NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date:

Region: Winston-Salem Regional Office
County: Stokes
NC Facility ID: 8500004
Inspector's Name: Robert Barker
Date of Last Inspection: 09/21/2020
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Duke Energy Carolinas, LLC - Belews Creek Steam Station

Facility Address:
Duke Energy Carolinas, LLC - Belews Creek Steam Station
3195 Pine Hall Road
Walnut Cove, NC 27009

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: 02Q .0501(b)(2)
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
Brenda Johnson Sr. EHS Professional (336) 445-0634 3195 Pine Hall Road Belews Creek, NC 27009	Michael Lanning General Manager III (336) 445-0501 3195 Pine Hall Road Belews Creek, NC 27009	Erin Wallace Lead Environmental Specialist (919) 546-5797 410 South Wilmington Street Raleigh, NC 27601

Application Data

Application Number: 8500004.21A
Date Received: 02/15/2021
Application Type: Modification
Application Schedule: TV-Sign-501(b)(2) Part I

Existing Permit Data
Existing Permit Number: 01983/T34
Existing Permit Issue Date: 04/08/2019
Existing Permit Expiration Date: 01/31/2022

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2019	3370.79	5699.34	81.72	688.24	778.24	53.73	26.92 [Fluorides (sum of all fluoride]
2018	4114.85	7303.30	90.86	762.97	851.57	60.34	30.22 [Fluorides (sum of all fluoride]
2017	4522.43	7053.81	108.66	910.11	979.24	72.00	36.25 [Fluorides (sum of all fluoride]
2016	5066.60	6792.52	123.64	1036.49	1149.04	81.38	40.94 [Fluorides (sum of all fluoride]
2015	6780.39	7101.62	137.84	1151.24	1273.12	173.88	117.16 [Hydrogen chloride (hydrochlori]

Review Engineer: Ed Martin

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

Comments / Recommendations:
Issue 01983/T35
Permit Issue Date:
Permit Expiration Date:

Chronology

February 15, 2021	Application received and considered complete on this date.
April 13, 2021	Toxics memo received from Mark Yoder showing compliance with the Acceptable Ambient Levels (AALs).
April 20, 2021	The draft permit and review were sent to Erin Wallace at DEP, Robert Barker at the Winston-Salem Regional Office (WSRO) and Samir Parekh with SSCB for review.

I. Purpose of Application

Duke Energy Carolina, LLC (DEC) is requesting authorization to excavate the existing Belews Creek Steam Station Ash Basin and place the excavated coal combustion residuals (CCR) in a new lined Closure Landfill that will be located within the Ash Basin waste boundary. The project will result in increased emissions of particulate matter (PM), PM less than 10 micrometers and 2.5 micrometers in diameter (PM10 and PM2.5, respectively), lead, and air toxics. This permit application also requests addition of four diesel-fired internal combustion engines (ICE) to the AQP insignificant activity list.

The following changes are proposed:

- Add the Ash Basin and the Closure Landfill as a permitted source (emissions source ID No. ABCL) to account for emissions from wind-erosion as well as excavation and relocation of ash at the Ash Basin and Closure Landfill
- Add haul roads as a permitted source (emissions source ID No. HAULRD) to account for emissions from trucks driving across the Ash Basin for the excavation and relocation of ash

Historically, ash generated from coal combustion was sluiced and sent to the Ash Basin along with various other waste streams; however, modifications were completed to convert from wet to dry flyash handling and ash is currently routed to the flyash storage silos or the ash dome where it is sold and removed from the site. Boiler bottom ash is dewatered and deposited in the Ash Landfill.

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) April 1, 2019 Closure Determination mandating closure of the Ash Basin via excavation, DEC plans to excavate material from the existing Ash Basin. DEC will construct a new, lined Closure Landfill in which the excavated material from the existing Ash Basin will be deposited.

