

DRAFT

**NORTH CAROLINA DIVISION OF  
AIR QUALITY  
Application Review**

**Region:** Asheville Regional Office  
**County:** Rutherford  
**NC Facility ID:** 8100028  
**Inspector's Name:** Christopher Scott  
**Date of Last Inspection:** 09/24/2024  
**Compliance Code:** 3 / Compliance - inspection

**Issue Date:** TBD

Facility Data	Permit Applicability (this application only)
<p><b>Applicant (Facility's Name):</b> Duke Energy Carolinas, LLC - Cliffside Steam Station</p> <p><b>Facility Address:</b> Duke Energy Carolinas, LLC - Cliffside Steam Station 573 Duke Power Road Mooresboro, NC 28114</p> <p><b>SIC:</b> 4911 / Electric Services <b>NAICS:</b> 221112 / Fossil Fuel Electric Power Generation</p> <p><b>Facility Classification: Before:</b> Title V <b>After:</b> Title V <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V</p>	<p><b>SIP:</b> 02Q .0400 <b>NSPS:</b> NA <b>NESHAP:</b> NA <b>PSD:</b> NA <b>PSD Avoidance:</b> NA <b>NC Toxics:</b> NA <b>112(r):</b> NA <b>Other:</b> Acid Rain Permit</p>

Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	
Kenneth McKinney Senior EHS Consultant (828) 657-2339 573 Duke Power Road Mooresboro, NC 28114	Brandon Sipe General Manager III (828) 657-2001 573 Duke Power Road Mooresboro, NC 28114	Jerry Battle Env. Specialist II (919) 247-5295 410 South Wilmington St Raleigh, NC 27601	<p><b>Application Number:</b> 8100028.23C <b>Date Received:</b> 08/08/2023 <b>Application Type:</b> Modification <b>Application Schedule:</b> TV-Significant</p> <p style="text-align: center;"><b>Existing Permit Data</b></p> <p><b>Existing Permit Number:</b> 04044/T47 <b>Existing Permit Issue Date:</b> February 14, 2025 <b>Existing Permit Expiration Date:</b> 01/31/2029</p>

**Total Actual emissions in TONS/YEAR:**

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2023	1023.09	2023.25	1.52	725.38	322.88	38.88	22.92 [Hexane, n-]
2022	455.32	1737.06	1.86	636.85	187.02	38.40	30.91 [Hexane, n-]
2021	552.47	1796.01	5.65	350.18	237.72	32.87	19.91 [Hexane, n-]
2020	819.27	2074.49	19.55	183.44	240.95	28.66	12.00 [Hydrogen chloride (hydrochlori)]
2019	1383.06	2488.59	46.03	580.53	305.87	34.45	17.63 [Hydrogen chloride (hydrochlori)]

<p><b>Review Engineer:</b> Russell Braswell</p> <p><b>Review Engineer's Signature:</b> _____ <b>Date:</b> _____</p>	<p style="text-align: center;"><b>Comments / Recommendations:</b></p> <p><b>Issue</b> 04044T48 <b>Permit Issue Date:</b> TBD <b>Permit Expiration Date:</b> January 31, 2029 or when the renewal of Permit No. 04044T45 has been issued or denied (no change)</p>
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## **1. Purpose of Application**

Duke Energy Carolinas, LLC - Cliffside Steam Station (DEC; the facility) currently operates a power plant in Rutherford County under Title V permit 04044T47 (the existing permit). The existing permit also incorporates the Title IV permit (a.k.a., the acid rain permit), which in turn incorporates DEC's optional NOx averaging plan. DEC's averaging plan includes several facilities owned by Duke Energy Carolinas and Duke Energy Progress. Updates have been made to facilities included in the NOx averaging plan, and therefore DEC has submitted this application in order to update the NOx averaging plan.

DEP submitted this application pursuant to 15A NCAC 02Q .0501(b) and 15A NCAC 02Q .0516 (*i.e.*, a significant modification).

## 2. Application Chronology

Date	Event
August 8, 2023	Application received.
January 8, 2025	Responsibility for application transferred to Russell Braswell
January 14, 2025	An initial draft of the permit and this application review were sent to DAQ Permits staff.
January 16, 2025	Comments received on the January 14 draft.
January 21, 2025	A revised draft of the permit and this application review were sent to DAQ SSCB staff, DAQ ARO staff, and DEC staff.
January 24, 2025	In a phone call, Erin Wallace (representing DEC), stated that DEC was considering a modification to the NOx averaging plan.
January 28, 2025	1. DEC stated that the NOx averaging plan would not be updated at this time. 2. DEC also requested the addition of the text “unless another date is approved by DAQ” to the testing due dates associated with the PSD requirements in the permit.
January 30, 2025	In response to the January 28 request, DAQ determined that this should be handled via administrative amendment.
February 6, 2025	DEC submitted a request for administrative amendment in response to DAQ’s January 30 statement.
February 14, 2025	In response to DEC’s February 6 request, DAQ issued Title V permit 04044T47.
XXXXX	Public notice / EPA review
XXXXX	Permit issued.

