID Nos. FHSILOA and FHSILOB**) for any visible emissions above normal. If visible emissions from these sources are observed to be above normal, the Permittee shall either:
   i. Immediately shutdown the sources and repair the malfunction,
   ii. Be deemed to be in noncompliance with 15A NCAC 02D .0521 or
   iii. Demonstrate that the percent opacity from the emission points of the emission sources in accordance with 15A NCAC 02D .2610 (Method 9) for 30 minutes is below the limit given in Section 2.1 J.2.a., above.

   If the demonstration in iii. above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521.

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

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 those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not maintained.

Reporting [15A NCAC 02Q .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.

K.

- **One bottom ash storage silo (ID No. SILO8) and associated bagfilter (ID No. CD-BF9), and**
- **Three bottom ash pneumatic transfer systems (ID Nos. ES-PBTS1, ES-PBTS2, and ES-PBTS3) and associated bagfilters (ID Nos. CD-BF10, CD-BF11, and CD-BF12)**

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 $P \leq 30$, $E = 4.10\ (P)^{0.67}$ For $P > 30$, $E = 55.0\ (P)^{0.11} - 40$ Where: E = allowable particulate emission rate in pounds per hour P = process weight rate in tons per hour	15A NCAC 02D .0515
Visible Emissions	20 percent opacity (except during startup, shutdowns, and malfunctions)	15A NCAC 02D .0521
Toxic Air Pollutants	See Section 2.2 B.1. State-enforceable Only	15A NCAC 02D .1100

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

a. Emissions of particulate matter from these sources **(ID Nos. ES-SILO8, ES-PBTS1, ES-PBTS2, and ES-PBTS3)** shall not exceed an allowable emission rate as calculated by the following equations:

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

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 .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 K.1.a above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

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

c. Particulate matter emissions from these emissions sources (**ID Nos. ES-SILO8, ES-PBTS1, ES-PBTS2, and ES-PBTS3**) shall be controlled by the associated bagfilters (**ID Nos. ES-BF9, ES-BF10, ES-BF11, and ES-BF12**). To ensure that optimum control efficiency is maintained, the Permittee shall perform inspections and maintenance as recommended by the manufacturer implemented in the plant's Work Management System. 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 must include the following:

i. An annual (for each 12-month period following the initial inspection) internal inspection of the baghouse structural integrity and fabric filters; and
ii. A monthly visual inspection of each system ductwork and material collection units for leaks.

The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if the ductwork and fabric filters

are not inspected and maintained.

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

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 actions recorded;
   ii. The results of each inspection;
   iii. The results of any maintenance performed on the duct work and fabric filter; and
   iv. Any variance from manufacturer's recommendations, if any, and corrections made.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515 if these records are not maintained.

Reporting [15A NCAC 02Q .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 02D .0521: CONTROL OF VISIBLE EMISSIONS

a. Visible emissions from these sources **(ID Nos. ES-SILO8, ES-PBTS1, ES-PBTS2, and ES-PBTS3)** shall not be more than 20 percent opacity (except during startup, shutdowns, and malfunctions approved as such according to procedures approved under 15A NCAC 02D .0535) when averaged over a six-minute period. However, six-minute averaging periods may exceed 20 percent not more than once in any hour and not more than four times in any 24-hour period. In no event shall the six-minute average exceed 87 percent opacity.

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

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 K.2.a., above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

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

c. To assure compliance, once a month the Permittee shall observe the emission points of these sources **(ID Nos. ES-SILO8, ES-PBTS1, ES-PBTS2, and ES-PBTS3)** for any visible emissions above normal. If visible emissions from these sources are observed to be above normal, the Permittee shall either:
   i. Immediately shutdown the source and repair the malfunction,
   ii. Be deemed to be in noncompliance with 15A NCAC 02D .0521 or
   iii. Demonstrate that the percent opacity from the emission points of the emission source in accordance with 15A NCAC 02D .2610 (Method 9) for 30 minutes is below the limit given in Section 2.1 K.2.a., above.

   If the demonstration in iii. above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521.

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

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 those sources with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not maintained.

Reporting [15A NCAC 02Q .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.

L. One bottom ash silo truck load-out (ID No. ES-DBA Load)

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 $P \leq 30$, $E = 4.10\ (P)^{0.67}$ For $P > 30$, $E = 55.0\ (P)^{0.11} - 40$ Where: E = allowable emission rate in pounds per hour P = process weight rate in tons per hour	15A NCAC 02D .0515
Visible Emissions	20 percent opacity (except during startups, shutdowns, and malfunctions)	15A NCAC 02D .0521
Toxic Air Pollutants	See Section 2.2 B.1. State-enforceable Only	15A NCAC 02D .1100

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

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

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

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 .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 L. 1. a. above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0515.

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

c. No monitoring/recordkeeping/reporting is required for emissions from this source.

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

a. Visible emissions from this source (**ID No. ES-DBA Load**) 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 .0508(f)]

b. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If the results of this test are above the limit given in Section 2.1 L.2.a., above, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521.

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

c. To assure compliance, once a month the Permittee shall observe the emission points of this source (**ID No. ES-DBA Load**) for any visible emissions above normal. If visible emissions from this source are observed to be

above normal, the Permittee shall either:

i. Immediately shutdown the source and repair the malfunction,
ii. Be deemed to be in noncompliance with 15A NCAC 02D .0521 or
iii. Demonstrate that the percent opacity from the emission points of the emission sources in accordance with 15A NCAC 02D .2610 (Method 9) for 30 minutes is below the limit given in Section 2.1 L.2.a., above.

If the demonstration in iii. above cannot be made, the Permittee shall be deemed to be in noncompliance with 15A NCAC 02D .0521.

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

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 the source with emissions that were observed to be in noncompliance along with any corrective actions taken to reduce visible emissions; and
   iii. The results of any corrective actions performed.

   The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0521 if these records are not maintained.

Reporting [15A NCAC 02Q .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.

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

A. Limestone, Receiving, Storage, Transfer, and Grinding

- **Receiving and storage pile (ID No. LSRSP)**
- **Reclaim hopper transfer and belt feeder L1 (ID No. LSL1)**
- **Belt feeder L1 transfer and conveyor L2 (ID No. LSL2)**
- **Conveyor L2 transfer and L2 head chute gate in transfer housing (ID No. LSL2HCG) with fabric filter (ID No. CDLSL2HCG)**
- **Head chute gate transfer and conveyor L3 (ID No. LSL3)**
- **Conveyor L3 transfer and storage silo 1A (ID No. LSS1A) with fabric filter (ID No. CDLSS1A)**
- **Head chute gate transfer and storage silo 1B (ID No. LSS1B) with fabric filter (ID No. CDLSS1A)**
- **Wet ball mill grinders in preparation building (ID Nos. LSG1 and LSG2)**

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	Ambient air quality standards, opacity, and control requirements for non-process fugitive dust pursuant to 15A NCAC 02D .0540	15A NCAC 02D .0510
Particulate Matter	Control requirements for non-process fugitive dust	15A NCAC 02D .0540

1. 15A NCAC 02D .0510: PARTICULATES FROM SAND, GRAVEL, OR CRUSHED STONE OPERATIONS

a. The Permittee shall not cause, allow, or permit any material in a sand, gravel, or crushed stone operation to be produced, handled, transported or stockpiled without taking measures to reduce to a minimum any particulate matter from becoming airborne to prevent exceeding the ambient air quality standards beyond the property line for particulate matter, both PM10 and total suspended particulates.

b. Fugitive non-process dust emissions from sand, gravel, or crushed stone operations shall be regulated by Section 2.2 A.2. (15A NCAC 02D .0540).

c. The Permittee shall control process-generated emissions from conveyors, screens, and transfer points, such that the applicable opacity standards in Section 2.1 F. (15A NCAC 02D .0524 - 40 CFR 60, Subpart OOO) and 2.1 G.1. (15 A NCAC 02D .0521) are not exceeded.

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

d. If emissions testing is required, the testing shall be performed in accordance with General Condition JJ. If emissions tests are required, the testing shall be performed in accordance with the applicable permit limit. If the results of this test are above the applicable limit, the Permittee shall be deemed in noncompliance with 15A NCAC 02D .0510.

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

e. The Permittee shall comply with the applicable monitoring/recordkeeping/reporting requirements in 15A NCAC 02D .0521, .0524, and .0540. The Permittee shall be deemed in noncompliance with 15A NCAC 02D .0510 if monitoring, recordkeeping, and recordkeeping are not conducted in accordance with the applicable permit condition

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

a. The Permittee shall not cause or allow fugitive non-process dust emissions (i.e., 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) to cause or contribute to substantive complaints (i.e., complaints that are verified with physical evidence acceptable to the DAQ).

b. If fugitive non-process dust emissions cause or contribute 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; and
   iii. Within 30 days after the Director approves the plan, be in compliance with the plan.
c. The Director may require that the Permittee develop and submit a fugitive non-process dust control plan 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.
d. A 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.
e. The Director shall approve the plan if he finds that:
   i. The plan contains all required elements;
   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 the 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.
f. If after a plan has been implemented, the Director finds that the plan inadequately controls fugitive non-process dust emissions; he shall require the Permittee 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.

B. Facility Wide

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

Regulated Pollutant	Limits/Standards	Applicable Regulation
Toxic Air Pollutant Emissions	Emissions rates modeled to demonstrate compliance with acceptable ambient levels. State-enforceable Only	15A NCAC 02D .1100

State-only Requirement

1. 15A NCAC 02D .1100: CONTROL OF TOXIC AIR POLLUTANTS

a. Pursuant to 15A NCAC 02D .1100 and in accordance with the approved application for an air toxic compliance demonstration, the following permit limits shall not be exceeded:

Permit Source ID	Source Description	Toxic Air Pollutant	Emissions Limit	
			(lb/yr)	(lb/day)
CRUSHER	Coal crusher	ARSENIC	2.70E-01	
		BERYLLIUM	8.27E-01	
		CADMIUM	9.28E-01	
		MANGANESE		4.12E-01
		MERCURY		1.40E-02
		NICKEL		1.68E-01
SILO2 - SILO6	Five coal storage silos	ARSENIC	1.35E+00	
		BERYLLIUM	4.14E+00	
		CADMIUM	4.64E+00	
		MANGANESE		2.06E+00
		MERCURY		6.98E-02
		NICKEL		8.38E-01
PFTS1	Dry flyash pneumatic transfer system	ARSENIC	1.11E+00	
		BERYLLIUM	1.94E+00	
		CADMIUM	2.41E+00	
		CHROMIUM VI		3.73E-02
		MANGANESE		1.65E+00
		MERCURY		3.63E-03
		NICKEL		3.77E-01
PFTS2	Dry flyash pneumatic transfer system	ARSENIC	1.11E+00	
		BERYLLIUM	1.94E+00	
		CADMIUM	2.41E+00	
		CHROMIUM VI		3.73E-02
		MANGANESE		1.65E+00
		MERCURY		3.63E-03
		NICKEL		3.77E-01
PFTS3	Dry flyash pneumatic	ARSENIC	1.11E+00	

Permit Source ID	Source Description	Toxic Air Pollutant	Emissions Limit	
			(lb/yr)	(lb/day)
	transfer system	BERYLLIUM	1.94E+00	
		CADMIUM	2.41E+00	
		CHROMIUM VI		3.73E-02
		MANGANESE		1.65E+00
		MERCURY		3.63E-03
		NICKEL		3.77E-01
PFTS4	Dry flyash pneumatic transfer system	ARSENIC	1.11E+00	
		BERYLLIUM	1.94E+00	
		CADMIUM	2.41E+00	
		CHROMIUM VI		3.73E-02
		MANGANESE		1.65E+00
		MERCURY		3.63E-03
		NICKEL		3.77E-01
SILO1	Flyash storage silo	ARSENIC	1.38E+00	
		BERYLLIUM	2.41E+00	
		CADMIUM	3.00E+00	
		CHROMIUM VI		4.64E-02
		MANGANESE		2.06E+00
		MERCURY		4.51E-03
		NICKEL		4.69E-01
SILO1A	Flyash storage silo	ARSENIC	1.38E+00	
		BERYLLIUM	2.41E+00	
		CADMIUM	3.00E+00	
		CHROMIUM VI		4.64E-02
		MANGANESE		2.06E+00
		MERCURY		4.51E-03
		NICKEL		4.69E-01
LSL2HCG	Head chute gate transfer housing for conveyor L2 transfer to conveyor L3	ARSENIC	8.47E-04	
		BERYLLIUM	1.08E-03	
		CADMIUM	2.08E-02	
		MANGANESE		2.54E-02
		MERCURY		2.16E-05
		NICKEL		5.65E-04
LSS1A, LSS1B	Conveyor L3 transfer and storage silo 1A/Head chute gate transfer and storage silo 1B	ARSENIC	8.47E-04	
		BERYLLIUM	1.08E-03	
		CADMIUM	2.08E-02	
		MANGANESE		2.54E-02
		MERCURY		2.16E-05
		NICKEL		5.65E-04

Permit Source ID	Source Description	Toxic Air Pollutant	Emissions Limit	
			(lb/yr)	(lb/day)
ES-PBTS1	One bottom ash pneumatic transfer system	ARSENIC	4.60E-02	
		BERYLLIUM	6.96E-01	
		CADMIUM	8.87E-01	
		CHROMIUM VI		2.07E-02
		MANGANESE		1.27E+00
		MERCURY		7.23E-04
		NICKEL		2.42E-01
ES-PBTS2	One bottom ash pneumatic transfer system	ARSENIC	4.60E-02	
		BERYLLIUM	6.96E-01	
		CADMIUM	8.87E-01	
		CHROMIUM VI		2.07E-02
		MANGANESE		1.27E+00
		MERCURY		7.23E-04
		NICKEL		2.42E-01
ES-PBTS3	One bottom ash pneumatic transfer system	ARSENIC	4.60E-02	
		BERYLLIUM	6.96E-01	
		CADMIUM	8.87E-01	
		CHROMIUM VI		2.07E-02
		MANGANESE		1.27E+00
		MERCURY		7.23E-04
		NICKEL		2.42E-01
ES-SILO8	One bottom ash storage silo	ARSENIC	4.26E-02	
		BERYLLIUM	6.45E-01	
		CADMIUM	8.22E-01	
		CHROMIUM VI		1.91E-02
		MANGANESE		1.18E+00
		MERCURY		6.70E-04
		NICKEL		2.24E-01
ES-SORB1, ES-SORB4	Sorbent silo (ES-SORB1), sorbent pneumatic conveying equipment (ES-SORB4)	ARSENIC	1.22E-02	
		BERYLLIUM	1.55E-02	
		CADMIUM	2.99E-01	
		MANGANESE		3.66E-01
		MERCURY		3.10E-04
		NICKEL		8.14E-03
EDTA	Unit 1A/1B Boilers when evaporating waste EDTA cleaning solution	ARSENIC	2.84E-01	
		CADMIUM	3.37E+01	
		CHROMIUM VI		3.51E+00
		MANGANESE		1.42E+03
		MERCURY		8.51E+01

