

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date:

Region: Mooresville Regional Office
County: Gaston
NC Facility ID: 3600039
Inspector's Name: Karyn Kurek
Date of Last Inspection: 03/24/2021
Compliance Code: 3 / Compliance - inspection

<p align="center">Facility Data</p> <p>Applicant (Facility's Name): Duke Energy Carolinas, LLC - Allen SteamStation</p> <p>Facility Address: Duke Energy Carolinas, LLC - Allen SteamStation 253 Plant Allen Road Belmont, NC 28012</p> <p>SIC: 4911 / Electric Services NAICS: 221112 / Fossil Fuel Electric Power Generation</p> <p>Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V</p>	<p align="center">Permit Applicability (this application only)</p> <p>SIP: 15A NCAC 02Q .0501(c)(l) NSPS: NA NESHAP: NA PSD: NA PSD Avoidance: NA NC Toxics: NA 112(r): NA Other: NA</p>
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Contact Data			Application Data
<p align="center">Facility Contact</p> <p>M. Randy Gantt Lead EHS Professional (704) 829-2587 253 Plant Allen Road Belmont, NC 28012</p>	<p align="center">Authorized Contact</p> <p>Jeffrey Flanagan General Manager III (828) 478-7600 8320 East NC Highway 150 Terrell, NC 28682</p>	<p align="center">Technical Contact</p> <p>Daniel Markley Lead Environmental Specialist (704) 382-0696 526 South Church Street - EC13K Charlotte, NC 28202</p>	<p>Application Number: 3600039.21C Date Received: 09/07/2021 Application Type: Modification Application Schedule: TV-Significant Existing Permit Data Existing Permit Number: 03757/T48 Existing Permit Issue Date: 08/24/2021 Existing Permit Expiration Date: 02/28/2023</p>

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2020	103.45	1026.64	7.11	290.88	62.24	4.82	3.12 [Hydrogen chloride (hydrochlori)]
2019	147.87	1347.63	13.40	414.92	71.51	8.81	5.73 [Hydrogen chloride (hydrochlori)]
2018	246.01	1440.96	12.43	380.10	64.89	7.93	5.16 [Hydrogen chloride (hydrochlori)]
2017	354.02	1610.22	14.47	454.95	65.21	9.38	6.07 [Hydrogen chloride (hydrochlori)]
2016	676.03	2168.28	21.59	718.46	88.05	13.59	8.79 [Hydrogen chloride (hydrochlori)]

<p>Review Engineer: Ed Martin</p> <p>Review Engineer's Signature: _____ Date: _____</p>	<p align="center">Comments / Recommendations:</p> <p>Issue 03757/T49 Permit Issue Date: Permit Expiration Date:</p>
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Chronology

- September 26, 2000 The original 02D .0536/02Q .0317 condition was established in Section.1 A.4 of the permit.
- January 26, 2015 Duke Energy submitted an application for the T41 permit (issued March 27, 2017) to add a permit option to use PM continuous emission monitor system (CEMS) on the Allen units for compliance purposes in lieu of opacity COMS monitoring under 02D .0521 (opacity), 02D .0536 (particulate and annual average opacity), and 02D .0606.
- February 26, 2015 In an amendment to the application for the T41 permit, Duke Energy requested an option to use PM CEMS in lieu of COMS and use the Maximum Achievable Control Technology (MACT) in 40 CFR Part 63 Subpart UUUUU as the regulatory framework.
- July 19, 2021 In an email, Mr. Jeffrey Flanagan, the Allen Responsible Official, included an addendum to the ash basin closure application (application 3600039.21B) and draft permit 03757T48 to request that the 02D .0536 rule (including Sections 2.1 A.4, 2.1 A.5 and 2.1 A.6) be removed from the permit since the rule was repealed effective November 1, 2020 and no longer applies. This was after the ash basin closure draft permit had been sent to Duke and no comments related to the 02D .0536 removal were received.
- July 22, 2021 An email was sent to Mr. Flanagan to explain how the ash basin closure draft permit was handled with respect to removal of 02D .0536 as requested in Duke's original application 3600039.21B received April 28, 2021. The email discussed that EPA has brought to DAQ's attention an issue with its TV administrative amendment rule where Part 70 does not have the ability to remove monitoring, recordkeeping, and reporting language administratively. Therefore, the 02D .0536 etc. changes could not be made for the first step of the 02Q .0501(b)(2) ash basin closure permit.
- July 28, 2021 A call was held with Cyndi Winston and Dan Markley at Duke and Mark Cuilla, Booker Pullen and Ed Martin to discuss why 02D .0536 was not removed from the Allen draft ash basin closure permit even though they requested that it be removed in the application. The options for removing 02D .0536 were discussed including submittal of a significant permit modification application.
- September 7, 2021 Application 3600039.21C was received and considered complete on this date.
- September 22, 2021 Sent email to Dan Markley asking whether Duke wants to remove the COMS option to simplify the permit. Mr. Markley agreed to this.

