

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

**Region:** Mooresville Regional Office  
**County:** Catawba  
**NC Facility ID:** 1800073  
**Inspector's Name:** Joe Foutz  
**Date of Last Inspection:** 01/10/2023  
**Compliance Code:** B / Violation - emissions

**Issue Date:** TBD

<b>Facility Data</b>	<b>Permit Applicability (this application only)</b>
<p><b>Applicant (Facility's Name):</b> Duke Energy Carolinas, LLC – Marshall Steam Station</p> <p><b>Facility Address:</b> Duke Energy Carolinas, LLC - Marshall Steam Station 8320 East NC Hwy 150 Terrell, NC 28682</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> 02D .1425, 02Q .0400  <b>NSPS:</b> n/a  <b>NESHAP:</b> n/a  <b>PSD:</b> n/a  <b>PSD Avoidance:</b> n/a  <b>NC Toxics:</b> n/a  <b>112(r):</b> n/a  <b>Other:</b> n/a</p>

Contact Data			Application Data
<b>Facility Contact</b>	<b>Authorized Contact</b>	<b>Technical Contact</b>	
Joseph (Scott) La Sala Senior EHS Professional (828) 478-7820 8320 East NC Hwy 150 Terrell, NC 28682	Jeffrey Flanagan General Manager III (828) 478-7600 8320 East NC Highway 150 Terrell, NC 28682	Daniel Markley Lead Environmental Specialist (704) 382-0696 526 South Church Street Charlotte, NC 28202	<p><b>Application Number:</b> 1800073.23A  <b>Date Received:</b> 08/08/2023  <b>Application Type:</b> Modification  <b>Application Schedule:</b> TV-Significant  <b>Existing Permit Data</b>  <b>Existing Permit Number:</b> 03676/T59  <b>Existing Permit Issue Date:</b> 06/29/2022  <b>Existing Permit Expiration Date:</b> 05/31/2027</p>

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

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2021	2812.65	7121.48	125.47	2488.47	318.82	37.49	14.42 [Hexane, n-]
2020	3086.51	5991.98	85.09	2045.99	237.14	23.17	8.99 [Hydrogen chloride (hydrochlori)]
2019	4877.96	8752.83	94.30	2167.26	293.68	26.17	11.80 [Hydrogen chloride (hydrochlori)]
2018	3621.01	8836.06	102.16	2274.58	326.18	27.65	12.81 [Hydrogen chloride (hydrochlori)]
2017	4362.01	9545.81	111.17	2446.55	346.03	29.70	13.69 [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> 03676/T60  <b>Permit Issue Date:</b> TBD  <b>Permit Expiration Date:</b> May 31, 2027 (no change)</p>
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## 1.0 Purpose of Application

Duke Energy Carolinas, LLC – Marshall Steam Station (DEC; the facility) operates a power plant in Catawba County under Title V permit 03676T59 (the existing permit). The existing permit includes DEC’s Title IV permit (a.k.a. the acid rain permit). DEC submitted this application in order to incorporate an updated averaging plan for the acid rain permit.

This application was submitted pursuant to 15A NCAC 02Q .0501(b)(1) (a significant modification).

DAQ will also take this opportunity to correct the Title V permit. North Carolina adopted rule 15A NCAC 02D .1425 “NOx SIP Call Budget” in May of 2022. That rule applies to this facility, but has not yet been included in the Title V permit. DAQ will add a specific condition for this rule to the permit.

## 2.0 Application Chronology

Date	Event
August 8, 2023	Application .23A received.
August 22, 2023	An initial draft of the Title V permit and this application review were sent to DAQ Permits staff for initial review.
August 25, 2023	A revised draft of the Title V permit and this application review were sent to DAQ SSCB staff, DAQ MRO staff, and DEC staff.
XXXXXX	Public Notice / EPA review
XXXXXX	Permit issued.

## 3.0 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, the boilers at this facility are “tangentially-fired” boilers, which have a NOx emission limit of 0.40 pounds per million Btu.

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] (facility ID 8100028)
- GG Allen (facility ID 3600039)
- Marshall (this facility)
- 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 both coal-fired boilers 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 the coal-fired boilers at Marshall 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
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 Attachment 2.

### 3.2 15A NCAC 02D .1425 “NOx SIP Call Budget” [State-enforceable only]

*Applicability:* This rule applies to EGUs and large non-EGUs as defined in 02D .1401. Each coal-fired boiler at this facility is subject to this rule. This rule became effective May 1, 2022.