Excavation of the Ash Basin is scheduled to begin in the year 2021 and continue through the year 2031. Once the Ash Basin is closed, the Closure Landfill will be finished by grading, seeding, and stabilizing. The site arrangement is shown in Figure 1 below.

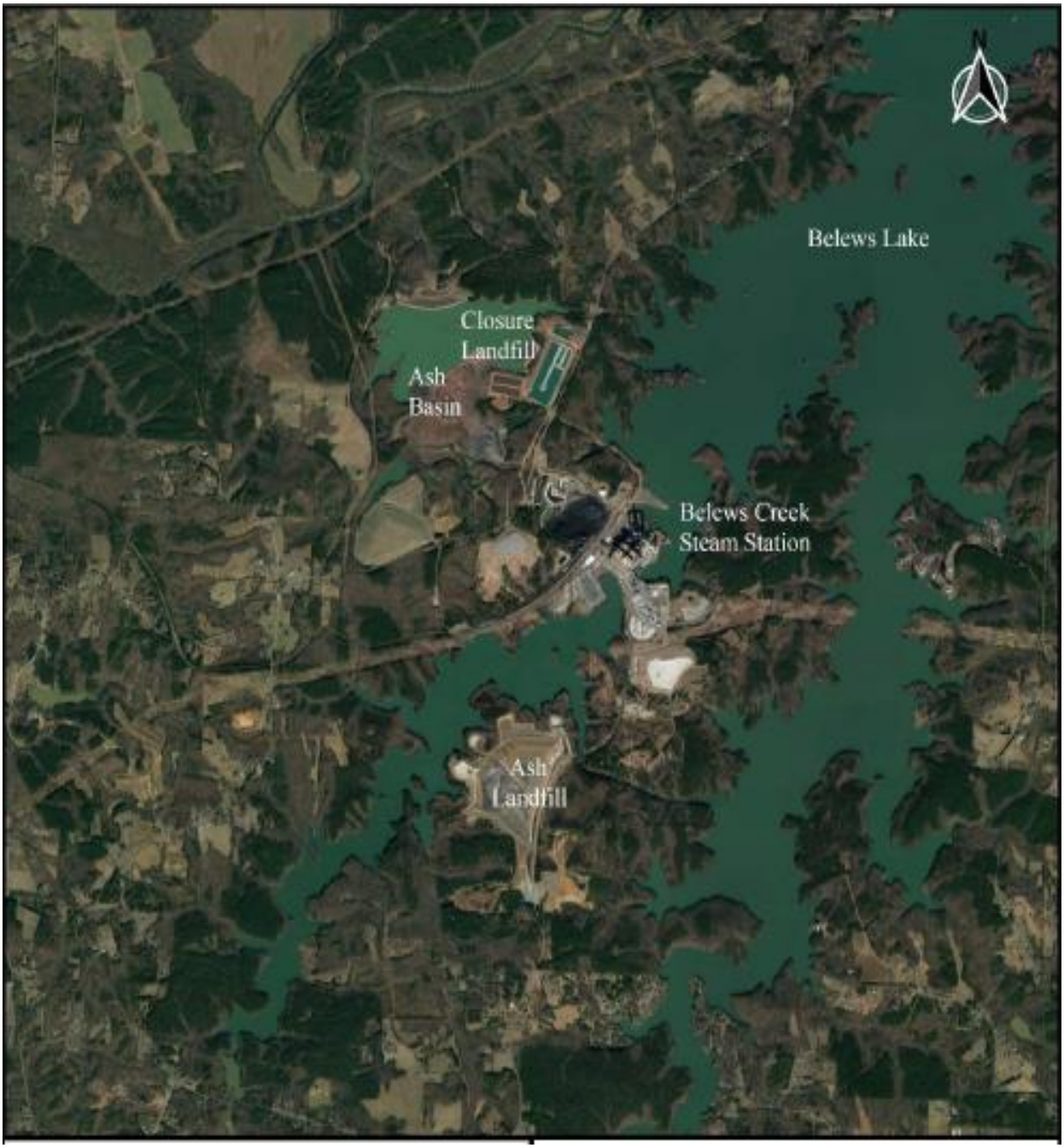

Figure 1 – Belews Creek Site Arrangement

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 Belews Creek 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 Carolinas, LLC's (Duke Energy) Belews Creek Steam Station (Belews Creek) in Stokes 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 impoundments. DEQ held a public information session on January 10, 2019 in Walnut Cove, NC where the community near Belews Creek 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 Belews Creek 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 unlined CCR surface impoundments at Belews Creek 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 Belews Creek by August 1, 2019. The Closure Plan must conform to this election by DEQ.

III. Permit Changes

The following changes were made to the Duke Energy Carolinas LLC - Belews Creek Steam Station Air Permit No. 01983T34:

Page	Section	Description of Change(s)
Cover	--	Amended permit numbers and dates.
7-8	1, table of permitted emission sources	Added ABCL and HAULRD. Added footnote 10.
18	2.1.A.7.a	Removed footnote ***. The %EE and %MD in this footnote when the operating hours are less than 2200 hours during the quarter are addressed when DAQ reviews the quarterly EERs on a case-by-case basis.
64	2.2.D.1.a	Revised toxic emission limits.
69	2.2.D.1.b	Added condition for the approved AQAB review memo.
70	2.2.F	Added 02Q .0504 condition for obtaining the Part II permit.
76-85	3	Updated General Conditions to version 5.5, 08/25/2020.

IV. Facility Description

DEC's Belews Creek Steam Station is an electric utility that generates electrical power using boilers. The Belews Creek facility has two coal/No. 2 fuel oil-fired electric utility boilers (ID Nos. ES-1 and ES-2, 12,000 million Btu per hour heat input each), two No. 2 fuel oil-fired auxiliary boilers (ID Nos. ES-3 and ES-4, 172 million Btu per hour heat input, each), one No. 2 fuel oil-fired emergency/blackout protection diesel generator (2000 kW), one No. 2 fuel oil-fired diesel emergency air compressor (525 hp), two emergency diesel IC engines, and various supporting scrubber limestone equipment.

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