### 3. Application Discussion

#### 3.1 Title IV Permit Updates (a.k.a. Acid Rain Permit)

As part of the Title IV permit, DEC is subject to NOx emission limits for the coal-fired boilers. Emission limits for coal-fired boilers are based on the operating method of the boiler. According to DEC's application, Boiler 5 at this facility is "tangentially-fired," which has a NOx emission limit of 0.40 pounds per million Btu. Note that Boiler 6 is not included in DEC's NOx averaging plan.

As an alternative to that emission limit, the operator of a facility may choose to average the NOx emission rates of coal-fired boilers using the alternative contemporaneous emissions limitation (ACEL) method in 40 CFR 76.11. In order to use the ACEL method, the Btu-weighted annual average emission rate (see 40 CFR 76.11(d)(1)(ii)) for all of the ACEL units must be less than the Btu-weighted annual average emission rate of those units had they each been operated using the default emission limits under 40 CFR 76.5, 76.6, or 76.7 (see 40 CFR 76.11(a)(5)).

DEC has developed a NOx averaging plan and established an ACEL for the coal-fired units at the following locations:

- Belews Creek (facility ID 8500004)
- Cliffside [excluding Unit 6] (this facility)
- GG Allen (facility ID 3600039)
- Marshall (facility ID 1800073)
- Mayo (facility ID 7300045)
- Roxboro (facility ID 7300029)

The existing Title IV permit (included in the Title V permit as Specific Condition 2.4) includes the ACEL and associated heat input limits for Boiler 5 at this facility.

DEC has revised the averaging plan for the above facilities, and has submitted this permit application for this facility in order to reflect the revised averaging plan. The revised plan reflects unit retirements at some of the above facilities. However, the ACEL and associated heat input limits for Boiler 5 at this facility were not changed. Therefore, the limits in the existing permit will not change.

The below table includes all of the emission proposed ACELs and associated heat input limits.

Plant Name	Unit ID	Emission Limit (\$76.5, 76.6, or 76.7) (lb/MMBtu)	ACEL (lb/MMBtu)	Annual Heat Input Limit (MMBtu/yr)
Belews Creek	1	0.68	0.25	26,834,070
Belews Creek	2	0.68	0.25	27,664,080
Cliffside	5	0.40	0.25	13,315,200
GG Allen	1	0.40	0.45	18,755,160
GG Allen	5	0.40	0.45	36,013,720
Marshall	1	0.40	0.45	41,662,560
Marshall	2	0.40	0.45	39,787,920
Marshall	3	0.40	0.25	16,438,140
Marshall	4	0.40	0.45	65,577,360

Plant Name	Unit ID	Emission Limit (\$76.5, 76.6, or 76.7) (lb/MMBtu)	ACEL (lb/MMBtu)	Annual Heat Input Limit (MMBtu/yr)
Mayo	1A	0.46	0.25	10,731,000
Mayo	1B	0.46	0.25	10,731,000
Roxboro	1	0.46	0.25	10,341,180
Roxboro	2	0.40	0.25	15,794,280
Roxboro	CS003A	0.46	0.25	9,331,590
Roxboro	CS003B	0.46	0.25	9,331,590
Roxboro	CS004A	0.46	0.25	9,855,000
Roxboro	CS00BA	0.46	0.25	9,855,000

Btu-weighted annual emission rate averaged over the units if they are operated in accordance with the proposed averaging plan
0.358

Btu-weighted annual average emission rate for same units operated in compliance with 40 CFR 76.5, 76.6, or 76.7
0.452

The updated averaging plan will be included in the new Title V permit as part of Attachment 1.

### 3.2 Changes to the existing permit

Page No.	Section	Description of Changes
Throughout	Throughout	<ul style="list-style-type: none"> <li>Updated dates and permit numbers</li> <li>Fixed formatting to match DAQ's standard formatting for Title V permits. Changes to formatting are not intended to affect the Permittee's compliance requirements.</li> </ul>
114	4	<ul style="list-style-type: none"> <li>Updated General Conditions to v8.0</li> </ul>
Attachment 1	Acid Rain Averaging Plan	<ul style="list-style-type: none"> <li>Updated Acid Rain Averaging Plan to reflect the Permittee's most recent submission (signed June 28, 2023, received August 8, 2023).</li> </ul>

\*This list is not intended to be a detailed record of every change made to the permit but a summary of those changes.