Permit Source ID	Source Description	Toxic Air Pollutant	Emissions Limit	
			(lb/yr)	(lb/day)
		NICKEL		6.56E+02
MONO	Monofill (5 acres active, 26 acres inactive) including wind erosion, generated ash unloading, and off-specification gypsum unloading.	ARSENIC	8.59E+01	
		BERYLLIUM	1.67E+02	
		CADMIUM	2.03E+02	
		CHROMIUM VI		3.70E+00
		MANGANESE		1.85E+02
		MERCURY		4.08E-01
		NICKEL		3.58E+01
LAND	Wind erosion, generated ash unloading, relocated ash unloading, and off-specification gypsum unloading at the Closure Landfill (10 acres active, 48 acres inactive).	ARSENIC	1.67E+02	
		BERYLLIUM	3.25E+02	
		CADMIUM	3.97E+02	
		CHROMIUM VI		7.22E+00
		MANGANESE		3.61E+02
		MERCURY		7.96E-01
		NICKEL		6.98E+01
ASHBASIN	Wind erosion and excavation of ash at the Ash Basin and FGD Pond (25 acres active, 133 acres inactive)	ARSENIC	4.34E+02	
		BERYLLIUM	8.41E+02	
		CADMIUM	1.03E+03	
		CHROMIUM VI		1.87E+01
		MANGANESE		9.34E+02
		MERCURY		2.06E+00
		NICKEL		1.81E+02
ES-DFA Load	Dry flyash silo truck loadout	ARSENIC	3.20E-02	
		BERYLLIUM	5.59E-02	
		CADMIUM	6.97E-02	
		CHROMIUM VI		1.08E-03
		MANGANESE		4.78E-02
		MERCURY		1.05E-04
		NICKEL		1.09E-02
ES-DBA Load	One bottom ash silo truck load-out	ARSENIC	4.91E-04	
		BERYLLIUM	6.87E-03	
		CADMIUM	8.83E-03	
		CHROMIUM VI		2.25E-04
		MANGANESE		1.41E-02
		MERCURY		1.40E-05
COALDUMP	Coal unloading operation with wet suppression	ARSENIC	4.59E-02	
		BERYLLIUM	1.41E-01	
		CADMIUM	1.58E-01	
		MANGANESE		7.00E-02
		MERCURY		2.38E-03

Permit Source ID	Source Description	Toxic Air Pollutant	Emissions Limit	
			(lb/yr)	(lb/day)
		NICKEL		2.85E-02
CV2, CV5, CV6	Three coal conveyors	ARSENIC	4.59E-02	
		BERYLLIUM	1.41E-01	
		CADMIUM	1.58E-01	
		MANGANESE		7.00E-02
		MERCURY		2.38E-03
		NICKEL		2.85E-02
CV9A, CV9B, CV10A, CV10B	Four coal conveyors	ARSENIC	4.59E-02	
		BERYLLIUM	1.41E-01	
		CADMIUM	1.58E-01	
		MANGANESE		7.00E-02
		MERCURY		2.38E-03
		NICKEL		2.85E-02
CV12A, CV12B, CV13A, CV13B	Four coal conveyors	ARSENIC	4.59E-02	
		BERYLLIUM	1.41E-01	
		CADMIUM	1.58E-01	
		MANGANESE		7.00E-02
		MERCURY		2.38E-03
		NICKEL		2.85E-02
ES-19	Coal Handling/Storage	ARSENIC	7.71E+00	
		BERYLLIUM	2.36E+01	
		CADMIUM	2.65E+01	
		MANGANESE		1.17E+01
		MERCURY		3.99E-01
		NICKEL		4.78E+00
LSRSP	Receiving and Storage Pile Active Area and Inactive Area	ARSENIC	3.30E+00	
		BERYLLIUM	4.19E+00	
		CADMIUM	8.08E+01	
		MANGANESE		9.89E+01
		MERCURY		8.39E-02
		NICKEL		2.20E+00
LSL1	Reclaim hopper transfer and belt feeder L1	ARSENIC	1.25E-04	
		BERYLLIUM	1.59E-04	
		CADMIUM	3.06E-03	
		MANGANESE		3.74E-03
		MERCURY		3.18E-06
		NICKEL		8.33E-05
LSL2	Reclaim hopper transfer and belt feeder L2	ARSENIC	1.25E-04	
		BERYLLIUM	1.59E-04	
		CADMIUM	3.06E-03	

Permit Source ID	Source Description	Toxic Air Pollutant	Emissions Limit	
			(lb/yr)	(lb/day)
		MANGANESE		3.74E-03
		MERCURY		3.18E-06
		NICKEL		8.33E-05
LSL3	Conveyor L3	ARSENIC	1.25E-04	
		BERYLLIUM	1.59E-04	
		CADMIUM	3.06E-03	
		MANGANESE		3.74E-03
		MERCURY		3.18E-06
		NICKEL		8.33E-05
ES-G1A, ES-G1B	Two Gypsum Reversing Conveyors	ARSENIC	1.93E-04	
		BERYLLIUM		
		CADMIUM	5.70E-03	
		MANGANESE		1.01E-02
		MERCURY		5.72E-05
		NICKEL		8.83E-05
ES-G2	Gypsum Conveyor from G1A/B to the Stacking Conveyor	ARSENIC	1.93E-04	
		CADMIUM	5.70E-03	
		MANGANESE		1.01E-02
		MERCURY		5.72E-05
		NICKEL		8.83E-05
ES-G3	Gypsum Stacking Conveyor	ARSENIC	1.93E-04	
		CADMIUM	5.70E-03	
		MANGANESE		1.01E-02
		MERCURY		5.72E-05
		NICKEL		8.83E-05
ES-GTL	Gypsum Truck Loadout	ARSENIC	1.93E-04	
		CADMIUM	5.70E-03	
		MANGANESE		1.01E-02
		MERCURY		5.72E-05
		NICKEL		8.83E-05
ES-GSP	Gypsum Storage Pile Active Area and Inactive Area	ARSENIC	3.39E+00	
		CADMIUM	1.00E+02	
		MANGANESE		1.78E+02
		MERCURY		1.01E+00
		NICKEL		1.55E+00
WWTBR	Wastewater Metals Reduction Bioreactor	HYDROGEN SULFIDE		4.97E+01

b. The Permittee has submitted a toxic air pollutant dispersion modeling analysis dated November 12, 2020 for the facility's toxic air pollutant emissions as listed in the above table. The modeling analysis was reviewed and

approved by the AQAB on February 10, 2021. Placement of the emission sources, configuration of the emission points, and operation of the sources shall be in accordance with the submitted dispersion modeling analysis and should reflect any changes from the original analysis submittal as outlined in the AQAB review memo.

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

c. The total amount of waste EDTA (as 100% $(NH_4)_4$ EDTA) evaporated in the electric utility boilers (**ID Nos. Unit 1A Boiler and Unit 1B Boiler**) shall not exceed 98,382 pounds per year. The Permittee shall keep records and report to DAQ as follows:
   i. The total amount of waste EDTA injected in each boiler in pounds must be recorded on a daily[4] basis and the record kept on file for a minimum of two years.
   ii. The Permittee shall notify the DAQ, Raleigh Regional Office, at least five days prior to evaporating waste EDTA cleaning solution.

d. No monitoring, recordkeeping, or reporting shall apply to any emission sources (excluding Unit 1A Boiler and Unit 1B Boiler) included in Section 2.2 B.1.a table above.

C.

- **Truck Transport including haul roads for generated and excavated ash to the Closure Landfill (ID No. HAULRD)**
- **Monofill including wind erosion, generated ash unloading, and off-specification gypsum unloading (ID No. MONO)**
- **Coal Handling/Storage (ID No. ES-19)**
- **Closure Landfill wind erosion, generated ash unloading, relocated ash unloading, and off-specification gypsum unloading (ID No. LAND)**
- **Ash Basin and FGD Pond wind erosion and excavation of ash (ID No. ASHBASIN)**
- **Closure Landfill Emergency Generator (ID No. IS-LANDEGEN)**

THIS CONDITION IS NOT SHIELDED PURSUANT TO 15A NCAC 02Q .0512(a).

1. 15A NCAC 02D .0530(u): USE OF PROJECTED ACTUAL EMISSIONS TO AVOID APPLICABILITY OF PREVENTION OF SIGNIFICANT DETERIORATION REQUIREMENTS

a. Monitoring/Recordkeeping/Reporting
The Permittee has used projected actual emissions to avoid applicability of prevention of significant deterioration requirements, pursuant to Application 7300045.20A, for the ash basin closure project shown below. The Permittee shall perform the following:
   i. The Permittee shall maintain records of annual emissions in tons per year, on a calendar year basis related to the ash basin closure project, for five years following first placement of ash in the new Closure Landfill after the change is made.
   ii. The Permittee shall submit a report to the director within 60 days after the end of each calendar year during which these records must be generated. The report shall contain the items listed in 40 CFR 51.166(r)(6)(v)(a) through (c).
   iii. The Permittee shall make the information documented and maintained under this condition available to the Director or the general public pursuant to the requirements in 40 CFR 70.4(b)(3)(viii).
   iv. The reported actual emissions (post-construction emissions) for each of the five calendar years will be compared to the projected actual emissions (pre-construction projection) as included below:

Regulated NSR Pollutant	Projected Actual Emissions* (tons per year)
PM	21.79

4 Daily records are required only on the days when the Permittee is actually injecting waste EDTA in the electric utility boilers (ID Nos. Unit 1A Boiler and Unit 1B Boiler).

Regulated NSR Pollutant	Projected Actual Emissions* (tons per year)
PM_{10}	10.89

* The projected actual emissions are not enforceable limitations. If the reported actual emissions exceed the projected actual emissions, the Permittee shall include in its annual report an explanation as to why actual emissions exceeded the projected actual emissions. These projected actual emissions include total post project emissions (including projected actual emissions for existing sources and potential to emit emissions for new sources) as used in the application.

2. 15A NCAC 02Q .0504: OPTION FOR OBTAINING CONSTRUCTION AND OPERATION PERMIT

Permitting [15A NCAC 02Q .0504(d)]

a. Pursuant to 15A NCAC 02Q .0501(b)(2) or (c)(2), for completion of the two-step significant modification process initiated by Application No. (7300045.20A), the Permittee shall file an amended application following the procedures of Section 15A NCAC 02Q .0500 within one year from the date of beginning operation of any of these sources (**ID Nos. LAND and ASHBASIN**).

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

b. The Permittee shall notify the Regional Office in writing of the date of beginning operation of the first of these sources (**ID Nos. LAND and ASHBASIN**), postmarked no later than 30 days after such date.

2.3- Permit Shield for Non-applicable Requirements

This condition is to clarify that issuance of this permit provides no shield from the Act, or regulations promulgated there under, including state regulations, pertaining to requirements of the New Source Performance Standards or major or minor new source preconstruction review requirements. The permit may be subject to reopening to include a compliance plan and schedule addressing any past or ongoing noncompliance with those provisions for any affected emission units. [40 CFR 70.6(c)(3), 70.6(f) and 70.7(f)]

The Permittee is shielded from the following non-applicable requirements as of the date of issuance of this permit based on information furnished with all previous applications. This shield does not apply to future modifications or changes in the method of operation: [15A NCAC 02Q .0512(a)(1)(B)]

A. 15A NCAC 02D .0537, Control of Mercury Emissions, is not applicable to the boilers or turbines because it does not apply to fuel combustion sources.
B. 15A NCAC 02D .0614, Compliance Assurance Monitoring, is not applicable to the boilers due to the addition of PM CEMS for continuous monitoring of emissions.

2.4- Phase II Acid Rain Permit Requirements

ORIS code: 6250
Effective: December 6, 2016 until November 30, 2021

A. Statement of Basis

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

B. SO2 Allowance Allocations for each affected unit

Boiler ID No.	SO_2 allowances, under Tables 2, 3, or 4 of 40 CFR part 73.	
	2010 - 2014	2015 and onward
1A	12,807*	*
1B	12,807*	*

* The number of allowances allocated to Phase II-affected units by U.S. EPA may change under 40 CFR part 73. In addition, the number of allowances actually held by an affected source in a unit account may differ from the number allocated by U.S. EPA. Neither of the aforementioned conditions necessitate a revision to the unit SO_2 allowance allocations identified in this permit (See 40 CFR 72.84).

C. NO_X Requirements for each affected unit

NO_X Requirements for each affected unit
Pursuant to 40 CFR 76.11, the Division of Air Quality approves one NO_X emissions averaging plan for each unit. The plans are effective for calendar years 2016 through 2021. Under each plan, the actual Btu-weighted annual average NO_X emission rate for the units in the plan shall be less than or equal to the Btu-weighted annual average NO_X emission rate for the same units had they each been operated, during the same period of time, in compliance with the individual applicable emission limitations under 40 CFR 76.5, 76.6, or 76.7, except that for any early election units, the applicable emission limitations shall be under 40 CFR 76.7. If the designated representative demonstrates that the requirement of the prior sentence (as set forth in 40 CFR 76.11(d)(1)(ii)(A)) is met for the plan year, then this unit shall be deemed to be in compliance for the year with its alternative contemporaneous annual emission limitation and annual heat input limit. If the designated representative cannot make the above demonstration (as set forth in 40 CFR 76.11(d)(1)(ii)(A)) for the plan year and if this unit fails to meet the annual average alternative contemporaneous emission limitation of **0.25 lb/MMBtu** or has an annual heat input less than **10,731,000 MMBtu**, then excess emissions of nitrogen oxides occur during the year at this unit. A penalty for excess emissions will be assessed in accordance with 40 CFR 77.6. In addition to the described NO_X compliance plan, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO_X compliance plan and requirements covering excess emissions.

D. Comments, Notes and Justifications : None.

E. Phase II Permit Applications and Phase II NOx Compliance Plan (attached)
The permit applications submitted for this facility, as approved by the Division of Air Quality, are part of this permit. The owners and operators of these Phase II acid rain sources must comply with the standard requirements and special provisions set forth in the following attached applications:

Acid Rain Permit Application dated April 18, 2014
Phase II NOx Compliance Plan dated June 23, 2015
Phase II NOx Averaging Plan dated June 23, 2015

2.5- Section 112(r) of the Clean Air Act – Risk Management Plan

15A NCAC 02D .2100: RISK MANAGEMENT PROGRAM

a. The Permittee is subject to Section 112(r) of the Clean Air Act and shall comply with all applicable requirements in accordance with 40 CFR Part 68.

Recordkeeping/Reporting [15A NCAC 02D .2104]

b. The Permittee shall submit a Risk Management Plan (RMP) to EPA pursuant to 40 CFR 68.150, or as specified in 40 CFR 68.10.[5]
c. The Permittee shall revise and update the RMP submitted under 40 CFR 68.150 no later than December 20, 2021, and at least every five years after that date or most recent update as required by 40 CFR 68.190(b)(2) through (b)(7), whichever is later.
d. When the Permittee submits the annual Compliance Certification required by General Condition P, the Permittee shall include a statement that the facility is in compliance with all requirements of 15A NCAC 02D .2100.

5 At the time this Permit was issued, the Permittee most recently updated the Risk Management Plan on December 20, 2016.

SECTION 3 - GENERAL CONDITIONS (version 5.5, 08/25/2020)

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

A. **General Provisions** [NCGS 143-215 and 15A NCAC 02Q .0508(i)(16)]
1. Terms not otherwise defined in this permit shall have the meaning assigned to such terms as defined in 15A NCAC 02D and 02Q.
2. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are binding and enforceable pursuant to NCGS 143-215.114A and 143-215.114B, including assessment of civil and/or criminal penalties. Any unauthorized deviation from the conditions of this permit may constitute grounds for revocation and/or enforcement action by the DAQ.
3. This permit is not a waiver of or approval of any other Department permits that may be required for other aspects of the facility which are not addressed in this permit.
4. This permit does not relieve the Permittee from liability for harm or injury to human health or welfare, animal or plant life, or property caused by the construction or operation of this permitted facility, or from penalties therefore, nor does it allow the Permittee to cause pollution in contravention of state laws or rules, unless specifically authorized by an order from the North Carolina Environmental Management Commission.
5. Except as identified as state-only requirements in this permit, all terms and conditions contained herein shall be enforceable by the DAQ, the EPA, and citizens of the United States as defined in the Federal Clean Air Act.
6. Any stationary source of air pollution shall not be operated, maintained, or modified without the appropriate and valid permits issued by the DAQ, unless the source is exempted by rule. The DAQ may issue a permit only after it receives reasonable assurance that the installation will not cause air pollution in violation of any of the applicable requirements. A permitted installation may only be operated, maintained, constructed, expanded, or modified in a manner that is consistent with the terms of this permit.

B. **Permit Availability** [15A NCAC 02Q .0507(k) and .0508(i)(9)(B)]
The Permittee shall have available at the facility a copy of this permit and shall retain for the duration of the permit term one complete copy of the application 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 Environmental Quality upon request.

