

**NORTH CAROLINA DIVISION OF
AIR QUALITY**

Application Review

Issue Date: **TBD**

Region: Mooresville Regional Office
County: Cleveland
NC Facility ID: 2300372
Inspector's Name: Carlotta Adams
Date of Last Inspection: 08/22/2017
Compliance Code: 3 / Compliance - inspection

<p style="text-align: center;">Facility Data</p> <p>Applicant (Facility's Name): Cleveland County Generating Facility</p> <p>Facility Address: Cleveland County Generating Facility 240 Battleground Road Kings Mountain, NC 28086</p> <p>SIC: 4911 / Electric Services NAICS: 221119 / Other Electric Power Generation</p> <p>Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V</p>	<p style="text-align: center;">Permit Applicability (this application only)</p> <p>SIP: 02D: .0516, .0521, .0524, .0530, .1418 02Q: .0400</p> <p>NSPS: KKKK NESHAP: n/a PSD: NOx, CO, PM, VOC PSD Avoidance: n/a NC Toxics: n/a 112(r): n/a Other: State BACT, CSAPR</p>
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Contact Data			Application Data
<p style="text-align: center;">Facility Contact</p> <p>Chris Pierce O&M Manager (704) 471-9502 240 Battleground Road Kings Mountain, NC 28086</p>	<p style="text-align: center;">Authorized Contact</p> <p>Chris Lane Plant Manager (704) 278-6601 5755 NC 801 Highway Salisbury, NC 28147</p>	<p style="text-align: center;">Technical Contact</p> <p>Scott McMillan SPC Environmental Compliance (205) 992-0057 3535 Colonnade Parkway Birmingham, AL 35243</p>	<p>Application Numbers: 2300372.18A&B Date Received: 03/02/2018 Application Type: Renewal Application Schedule: TV-Renewal Existing Permit Data Existing Permit Number: 09881/T05 Existing Permit Issue Date: 08/24/2017 Existing Permit Expiration Date: 12/31/2018</p>

Total Actual emissions in TONS/YEAR:							
CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2016	2.43	129.82	5.80	37.53	36.19	4.36	2.91 [Formaldehyde]
2015	4.00	174.00	7.74	48.16	47.62	5.66	3.69 [Formaldehyde]
2014	2.50	122.10	5.44	34.81	33.79	4.06	2.69 [Formaldehyde]
2013	2.80	46.10	1.95	13.21	12.26	1.51	1.04 [Formaldehyde]
2012	---	12.30	0.8500	2.06	4.26	0.3553	0.1399 [Hydrogen chloride (hydrochlori)]

<p>Review Engineer: Russell Braswell</p> <p>Review Engineer's Signature: _____ Date: _____</p>	<p style="text-align: center;">Comments / Recommendations:</p> <p>Issue 09881/T06 Permit Issue Date: TBD Permit Expiration Date: TBD</p>
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1. Purpose of Application:

- .18A

Southern Power Company currently owns a facility in Cleveland County (Cleveland County Generating Facility [CCGF]) which operates under Title V Air Quality Permit 09881T05. This permit is currently set to expire on December 31, 2018. CCGF submitted this application in order to renew the permit. Because this application was received at least nine months before the expiration date, the current permit will remain in effect, regardless of the expiration date, until this application is processed.

In addition, to renewing the permit, CCGF requested that the permit condition for NSPS Subpart KKKK be corrected.

- .18B

CCGF also operates under a Title IV Acid Rain Permit (ORIS code 57029). CCGF submitted this application in order to renew the Title IV permit.

2. Facility Description:

This facility is an electric generating power plant that primarily consists of four simple-cycle oil/gas-fired turbines. According to the most recent inspection report (Carlotta Adams, August 22, 2017), this facility operates on a "demand-based schedule." Based on the initial Title V permit (T03, January 21, 2014), each turbine has a nominal generating capacity of 190 megawatts.

3. History/Background Since the Previous Permit Renewal:

- January 21, 2014 Permit T03 issued. This was the 1st-Time Title V permit.
- July 19, 2016 Permit T04 issued. This was a TV-Significant Modification that removed two unconstructed turbines from the permit. Some limits on the existing turbines were adjusted based on this removal.
- August 24, 2017 Permit T05 issued. This was a TV-Significant Modification that allowed the use of natural gas during turbine startup/shutdown while also firing oil.

4. Application Chronology:

- March 2, 2018 Applications .18A&B received in Raleigh Central Office.
- April 9, 2018 In-person meeting with CCGF staff (Scott McMillan, Sam Sharpe) to discuss changes and corrections to the NSPS Subpart KKKK permit condition.
- April 11, 2018 CCGF submitted an amendment to the application to address the issues raised in the April 9 meeting.
- April 20, 2018 An initial draft of the permit and review were sent to DAQ staff (Tom Anderson, Mark Cuilla, Samir Parekh, Bob Caudle) and to CCGF staff (Scott McMillan, Sam Sharpe). For a summary of comments received, see Attachment 2.
- XXXXX Public / EPA notice

- XXXXX Permit issued.

