NORTH CAROLINA DIVISION OF AIR QUALITY

Application Review

Issue Date:

Region: Fayetteville Regional Office
County: Richmond
NC Facility ID: 7700070
Inspector's Name: Evangelyn Lowery-Jacobs
Date of Last Inspection: 11/18/2021
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Duke Energy Progress, LLC - Richmond County Turbines

Facility Address:
Duke Energy Progress, LLC - Richmond County Turbines
Richmond County Energy Complex
Hamlet, NC 28345

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: 15A NCAC 02Q .0501(c)(l)
NSPS: NA
NESHAP: NA
PSD: NA
PSD Avoidance: NA
NC Toxics: NA
112(r): NA
Other: NA

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Kimberly Kashmer Lead EHS Professional (910) 205-2111 198 Energy Way Hamlet, NC 28345	Antonio Price General Manager III (910) 205-2101 198 Energy Way Hamlet, NC 28345	Erin Wallace Lead Environmental Specialist (919) 546-5797 410 South Wilmington Street Raleigh, NC 27601

Application Data

Application Number: 7700070.21C
Date Received: 10/19/2021
Application Type: Modification
Application Schedule: TV-Significant

Existing Permit Data
Existing Permit Number: 08759/T23
Existing Permit Issue Date: 11/17/2021
Existing Permit Expiration Date: 07/31/2026

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2020	19.52	417.70	56.38	589.19	184.56	33.82	23.19 [Formaldehyde]
2019	22.04	507.83	63.05	655.95	205.84	37.66	25.80 [Formaldehyde]
2018	35.53	799.83	84.40	877.41	273.06	50.08	34.20 [Formaldehyde]
2017	24.41	524.15	69.59	714.77	222.98	40.99	28.16 [Formaldehyde]
2016	26.10	743.13	75.28	794.13	247.52	45.50	31.26 [Formaldehyde]

Review Engineer: Ed Martin

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

Comments / Recommendations:
Issue 08759/T24
Permit Issue Date:
Permit Expiration Date:

Chronology

October 19, 2021 Application 7700070.21C was received and considered complete on this date.

I. Facility Description

The Richmond County Combustion Turbine Facility is part of the Smith Energy Complex located south of Hamlet in Richmond County. DEP currently operates five dual-fuel simple-cycle combustion turbines (SCCTs), Units 1 through 4 and 6; two dual-fuel combined-cycle combustion turbines (CCCTs), Units 7 and 8; two dual-fuel simple/combined cycle combustion turbines (Units 9 and 10), and other ancillary support equipment. The five SCCTs are GE 7FA.03 units that fire primarily natural gas, with 0.05% sulfur No. 2 fuel oil as backup. Each SCCT is equipped with dry-low-NOx combustors for natural gas and uses water injection for NOx control when firing fuel oil. The two CCCTs are each equipped with a heat recovery steam generator and a steam turbine, have dry-low-NOx combustors for natural gas, and use water injection for NOx control when firing fuel oil. The two simple/combined cycle units have dry low-NOx combustors for natural gas and use water injection for NOx control when firing fuel oil. The facility also has multiple fuel oil storage tanks, cooling towers, a natural gas-fired auxiliary boiler, multiple natural gas-fired heaters, and an emergency diesel-fired fire water pump.

II. Purpose of Application

Duke Energy Progress (DEP) is requesting reclassification from a major source of hazardous air pollutants (HAPs) to an area source of HAPs. As a result, the following maximum achievable control technology (MACT) standards no longer apply and have been removed as follows:

MACT Standard	Affected Emission Sources
15A NCAC 02D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY (40 CFR 63 Subpart YYYY - National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Turbines)	Unit 1 through Unit 4, and Unit 6 through Unit 10
15A NCAC 02D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY (40 CFR PART 63, SUBPART DDDDD - National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters)	I-20, I-21, I-23, I-24, I-25, ES-10, ES-19, and ES-20

In addition, source I-19 has been reclassified from MACT ZZZZ to GACT ZZZZ.

This is a one-step significant permit modification that contravenes or conflicts with a condition in the existing permit, following the procedures in 15A NCAC 02Q .0501(c)(l).

There are no changes to equipment.