C. **Severability Clause** [15A NCAC 02Q .0508(i)(2)]
In the event of an administrative challenge to a final and binding permit in which a condition is held to be invalid, the provisions in this permit are severable so that all requirements contained in the permit, except those held to be invalid, shall remain valid and must be complied with.

D. **Submissions** [15A NCAC 02Q .0507(e) and 02Q .0508(i)(16)]
Except as otherwise specified herein, 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

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

E. **Duty to Comply** [15A NCAC 02Q .0508(i)(3)]
The Permittee shall comply with all terms, conditions, requirements, limitations and restrictions set forth in this permit. Noncompliance with any permit condition except conditions identified as state-only requirements constitutes a violation of the Federal Clean Air Act. Noncompliance with any permit condition is grounds for enforcement action, for permit termination, revocation and reissuance, or modification, or for denial of a permit renewal application.

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

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

H. **Changes Not Requiring Permit Modifications**
1. Reporting Requirements
Any of the following that would result in new or increased emissions from the emission source(s) listed in Section 1 must be reported to the Regional Supervisor, DAQ:
   a. changes in the information submitted in the application;
   b. changes that modify equipment or processes; or
   c. changes in the quantity or quality of materials processed.

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

2. Section 502(b)(10) Changes [15A NCAC 02Q .0523(a)]
   a. "Section 502(b)(10) changes" means changes that contravene an express permit term or condition. Such changes do not include changes that would violate applicable requirements or contravene federally enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements.
   b. The Permittee may make Section 502(b)(10) changes without having the permit revised if:
      i. the changes are not a modification under Title I of the Federal Clean Air Act;
      ii. the changes do not cause the allowable emissions under the permit to be exceeded;
      iii. the Permittee notifies the Director and EPA with written notification at least seven days before the change is made; and
      iv. the Permittee shall attach the notice to the relevant permit.
   c. The written notification shall include:

i. a description of the change;
ii. the date on which the change will occur;
iii. any change in emissions; and
iv. any permit term or condition that is no longer applicable as a result of the change.

d. Section 502(b)(10) changes shall be made in the permit the next time that the permit is revised or renewed, whichever comes first.

3. Off Permit Changes [15A NCAC 02Q .0523(b)]
The Permittee may make changes in the operation or emissions without revising the permit if:
a. the change affects only insignificant activities and the activities remain insignificant after the change; or
b. the change is not covered under any applicable requirement.

4. Emissions Trading [15A NCAC 02Q .0523(c)]
To the extent that emissions trading is allowed under 15A NCAC 02D, including subsequently adopted maximum achievable control technology standards, emissions trading shall be allowed without permit revision pursuant to 15A NCAC 02Q .0523(c).

I.A **Reporting Requirements for Excess Emissions and Permit Deviations** [15A NCAC 02D .0535(f) and 02Q .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 02D; or by a permit condition; or that exceeds an emission limit established in a permit issued under 15A NCAC 02Q .0700. *(Note: Definitions of excess emissions under 02D .1110 and 02D .1111 shall apply where defined by rule.)*

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

Permit Deviations

3. Pursuant to 15A NCAC 02Q .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 02D .0535 quarterly. A written report to the Regional Supervisor shall include the

probable cause of such deviation and any corrective actions or preventative actions taken. The responsible official shall certify all deviations from permit requirements.

I.B **Other Requirements under 15A NCAC 02D .0535**

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

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

J. **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 02Q .0508(e) and 02Q .0513(b)]

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

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

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

M. **Duty to Provide Information (submittal of information)** [15A NCAC 02Q .0508(i)(9)]
1. The Permittee shall furnish to the DAQ, in a timely manner, any reasonable information that the Director may request in **writing** to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit.
2. The Permittee shall furnish the DAQ copies of records required to be kept by the permit when such copies are requested by the Director. For information claimed to be confidential, the Permittee may furnish such records directly to the EPA upon request along with a claim of confidentiality.

N. **Duty to Supplement** [15A NCAC 02Q .0507(f)]
The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information to the DAQ. The Permittee shall also provide additional information as necessary to address any requirement that becomes applicable to the facility after the date a complete permit application was submitted but prior to the release of the draft permit.

O. **Retention of Records** [15A NCAC 02Q .0508(f) and 02Q .0508 (l)]
The Permittee shall retain records of all required monitoring data and supporting information for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Supporting information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring information, and copies of all reports required by the permit. These records shall be maintained in a form suitable and readily available for expeditious inspection and review. Any records required by the conditions of this permit shall be kept on site and made available to DAQ personnel for inspection upon request.

P. **Compliance Certification** [15A NCAC 02Q .0508(n)]
The Permittee shall submit to the DAQ and the EPA (Air and EPCRA Enforcement Branch, EPA, Region 4, 61 Forsyth Street SW, 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 02Q .0520]
A responsible official shall certify the truth, accuracy, and completeness of any application form, report, or compliance certification required by this permit. All certifications shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

R. **Permit Shield for Applicable Requirements** [15A NCAC 02Q .0512]
1. Compliance with the terms and conditions of this permit shall be deemed compliance with applicable requirements, where such applicable requirements are included and specifically identified in the permit as of the date of permit issuance.
2. A permit shield shall not alter or affect:
   a. the power of the Commission, Secretary of the Department, or Governor under NCGS 143-215.3(a)(12), or EPA under Section 303 of the Federal Clean Air Act;
   b. the liability of an owner or operator of a facility for any violation of applicable requirements prior to the effective date of the permit or at the time of permit issuance;
   c. the applicable requirements under Title IV; or

d. the ability of the Director or the EPA under Section 114 of the Federal Clean Air Act to obtain information to determine compliance of the facility with its permit.

3. A permit shield does not apply to any change made at a facility that does not require a permit or permit revision made under 15A NCAC 02Q .0523.
4. A permit shield does not extend to minor permit modifications made under 15A NCAC 02Q .0515.

S. **Termination, Modification, and Revocation of the Permit** [15A NCAC 02Q .0519]
The Director may terminate, modify, or revoke and reissue this permit if:
1. the information contained in the application or presented in support thereof is determined to be incorrect;
2. the conditions under which the permit or permit renewal was granted have changed;
3. violations of conditions contained in the permit have occurred;
4. the EPA requests that the permit be revoked under 40 CFR 70.7(g) or 70.8(d); or
5. the Director finds that termination, modification, or revocation and reissuance of the permit is necessary to carry out the purpose of NCGS Chapter 143, Article 21B.

T. **Insignificant Activities** [15A NCAC 02Q .0503]
Because an emission source or activity is insignificant does not mean that the emission source or activity is exempted from any applicable requirement or that the owner or operator of the source is exempted from demonstrating compliance with any applicable requirement. The Permittee shall have available at the facility at all times and made available to an authorized representative upon request, documentation, including calculations, if necessary, to demonstrate that an emission source or activity is insignificant.

U. **Property Rights** [15A NCAC 02Q .0508(i)(8)]
This permit does not convey any property rights in either real or personal property or any exclusive privileges.

V. **Inspection and Entry** [15A NCAC 02Q .0508(l) and NCGS 143-215.3(a)(2)]
1. Upon presentation of credentials and other documents as may be required by law, the Permittee shall allow the DAQ, or an authorized representative, to perform the following:
   a. enter the Permittee's premises where the permitted facility is located or emissions-related activity is conducted, or where records are kept under the conditions of the permit;
   b. have access to and copy, at reasonable times, any records that are required to be kept under the conditions of the permit;
   c. inspect at reasonable times and using reasonable safety practices any source, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
   d. sample or monitor substances or parameters, using reasonable safety practices, for the purpose of assuring compliance with the permit or applicable requirements at reasonable times.

   Nothing in this condition shall limit the ability of the EPA to inspect or enter the premises of the Permittee under Section 114 or other provisions of the Federal Clean Air Act.
2. No person shall refuse entry or access to any authorized representative of the DAQ who requests entry for purposes of inspection, and who presents appropriate credentials, nor shall any person obstruct, hamper, or interfere with any such authorized representative while in the process of carrying out his official duties. Refusal of entry or access may constitute grounds for permit revocation and assessment of civil penalties.

W. **Annual Fee Payment** [15A NCAC 02Q .0508(i)(10)]
1. The Permittee shall pay all fees in accordance with 15A NCAC 02Q .0200.
2. Payment of fees may be by check or money order made payable to the N.C. Department of Environmental Quality. Annual permit fee payments shall refer to the permit number.
3. If, within 30 days after being billed, the Permittee fails to pay an annual fee, the Director may initiate action to terminate the permit under 15A NCAC 02Q .0519.

X. **Annual Emission Inventory Requirements** [15A NCAC 02Q .0207]
The Permittee shall report by **June 30 of each year** the actual emissions of each air pollutant listed in 15A NCAC 02Q .0207(a) from each emission source within the facility during the previous calendar year. The

report shall be in or on such form as may be established by the Director. The accuracy of the report shall be certified by a responsible official of the facility.

Y. **Confidential Information** [15A NCAC 02Q .0107 and 02Q .0508(i)(9)]
Whenever the Permittee submits information under a claim of confidentiality pursuant to 15A NCAC 02Q .0107, the Permittee may also submit a copy of all such information and claim directly to the EPA upon request. All requests for confidentiality must be in accordance with 15A NCAC 02Q .0107.

Z. **Construction and Operation Permits** [15A NCAC 02Q .0100 and .0300]
A construction and operating permit shall be obtained by the Permittee for any proposed new or modified facility or emission source which is not exempted from having a permit prior to the beginning of construction or modification, in accordance with all applicable provisions of 15A NCAC 02Q .0100 and .0300.

AA. **Standard Application Form and Required Information** [15A NCAC 02Q .0505 and .0507]
The Permittee shall submit applications and required information in accordance with the provisions of 15A NCAC 02Q .0505 and .0507.

BB. **Financial Responsibility and Compliance History** [15A NCAC 02Q .0507(d)(3)]
The DAQ may require an applicant to submit a statement of financial qualifications and/or a statement of substantial compliance history.

CC. **Refrigerant Requirements (Stratospheric Ozone and Climate Protection)** [15A NCAC 02Q .0501(d)]
1. If the Permittee has appliances or refrigeration equipment, including air conditioning equipment, which use Class I or II ozone-depleting substances such as chlorofluorocarbons and hydrochlorofluorocarbons listed as refrigerants in 40 CFR Part 82 Subpart A Appendices A and B, the Permittee shall service, repair, and maintain such equipment according to the work practices, personnel certification requirements, and certified recycling and recovery equipment specified in 40 CFR Part 82 Subpart F.
2. The Permittee shall not knowingly vent or otherwise release any Class I or II substance into the environment during the repair, servicing, maintenance, or disposal of any such device except as provided in 40 CFR Part 82 Subpart F.
3. The Permittee shall comply with all reporting and recordkeeping requirements of 40 CFR 82.166. Reports shall be submitted to the EPA or its designee as required.

DD. **Prevention of Accidental Releases - Section 112(r)** [15A NCAC 02Q .0508(h)]
If the Permittee is required to develop and register a Risk Management Plan with EPA pursuant to Section 112(r) of the Clean Air Act, then the Permittee is required to register this plan in accordance with 40 CFR Part 68.

EE. **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 02Q .0508(i)(1)]
This permit does not limit the number of Title IV allowances held by the Permittee, but the Permittee may not use allowances as a defense to noncompliance with any other applicable requirement. The Permittee's emissions may not exceed any allowances that the facility lawfully holds under Title IV of the Federal Clean Air Act.

GG. **Air Pollution Emergency Episode** [15A NCAC 02D .0300]
Should the Director of the DAQ declare an Air Pollution Emergency Episode, the Permittee will be required to operate in accordance with the Permittee's previously approved Emission Reduction Plan or, in the absence of an approved plan, with the appropriate requirements specified in 15A NCAC 02D .0300.

HH. **Registration of Air Pollution Sources** [15A NCAC 02D .0202]
The Director of the DAQ may require the Permittee to register a source of air pollution. If the Permittee is required to register a source of air pollution, this registration and required information will be in accordance with 15A NCAC 02D .0202(b).

II. **Ambient Air Quality Standards** [15A NCAC 02D .0501(c)]
In addition to any control or manner of operation necessary to meet emission standards specified in this permit, any source of air pollution shall be operated with such control or in such manner that the source shall not cause the ambient air quality standards in 15A NCAC 02D .0400 to be exceeded at any point beyond the premises on which the source is located. When controls more stringent than named in the applicable emission standards in this permit are required to prevent violation of the ambient air quality standards or are required to create an offset, the permit shall contain a condition requiring these controls.

JJ. **General Emissions Testing and Reporting Requirements** [15A NCAC 02Q .0508(i)(16)]
Emission compliance testing shall be by the procedures of Section .2600, except as may be otherwise required in Rules .0524, .1110, or .1111 of Subchapter 02D. If emissions testing is required by this permit or the DAQ or if the Permittee submits emissions testing to the DAQ to demonstrate compliance for emission sources subject to Rules .0524, .1110, or .1111, the Permittee shall provide and submit all notifications, conduct all testing, and submit all test reports in accordance with the requirements of 15A NCAC 02D .0524, .1110, or ,1111, as applicable. Otherwise, if emissions testing is required by this permit or the DAQ or if the Permittee submits emissions testing to the DAQ to demonstrate compliance, the Permittee shall perform such testing in accordance with 15A NCAC 02D .2600 and follow the procedures outlined below:

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

b. The Director may authorize the Division of Air Quality to conduct independent tests of any source subject to a rule in this Subchapter to determine the compliance status of that source or to verify any test data submitted relating to that source. Any test conducted by the Division of Air Quality using the appropriate testing procedures described in Section 02D .2600 has precedence over all other tests.

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

1. A permit shall be reopened and revised under the following circumstances:
   a. additional applicable requirements become applicable to a facility with remaining permit term of three or more years;
   b. additional requirements (including excess emission requirements) become applicable to a source covered by Title IV;
   c. the Director or EPA finds that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit; or
   d. the Director or EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.
2. Any permit reopening shall be completed or a revised permit issued within 18 months after the applicable requirement is promulgated. No reopening is required if the effective date of the requirement is after the expiration of the permit term unless the term of the permit was extended pursuant to 15A NCAC 02Q .0513(c).
3. Except for the state-enforceable only portion of the permit, the procedures set out in 15A NCAC 02Q .0507, .0521, or .0522 shall be followed to reissue the permit. If the State-enforceable only portion of the permit is reopened, the procedures in 15A NCAC 02Q .0300 shall be followed. The proceedings shall affect only those parts of the permit for which cause to reopen exists.
4. The Director shall notify the Permittee at least 60 days in advance of the date that the permit is to be reopened, except in cases of imminent threat to public health or safety the notification period may be less than 60 days.
5. Within 90 days, or 180 days if the EPA extends the response period, after receiving notification from the EPA that a permit needs to be terminated, modified, or revoked and reissued, the Director shall send to the EPA a proposed determination of termination, modification, or revocation and reissuance, as appropriate.

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

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

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

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

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

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

1. For modifications made pursuant to 15A NCAC 02Q .0501(b)(2), the Permittee shall file a Title V Air Quality Permit Application for the air emission source(s) and associated air pollution control device(s) on or before 12 months after commencing operation.
2. For modifications made pursuant to 15A NCAC 02Q .0501(c)(2), the Permittee shall not begin operation of the air emission source(s) and associated air pollution control device(s) until a Title V Air Quality

Permit Application is filed and a construction and operation permit following the procedures of Section .0500 (except for Rule .0504 of this Section) is obtained.

3. For modifications made pursuant to 502(b)(10), in accordance with 15A NCAC 02Q .0523(a)(1)(C), the Permittee shall notify the Director and EPA (EPA - Air Planning Branch, 61 Forsyth Street SW, Atlanta, GA 30303) in writing at least seven days before the change is made. The written notification shall include:
   a. a description of the change at the facility;
   b. the date on which the change will occur;
   c. any change in emissions; and
   d. any permit term or condition that is no longer applicable as a result of the change.