#### **4. Compliance Status and Other Regulatory Concerns**

*Compliance status:*

- This facility was most recently inspected on September 24, 2024, by Christopher Scott. DEC appeared to be in compliance with the Title V permit at that time.
- DAQ has not issued any Notices of Violation to this facility in the previous five years.
- DEC included Form E5 “Title V Compliance Certification” with this application. On that form, DEC indicated “the facility is in compliance with all applicable requirements.”

*Application fee:* Applications for significant modification require an application fee. DEC submitted the appropriate fee with the application.

*PE Seal:* Pursuant to 15A NCAC 02Q .0112 “Application requiring a Professional Engineering Seal,” a professional engineer’s seal (PE Seal) is required to seal technical portions of air permit applications for new sources and modifications of existing sources as defined in 15A NCAC 02Q .0103 that involve the criteria in 02Q .0112(a)(1)-(3):

- (1) design;
- (2) determination of applicability and appropriateness; or
- (3) determination and interpretation of performance of air pollution capture and control systems.

This application does not propose any new control devices or changes to existing control devices. The maximum emission rate for pollutants controlled by existing control devices is not changing. Therefore, none of the criteria are met.

*Zoning Consistency Determination:* Pursuant to 15A NCAC 02Q .0507(d), a zoning consistency determination is required for a new facility or expansion of an existing facility. DEC is not proposing a new facility or expansion of the existing facility, so no zoning consistency determination is required for this application.

*General Conditions:* The General Conditions (Section 4 of the existing permit) has been updated to DAQ’s latest version (Version 8.0). The General Conditions appear in each Title V permit issued by DAQ. Changes to the General Conditions are not targeted at any specific facility or triggered by any action of an applicant.

## **5. Facility Emissions Review**

*Emission changes as a result of the proposed modification:* Although DEC is updating the NO<sub>x</sub> averaging plan for Boiler 5, DEC is not actually proposing any changes to Boiler 5's limit or annual heat input. Therefore, this proposed modification will not affect emissions from this facility.

*Title V:* DEC is a major source for Title V because it has actual or potential emissions of regulated pollutants (e.g., NO<sub>x</sub>) greater than the major source threshold in 40 CFR 70.2. DEC will continue to be a major source for Title V.

*HAP:* DEC is a major source of hazardous air pollutants (HAP) because it has actual emissions of HAP greater than the major source threshold in 40 CFR 63.2. DEC will continue to be a major source of HAP.

*PSD:* DEC is a major stationary source for PSD (see 40 CFR 51.166(b)(1)(i)) because the facility has actual emissions of at least one regulated NSR pollutant greater than the major source threshold in the rule (e.g., NO<sub>x</sub>). DEC will continue to be a major stationary source for PSD.

## **6. Draft Permit Review Summary, Public Notice, and EPA Review**

*Initial draft:* An initial draft of the modified permit and this application review were sent to DAQ Permits staff on January 14, 2025. Comments were received on January 16, 2025. The comments pointed out typos in the draft permit and application review.

*Subsequent draft:* A revised draft of the modified permit and this application review were sent to DAQ SSCB staff, DAQ ARO staff, and DEC staff on January 21, 2025.

- In a phone call (January 24, 2025) with Erin Wallace (representing DEC), DEC stated that there was a possibility of further modifications to the NOx averaging plan.
- In a phone call (January 28, 2025) with Erin Wallace, DEC requested the term “unless another date is approved by DAQ” to several emission testing requirements in the permit. DAQ determined that this change could be made through administrative amendment. This application was put on hold while the permit was administratively amended.
- In the January 28 phone call, DEC stated that no further modification to the NOx averaging plan was necessary at this time, and there were no other comments on this draft permit.
- DAQ issued the administratively amended permit on February 14, 2025.

*Public Notice and EPA Review:* A notice of the draft Title V Permit shall be made pursuant to 15A NCAC 02Q .0521. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Consistent with 15A NCAC 02Q .0518(b), the EPA will have a 45-day review period. Based on an agreement between DAQ and EPA, this period will generally coincide with the 30-day public notice period. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 02Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also, pursuant to 02Q .0522, a notice of the draft Title V Permit shall be provided to each affected State at or before the time notice is provided to the public under 02Q .0521 above. DAQ voluntarily provides notice to each bordering State (Virginia, Tennessee, Georgia, and South Carolina).



## **7. Recommendations**

This permit application has been reviewed by NC DAQ to determine compliance with all procedures and requirements. NC DAQ has determined that this facility appears to be complying with all applicable requirements.

DAQ recommends issuance of Permit No. 04044T48. ARO, SSCB, and DEC staff have received a copy of this permit and submitted comments that were incorporated as described in Section 6.