PM emissions, including PM10 and PM2.5, will increase as a result of the project because excavated ash will be hauled 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). DEC used the average silt content of plant roads at a coal mining site, the expected vehicle weight, and the distance of a non-straight vehicle path across the Ash Basin to calculate emissions. DEC 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 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

DEC calculated emissions of PM, PM10, PM2.5, lead, and air toxics from material handling operations associated with the proposed project. These material handling operations include the following:

- 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 Winston-Salem Meteorological Station and a conservative (i.e., low) moisture content of 10% to calculate an emissions factor in pounds per ton of material handled. Emissions of HAP and toxic air pollutants (TAP) were calculated using elemental analysis for the ash.

DEC calculated the PTE from handling excavated ash. Excavated ash handling rates were based on the maximum potential tonnage of excavated ash deposited in the Closure Landfill annually.

Wind Erosion

DEC calculated emissions of PM, PM10, PM2.5, lead, and air toxics as a result of wind erosion at the Ash Basin and Closure Landfill. Emissions were calculated using the methodology presented in the document titled "Air/Superfund National Technical Guidance Study Series – Volume III – Estimate of Air Emissions From Cleanup Activities at Superfund Sites – Interim Final," by U.S. EPA Office of Air Quality Planning and Standards (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 size fractions from Section 13.2.5.2 of U.S. EPA's AP-42 emissions factors for industrial wind erosion.

DEC calculated PTE due to wind erosion at the Ash Basin and the Closure Landfill. HAP and TAP emissions were calculated based on elemental analyses of the ash because ash comprises the majority of material in the Ash Basin and Closure Landfill.

VI. Regulatory Evaluation -- PSD Applicability

The Belews Creek 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 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.

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}, $PM_{2.5}$, and lead. The following describes the methodology used to determine the increases for the project for the new sources. No existing sources are affected by this project. As shown in Table 1, the calculations demonstrate that the PSD requirements are not triggered because project increases are below the PSD significant emissions rates.