In addition to this notification requirement, with the next significant modification or Air Quality Permit renewal, the Permittee shall submit a page "E5" of the application forms signed by the responsible official verifying that the application for the 502(b)(10) change/modification, is true, accurate, and complete. Further note that modifications made pursuant to 502(b)(10) do not relieve the Permittee from satisfying preconstruction requirements.

OO. **Third Party Participation and EPA Review** [15A NCAC 02Q .0521, .0522 and .0525(7)]
For permits modifications subject to 45-day review by the federal Environmental Protection Agency (EPA), EPA's decision to not object to the proposed permit is considered final and binding on the EPA and absent a third party petition, the failure to object is the end of EPA's decision-making process with respect to the revisions to the permit. The time period available to submit a public petition pursuant to 15A NCAC 02Q .0518 begins at the end of the 45-day EPA review period.

Attachment 1 to Air Quality Permit 03478T48

List of Acronyms

AOS	Alternative Operating Scenario
BACT	Best Available Control Technology
BAE	Baseline Actual Emissions
Btu	British thermal unit
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEM	Continuous Emission Monitor
CFR	Code of Federal Regulations
CSAPR	Cross-State Air Pollution Rule
DAQ	Division of Air Quality
DEQ	Department of Environmental Quality
EMC	Environmental Management Commission
EPA	Environmental Protection Agency
FR	Federal Register
GACT	Generally Available Control Technology
GHGs	Greenhouse Gases
HAP	Hazardous Air Pollutant
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
NAA	Non-Attainment Area
NAAQS	National Ambient Air Quality Standards
NCAC	North Carolina Administrative Code
NCGS	North Carolina General Statutes
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_X	Nitrogen Oxides
NSPS	New Source Performance Standard
NSR	New Source Review
OAH	Office of Administrative Hearings
PAE	Projected Actual Emissions
PAL	Plantwide Applicability Limitation
PM	Particulate Matter
$PM_{2.5}$	Particulate Matter with Nominal Aerodynamic Diameter of 2.5 Micrometers or Less
PM_{10}	Particulate Matter with Nominal Aerodynamic Diameter of 10 Micrometers or Less
POS	Primary Operating Scenario
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
RACT	Reasonably Available Control Technology
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
TAP	Toxic Air Pollutant
tpy	Tons Per Year
VOC	Volatile Organic Compound

Attachment 2 to Air Quality Permit 03478T48

Acid Rain permit application
(Dated April 18, 2014)

Attachment 3 to Air Quality Permit 03478T48

Acid Rain Compliance/Averaging Plans
(Dated June 23, 2015)

NOTICE FOR REMOTE PUBLIC HEARING

AIR PERMIT APPLICATION FOR

Duke Energy Progress, LLC - Mayo Steam Electric Plant

The North Carolina Department of Environmental Quality, Division of Air Quality (DAQ) gives notice that the following company has requested authorization to close the existing Mayo Steam Electric Plant ash basin via excavation and place the excavated coal combustion residuals in a new lined landfill at:

Duke Energy Progress, LLC - Mayo Steam Electric Plant
10660 Boston Road
Roxboro, North Carolina 27574
Person County

DAQ is providing notice of a scheduled public hearing by teleconference on **April 13, 2021** to allow for public participation while protecting public health under current guidance to prevent the spread of COVID-19.

Event title: Duke Mayo Virtual Public Hearing
Date and Time: April 13, 2021 at 6 p.m.
Phone: US TOLL +1-415-655-0003, **Access Code** 185 765 6088
WebEx Link: https://bit.ly/3b8zoc4
Event Password: NCDAQ

If you wish to speak at the public hearing, you must register **by April 13 at 4 p.m.** To register, please visit: https://bit.ly/3uM19ij or call (919) 618-0968.

Internet access is not required to participate in the hearing. To comment by phone,when your name is called, press *3 so the moderator can identify and open your line. Once you have made your comment, please press *3 to end your comment.

Copies of all data and the application submitted by Duke Energy Progress, LLC - Mayo Steam Electric Plant are availablefor public inspection on the DAQ website at https://deq.nc.gov/about/divisions/air-quality/events or in person by appointment only at:

NCDEQ
Division of Air Quality
Air Permits Section
217 West Jones Street,
Raleigh, NC 27603
919-707-8738

or

Matthew Mahler
Raleigh Regional Office
3800 Barrett Drive, Suite 101
Raleigh, NC 27609
919-791-8240

For those who are unable to attend or who experience technical difficulties, comments can also be submitted by email to DAQ.publiccomments@ncdenr.gov with the subject line ["Duke Mayo Ash Basin Closure"] You may also leave a voicemail comment at (919) 707-8714. Comments will be accepted until April 15, 2021 at 5 p.m.

In the event of a postponement due to extraordinary circumstances, such as severe weather interfering with the Division's ability to conduct the hearing, the public hearing will be held on Tuesday, April 20. Any notice of postponement shall be posted on the Division's website at http://bit.ly/306zAlE. If an alternate hearing date is required, the comment period will remain open until April 22 at 5 p.m.

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Raleigh, NC 27609
919-791-8240

For those who are unable to attend or who experience technical difficulties, comments can also be submitted by email to DAQ.publiccomments@ncdenr.gov with the subject line ["Duke Mayo Ash Basin Closure"] You may also leave a voicemail comment at (919) 707-8714. Comments will be accepted until April 15, 2021 at 5 p.m.

In the event of a postponement due to extraordinary circumstances, such as severe weather interfering with the Division's ability to conduct the hearing, the public hearing will be held on Tuesday, April 20. Any notice of postponement shall be posted on the Division's website at http://bit.ly/3qfl0Sv. If an alternate hearing date is required, the comment period will remain open until April 22 at 5 p.m.
3/11/2021

Attendanc	Event Name	Event Start Dat	User Type	FirstName	LastName	Email	Invited	Registered	Attended	Join Time	Leave Time	Attendance Duration
1	Duke Mayo Virtual Public	April 13, 2021	Panelist	Zaynab	Nasif	zaynab.nasif@ncdenr.gov	Yes	No	Yes	5:30 pm	6:17 pm	46.0 mins
2	Duke Mayo Virtual Public	April 13, 2021	Panelist	Michael	Koerschner	michael.koerschner@ncdenr.go	Yes	No	Yes	5:36 pm	6:17 pm	40.0 mins
3	Duke Mayo Virtual Public	April 13, 2021	Panelist	Mark	Cuilla	mark.cuilla@ncdenr.gov	Yes	No	Yes	5:53 pm	6:17 pm	24.0 mins
4	Duke Mayo Virtual Public	April 13, 2021	Panelist	Brendan	Davey	brendan.davey@ncdenr.gov	Yes	No	Yes	5:44 pm	6:17 pm	32.0 mins
5	Duke Mayo Virtual Public	April 13, 2021	Panelist	Ed	Martin	ed.martin@ncdenr.gov	Yes	No	Yes	5:36 pm	6:17 pm	40.0 mins
6	Duke Mayo Virtual Public	April 13, 2021	Panelist	Ed	Martin	ed.martin@ncdenr.gov	Yes	No	Yes	5:26 pm	5:47 pm	21.0 mins
7	Duke Mayo Virtual Public	April 13, 2021	Attendee	Angela	Brice-Smith	angela.brice-smith@comcast.ne	No	No	Yes	6:03 pm	6:17 pm	13.0 mins
8	Duke Mayo Virtual Public	April 13, 2021	Attendee	Matt	Mahler	matthew.mahler@ncdenr.gov	No	No	Yes	6:05 pm	6:17 pm	11.0 mins
9	Duke Mayo Virtual Public	April 13, 2021	Attendee	Matt	Mahler	matthew.mahler@ncdenr.gov	No	No	Yes	5:59 pm	6:04 pm	5.0 mins
10	Duke Mayo Virtual Public	April 13, 2021	Attendee	Taylor	Hartsfield	taylor.hartsfield@ncdenr.gov	No	No	Yes	5:54 pm	6:17 pm	22.0 mins
11	Duke Mayo Virtual Public	April 13, 2021	Attendee	Michael	Pjetraj	michael.pjetraj@ncdenr.gov	No	No	Yes	5:20 pm	6:17 pm	56.0 mins
12	Duke Mayo Virtual Public	April 13, 2021	Attendee	Cynthia	Winston	cynthia.winston@duke-energy.c	No	No	Yes	5:52 pm	6:17 pm	24.0 mins
13	Duke Mayo Virtual Public	April 13, 2021	Attendee	George	Willoughby	gwilloughby@roxboro-courier.c	No	No	Yes	5:17 pm	6:17 pm	60.0 mins
14	Duke Mayo Virtual Public	April 13, 2021	Attendee	Tanya	Evans	tis4tarheel@gmail.com	No	No	Yes	6:03 pm	6:17 pm	13.0 mins
15	Duke Mayo Virtual Public	April 13, 2021	Attendee	Kimberlee	Witt	kimberlee.witt@duke-energy.co	No	No	Yes	5:50 pm	6:16 pm	26.0 mins
16	Duke Mayo Virtual Public	April 13, 2021	Attendee	Bill	Norton	bill.norton@duke-energy.com	No	No	Yes	5:59 pm	6:17 pm	17.0 mins
17	Duke Mayo Virtual Public	April 13, 2021	Attendee	Will	Wike	will.wike@ncdenr.gov	No	No	Yes	6:00 pm	6:17 pm	17.0 mins
18	Duke Mayo Virtual Public	April 13, 2021	Attendee	E	Wallace	erin.wallace@duke-energy.com	No	No	Yes	5:49 pm	6:17 pm	27.0 mins

1 Introduction

The Environmental Justice (EJ) Report is an initial look at the demographics and socioeconomics of the Duke Energy Progress, LLC - Mayo Steam Electric Plant surrounding community area. This includes information within a radius, as determined by the North Carolina Department of Environmental Quality (Department or DEQ), race and ethnicity (decennial census year), poverty status, per capita income, and ability to speak English (most current American Community Survey (ACS) census range), the current North Carolina Department of Commerce county tier, and presence of Native American territory.

The primary goal is to encourage EJ Report comments and suggestions from the surrounding community, industry, and environmental groups throughout the comment period.

It is important to keep in mind, that based on the data available, the following limitations of this study exist:

- census data is from 2010 and may be outdated;
- the more recent ACS data through 2017 are estimates;
- EPA's EJSCREEN does not provide all of the data categories that were used in this analysis, so the census tract and county data cannot be compared to the radius evaluating the facility boundary;
- census tracts can be large areas that do not identify exact locations of each population;
- some of the census tracts slightly overlap with the two-mile radius; and
- the Department cannot determine which populations are located within that small area of overlap.

The Department has reviewed the demographic and socioeconomic data of the communities surrounding the Duke Energy Progress, LLC - Mayo Steam Electric Plant in Roxboro (Person County) to foster communication prior to the Division of Air Quality's public hearing for the air quality permit application.

Under the consent order signed in February of 2020, Duke Energy is required to excavate more than 76 million tons of coal ash from open, unlined impoundments at six facilities. Duke Energy submitted its closure plan for the Mayo Steam Electric Plant on December 31, 2019. The plan details full excavation of 6.6 million tons of coal ash from the Mayo facility impoundment to a lined, onsite landfill. After a thorough review and public comment period, the Department determined on April 29, 2020, that the closure plan submitted by Duke Energy for the Mayo Steam Electric Plant to be protective of public health and the environment.

2 Environmental Justice Evaluation

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies (US EPA). This evaluation examines the demographic and environmental conditions in Person County, as well as census tracts 9201 and 9202, and the two-mile radius around the property boundary of the Duke Energy Mayo Steam Electric Plant. Finally, the demographics for the State of North Carolina are also considered as they compare to both the county and local census tract and radius settings. Because the northern portion of the 2 mile radius goes into a portion of Virginia, those census tracts are not included in this report as it is outside of the N.C. DEQ purview.

The Department has assessed the permit application and the potential impact on communities surrounding the requested permit application. Accordingly, the EJ Report will include:

- Permit applications submitted by Duke Energy Progress, LLC to the Division of Air Quality and the Division of Waste Management;
- Modeled emissions rates;
- Study of area demographics [determined by using the EPA Environmental Justice tool (EJSCREEN) https://ejscreen.epa.gov/mapper/] https://ejscreen.epa.gov/mapper/ and current, available census data from http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml;
- Comparison of local area demographics to both county and statewide census data;
- County health assessment;
- Surrounding sensitive receptors; and
- Local industrial sites (using the DEQ Community Mapping System) found at: https://ncdenr.maps.arcgis.com/apps/webappviewer/index.html?id=1eb0fbe2bcfb4cccb3cc212af8a0b8c8.

Demographics (including race and ethnicity, poverty status, and Limited English Proficiency) for Person County and North Carolina will be compared to the local (census tracts and project radius) level data to identify any disparities surrounding the project area. Using standard environmental justice guidelines from the EPA and National Environmental Policy Act (NEPA) documentation, the following conditions will be flagged as potentially underserved communities:

- 10% or more in comparison to the county or state average;
- 50% or more minority; and
- 5% or more in comparison to the county or state average for poverty.

3 Proposed Project

The proposed project to build a new lined landfill for coal ash disposal at the existing Duke Energy Mayo facility is consistent with the Coal Ash Impoundment Closure Plan, approved by DEQ on April 29, 2020. For this project, Duke Energy submitted two separate applications with two different DEQ divisions. The following sections will outline the draft permits under review within the Division of Waste Management – Solid Waste Section (DWM –SWS), followed by the draft permit under consideration by the Division of Air Quality (DAQ).

DWM

The Division of Waste Management received the Site Suitability Application, Volumes I and II and the Permit to Construct Application on February 26, 2021 for the new onsite lined landfill (7307-INDUS-202X). The application is currently under review; however, construction of the new landfill is not planned until the 4th Quarter of 2022. Approximately 1.2 million tons of excavated CCR from the ash basin will be transported to the existing lined CCR landfill (7305-INDUS-2012) and the remaining 5.4 million tons will be placed in the new landfill. Both the existing and new landfill are double lined and constructed with a leachate detection system and a leachate collection system providing further protection of any potential leaks.

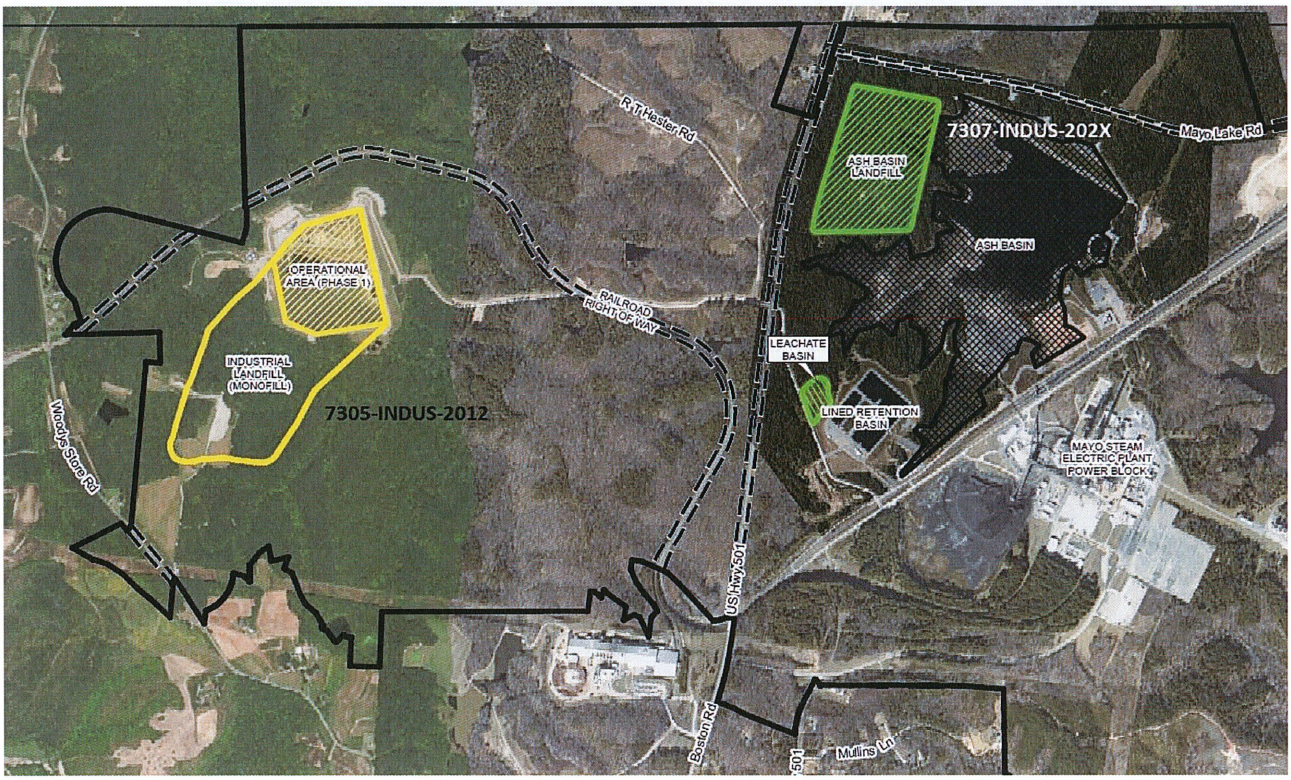

Figure 1. Location of landfills on Duke Energy property.