*Monitoring, Recordkeeping, and Reporting:* This rule does not include a specific emission limit. Instead, DEC must calculate the total NOx emissions from the boilers during the summer ozone period (as defined by 02D .1401(a)) and submit an annual NOx report. DEC must use data gathered in accordance with 40 CFR Part 75 to prepare the report.

*Changes to the existing permit:* The existing permit does not include a specific condition for this rule. A specific condition for this rule will be added to the new permit. Compliance will be determined when the first annual NOx report is received. This condition will be state-enforceable only.

### 3.3 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 where appropriate. Changes to formatting are only for clarity and conformity with NC DAQ’s other Title V permits and are not intended to affect the Permittee’s compliance requirements.</li> <li>Updated submission date of the Permittee’s Acid Rain NOx Compliance Plan and Averaging Plan.</li> </ul>
22	2.1 A.11	<ul style="list-style-type: none"> <li>Added new Specific Condition for 15A NCAC 02D .1425. This rule was promulgated in May 2022. This condition is state-enforceable only.</li> </ul>
64	4	<ul style="list-style-type: none"> <li>Updated General Conditions to version 7.0.</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.

### 4.0 Draft Permit Review Summary

*Initial draft:* An initial draft of the Title V permit and this application review were sent to DAQ Permits staff on August 22, 2023. Comments were received on August 25, 2023. The comments pointed out minor typos in the draft permit and review.

*Subsequent draft:* An updated draft of the Title V permit and this application review were sent to DAQ SSCB staff, DAQ MRO staff, and DEC staff on August 25, 2023. No comments were received on this draft.

### 5.0 Compliance Status and Other Regulatory Concerns

*Compliance status:* DAQ conducted a full compliance inspection of this facility on January 10, 2023. DEC appeared to be in compliance with the Title V permit at that time.

*Compliance history:* In the previous five years, DAQ has issued one Notice of Violation to this facility. On July 21, 2023, DAQ issued an NOV to DEC due to an exceedance of the SO<sub>2</sub> emission limit for Units 1 and 2. As of the issuance of this permit, DAQ did not consider this matter resolved.

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

*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. No PE Seal was required for this application.

*Zoning:* A Zoning Consistency Determination per 15A NCAC 02Q .0507(d) was not required for this application.

*Removal of References to Affirmative Defense:* EPA has promulgated a rule (88 FR 47029, July 21, 2023), with an effective date of August 21, 2023, removing the emergency affirmative defense provisions in operating permits programs, codified in both 40 CFR 70.6(g) and 71.6(g). EPA has concluded that these provisions are inconsistent with the EPA’s current interpretation of the enforcement structure of the CAA, in light of prior court decisions.<sup>1</sup> Moreover, per EPA, the removal of these provisions is also consistent with other recent EPA actions involving affirmative defenses<sup>2</sup> and will harmonize the EPA’s treatment of affirmative defenses across different CAA programs.

As a consequence of this EPA action to remove these provisions from 40 CFR 70.6(g), it will be necessary for states and local agencies that have adopted similar affirmative defense provisions in their Part 70 operating permit programs to revise their Part 70 programs (regulations) to remove these provisions. In addition, individual operating permits that contain Title V affirmative defenses based on 40 CFR 70.6(g) or similar state regulations will need to be revised.

DAQ has not adopted these discretionary affirmative defense provisions in its Title V regulations (15A NCAC 02Q .0500). Instead, DAQ has chosen to include them directly in individual Title V permits as General Condition J.

Per EPA, DAQ is required to promptly remove such impermissible provisions, as stated above, from individual Title V permits, after August 21, 2023, through normal course of permit issuance.

## **6.0 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

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<sup>1</sup> NRDC v. EPA, 749 F.3d 1055 (D.C. Cir. 2014).

<sup>2</sup> In newly issued and revised New Source Performance Standards (NSPS), emission guidelines for existing sources, and NESHAP regulations, the EPA has either omitted new affirmative defense provisions or removed existing affirmative defense provisions. See, e.g., National Emission Standards for Hazardous Air Pollutants for the Portland Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants; Final Rule, 80 FR 44771 July 27, 2015); National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters; Final Rule, 80 FR 72789 (November 20, 2015); Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units; Final Rule, 81 FR 40956 (June 23, 2016).

notice is provided to the public under 02Q .0521 above. DAQ voluntarily provides notice to each bordering State (Virginia, Tennessee, Georgia, and South Carolina).

- The Public Notice and EPA Review periods began on XXXX
- The Public Notice period ended on XXXX
- The EPA Review period ended on XXXX

## **7.0 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. 03676T60. MRO, SSCB, and DEC have received a copy of this permit and submitted comments that were incorporated as described in Section 0.