5. Permit Modifications/Changes and TVEE Discussion:

- Corrected the emission limits listed in the condition for NSPS Subpart KKKK.
- Removed ES9 and ES12 at the facility's request. These sources were never constructed and CCGF now has no intention of constructing them.

The complete list of changes to the permit can be found in Attachment 1.

6. Regulatory Overview:

CCGF is subject to the following State Implementation Plan (SIP) and Federal regulations, in addition to the requirements in the General Conditions:

- 15A NCAC 02D .0516 "Sulfur Dioxide from Combustion Sources"
- 15A NCAC 02D .0521 "Control of Visible Emissions"
- 15A NCAC 02D .0524 "New Source Performance Standards" (40 CFR Part 60, Subpart KKKK)
- 15A NCAC 02D .0530 "Prevention of Significant Deterioration"
- 15A NCAC 02D .1408 "Stationary Combustion Turbines"
- 15A NCAC 02Q .0400 "Acid Rain Procedures"
- Cross State Air Pollution Rule (aka CSAPR) (40 CFR Part 97, Subparts AAAAA, BBBB, and CCCCC)

An extensive review for the following applicable regulations is not included in this document: 02D .0516 and .0521. The facility's status with respect to these regulations has not changed and discussion regarding these rules is not required. The permit will be updated to reflect the most current stipulations for all applicable regulations.

For an explanation of rules included (or not included) in the permit, see Section 7, below.

7. Rules Review

a. New Source Performance Standards (NSPS; 40 CFR Part 60)

1. Subpart Dc "Small Industrial-Commercial-Institutional Steam Generating Units"

This rule applies to boilers with a heat input capacity less than 100 MMBtu/hr and that were constructed or modified after June 9, 1989. However, the rule specifically exempts "affected facilities that are associated with stationary combustion turbines and meet the applicability requirements of subpart KKKK."

The only potentially applicable source at this facility is the gas preheater ES12. Because this source is associated with the NSPS-affected turbines, it will not be subject to NSPS Dc.

2. Subpart KKKK "Stationary Combustion Turbines"

This rule applies to stationary turbines constructed after February 18, 2005. Each of the turbines at this facility are subject to this rule. Note that turbines subject to this rule are exempt from NSPS Subpart GG.

This rule establishes limits for NO_x and SO₂ based on the size and operating parameters of the turbine.

This rule includes a limit category for "turbines operating at less than 75 percent of peak load", but this category was not included in the permit condition. This has been corrected:

Section 2.1 A.2

- c. The Permittee shall not cause to be discharged into the atmosphere from any combustion turbine (**ID Nos. ES1 through ES4**) any gases which contain nitrogen dioxide (NO_x) emissions in excess of the following limits, except during periods of startup, shutdown, or malfunction:
- i. 15 ppm at 15 percent O₂ (4-hour rolling average) when firing natural gas and operating at or above 75% of peak load;
 - ii. 42 ppm at 15 percent O₂ (4-hour rolling average) when firing fuel oil and operating at or above 75% of peak load;
 - iii. 96 ppm at 15 percent O₂ (4-hour rolling average) when operating below 75% of peak load; and
 - iv. 96 ppm at 15 percent O₂ (4-hour rolling average) when operating at temperatures less than 0 °F.
 - v. For operating periods during which multiple emissions standards apply, the applicable standard is the average of the applicable standards during each hour. For hours with multiple emissions standards, the applicable limit for that hour is determined based on the condition that corresponded to the highest emissions standard.

In order to comply with these limits, the facility must operate a NO_x CEMS, use water injection as necessary, and monitor the sulfur content of the fuel based on sampling and/or purchase records. The facility must keep records and submit reports regularly. Because the facility operates a NO_x CEMS, the rule does not require subsequent emission testing after the initial test was completed.

Based on the most recent inspection report, CCGF appears to be in compliance with this rule. Continued compliance will be determined with subsequent reports and inspections.

b. Maximum/Generally Available Control Technology (MACT/GACT; 40 CFR Part 63)

This facility is considered an Area Source for hazardous air pollutants (HAP). Rules that apply specifically to Major Sources (e.g. Subpart YYYY) do not apply to this facility.

1. *Subpart JJJJJ "Industrial, Commercial, and Institutional Boilers Area Sources"*

This rule applies to boilers that burn non-gas fuels and are located at HAP-Area sources. Gas-fired boilers are not subject to this rule. The gas preheater at this facility only fires natural gas, so it is exempt from this rule.

c. Prevention of Significant Deterioration (PSD)

This facility underwent a PSD review with the initial permit. The PSD review established Best Available Control Technology (BACT) limits for NO_x, CO, PM, and VOC. Because CCGF accepted the tax credit offered by NCGS 62-133.6, 15A NCAC 02D .0530(h) required a PSD review and BACT limit for SO₂. The SO₂ limit is considered state-enforceable only.