DAQ

Duke Energy Progress, LLC (DEP) is requesting authorization to close the Mayo Plant Ash Basin and Flue Gas Desulfurization Pond (the Ash Basin) via excavation and place the excavated coal combustion residuals (CCR) in a new lined Closure Landfill. The project will result in increased

emissions of particulate matter (PM), PM less than 10 micrometers and PM less than 2.5 micrometers in diameter (PM_{10} and $PM_{2.5}$, respectively), NOx, SO_2, CO, VOCs, lead, carbon dioxide as CO_2e, and air toxics.

Table 1. Project Emissions Increase, Tons Per Year

	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	CO	VOC	CO_2e	Lead
Project emissions increase, TPY	19.34	9.72	3.2	1.37E-03	0.83	0.72	0.32	144	2.91E-03

Air dispersion modeling was performed for the following emissions. The results for each compound fell below the Acceptable Ambient Level (AAL).

Table 2. Potential Emissions

Toxic Compounds	Facility-wide Potential Emission Rates		
	lb/day	lb/yr	Percent of AAL (%)
Arsenic		31.5	25.3
Beryllium		7.45	2.1
Cadmium		6.98	0.2
Chromium VI	0.15		0.4
Manganese	4.61		0.1
Mercury	0.11		0.0
Nickel	3.72		0.3

4 Geographic Area

The Duke Energy Progress, LLC- Mayo Steam Electric Plant is located at 10660 Boston Rd, Roxboro, NC 27574 (Figure 2).

Figure 2. Duke Energy Mayo Steam Electric Plant location with two-mile radius

Regional Setting

The Duke Energy Mayo Steam Electric Plant and the two-mile buffer is located in Person County. Person County is designated as a Tier 2 county in 2021 by the N.C. Department of Commerce. The two-mile buffer enters into Virginia, but since this is outside DEQ jurisdiction, the demographics were not included. Tier 1 counties encompass the 40 most distressed counties based on average unemployment rate, median household income, percentage growth in population, and adjusted property tax per capita. Tier 2 counties encompass the next 40 counties based on this ranking system. The two-mile radius used in this analysis crosses over two census tracts. The facility site falls in Census Tract 9201 in Person County, and the two-mile radius enters into Census Tract 9202, and crosses the state line into Virginia (Figure 3). Census tracts are small, relatively permanent statistical subdivisions of a county with a unique numeric code (US Census Bureau). Census Tract 9201 encompasses land within the state designated tribal statistical area for the Sappony tribe.

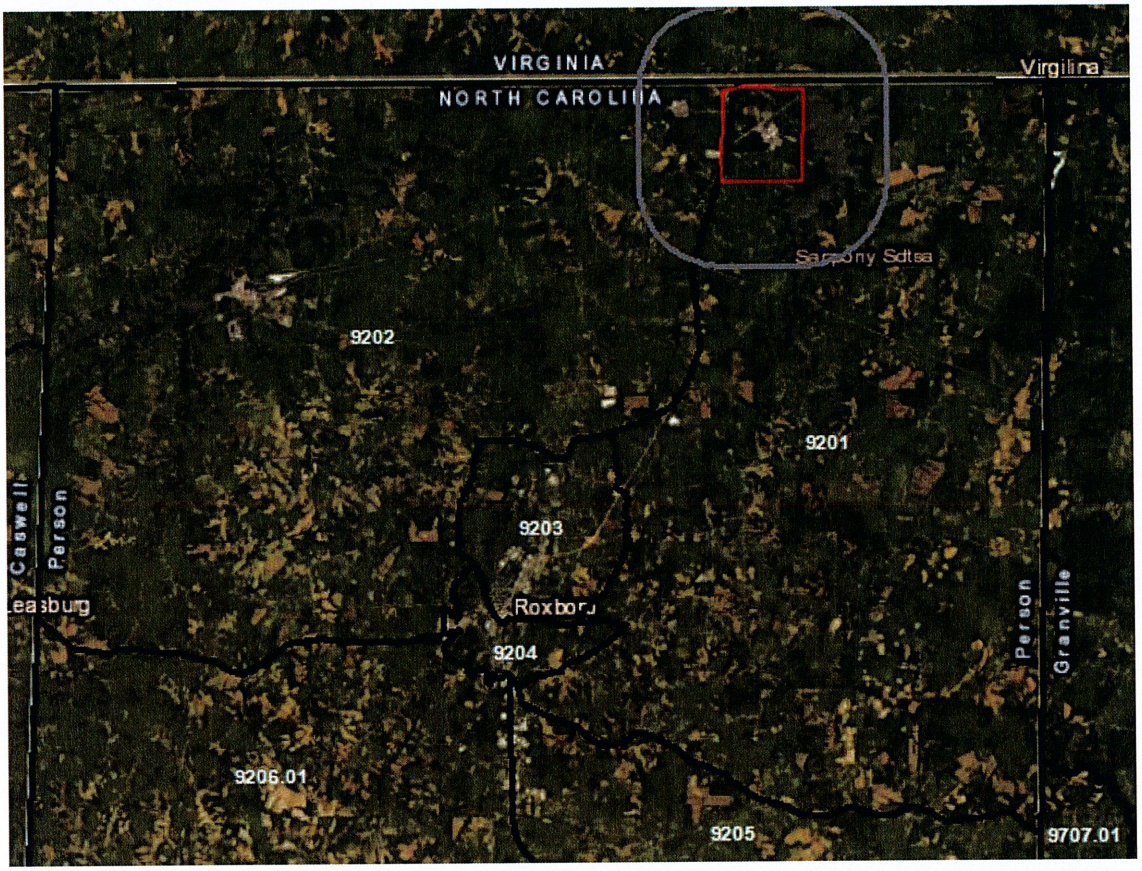

Figure 3. Census tracts surrounding facility location

Table 3. Regional Setting - Race and Ethnicity

Subject	North Carolina		Person County	
	Estimate	**Percent**	**Estimate**	**Percent**
Total:	9,535,483	100.00	39,464	100.00
Not Hispanic or Latino:	8,735,363	91.61	37,871	95.96
White alone	6,223,995	65.27	26,354	66.78
Black or African American alone	2,019,854	21.18	10,599	**26.86**
American Indian and Alaska Native alone	108,829	1.14	244	0.62
Asian alone	206,579	2.17	115	0.29
Native Hawaiian and Other Pacific Islander alone	5,259	0.06	4	0.01
Some Other Race alone	15,088	0.16	51	0.13
Two or More Races:	155,759	1.63	504	1.28
Hispanic or Latino	800,120	8.39	1,593	4.04

Source: US Census Bureau, 2010 Census
All **bolded and orange** cells indicate a difference that is greater than 10% when compared to the State.

Table 4. Local Setting – Race and Ethnicity

Subject	Census Tract 9202		Census Tract 9201		2-mile facility buffer	
	Total	**Percent**	**Total**	**Percent**	**Total**	**Percent**
Total:	6,749	100.0	6,834	100.00	991	100.0
Not Hispanic or Latino:	6,590	97.6	6,667	97.56	971	98.0
White alone	4,886	**72.4**	4,448	65.09	688	69.4
Black or African American alone	1,602	**23.7**	2,023	**29.60**	247	24.9
American Indian and Alaska Native alone	21	0.3	93	1.36	23	2.3
Asian alone	15	0.2	17	0.25	3	0.3
Native Hawaiian and Other Pacific Islander alone	0	0.0	0	0.00	0	0.0
Some Other Race alone	7	0.1	12	0.18	1	0.1
Two or More Races:	59	0.9	74	1.08	8	0.8
Hispanic or Latino	159	2.4	167	2.44	20	2.0

Source: US Census Bureau, 2010 Census
All **bolded and orange** cells indicate a difference that is greater than 10% when compared to the State.
All **bolded and blue cells** indicate a greater than 5% difference when compared to the state and county.

Table 5. Poverty Status – Regional Setting

Subject	North Carolina						Person County					
	Total		Below poverty level		Percent below poverty level		Total		Below poverty level		Percent below poverty level	
	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-
Population for whom poverty status is determined	9,881,292	1,522	1,523,949	15,319	15.4%	0.2	38,722	163	6,836	961	**17.7%**	2.5
AGE												
Under 18 years	2,258,876	1,607	498,013	7,632	22.0%	0.3	8,158	131	2,759	558	**33.8%**	6.9
18 to 64 years	6,092,009	1,103	884,618	9,282	14.5%	0.2	23,602	98	3,276	516	13.9%	2.2
65 years and over	1,530,407	995	141,318	2,705	9.2%	0.2	6,962	99	801	166	**11.5%**	2.3
SEX												
Male	4,779,533	2,237	669,307	8,648	14.0%	0.2	18,663	187	2,798	512	15.0%	2.8
Female	5,101,759	2,244	854,642	8,676	16.8%	0.2	20,059	168	4,038	559	**20.1%**	2.7
RACE AND ETHNICITY												
White	6,829,742	8,193	823,258	11,150	12.1%	0.2	26,395	334	3,628	766	**13.7%**	2.9
Black or African American	2,096,490	5,812	493,496	8,392	23.5%	0.4	10,359	296	2,559	640	24.7%	6.2
American Indian/ Alaska Native	117,702	1,595	29,577	1,585	25.1%	1.3	193	62	27	40	14.0%	18.2
Asian alone	275,301	1,983	32,712	2,356	11.9%	0.9	168	60	0	26	0.0%	18.7
Native Hawaiian and Other Pacific Islander	6,414	671	1,246	264	19.4%	4.2	1	2	0	26	0.0%	100
Some other race	302,934	7,911	89,305	5,371	29.5%	1.5	720	338	478	317	**66.4%**	24.4
Two or more races	252,709	6,223	54,355	2,369	21.5%	0.8	886	295	144	112	16.3%	11.9
Hispanic or Latino origin	915,426	901	260,607	5,682	28.5%	0.6	1,634	32	779	266	**47.7%**	16.1
ALL INDIVIDUALS BELOW												
50 percent of poverty level	663,550	10,829					2,549	818				
125 percent of poverty level	2,034,827	19,447					9,050	1,028				
150 percent of poverty level	2,526,688	21,681					11,131	1,013				
185 percent of poverty level	3,227,889	24,339					13,858	1,069				
200 percent of poverty level	3,513,670	25,035					14,485	1,080				

Source: American Community Survey 5-year Estimates, 2014-2018
All **bolded and orange** cells indicate a difference that is greater than 5% when compared to the State

Table 6. Poverty Status – Local Setting

Subject	Census Tract 9202, Person County						Census Tract 9201, Person County					
	Total		Below poverty level		Percent below poverty level		Total		Below poverty level		Percent below poverty level	
	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-
Population for whom poverty status is determined	6,612	439	921	366	13.9%	5.5	4,231	361	346	174	8.2%	3.9
AGE												
Under 18 years	1,214	214	215	176	17.7%	14	804	228	47	77	5.8%	8.8
18 to 64 years	4,142	325	544	211	13.1%	5	2,378	234	80	75	3.4%	3
65 years and over	1,256	127	162	89	**12.9%**	7.1	1,049	124	219	118	**20.9%**	11
SEX												
Male	3,415	301	411	167	12.0%	4.8	1,936	242	152	87	7.9%	4.3
Female	3,197	275	510	249	16.0%	7.6	2,295	248	194	116	8.5%	5
RACE/ETHNICITY												
White	5,198	444	642	348	12.4%	6.6	2,984	270	138	94	4.6%	3.1
Black or African American	1,173	283	209	103	17.8%	9.6	1,114	228	151	110	13.6%	9.3
American Indian/ Alaska Native	42	39	0	17	0.0%	47.5	0	12	0	12	-	**
Asian alone	0	17	0	17	-	**	0	12	0	12	-	**
Native Hawaiian and Other Pacific Islander	0	17	0	17	-	**	0	12	0	12	-	**
Some other race	82	89	70	84	**85.4%**	23.6	43	54	0	12	0.0%	45.2
Two or more races	117	88	0	17	0.0%	25.4	90	109	57	93	**63.3%**	57.4
Hispanic or Latino origin	197	116	78	84	**39.6%**	29	43	54	0	12	0.0%	45.2
ALL INDIVIDUALS BELOW												
50 percent of poverty level	291	181					148	137				
125 percent of poverty level	1,111	392					394	186				
150 percent of poverty level	1,368	404					583	195				
185 percent of poverty level	1,855	403					723	201				
200 percent of poverty level	1,892	409					910	275				

Source: US Census Bureau, American Community Survey 5-Year Estimates (2014-2018)
All **bolded and orange** cells indicate a greater than 5% difference when compared to the state.
All **bolded and blue cells** indicate a greater than 5% difference when compared to the state and county.

5 Limited English Proficiency (LEP)

Per the Safe Harbor Guidelines, should an LEP Group be identified during the permit application process, written translations of vital documents for each eligible LEP language group that constitutes five percent or includes 1,000 members (whichever is less) of the population of persons eligible to be served or likely to be affected or encountered. If there are fewer than 50 persons in a language group that reaches the five percent trigger, then DEQ will not translate vital written materials, but instead will provide written notice in the primary language of the LEP language group of the right to receive competent oral interpretation of those written materials, free of cost. The Safe Harbor provisions apply to the translation of written documents only. Safe Harbor Guidelines are per the EPA guidance for LEP persons, and implemented by DEQ when deemed appropriate. Three potential LEP language groups were identified during this initial screening of demographic data: Spanish or Spanish Creole, German, and other Asian languages. However, none of the languages identified reached the 5 percent threshold. If larger LEP groups are identified during the site visit or specific translation requests are received, then DEQ will revisit the Safe Harbor Guidelines.

Table 7. Limited English Proficiency

Language Spoken at Home	Census Tract 9202		Census Tract 9201	
	Estimate	Margin of Error	Estimate	Margin of Error
Total:	6,811	+/- 519	6,539	+/- 483
Speak only English	6,407	+/- 596	6,468	+/- 487
Spanish or Spanish Creole:	402	+/- 303	53	+/- 36
Speak English "very well"	107	+/- 88	47	+/- 36
Speak English less than "very well"	295	+/- 229	6	+/- 6
German:	0	+/- 17	0	+/- 17
Speak English "very well"	0	+/- 17	0	+/- 17
Speak English less than "very well"	0	+/- 17	0	+/- 17
Other Asian languages:	0	+/- 17	3	+/- 4
Speak English "very well"	0	+/- 17	1	+/- 2
Speak English less than "very well"	0	+/- 17	2	+/- 3
Source: US Census Bureau, American Community Survey 5-year Estimates (2011-2015)				

6. County Health

The University of Wisconsin Population Health Institute, in collaboration with the Robert Wood Johnson Foundation, calculated a County Health Rankings system for all the states in the United States (www.countyhealthrankings.org). This ranking is based on health outcomes (such as lifespan and self-reported health status) and health factors (such as environmental, social and economic conditions). According to this 2020 report, out of all 100 counties in North Carolina (with 1 indicating the healthiest), Person County ranks 53rd in health factors and 72nd in health outcomes (Figure 4).