Since the project involves only new emission sources, a significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the emissions increases for each source equals or exceeds the significant amount for that pollutant, as defined in paragraph 40 CFR 51.166(b)(23), using the "actual-to-potential test" in accordance with 40 CFR 51.166(a)(7)(iv)(*d*).

Emissions under the "actual-to-potential test" are calculated as the difference between the PTE (post-project) as defined by 40 CFR 51.166(b)(4), and the baseline actual emissions (BAE) (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 new emissions sources, BAEs are zero.

As discussed above, DEP calculated PTE emissions from: haul roads used to transport excavated ash from the Ash Basin to the Closure Landfill, from handling excavated ash from the Ash Basin and unloading of excavated ash at the Closure Landfill, and due to wind erosion at the Ash Basin and the Closure Landfill. Table 1 shows a summary of the net emissions increases for the project.

Table 1
Project PTE Emissions and PSD Applicability Analysis Summary (tpy)

Source	PM	PM_{10}	$PM_{2.5}$	Lead
Excavation of Ash Basin	1.64	1.64	1.64	1.26E-04
Ash Basin Haul Roads – Loaded to Closure Landfill	2.29	0.59	0.0592	--
Ash Basin Unloading at Closure Landfill	0.41	0.41	0.41	3.15E-05
Wind Erosion at the Ash Basin and Closure Landfill	11.84	5.92	0.89	3.24E-03
Haul Roads - Unloaded	1.63	0.42	0.0420	--
Total Project Emissions Increase (PTE)	17.81	8.98	3.04	3.40E-03
PSD Significant Emissions Rate	25	15	10	0.6
Is pollutant subject to PSD review?	No	No	No	No

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.

VII. Facility-wide Toxics Demonstration

State-Only Requirement
15A NCAC 02D .1100 CONTROL OF TOXIC AIR POLLUTANTS
As a result of this modification to excavate the Ash Basin and place the excavated coal combustion residuals in 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.

DEC 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.

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: the following toxic pollutant emission rates (TPER) were exceeded:

- Arsenic and Inorganic Arsenic Compounds – Annual (Carcinogens)
- Beryllium (7440-41-7) – Annual (Carcinogens)
- Cadmium (7440-43-9) – Annual (Carcinogens)
- Soluble Chromate Compounds, as Chromium (VI) Equivalents – Daily (Chronic Toxicants)
- Manganese and Compounds – Daily (Chronic Toxicants)
- Mercury, Vapor (7439-97-6) – Daily (Chronic Toxicants)
- Nickel (7440-02-0) – Daily (Chronic Toxicants)

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			223			0.053			yes
Beryllium			22.0			0.28			yes
Cadmium			229			0.37			yes
Chromium VI		0.30			0.013			yes	
Manganese		2.99			0.630			yes	
Mercury		0.16			0.013			yes	
Nickel		2.73			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/m³)	AAL (µg/m3)	Percent of AAL (%)
Arsenic	2015	Annual	2.25E-04	2.1E-03	10.71
Beryllium	2015	Annual	5.82E-05	4.1E-03	1.42
Cadmium	2014	Annual	2.97E-05	5.5E-03	0.54
Chromium VI	2015	24-hour	1.40E-03	0.62	0.23
Manganese	2015	24-hour	1.43E-02	31	0.05
Mercury	2017	24-hour	1.81E-04	0.6	0.03
Nickel	2015	24-hour	1.11E-02	6	0.19

Table 4
Results of Optimized Modeled Toxics Impacts

Pollutant	Year	Averaging Period	Maximum Impact (µg/m³)	AAL (µg/m3)	Percent of AAL (%)
Arsenic	2015	Annual	2.06E-03	2.1E-03	98.10
Beryllium	2015	Annual	4.02E-03	4.1E-03	98.05
Cadmium	2014	Annual	5.39E-03	5.5E-03	98.00
Chromium VI	2015	24-hour	6.08E-01	0.62	98.00
Manganese	2015	24-hour	30.38	31	98.00
Mercury	2017	24-hour	0.59	0.6	98.00
Nickel	2015	24-hour	5.88	6	98.00

DEC's toxics dispersion modeling analysis was approved by Mark Yoder, AQAB, (see memo to Ed Martin dated April 13, 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 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 DEC'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.D.1.a.

