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 410 S. Wilmington 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.

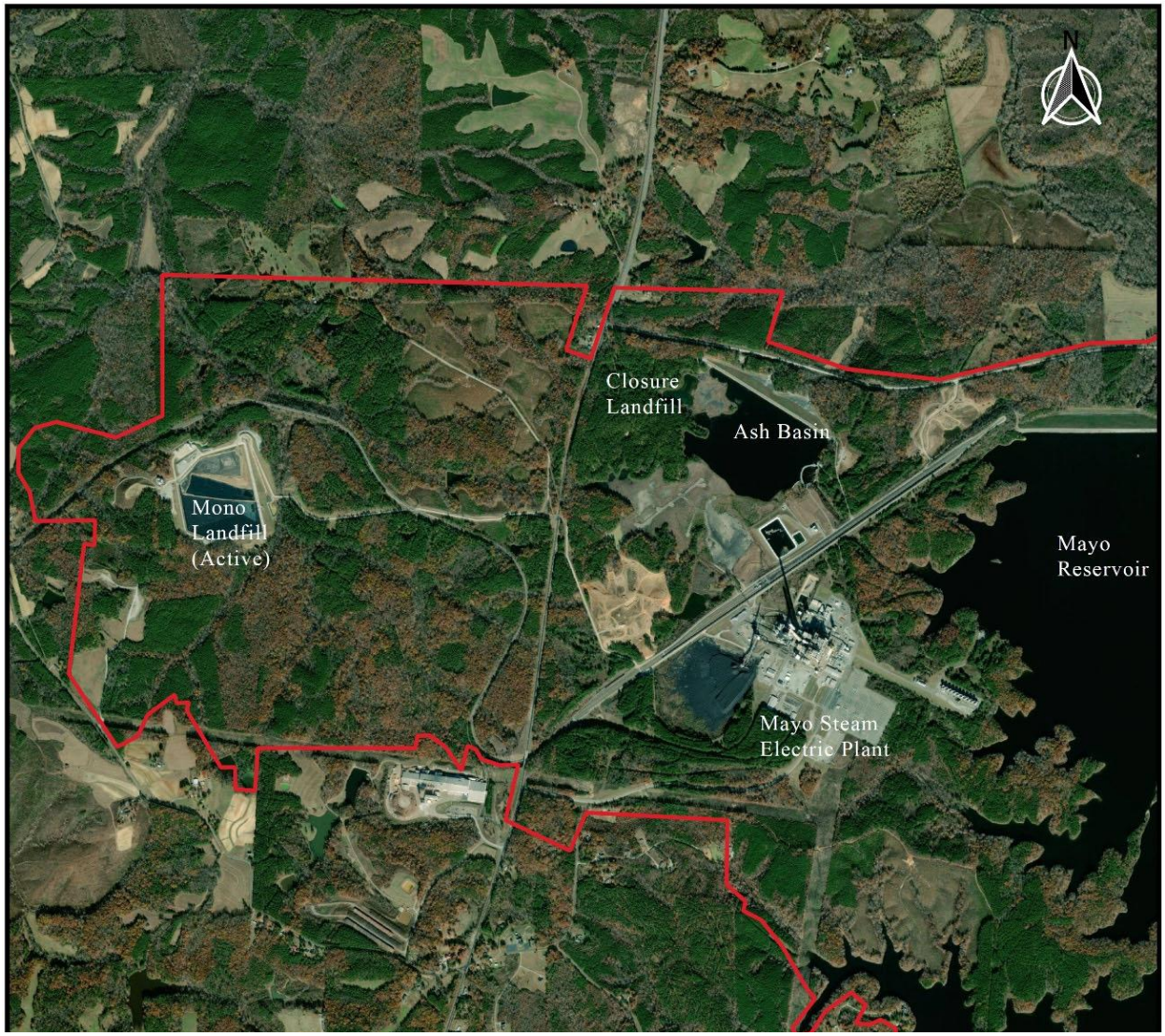

Figure 1 – Mayo Site Arrangement

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 haul roads 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)

	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	CO	VOC	CO_2e	Lead
Source	**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 (µg/m^3)	AAL (µg/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