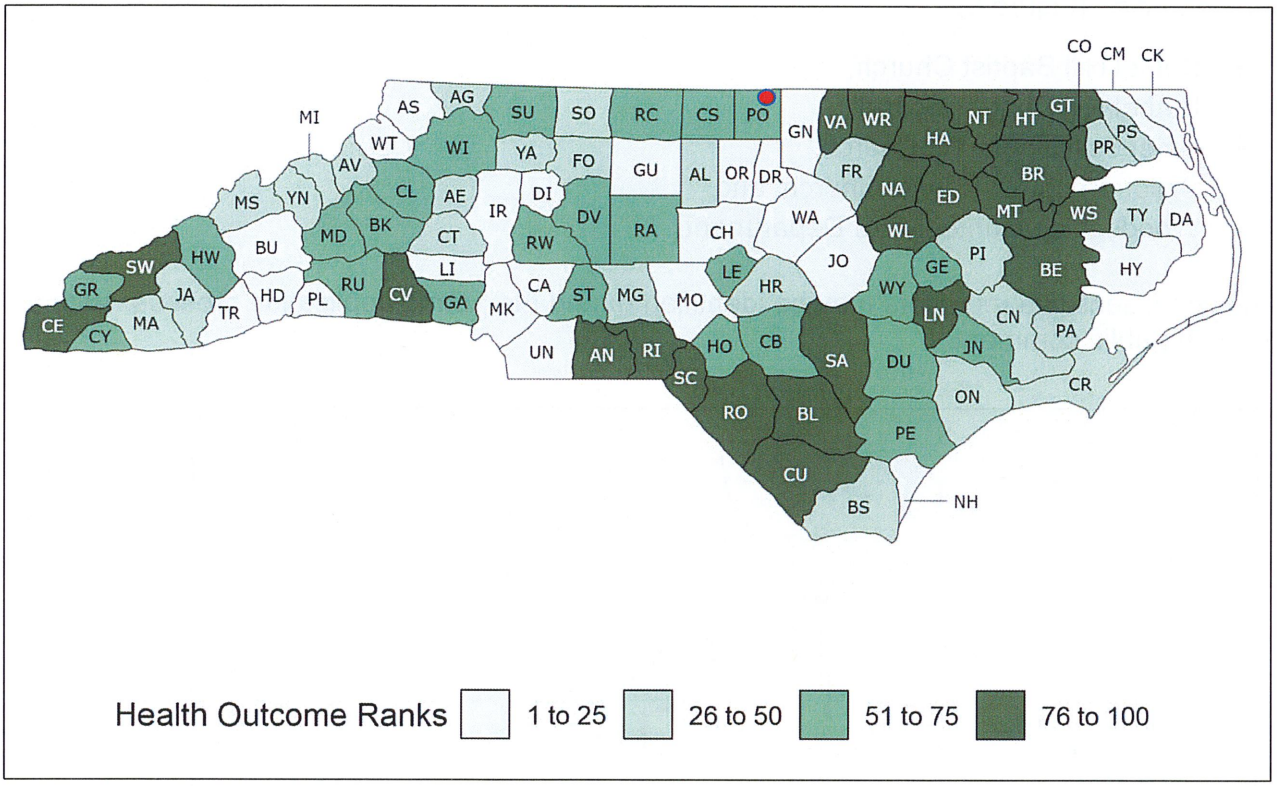

Figure 4. County Health Rankings for Health Factors in North Carolina provided by University of Wisconsin Public Health Institute.

7 Local Sensitive Receptors

The EPA suggests that sensitive receptors include, but are not limited to, hospitals, schools, daycare facilities, elderly housing and convalescent facilities. These are areas where the occupants are more susceptible to the adverse effects of exposure to toxic chemicals, pesticides, and other pollutants. Extra care must be taken when dealing with contaminants and pollutants in close proximity to areas recognized as sensitive receptors. For instance, children and the elderly may have a higher risk of developing asthma from elevated levels of certain air pollutants than a healthy individual aged between 18 and 64.

Within the two-mile project radius from the facility, the following potential sensitive receptors were identified (Figure 5):

- Bethel Hill Baptist Church,
- Bethel Hill Charter School,
- Prospect Hill Baptist Church,
- Shiloh Primitive Baptist Church, and
- Woodsdale volunteer Fire Department.

Additional sensitive receptors may be identified during the permit application process, such as through public comment.

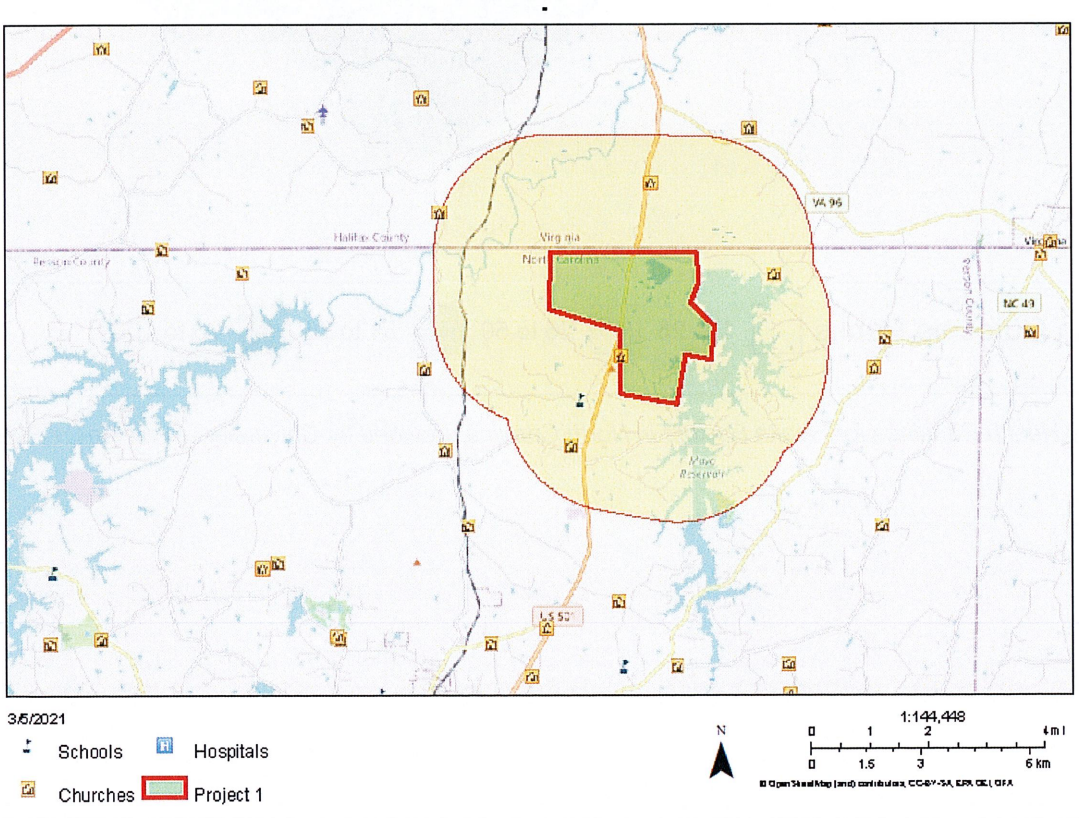

Figure 5. Sensitive receptors surrounding the Duke Energy Mayo Steam Electric Plant.

8. Local Industrial Sites

Within the two-mile radius, there are 11 facility permits or incident reports (as of March 5, 2021). These include two Title V air quality permits (one belonging to the Mayo Steam Electric Power Plant), three National Pollutant Discharge Elimination System wastewater discharge permits (one belonging to the Mayo Steam Electric Power Plant), two solid waste landfills (one belonging to the Mayo Steam Electric Power Plant), two hazardous waste sites (one belonging to the Mayo Steam Electric Power Plant), one underground storage tank (UST) incident from 1990, and one active UST permit (Figure 6).

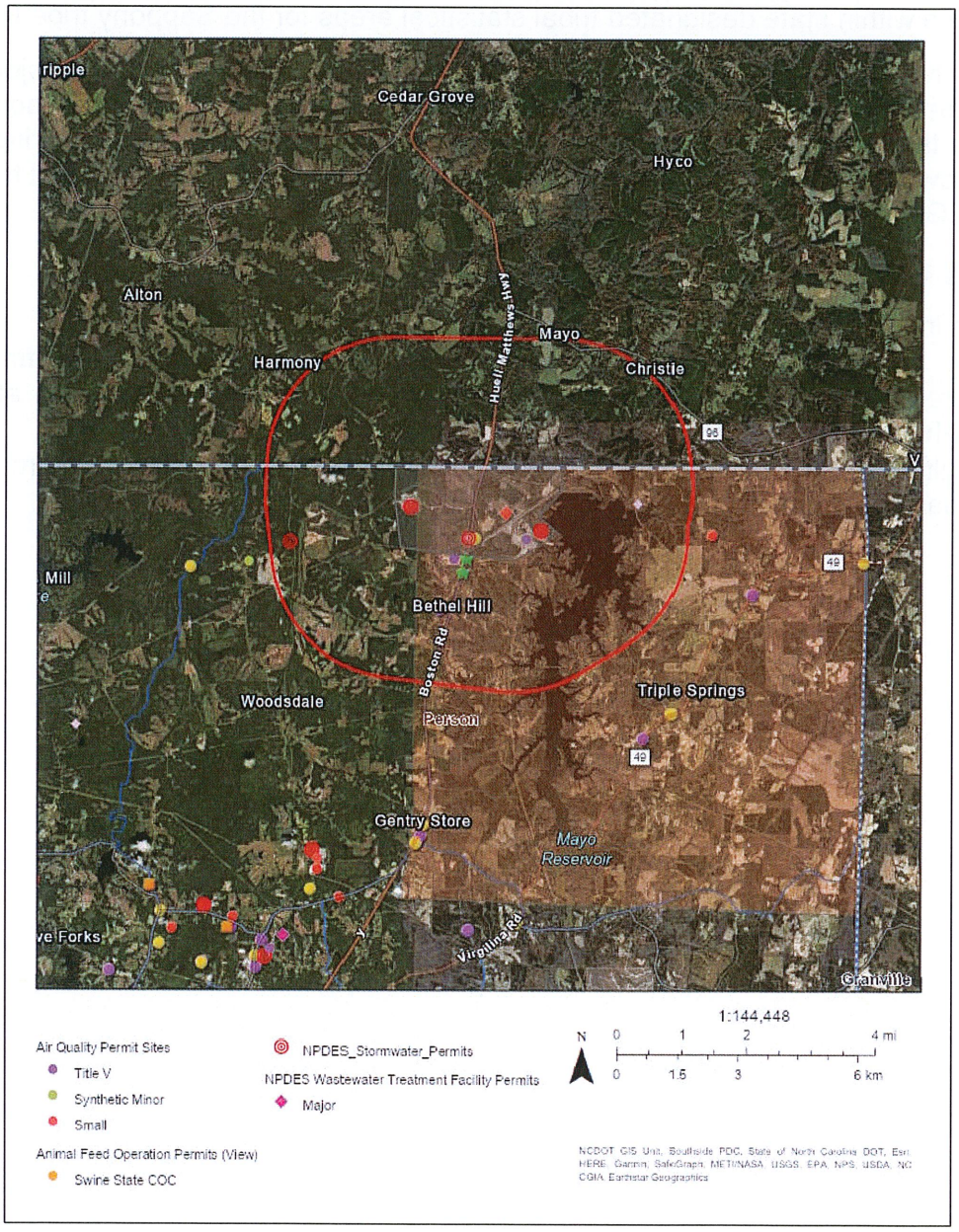

Figure 6. Permitted facilities and incidents with the two-mile radius surrounding the Duke Energy Mayo Steam Station.

Conclusion

This Draft EJ Report is an initial evaluation of the demographics and socioeconomics of the community area surrounding the Duke Energy Progress, LLC- Mayo Steam Electric Plant in Roxboro (Person County). This includes information within a determined radius by the Department (two miles for this project) on race and ethnicity (decennial census year), poverty, per capita income, and ability to speak English (most current ACS census range), current N.C. Department of Commerce county tier, and presence or absence of American Indian Tribal areas. The proposed landfill for coal ash disposal at Duke Energy Mayo Steam Power Plant is in an area designated with moderate health factors and outcomes in comparison to other areas of the State. It is also within state designated tribal statistical areas for the Sappony tribe (Section 6).

Person County has higher levels of poverty compared to the state for several subjects, but the local area displays similar or lower percentages of minority residents and poverty when compared to the state. Three potential LEP language groups were identified during this initial screening, however, none of the language groups identified reached the 5 percent threshold for Safe Harbor Guidelines.

The following additional outreach will be conducted:

- Informing the Sappony Tribe throughout the permitting process;
- Giving additional attention to ensure language data is accurate, and translation or interpretation will be considered if more LEP populations are identified at any point throughout the process; and
- Consulting the list of sensitive receptors while considering additional outreach options that may best fit this community's needs.

ROY COOPER
Governor
DIONNE DELLI-GATTI
Secretary
MICHAEL SCOTT
Director

NORTH CAROLINA
Environmental Quality

April 14, 2021

Delivered by email: Chris.Hallman@duke-energy.com

Mr. Chris Hallman, P.E.
Environmental Projects
Duke Energy
EC13K / PO Box 1006
Charlotte, NC 28201-1006

RE: Coal Ash Excavation Plan, Approval
Mayo Steam Electric Plant
Person County, FID 1577025

Dear Mr. Hallman:

In accordance with the North Carolina Department of Environmental Quality's letter of April 29, 2020, entitled *Coal Ash Impoundment Closure Plan - Determination of Compliance (FID* 1404846*)*, the Division of Waste Management, Solid Waste Section (Section) received Duke Energy's *Coal Ash Excavation Plan* (Plan), for the Mayo Steam Electric Plant, on February 5, 2021 (FID 1527984). The Section has reviewed and hereby approves the Plan. The approved Plans for this site may be found at the following link,
https://edocs.deq.nc.gov/WasteManagement/Browse.aspx?id=1395686&dbid=0&repo=WasteManagement

The approved Plan is to be reviewed and updated annually by Duke Energy and submitted to the Section. The annual submittal should include a site plan with annual phased excavation, a transportation plan with routes to on-site and off-site landfills, a dust control plan specific to excavation, management of the site's non-recyclable coal ash disposal both on-site and off-site, a list of regulatory permits and approvals, plans for stockpiling coal ash, an expanded health and safety plan for dewatering ash, and a list of excavation related complaints from the previous year.

If you have any questions, please do not hesitate to contact me at larry.frost@ncdenr.gov, (828) 296-4704 or Elizabeth Werner at elizabeth.werner@ncdenr.gov, (919) 707-8253.

Sincerely,

Digitally signed by Larry Frost
DN: cn=Larry Frost, o=NCDEQ, ou=Solid Waste Section, email=larry.frost@ncdenr.gov, c=US
Date: 2021.04.14 16:03:37 -04'00'
Adobe Acrobat version: 2021.001.20142

Larry Frost
Permit Engineer
Solid Waste Section

ec: Ed Mussler – Section Chief
Sherri Stanley – Permitting Branch Head

Daniel Mc Rainey
Vice President
CCP Project Management

400 South Tryon Street, ST06K
Charlotte, NC 28202

Phone: 704-382-1259
Email: daniel.mcrainey@duke-energy.com

February 5, 2021

VIA ELECTRONIC MAIL

Sheila C. Holman, Assistant Secretary
North Carolina Department of Environmental Quality (NCDEQ)
217 West Jones Street
1601 Mail Service Center
Raleigh, NC 27603

Dear Assistant Secretary Holman:

RE: Response to NCDEQ Comments on (Draft) Coal Ash Excavation Plans, Review
Duke Energy Excavation Sites
Buck, Cape Fear, HF Lee, Marshall, Mayo, Rogers (Cliffside), & Weatherspoon
Roxboro, North Carolina

Reference: NCDEQ Letter, "Draft Excavation Plans, Review, Duke Energy Excavation Sites, FID 1517372" dated December 22, 2020

Pursuant to NCDEQ's request in the above referenced letter, as well as being consistent with NCDEQ Guidelines, please find the attached revised Coal Ash Excavation Plans for the Duke Energy excavation sites. In addition to the changes requested, the plans were also revised to include reference to the letter from NCDEQ to Duke Energy dated January 15, 2021, North Carolina Department of Environmental Quality Recommendation Regarding Proposed Stacks and Piles of Coal Combustion Residuals (CCR) Within Existing CCR Surface Impoundments in North Carolina.