Table 5
Permit Toxic Emission Limits

Permit Source ID	Source Description	Toxic Air Pollutant	Emissions Limit		
			lb/yr	lb/day	lb/hr
ES-13a, ES-15, ES-16, ES-17, ES-18	Dust Collector Fan Exhaust thru Roof of Limestone Conveyor Plant Transfer Tower	ARSENIC	4.16E-02		
		BERYLLIUM	3.36E-02		
		CADMIUM	1.71E-01		
		MANGANESE		1.52E+00	
		MERCURY		2.45E-04	
		NICKEL		1.60E-02	
ES-6, ES-6a, ES-6b, ES-7	Dust Collector Fan at Train Unloading	ARSENIC	7.15E-02		
		BERYLLIUM	5.78E-02		
		CADMIUM	2.94E-01		
		MANGANESE		2.60E+00	
		MERCURY		4.22E-04	
		NICKEL		2.75E-02	
DOME-1	Storage Dome	ARSENIC	1.84E+00		
		BERYLLIUM	3.58E+00		
		CADMIUM	1.06E+00		
		CHROMIUM VI		6.80E-02	
		MANGANESE		3.40E+00	
		MERCURY		2.59E-02	
		NICKEL		6.58E-01	
SILO-3	Charah Ash Silo	ARSENIC	5.31E+00		
		BERYLLIUM	1.03E+01		
		CADMIUM	3.06E+00		
		CHROMIUM VI		1.96E-01	
		MANGANESE		9.82E+00	
		MERCURY		7.48E-02	
		NICKEL		1.90E+00	
SILO-4, DFAL-4a	Charah Ash Silo and Dry flyash truck loading station	ARSENIC	1.23E+00		
		BERYLLIUM	2.39E+00		
		CADMIUM	7.06E-01		
		CHROMIUM VI		4.53E-02	
		MANGANESE		2.27E+00	
		MERCURY		1.73E-02	
		NICKEL		4.39E-01	
SILO-5	Charah Ash Silo	ARSENIC	5.31E+00		
		BERYLLIUM	1.03E+01		
		CADMIUM	3.06E+00		
		CHROMIUM VI		1.96E-01	
		MANGANESE		9.82E+00	

Permit Source ID	Source Description	Toxic Air Pollutant	Emissions Limit		
			lb/yr	lb/day	lb/hr
		MERCURY		7.48E-02	
		NICKEL		1.90E+00	
ES-U1SorbSilo	Hydrated Lime Silo Baghouse	ARSENIC	3.61E-02		
		BERYLLIUM	2.91E-02		
		CADMIUM	1.48E-01		
		MANGANESE		1.31E+00	
		MERCURY		2.13E-04	
		NICKEL		1.39E-02	
ES-U2SorbSilo	Hydrated Lime Silo Baghouse	ARSENIC	3.61E-02		
		BERYLLIUM	2.91E-02		
		CADMIUM	1.48E-01		
		MANGANESE		1.31E+00	
		MERCURY		2.13E-04	
		NICKEL		1.39E-02	
ES-U1Whopper1, ES-U1Whopper2, ES-U1Whopper3	Hydrated Lime Hopper Baghouse	ARSENIC	3.61E-02		
		BERYLLIUM	2.91E-02		
		CADMIUM	1.48E-01		
		MANGANESE		1.31E+00	
		MERCURY		2.13E-04	
		NICKEL		1.39E-02	
ES-U2Whopper1, ES-U2Whopper2, ES-U2Whopper3	Hydrated Lime Hopper Baghouse	ARSENIC	3.61E-02		
		BERYLLIUM	2.91E-02		
		CADMIUM	1.48E-01		
		MANGANESE		1.31E+00	
		MERCURY		2.13E-04	
		NICKEL		1.39E-02	
ES-33a	WWTP Lime Storage Silo	ARSENIC	1.92E-02		
		BERYLLIUM	1.55E-02		
		CADMIUM	7.91E-02		
		MANGANESE		7.00E-01	
		MERCURY		1.13E-04	
		NICKEL		7.40E-03	
ES-33b	WWTP Lime Storage Silo	ARSENIC	1.92E-02		
		BERYLLIUM	1.55E-02		
		CADMIUM	7.91E-02		
		MANGANESE		7.00E-01	
		MERCURY		1.13E-04	
		NICKEL		7.40E-03	
SILO-3	SILO3-5 Redundant Baghouse	ARSENIC	2.66E+00		
		BERYLLIUM	5.17E+00		
		CADMIUM	1.53E+00		