In order to comply with the BACT limits, the facility must:

- Use water injection in the turbines while firing fuel oil;
- Use low-NO_x combustors while firing natural gas;
- Limit the sulfur content of all fuels to less than 15ppm;
- Keep records of fuel burned on a daily basis;
- Perform an emission test no later than January 31, 2019;
- Comply with annual heat input limits;
- Comply with daily heat input limits; and
- Submit semiannual reports.

Based on the most recent inspection report, CCGF appears to be in compliance with all these requirements.

The permit condition in the existing permit has two mistakes: it specifies limits based on a rolling 24-hour block instead of the regular midnight-to-midnight block, and requires quarterly reports instead of semiannual reports.

In the application amendment received April 11, 2018, CCGF explained that the PSD limits were based on modeling that was conducted on a midnight-to-midnight basis, not a rolling 24-hour block. Therefore, the permit should be corrected. Additionally, the permit specifies "quarterly" reporting, but only requires the report to be submitted twice per year. Both of these issues have been corrected.

d. Section 112(r) of the Federal Clean Air Act

The facility does not appear to store any 112(r)-subject materials above their respective thresholds. Therefore, the facility does not have any increased requirements under Section 112(r) of the Clean Air Act.

e. Reasonably Available Control Technology (RACT)

This facility was previously located in an area of ozone nonattainment, and therefore was subject to RACT rules. The only such rule that applied was 15A NCAC 02D .1418. As implemented in the permit, this rule only requires that the facility operate a NO_x CEMS and comply with the emission BACT emission limits.

In 2015, all areas of North Carolina were designated as attainment/unclassified for ozone. Therefore, this facility is technically not located in an area of ozone nonattainment. However, as part of North Carolina's SIP and maintenance plan, all previously established RACT rules and limits will remain in effect. Therefore, this facility must continue to comply with this rule.

Based on the most recent inspection report, CCGF appears to be in compliance with this rule. Continued compliance will be determined with subsequent reports and inspections.

f. Compliance Assurance Monitoring (CAM)

CAM applies to control devices that are used to comply with specific emission standards. This facility does not use any control devices, so CAM does not apply.

g. Cross State Air Pollution Rule (CSAPR; 40 CFR Part 97, Subparts AAAAA, BBBBB, and CCCCC)

This rule applies to power plants that produce electricity for sale.

CSAPR was originally scheduled to take effect on January 1, 2012. This rule was planned as a replacement for CAIR. However, CSAPR was challenged in court and initially vacated by the DC Circuit Court. Legal issues were finally resolved in April 2014, when the US Supreme Court reversed that decision. Because the regulation was delayed by court proceedings, the effective date of the rule was moved to January 1, 2015.

Under this rule, each of the turbines at the facility is considered a "large electric generating unit", per 40 CFR 52.34. This rule and all requirements thereof are considered Federal-enforceable only. Compliance will be determined by the US EPA, not NC DAQ.

h. Acid Rain Permit (15A NCAC 02Q .0400)

This rule applies to facilities that are required to obtain a Title IV Acid Rain Permit. This permit sets limits for NO_x and SO₂ emissions for electric generating units. However, gas-fired turbines have no NO_x limits under the rule, and new units are not explicitly issued SO₂ allowances by US EPA.

The Title V permit will include a reference to the Title IV permit. However, compliance with this rule is determined wholly by US EPA, not NC DAQ.

8. Toxic Air Pollutants

This facility has not been reviewed for TAP emission rates. This renewal does not trigger a new TAP emission review.

9. Facility Emissions Review

This permit renewal is not expected to change potential emissions from the facility.

For a historical review of actual emissions from the facility, see the summary table on the first page of this review.

10. Compliance Status

a. Notices of Violation/Recommendation for Enforcement since the previous renewal

None.

b. Inspection status

The facility was most recently inspected by Carlotta Adams on August 22, 2017. CCGF appeared to be in compliance with the Title V permit at the time of that inspection.

11. Other Regulatory Concerns

A PE seal was not required for this permit renewal.

A zoning consistency form was not required for this permit renewal.

12. Public Notice/EPA and Affected State(s) 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 .0525, the EPA will have a concurrent 45-day review 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 pursuant 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. South Carolina is an affected state program within 50 miles of the facility.

Public notice / EPA review began on XXXXX and ended on XXXXX.

13. Recommendations

Issue permit 09881T06.

ATTACHMENT 1 Review of applications 3100116.18A&B

Change List

Insert change list from final permit

DRAFT

ATTACHMENT 2 Review of applications 3100116.18A&B

Comments Received on Initial Draft

- Mark Cuilla, by email on April 23, 2018

1. Mark pointed out typos in the permit and review.

Response: Fixed.

2. Mark asked if the facility's claims regarding the original modeling on a block 24-hour-basis had been verified.

Response: Yes. After reviewing the original modeling, I verified that the information submitted had used 24-hour blocks for calculations.

- Sam Sharpe, by email on May 1, 2018

1. Sam requested that the phrase "(28 full load equivalent hours)" not be removed from paragraphs 2.2 A.1.f. and g.

Response: Fixed.