If you have any questions or need clarification regarding the information provided, feel free to contact Randy Hart at randy.hart@duke-energy.com or 980-373-5630 at your convenience.

Respectfully submitted,

Daniel Mc Rainey
Vice President

Attachments: Buck Steam Station Coal Ash Excavation Plan, Cape Fear Steam Station Coal Ash Excavation Plan, HF Lee Energy Complex Coal Ash Excavation Plan, Marshall Steam Station Coal Ash Excavation Plan, Mayo Steam Station Coal Ash Excavation Plan, Rogers (Cliffside) Coal Ash Excavation Plan, Weatherspoon Steam Plant Coal Ash Excavation Plan, Revision 0, February 5, 2021

NCDEQ cc: DamSafety@ncdenr.gov , deq.coalash@ncdenr.gov, Ed Mussler, Larry Frost, Rick Bolich, Toby Vinson, George Eller

Duke Energy cc: ccprecords@duke-energy.com, Paul Draovitch, Jim Wells, Ed Sullivan, Richard Baker, Chris Hallman, Dan Mc Rainey, Jessica Bednarcik, Randy Hart

Coal Ash Excavation Plan
Mayo Steam Station

Person County,
Roxboro, NC

Revision 0
February 05, 2021

Revision History

Revision	Date of Revision	Description of Revision
0	2/05/2021	Initial Submittal

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Appendices

1.0 General Information

1.1 Purpose

The purpose of this Excavation Plan (Plan) is to provide a vehicle for communication and understanding of general activities related to excavation efforts associated with closure of the ash basin at the Duke Energy Mayo Steam Station (Mayo, Plant, Site).

This Plan provides general information related to protection of public health, workers, and the environment in addition to field efforts and is intended to provide an overview of the various supporting permits, reports, and safety procedures associated with excavation of the ash basins for closure. Supporting permits, reports, and procedures should be consulted for more detailed information associated with each topic in this Plan.

1.2 Plan Updates

Field conditions and documents could vary from this Plan's contents. Information in this Plan is conceptual in nature and will be revised on an as-needed basis. As requested by NCDEQ Division of Waste Management (DWM), an updated Plan will be provided annually with the next submittal occurring on or before December 31, 2021. Each subsequent annual updated plan will be submitted on or before December 31 of the corresponding year.

2.0 Phased Excavation Plan

The Mayo conceptual coal combustion residuals (CCR) excavation phasing plan, illustrated in **Figure 1**, incorporates the following priorities:

- Excavation of ash basin "Finger 2" to facilitate construction of Cell 1 of the Ash Basin Landfill and the landfill haul road (Phase 1).
- Excavation of ash basin "Finger 1" to facilitate construction of Cell 2 of the Ash Basin Landfill (Phase 2).
- Concentric excavation of the remaining CCR in the ash basin (Phases 3 to 6).

The Plan has been revised to include placing 1.5 million cubic yards of ash from Excavation Phases 1, 2, and 3 into the existing onsite Mayo Monofill. Once the existing constructed footprint of the Monofill has been filled to the permitted airspace, all remaining CCRs to be placed in a new onsite lined landfill, contiguous with the ash basin and located immediately to the Northwest. Phasing of the new Ash Basin Landfill (ABLF) will involve a starter cell (Cell 1) located predominantly on natural ground. The subsequent phase (Cell 2) will be constructed as ash is removed from overlapping fingers and structural backfill is placed and compacted to the required subgrade elevation. The proposed Ash Basin Landfill is illustrated in **Figure 1**.

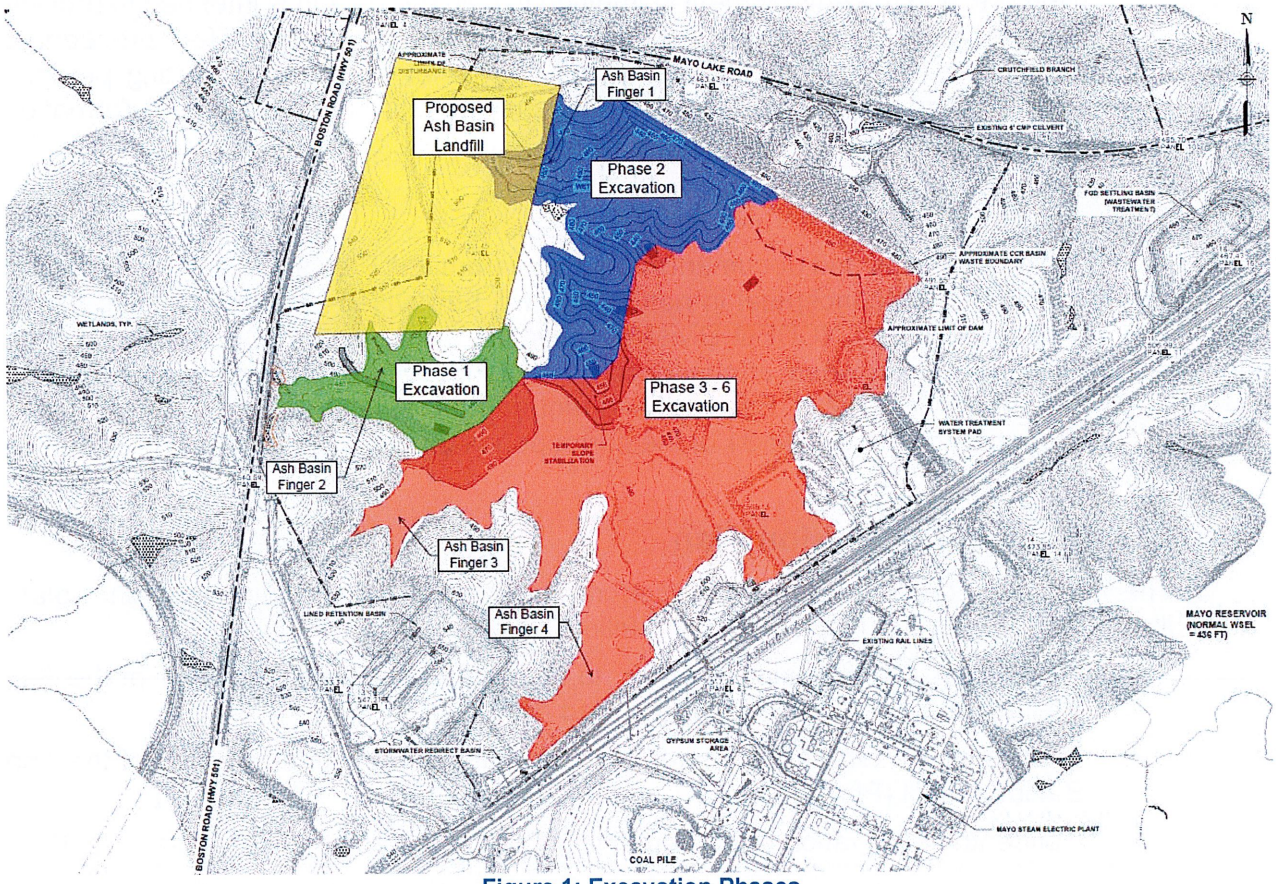


Figure 1: Excavation Phases

Table 1: Estimated Excavation Areas by Year (refer to Figure 1)

Phase	Year	2021	2022	2023	2024	2025	2026	2027	2028
	Volume (M CY)	0.4	0.7	0.9	1.0	1.0	0.75	0.50	0.25
1	0.35								
2	0.4								
3	2.8								
4	1.0								
5	0.6								
6	0.35								

Legend: Excavation To Monofill; Excavation To ABLF

3.0 Excavated CCR Transportation

Excavated CCRs identified in this plan will be placed in the proposed Ash Basin Landfill located on-site between the ash basin and NC HWY 501. Existing and future haul routes are shown on **Figure 2** of this Plan. Environmental incident preventative measures and response actions associated with hauling excavated CCRs are included in the **Spills Prevention and Incident Response Plan (Appendix A).**

3.1 Off-Site Hauling of Excavated CCR

Material that is unable to be placed in the on-site landfill (i.e.: vegetative material, petroleum impacted materials, etc.) will be transported off-site to a solid waste facility that is permitted to dispose of this material.

3.2 On-Site Hauling of Excavated CCR

CCR will be hauled from the area of excavation to the Monofill and Ash Basin Landfill on existing and new haul roads on-site as well as temporary haul roads located within the ash basin. CCRs transported to the Monofill will cross a section of public road (NC HWY 501) at the existing haul road crossing.

3.3 Spill Prevention and Incident Response Plan

Environmental incident preventative measures and response actions associated with hauling excavated CCRs are included in the **Spills Prevention and Incident Response Plan (Appendix A).**

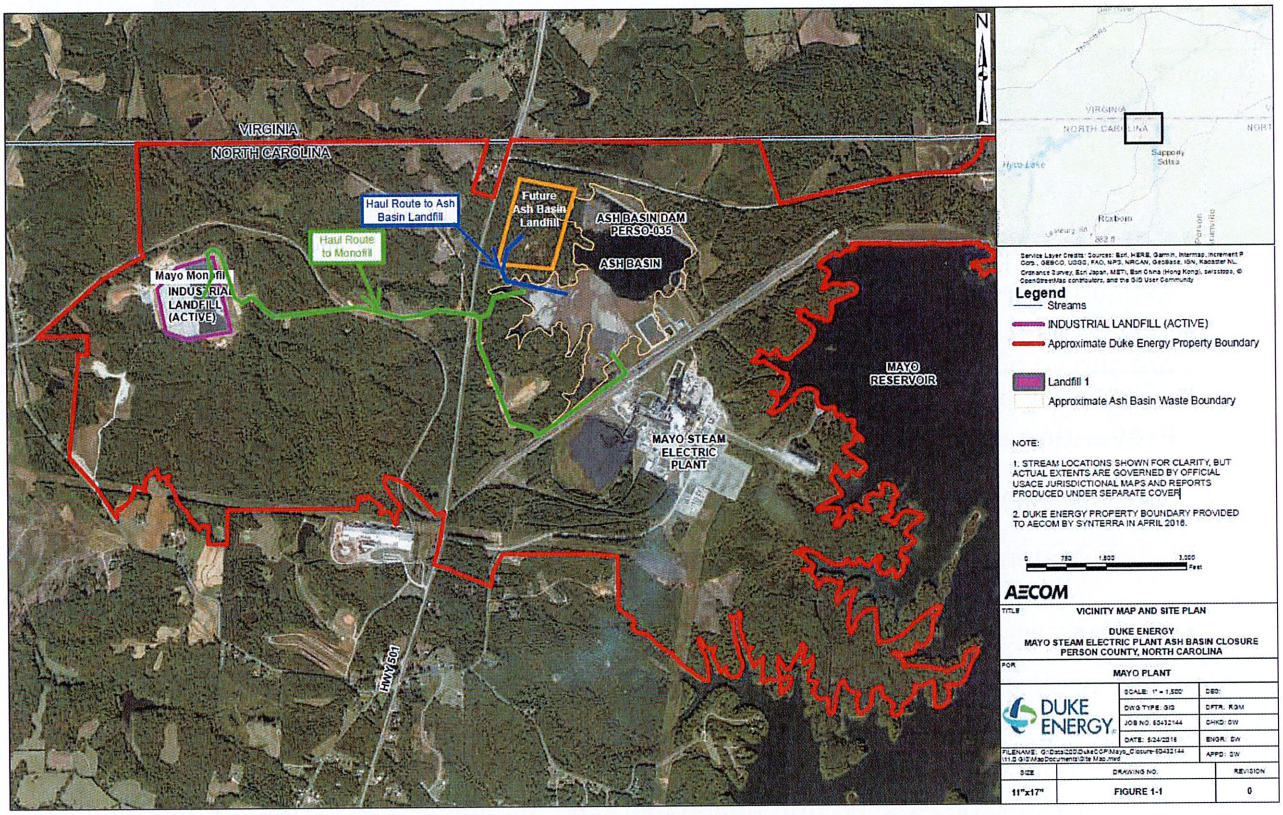


Figure 2: Haul Routes

4.0 Fugitive Dust Control

Control of fugitive dust is addressed in the **Dust Control Plan** included as **Appendix B**.

5.0 Active Permits Associated with Excavation

Regulatory permits associated with CCR excavation at Mayo are summarized in **Table 2** including various permits which will be needed as the project progresses. The actual current regulatory document should be consulted for obligations and requirements related to excavation.

Table 2: Active Permits and Approvals

Permit Type	Number	Issuance Date	Expiration Date	Approval Needed Date
NPDES – Waste Water	NC0038377	August 1, 2018	July 13, 2023	
Industrial Storm Water	NCS000580	January 27, 2017	December 31, 2021	
Permit to Operate – Mayo Industrial Monofill	7305-INDUS-2012	July 10, 2014	July 10, 2064	
Construction Stormwater- FGD Pond Decommissioning Plan	PERSO 2018-015	January 29, 2020	N/A	
Construction Stormwater- Preliminary Landfill Investigation	PERSO-2020-003	November 26, 2019	N/A	
Construction Stormwater- Mayo Water Redirect Stockpile	PERSO-2018-021	July 17, 2018	N/A	
Construction Stormwater- Ash Basin Finger Dewatering	PERSO-2020-006	March 6, 2020	N/A	
Construction Stormwater- Ash Basin Landfill Construction	PERSO-XXXX-XXX			February 2021
Section 404 Individual Permit	SAW-2011-00181			August 2021
Section 401 Individual Water Quality Certification	WQC00XXXX			August 2021
Mayo CCP Monofill Permit to Operate	7305-INDUS-2012	July 10, 2014	July 10, 2064	
Mayo CCP Ash Basin Landfill Permit to Construct – Cells 1 & 2	7307-INDUS-XXXX			August 2021
Mayo CCP Ash Basin Landfill Permit to Operate – Cell 1	7307-INDUS-XXXX			March 2023

Mayo CCP Ash Basin Landfill Permit to Operate – Cell 2	7307-INDUS-XXXX			March 2024
Dam Safety	PERSO-035	1982	N/A	
Title V Air Permit	03478T47	September 15, 2017	November 30, 2021	

6.0 Temporary CCR Stockpiles

Some areas of impounded CCRs will require conditioning (removal of moisture) prior to transport to the CCP Landfill. CCRs with moisture content above landfill specifications will be temporarily stacked inside the limits of the CCR unit being excavated to allow water to drain. Any stacks or piles developed as part of this plan will follow the recommendations provided in the letter to Duke Energy dated January 15, 2021, North Carolina Department of Environmental Quality Recommendation Regarding Proposed Stacks and Piles of Coal Combustion Residuals (CCR) Within Existing CCR Surface Impoundments in North Carolina.

A conceptual Stockpile Locations Figure for CCR conditioning and clean soil is included as **Figure 3**. Future Excavation Plan submittals will include contact stormwater control plans.