Permit Source ID	Source Description	Toxic Air Pollutant	Emissions Limit		
			lb/yr	lb/day	lb/hr
		CHROMIUM VI		9.83E-02	
		MANGANESE		4.92E+00	
		MERCURY		3.74E-02	
		NICKEL		9.51E-01	
ES-TS-1	DFA Handling System Baghouse	ARSENIC	3.47E-01		
		BERYLLIUM	6.76E-01		
		CADMIUM	2.00E-01		
		CHROMIUM VI		1.28E-02	
		MANGANESE		6.42E-01	
		MERCURY		4.89E-03	
		NICKEL		1.24E-01	
IES-70	Gypsum Radial Stacker	ARSENIC	5.56E-02		
		CADMIUM	2.76E-01		
		MANGANESE		3.54E+00	
		MERCURY		4.49E-03	
		NICKEL		1.47E-02	
IES-2, I-60	Truck Ash Dump at Ash Landfill	ARSENIC	1.58E-01		
		BERYLLIUM	3.07E-01		
		CADMIUM	9.09E-02		
		CHROMIUM VI		5.83E-03	
		MANGANESE		2.92E-01	
		MERCURY		2.22E-03	
		NICKEL		5.64E-02	
IES-1	Railcar Coal Unloading, Coal Drop into Bunker, Coal Drop onto Pile	ARSENIC	8.32E-01		
		BERYLLIUM	1.62E+00		
		CADMIUM	4.79E-01		
		MANGANESE		1.54E+00	
		MERCURY		1.17E-02	
		NICKEL		2.98E-01	
ES-8, ES-10, ES-11a, ES-19, ES-20, ES-21, ES-22	Limestone Pile Drop	ARSENIC	4.24E-01		
		BERYLLIUM	3.42E-01		
		CADMIUM	1.74E+00		
		MANGANESE		1.54E+01	
		MERCURY		2.50E-03	
		NICKEL		1.63E-01	
DFAL-4b	Dry Flyash Truck Loadouts	ARSENIC	1.23E+00		
		BERYLLIUM	2.39E+00		
		CADMIUM	7.06E-01		
		CHROMIUM VI		4.53E-02	
		MANGANESE		2.27E+00	
		MERCURY		1.73E-02	