I Facility Description

DEC's Allen Steam Station is an electric utility that generates electrical power. The Allen Steam Station is permitted for five coal/No. 2 fuel oil-fired electric utility boilers (ID Nos. ES-1 (U1 Boiler), ES-2 (U2 Boiler), ES-3 (U3 Boiler), ES-4 (U4 Boiler), and ES-5 (U5 Boiler)), one No. 2 fuel oil-fired auxiliary boiler (ID No. ES-6 (AuxB)), and other supporting ancillary sources.

II Purpose of Application

Since regulation 15A NCAC 02D .0536 was repealed effective November 1, 2020, Duke Energy has requested the removal the following sections of the permit that are no longer applicable:

- 2.1 A.4 15A NCAC 02D .0536: PARTICULATE EMISSIONS FROM ELECTRIC UTILITY BOILERS, AND 15A NCAC 02Q .0317: AVOIDANCE CONDITIONS
for 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION

2.1 A.5 15A NCAC 02D .0536(b): PARTICULATE EMISSIONS FROM ELECTRIC UTILITY BOILERS (ANNUAL AVERAGE OPACITY FOR ELECTRIC UTILITY BOILERS)

2.1 A.6 15A NCAC 02D .0535: EXCESS EMISSIONS REPORTING AND MALFUNCTIONS

2.1 A.9 15A NCAC 02D .0614: COMPLIANCE ASSURANCE MONITORING

Along with removal of the 02D .0536 rules above, since the affected units are subject to the MACT standards in 40 CFR Part 63 Subpart UUUUU under 02D .1111 (i.e. the MATS rule), the provisions of 02D .0535 no longer apply as previously specified in 02D .0536 and as required for all electric utility boiler units as specified in 15A NCAC 02D .0535(d). Therefore, Duke Energy requests that all references to a Malfunction Abatement Plan be removed from the permit.

In addition, currently monitoring for the COMS option in Section 2.1 A.4.f for PM when the PM COMS option is used is based on the CAM condition in Section 2.1 A.9 in order to assure continuous compliance with 15A NCAC 02D .0536. With removal of 02D .0536, CAM can no longer be used for monitoring the COMS option. Furthermore, since a PM CEMS is required by the MATS rule and COMS have not been used for several years, Dan Markley was asked in a July 22, 2021, email whether Duke wanted to take this opportunity to remove the COMS option from the permit, which appears in sections 2.1 A.3 (02D .0521) and 2.1 A.7 (02D .0606) in addition to 2.1 A.4 (02D .0536/02D .0317) to simplify the permit. Dan Markley agreed with removal of the COMS option from the permit.

In addition, with removal of the PM COMS option, PM emissions monitoring in Section 2.1 A.4 is now demonstrated with PM CEMS only, which is a continuous compliance determination method (CCDM) exemption under CAM.

DAQ agrees that 02D .0536, 02D .0535 and 02D .0614 no longer apply and are being removed from the permit. However, the 02Q .0317 PSD avoidance requirements in the combined 02D .0536/02Q .0317 condition in Section 2.1 A.4 must be retained. The PSD avoidance limits in the revised condition are based on compliance with the MATS rule in Section 2.1 A.11. See Section IV for history of the 02D .0317 PSD avoidance condition.

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 emissions and equipment.

III. Permit Changes

The following changes were made to the Duke Energy Carolinas, LLC – Allen Steam Station Air Permit No. 03757T48:

Page No.	Section	Description of Change(s)
Cover	--	Amended permit numbers and dates.
11-12	2.1 A, table of applicable regulations	Removed 02D .0536 (for particulate matter and visible emissions), 02D .0535 and 02D .0614.
		Revised 02D .0521 to remove the COMS option.
		Added Cross State Air Pollution Rule 40 CFR Part 97, Subpart CCCCC for sulfur dioxide and added Subpart AAAAA for nitrogen oxides to correct previous permit.
		Removed “Federal-only requirement” designation for the Consent

		Decree for sulfur dioxide and nitrogen oxides.
		Removed footnote * at bottom of table.
14	2.1 A.3	Revised to remove the COMS option.
14-16	2.1 A.4	Revised to remove 02D .0536. Revised to remove the COMS option.
16	2.1 A.5	Removed and intentionally left blank.
16	2.1 A.6	Removed and intentionally left blank.
16-17	2.1 A.7	Revised to remove the COM option.
18	2.1 A.9	Removed and intentionally left blank.
27	2.1 A.12	Removed “Federal-Enforceable Only” and removed 40 CFR Part 97, Subpart BBBB.
57	2.5	Removed “Federal-only requirement” designation for the Consent Decree.