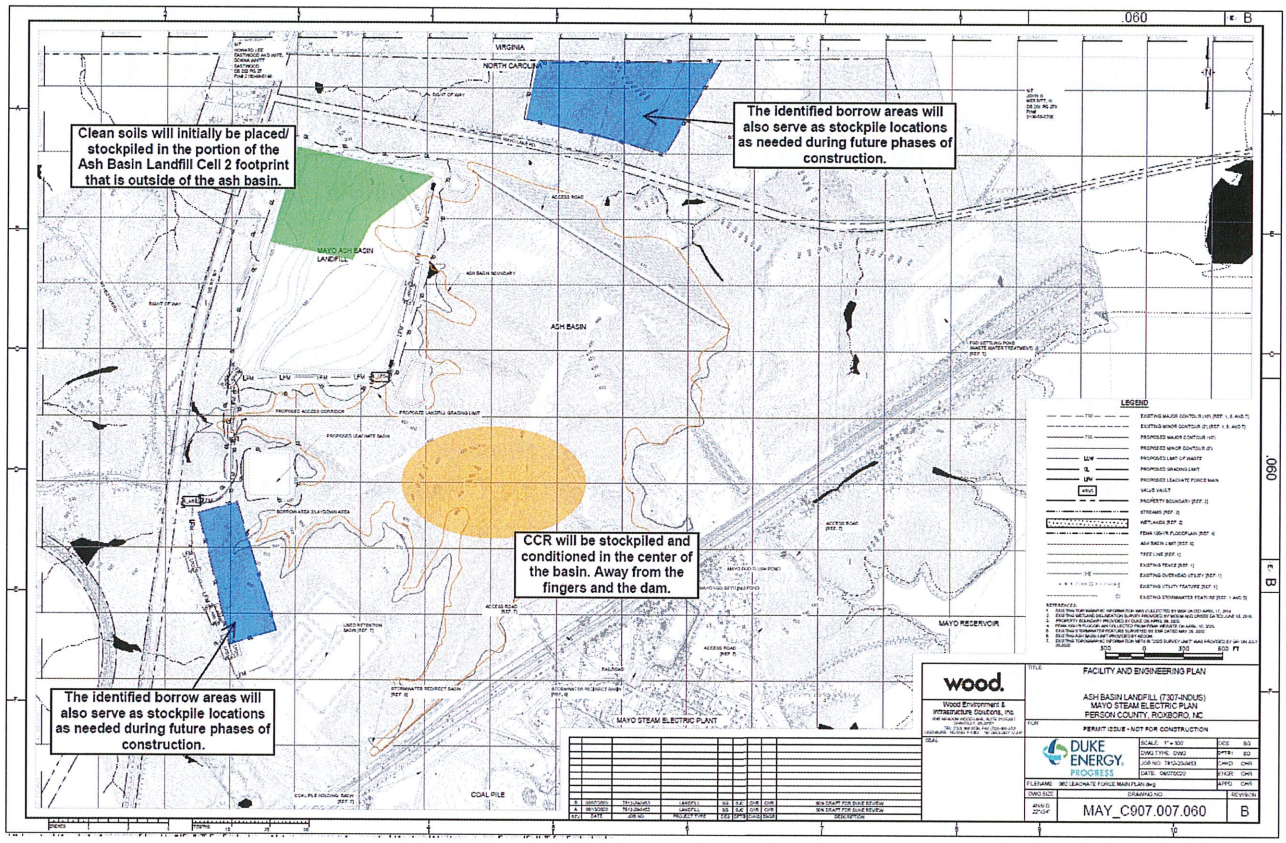


Figure 3: Stockpiling Plan Draft

7.0 Environmental Health and Safety Plan

Duke Energy is committed to the health, safety, and welfare of employees, contractors, and the public, and to protecting the environment and natural resources. Duke Energy actively engages the management of our contractors to hold them accountable for compliance with laws and applicable requirements. We develop and maintain effective public safety programs to educate and inform the public in the communities in which we operate. As part of this commitment, Duke Energy procedure, CCP-PRC-NA-PMI-021, "CCR Excavation, Planning and Permitting" has been developed to provide guidance on the controls required for working in CCR basins, impoundments, ponds or stacks.

Contractors are responsible for initiating, maintaining, and supervising all safety precautions and programs. Contractors shall observe and abide by all applicable laws (e.g., federal, state, and local) and the rules and regulations of any lawful regulatory body acting thereunder in connection with their work. Duke Energy contractors (TBD) shall provide site specific environmental, health, and safety plans as part of the submittal process for review and approval by Duke Energy.

Federal and state health and safety standards require that employers provide a healthful work environment that demonstrates employees are not overexposed to toxic chemicals, hazardous substances, and/or air contaminants. Where potential health hazards exist, contractors are required to comply with the OSHA regulations. When exposure monitoring is needed, contractors are required to conduct their own exposure monitoring using validated methods as defined by OSHA or NIOSH. Duke Energy will perform periodic monitoring of its employees and contingent workers to ensure they are not over the Permissible Exposure Limits.

Below is a list of excavation related complaints received by the facility from the public since the last Plan Update.

Table 3: Excavation Related Complaints

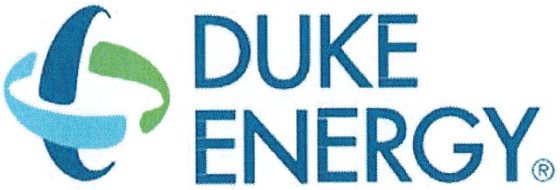
Date Received	Description of Complaint	Actions Taken to Resolve Complaint	Date of Resolution
N/A	No Excavation Related Complaints received since last Plan update.		

Excavation Stability and Ash Basin Access Control

Access to CCR basins, impoundments, ponds and/or stacks is controlled to minimize exposure of employees and contractors to basin excavation and dewatering hazards. Duke Energy developed a proprietary "CCR Excavation, Planning and Permitting" procedure, CCP-PRC-NA-PMI-021, that is utilized to establish permits for individual excavation and dewatering activities. The process initiates with assessing the geotechnical condition of the basin which is input through a multi-step decision tree such that work areas are determined to be 'Normal Access', 'Limited Access', or 'No Access'. Action plans are established to improve the stability of 'No Access' areas in such a manner that excavation and dewatering can be permitted in the future. Prior to accessing the basin, all activities must be clearly defined, and appropriate setbacks and stability monitoring requirements instituted. Each documented access plan defines employee/contractor training requirements, experience criteria, equipment requirements and limitations, equipment recovery plan, and minimum entry level conditions. Inspections and Observations are used to ensure access plans are being followed. If the entry level conditions change significantly during the implementation of an excavation or dewatering activity, the area will be evacuated, and a new access plan established prior to continuation of work

Spill Prevention and Incident Response Plan Mayo Steam Station

Person County, Roxboro, NC



Revision 0
February 05, 2021

Revision History

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0	2/05/2021	Initial Submittal

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Exhibits

1.0 Purpose

Excavation and transport of coal combustion residuals (CCR) are conducted with best management practices and preventative measures to protect the environment from a release of CCRs, petroleum products, and chemicals. Response actions and notifications guidance provided in this Plan (Plan) are used in the event preventative measures are unable to prevent the release of CCRs and/or chemicals to the environment at the Duke Energy Mayo Steam Station (Mayo, Plant, Site).

2.0 Preventative Measures

- Chemicals used on-site or residing in equipment will be stored and labeled in approved containers. Safety Data Sheets (SDS) will be on-site and available for each of these chemicals, petroleum products, and CCR.
- Spill Prevention Control and Countermeasure (SPCC) Plans for petroleum product storage and spills will be developed, updated, and maintained for the excavation project. These plans will include control measures such as the requirement for spill containments, refueling and equipment inspection procedures, location of spill response supplies, training records, and required inspection documentation.
- Documented observations of the work site and work practices will occur during hours of operation to ensure trucks are being loaded properly and to identify spills or areas of potential spills.
- Documented inspections of all equipment will occur daily to identify equipment issues which could cause spills.
- Any equipment found to have deficiencies or improper maintenance will be removed from service until repaired.
- Proper maintenance of all vehicles and heavy equipment will be logged.
- Haul roads are designed and constructed to incorporate line of sight, roadside protection features, grading, drainage, hazard awareness provisions, and traffic control signage to promote safe transport of material and minimize the potential for truck tipping.
- Protection of environmentally sensitive areas such as streams, rivers and wetlands will be incorporated into Erosion & Sediment Control design plans.
- Representative geotechnical sampling of CCR materials leaving the ash excavation footprint.

3.0 Environmental Incident Response

- In the event a release to the environment occurs or is discovered, the identifier will determine whether immediate hazards to safety or life exist, such as fires, electrical voltage or toxic exposure.
- If possible, a discharge will be controlled at the source (includes i.e.: shutting a valve, blocking a storm drain or raising the elevation of a spill containment).
- The project manager (PM) or construction manager (CM) will document all pertinent information regarding the release, including duration, volume, all parties involved, and measures taken to contain the release.

4.0 Notification and Reporting

If a release to the environment occurs, notifications will be made according to the site emergency response plan which is summarized below in the contact tree.

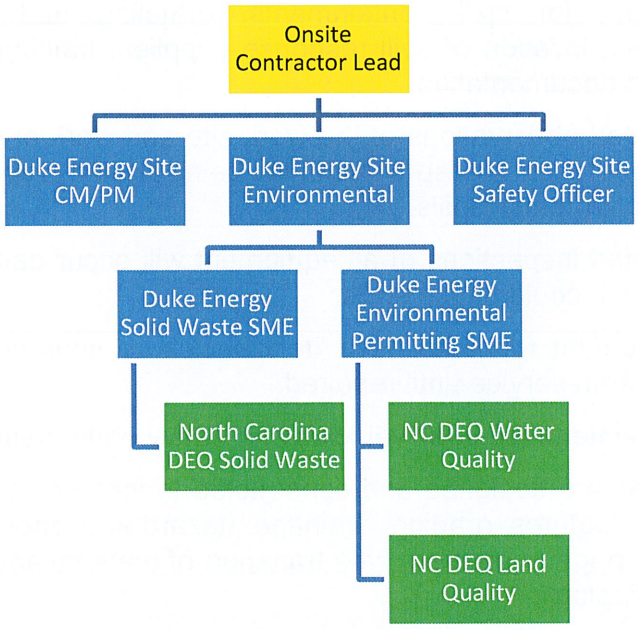

Figure 1: Contact Tree

- Any spill, regardless of size and/or reportability classification, will be reported to the Site Environmental Field Professional or their designee.
- Records of spill/incident events at the facility are maintained through Duke Energy's electronic program known as e-Trac. These records are available for access at Mayo through the site's Environmental Coordinator.

- Accurate and timely reporting is critical. Verbal communication of regulatory reportable spills must be made within 24 hours of identifying the release.

5.0 Clean-Up

- If a spill occurs, it will be cleaned-up as soon as practical.
- Spills containing petroleum will be cleaned in accordance with the applicable SPCC plan.
- Spill clean-up will be overseen by the Duke Energy Site Environmental Field Support or designated representative. Documentation of clean-up activities will be included in written event report.
- As needed, emergency response resources (local fire department or contract remediation company) are called upon for assistance with spills/incidents beyond the control of the site's initial response. Use of fire-fighting foams (PFAS) are not available for use by Duke response personnel.

Dust Control Plan
Mayo Steam Station

Person County,
Roxboro, NC

Revision 0
February 05, 2021

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Exhibits

1.0 Introduction and Site Description

This Dust Control Plan (Plan) is for the coal combustion residual (CCR) excavation areas at the Duke Energy Mayo Steam Station (Mayo/Plant/Site). This Plan provides:

- control methods for managing excavation areas and haul road dust emissions
- an observation program, and;
- corrective action responses to contain CCP's to prevent dust nuisances to employees and the public.

The monitoring program will aid Duke Energy and the excavation contractor in evaluating the dust control methods, or combination of dust control methods that prove effective with site specific conditions.

The Coal Combustion Residual (CCR) excavation area at Mayo includes the 153-acres of the Ash Basin. This Plan is to be implemented by the excavation contractor.

2.0 Dust Control Methods

The primary potential source of dust emissions in the excavation areas are the active excavation areas and areas without vegetative cover. These areas are at a higher risk for producing dust due to vehicular and equipment traffic and earthwork construction.

Dust emissions during excavation can be controlled through a variety of dust control methods. Possible dust control methods are identified herein. Dust control methods may be characterized as products or applications, structural wind breaks, and operational methods.

Dust control methods for the excavation areas and haul roads include:

- Watering;
- Establishing vegetative cover;
- Mulching;
- Structural controls consisting of:
    - Wind breaks (i.e. fencing and/or berms)
- Spray applied dust suppressants consisting of, and not limited to:
    - Anionic asphalt emulsion;
    - Latex emulsion;
    - Resin in water;
    - Polymer based emulsion; and
    - Mineral mortar coatings (i.e. posi-shell);
- Soil stabilizers (i.e. soil cements);

- Modifying the active working area; and
- Modifying operations during dry and windy conditions.
- Speed Limits

The contractor may use, and is not limited to, combinations of these dust control methods or any method that is technically sound to control dust for the specific site conditions. If the contractor intends to use a dust control method not presented above, the proposed dust control method will be evaluated on a case-by-case basis to assess the effectiveness with specific site conditions. The effectiveness of the dust control methods implemented should be evaluated through a dust monitoring program outlined in Section 3.

Operational equipment generally consists of excavators, dump trucks, vibratory rollers, bulldozer, water truck, spray trailer, and service trucks. Operational equipment will be used to construct, install, apply, and repair dust control methods. The contractor will make provisions to alleviate any on-site issues that arise when primary equipment is being maintained or is inoperable. The excavation contractor will make provisions to have the necessary equipment to control multiple fugitive CCP dusting emission events.

3.0 Monitoring

During excavation operations, a dust monitoring program will be implemented to evaluate the dust control measure performance and observe the areas for dust emissions. The dust monitoring program consists of performing visual observations of dust prone areas, dust control measures, and monitoring existing and forecasted weather conditions.

Dust emissions can occur under many conditions. For the purposes of this Plan, dust emissions are characterized as fugitive emissions where CCP dust is located outside the limit of the excavation area. This is most likely to occur during windy and dry conditions. Therefore, the contractor will monitor both existing and forecasted weather conditions and use dust control measures suited to the weather conditions. The dust control measures shall be implemented prior to the forecasted weather conditions.

Equipment operators shall observe the active face and other areas within the excavation area for dust emissions. In addition, preventative dust control measures should be observed and documented at least twice daily (morning and afternoon) when excavation activities are being performed to evaluate the dust control measure performance. Additional observations may be necessary as site and weather conditions dictate. Observations will be documented on the attached "*Monitoring Worksheet*," or online database/worksheet, etc. Due to the frequent maintenance necessary on moisture conditioned and spray- applied areas, the contractor shall pay particular attention to

these areas. Structural controls shall be observed to monitor that they are achieving their intended purpose.

Monitoring will be conducted during times when excavation activities are being performed. The contractor shall continue to provide necessary dust control measures during periods when operations are inactive (i.e. outages, weekends, holidays). The contractor will establish appropriate measures so that dust emissions are not likely to occur during inactive operations periods when monitoring is not being conducted.

4.0 Corrective Action

If fugitive dust emissions are observed and observations indicate dust control measures are not achieving their intended purpose, then appropriate corrective actions will be taken. Dust control measures will be reapplied, repaired, or added, as necessary, to control dust emissions. The contractor will construct, install, apply, and/or repair dust control measures prior to the end of the workday to control dust emissions during non-operating hours. The contractor will implement dust control measures as preventative controls rather than in response to fugitive dust emissions.

Table 1: Dust Control Monitoring Worksheet

Dust Control Monitoring Worksheet

Site Name: _____ Month: _____ Year: _____

Date		Actively Working?	Weather	Methods Used to Control Dust			Is Dust present?		Preventative or Corrective Action Taken	Was Preventative / Corrective Action Effective?	Initials
		Yes / No	Temperature Range, rainfall data, dry/damp, etc.	Currently Precipitating? (Y/N)	Water Truck Active (Y/N)	Other	Yes	No	Example: Added more water, applied mulch, modified working area, etc.	If no, describe secondary action taken.	
1	AM										
	PM										
2	AM										
	PM										
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Figure 1: Dust Control Monitoring Grid