Permit Source ID	Source Description	Toxic Air Pollutant	Emissions Limit		
			lb/yr	lb/day	lb/hr
		NICKEL		4.39E-01	
WFAL-3	Wet Flyash Truck Loadouts	ARSENIC	2.84E-02		
		BERYLLIUM	5.52E-02		
		CADMIUM	1.64E-02		
		CHROMIUM VI		1.05E-03	
		MANGANESE		5.25E-02	
		MERCURY		4.00E-04	
		NICKEL		1.02E-02	
WFAL-5	Wet Flyash Truck Loadouts	ARSENIC	2.84E-02		
		BERYLLIUM	5.52E-02		
		CADMIUM	1.64E-02		
		CHROMIUM VI		1.05E-03	
		MANGANESE		5.25E-02	
		MERCURY		4.00E-04	
		NICKEL		1.02E-02	
ABCL	Excavation of Ash Basin, Unloading of Relocated Ash at the Closure Landfill, Wind Erosion at the Ash Basin Active Area and Inactive Area, Wind Erosion at the Closure Landfill Active Area and Inactive Area	ARSENIC	2.25E+00		
		BERYLLIUM	4.37E+00		
		CADMIUM	1.29E+00		
		CHROMIUM VI		1.16E-01	
		MANGANESE		5.82E+00	
		MERCURY		4.43E-02	
		NICKEL		1.13E+00	
I-60	FGD Gypsum Landfill Drop, FGD (Gypsum) Landfill Active Area and Inactive Area	ARSENIC	5.57E-02		
		CADMIUM	2.76E-01		
		MANGANESE		3.55E+00	
		MERCURY		4.50E-03	
		NICKEL		1.47E-02	
I-60, IES-2	Active Ash Landfill and Inactive Ash Landfill	ARSENIC	5.38E-03		
		BERYLLIUM	1.05E-02		
		CADMIUM	3.10E-03		
		CHROMIUM VI		1.99E-04	
		MANGANESE		9.95E-03	
		MERCURY		7.58E-05	
		NICKEL		1.93E-03	
IES-1	Coal Storage Pile Active Area and Inactive Area	ARSENIC	5.61E-04		
		BERYLLIUM	1.09E-03		
		CADMIUM	3.23E-04		
		MANGANESE		1.04E-03	
		MERCURY		7.90E-06	
		NICKEL		2.01E-04	

Permit Source ID	Source Description	Toxic Air Pollutant	Emissions Limit		
			lb/yr	lb/day	lb/hr
F1	Limestone Pile Active Area and Inactive Area	ARSENIC	1.15E-04		
		CADMIUM	9.30E-05		
		CADMIUM	4.73E-04		
		MANGANESE		4.19E-03	
		MERCURY		6.78E-07	
		NICKEL		4.43E-05	
IES-73	Gypsum Pile Active Area and Inactive Area	ARSENIC	9.87E-05		
		CADMIUM	4.90E-04		
		MANGANESE		6.29E-03	
		MERCURY		7.98E-06	
		NICKEL		2.61E-05	
ES-PIGGING	Flare, pig receiver	ETHYL MERCAPTAN			1.02E+01
		n-HEXANE		9.68E+04	

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
The Zoning Consistency Determination form was signed by David Sudderth, Planning Director Stokes County Planning & Inspections, 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
Stokes County has triggered increment tracking under PSD for PM-10 and SO_2. There is no increase in SO_2.. This permit modification will result in an increase of 2.05 pounds per hour of PM_{10} based on the following:

The emissions increase of PM_{10} is 8.98 tpy as shown in Table 1 above; therefore, the hourly increase is:

For PM_{10}: (8.98 tons/yr x 2000 lb/ton)/8760 hr/yr = 2.05 lb/hr

X. Comments on Draft Permit

The draft permit and review were sent to Erin Wallace at DEP, Robert Barker at WSRO and Samir Parekh with SSCB on April 20, 2021 for review.

DEC Comments

The only comment received in an email from DEC on April 27, 2021 was to have the startup notification in Section 2.2.F.1.b be based on the first placement of ash in the closure landfill (ID No. ABCL) rather than startup of the first new source since DEC already has the approval to construct through the NOIC process. This change was made.

WSRO Comments

WSRO had no comments per an email from Robert Barker on April 26, 2021.

SSCB Comments

In an email on April 26, 2021, Samir Parekh thought there was a typo where 02D .0501(e) for SO2 in the permit should be 02D .0501(c) instead. This was corrected as it was 02D .0501(e) at one time, but the rule numbering was changed to 02D .0501(c) years ago.

XI. Recommendations

Later