IV. Regulatory Evaluation

A. Original 02D .0536/02Q .0317 PSD avoidance condition

The original limits in 2.1 A.4.a came from permit R16 in September 26, 2000, as follows:

The Permittee shall not exceed the following emission limitations:

Boiler ID No.	Pollutant	Emissions Limit(s)	Regulation
Unit 1 and Unit 2	Particulate matter	0.25 pounds per million Btu heat input	2D .0536
Unit 3, Unit 4, and Unit 5	Particulate matter	*0.20 pounds per million Btu heat input upon FGC becoming operational	PSD avoidance per 40 CFR 51.166(b)(2)(iii) (h)

* The installation and operation of the SO₃ and ammonia (FGC) systems constitute a Pollution Control Project (PCP) due to the reduction in particulate emissions resulting from their operation. Upon completion and operation of the FGC systems for Units Nos. 3, 4, and 5 respectively, the emissions limit is lowered to a maximum of 0.20 pounds of particulate per million Btu heat input.

B. Incorporation of MATS for PM Compliance

On January 26, 2015, Duke Energy submitted an application for the T41 permit (issued March 27, 2017) to add a permit option to use PM CEMS on the Allen units for compliance purposes in lieu of opacity COMS monitoring under 02D .0521 (opacity), 02D .0536 (particulate and annual average opacity), and 02D .0606. With this permit modification, only the 02Q .0317 portion of the original 02D .0536/02Q .0317 PSD avoidance condition remains in the permit.

On February 26, 2015, in an amendment to the application for the T41 permit, Duke Energy requested an option to use the MACT in 40 CFR Part 63 Subpart UUUUU, “National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units” also known as the Mercury and Toxics Standards (MATS) rule as the regulatory framework for the PM CEMS option in lieu of COMS.

C. Streamlining the 02Q .0317 PSD avoidance condition with MATS

As allowed under 40 CFR 70.6(a)(3)(i)(A):

“If more than one monitoring or testing requirement applies, the permit may specify a streamlined set of monitoring or testing provisions provided the specified monitoring or testing is adequate to assure compliance at least to the same extent as the monitoring or testing applicable requirements that are not included in the permit as a result of such streamlining.”

The monitoring (including recordkeeping) for the MATS requirements in Section 2.1 A.11 of the permit is adequate to ensure compliance at least to the same extent as required for the 02Q .0317 PSD avoidance monitoring requirements in Section 2.1 A.4; therefore, streamlining is specified for compliance. The 0.030 pounds per million Btu heat input PM limit for MATS compliance is much more stringent than the 0.20 pounds per million Btu heat input PSD avoidance PM limit.

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 Mooresville 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 Dan Markley at Duke Energy, to Karyn Kurek at MRO and to Samir Parekh with SSCB on October 7, 2021.

On October 8, 2021, DAQ followed up on the draft sent the day before to ask whether Duke can use Part 75 for data substitution for the PSD avoidance monitoring in Section 2.1 A.4.c.vi (page 15) for PM CEMS data substitution as shown below:

vi. PM CEMS data reported to meet the requirements of this section shall include data substituted using the missing data procedures in Subpart D of 40 CFR Part 75 except that unbiased values may be used. The missing data procedure shall be used whenever the emission unit combusts any fuel.

DEP Comments

On October 13, 2021, Dan Markley stated that currently the DAS cannot do data substitution for the PM CEMS without extensive work. Duke would be managing PM data sets for MATS and other data sets with values using data substitution. Not impossible but something Duke needs to seriously think about before saying yes.

On October 19, 2021, the revised draft permit was sent back to Dan Markley for any further comments. The draft permit was revised to remove data substitution, %EE, %MD, and SSM and simplify the condition

to streamline directly to the MATS rule based on the discussion below regarding SSCB's comments. On October 25, 2021, Duke stated they had no further comments.

SSCB Comments

On October 8, 2021, Samir Parekh commented that for 02Q.0317 (Section 2.1 A.4.c), data substitution, %EE, %MD, SSM emissions is required for using PM CEMS.

As a result of this comment, the draft permit was revised to add data substitution, %EE, %MD, SSM emissions for using PM CEMS in Section 2.1 A.4.c. However, it was not clear why this information was required to be included in a PSD avoidance condition. After reviewing the necessity for including these requirements, a meeting was held on October 15, 2021, with Mark Cuilla, Rahul Thaker and Ed Martin to discuss the issue. Ultimately, it was decided, since PSD/PSD avoidance requirements are at the discretion of Permitting, and since the PSD avoidance condition was revised to streamline directly to the MATS condition, that nothing further was needed for the PSD avoidance condition, especially in view of the much more stringent 0.030 pounds per million Btu PM limit for MATS compared to the 0.20 pounds per million Btu PSD avoidance PM limit.

MRO Comments

No comments were received.

VIII. Recommendations

TBD