III. Permit Changes

The following changes were made to Air Permit No. 08759T23:

Old Page	Old Section	New Page	New Section	Description of Changes
Cover				Amended permit numbers and dates.
Insignificant Activities List				Reclassified I-19 from "MACT ZZZZ" to "GACT ZZZZ". Removed "MACT DDDDD" identifier for I-20, I-21, I-23, I-24, and I-25.
3-4	1, table of permitted emission sources	4-5	1, table of permitted emission sources	Removed "MACT YYYY" identifier for Unit 1 through Unit 4, and Unit 6 through Unit 10. Removed "MACT DDDDD" identifier for ES-10, ES-19, and ES-20.
27	2.1 E, regulation table	25	2.1 E, regulation table	Removed 15A NCAC 02D .1111 (40 CFR Part 63, Subpart DDDDD)
29	2.1 E.6	26	2.1 E.6	Removed and reserved.
32	2.1 F, regulation table	27	2.1 F, regulation table	Removed 15A NCAC 02D .1111 MACT (40 CFR Part 63 Subpart YYYY)
44	2.1 F.5	37	2.1 F.5	Removed and reserved.
48	2.1 J, regulation table	40	2.1 J, regulation table	Removed 15A NCAC 02D .1111 (40 CFR Part 63, Subpart DDDDD)
49	2.1 J.4	40	2.1 J.4	Removed and reserved.
57-66	3.0	47-55	3.0	Updated General Conditions to version 6.0, dated 01/07/2022).

IV. Regulatory Evaluation

To be reclassified as an area source under Section 112, the facility's potential to emit considering controls must be less than 10 tons per year for any single HAP and less than 25 tons per year for any combination of HAPs.

DEP has undertaken an effort to refine potential-to-emit (PTE) calculations utilizing site-specific data, where available. Fuel oil sampling was performed at the facility, and the results were incorporated into the PTE calculations. DEP states that the majority of the metals analyzed resulted in a value that was less than the respective detection limit. For conservatism, the full detection limit was used for each of the metal HAPs to calculate the PTE emissions where the results were less than the detection limit, as compared to the previously used AP-42 values for metals, dating back to 1993, which do not account for the reduction in metals emitted due to EPA requiring lower sulfur content fuel oil to be 15 ppm or less. Metals in the fuel oil are lower due to the co-benefit during the hydrodesulfurization refining process.

The updated PTE demonstrates that the facility can be reclassified as an area source of HAPs. As shown in DEP's application, the maximum single HAP emissions are 5.7 tpy and the total emissions of all HAPs are 17.2 tpy. The revised calculations and fuel analysis results are shown in Attachments A and B of the application.

Therefore, the following MACT standards which only apply to major sources of HAPs and do not apply to area sources and are being removed:

15A NCAC 02D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY (40 CFR 63 Subpart YYYY - National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Turbines)
Subpart YYYY establishes national emission limitations and operating limitations for HAP emissions from stationary combustion turbines located at major sources HAP emissions as specified in 40 CFR 63.6080. Therefore, as an area source of HAPs, this standard no longer applies to combustion turbines Unit 1 through Unit 4, and Unit 6 through Unit 10.

15A NCAC 02D .1111: MAXIMUM ACHIEVABLE CONTROL TECHNOLOGY (40 CFR PART 63, SUBPART DDDDD - National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters
This subpart establishes national emission limitations and work practice standards for hazardous air pollutants (HAP) emitted from industrial, commercial, and institutional boilers and process heaters located at major sources of HAP as specified in 40 CFR 63.7480. Therefore, as an area source of HAPs, this standard no longer applies to the natural gas fired heaters I-20, I-21, I-23, I-24, I-25; the auxiliary boiler ES-10; and the dew point heaters ES-19 and ES-20. In addition, these natural gas-fired sources are not subject to 40 CFR Subpart JJJJJJ - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources as specified in 40 CFR 63.11195(e).

V. Public Notice

Pursuant to 15A NCAC 02Q .0521, a notice of the draft Title V Operating Permit will be published on the DAQ website to provide for a 30-day comment period with an opportunity for a public hearing. Copies of the draft (proposed) permit, review and public notice will be sent to EPA for their 45-day review, to persons on the Title V mailing list, to the Fayetteville Regional Office, and to the Permittee.

VI. 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
There is no expansion of the facility, therefore zoning consistency is not needed.

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

VII. Comments on Draft Permit

The draft permit and review were sent to Erin Wallace at DEP, to Evangelyn Lowery-Jacobs at FRO, and to Samir Parekh with SSCB on January 24, 2022.

DEP Comments (emails to Ed Martin from Erin Wallace dated January 27, 2022)
DEP had no comments.

SSCB Comments (email to Ed Martin from Samir Parekh dated January 27, 2022)
SSCB had no comments.

FRO Comments (email to Ed Martin from Evangelyn Lowery-Jacobs dated January 28, 2022)
FRO had no comments.

VIII. Recommendations

TBD