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NORTH CAROLINA DIVISION OF AIR QUALITY
Application Review

Issue Date: TBD

Region: Mooresville Regional Office
County: Cleveland
NC Facility ID: 2300372
Inspector's Name: Joe Foutz
Date of Last Inspection: 08/15/2022
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): Cleveland County Generating Facility

Facility Address:
Cleveland County Generating Facility
240 Battleground Road
Kings Mountain, NC 28086

SIC: 4911 / Electric Services
NAICS: 221119 / Other 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: 02D: .0516, .0521, .0524, .0530, .1418, .1425
02Q: .0400
NSPS: Part 60, Subpart KKKK
NESHAP: Part 63, Subpart CCCCCC
PSD: Major Source
PSD Avoidance: n/a
NC Toxics: n/a
112(r): n/a
Other: CSAPR

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Chris Pierce O&M Manager (704) 471-9502 240 Battleground Road Kings Mountain, NC 28086	Jesse English Plant Manager (704) 278-6601 5755 NC 801 Highway Salisbury, NC 28147	Scott McMillan Project Manager (205) 992-0057 3535 Colonnade Parkway Birmingham, AL 35243

Application Data

Application Numbers: 2300372.22B&C
Date Received: 11/14/2022
Application Type: Renewal (TV and TIV)
Application Schedule: TV-Renewal

Existing Permit Data
Existing Permit Number: 09881/T10
Existing Permit Issue Date: 06/16/2022
Existing Permit Expiration Date: 06/30/2023

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2021	2.80	141.11	6.46	42.31	30.77	4.84	3.29 [Formaldehyde]
2020	1.80	90.50	4.18	27.19	25.23	3.10	2.13 [Formaldehyde]
2019	3.10	151.93	6.74	45.62	42.23	5.19	3.57 [Formaldehyde]
2018	2.45	135.11	7.10	38.60	40.50	4.59	2.76 [Formaldehyde]
2017	2.69	137.66	6.20	40.80	39.78	4.68	3.14 [Formaldehyde]

Review Engineer: Russell Braswell

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

Comments / Recommendations:
Issue 09881/T11
Permit Issue Date: TBD
Permit Expiration Date: TBD+5 years

1.0 Purpose of Application

1.1 Application .22B

Cleveland County Generating Facility (CCGF; the facility) currently operates a power plant in Cleveland County under Title V permit 09881T10 (the existing permit). The existing permit is set to expire on June 30, 2023. CCGF submitted this permit application in order to renew the Title V permit. The application also includes suggestions for minor corrections to the permit, but does not propose any substantial changes.

Because this application for permit renewal was received at least six months before the expiration date, the existing permit will remain in effect, regardless of expiration date, until the renewed permit is issued.

1.2 Application .22C

The existing permit also includes an acid rain permit (a.k.a. a Title IV permit). The Title IV permit must also be renewed. CCGF submitted this application in order to renew the Title IV permit. CCGF did not propose any changes to the Title IV permit as part of this renewal.

2.0 Facility Description

This facility is a power plant that consists of four simple-cycle combustion turbines. The turbines can burn natural gas and No. 2 fuel oil; based on the most recent emission inventory, the turbines burn primarily natural gas. Based on the initial Title V permit (revision T03, issued January 21, 2014), each turbine has a nominal generating capacity of 190 megawatts. According to DAQ's most recent inspection of the facility (August 15, 2022), "this facility is an electric generating power plant that operates on a 'demand-based schedule.' The facility typically provides power to the grid during periods of extreme cold or heat."

In addition to the turbines, CCGF operates several activities that support the turbines such as storage tanks and a natural gas heater.

3.0 Title V Permit History Following the Previous Renewal

Date	Permit Revision	Application Type	Notes
July 9, 2018	T06	Renewal	This action renewed the Title V and Title IV permits. This action also included minor corrections to the permit.
October 14, 2019	T07	TV-significant	This action removed a sulfur content limit for natural gas delivered to the facility because the facility had no control over the natural gas content (there is only one natural gas supplier for this facility). In addition, this action removed references to 15A NCAC 02D .0530(h) from the permit because that rule no longer applies to the facility. This change was not considered a major modification for PSD because no physical change or change in the method of operation occurred as part of this modification.

Date	Permit Revision	Application Type	Notes
October 22, 2019	T08	TV-significant (part 1)	This action allowed for minor upgrades to Turbines 2 and 3. CCGF demonstrated that these upgrades would not be a major modification for PSD. A permit condition for 02D .0530(u) was added to the permit. In addition, a permit condition 02Q .0504 was added in order to complete the two-part significant modification.
September 28, 2020	T09	TV-significant (part 1)	This action allowed for the same minor upgrades to Turbines 1 and 4. As with T08, CCGF demonstrated that these upgrades would not be a major modification for PSD. A permit condition for 02D .0530(u) was added to the permit. In addition, a permit condition 02Q .0504 was added in order to complete the two-part significant modification.
June 16, 2022	T10	TV-significant (part 2)	This action completed the two-step significant modifications initiated with the T08 and T09 revisions. Specific conditions for 02Q .0504 were removed from the permit. In addition, this revision classified the use of water injection as a "control device" (this change was for clarity, and did not reflect a physical change at the facility), and identified issues regarding the NOx CEMS, PSD, and 02D .1418 that needed to be resolved during the next permit renewal.

4.0 Application Chronology

Date	Event
November 14, 2022	Applications .22B and .22C received.
December 29, 2022	Request for additional information sent via email to CCGF regarding: 1. Proposed changes to BACT table footnote #4. 2. Proposed changes to permit condition for 02D .1418. 3. Proposed new permit condition for 02D .1425. 4. Dates that projects were completed with regards to 02D .0530(u).
January 24, 2023	CCGF responded to the December 29 email. In this response, CCGF requested additional clarification regarding the proposed permit condition for 02D .1418.
January 30, 2023	An initial draft of the Title V permit and this application review were sent to DAQ Permits staff.
April 11, 2023	A revised draft of the Title V permit and this application review were sent to DAQ SSCB staff, DAQ MRO staff, and CCGF staff.
April 12, 2023	Request for additional information sent via email to CCGF regarding a 300 gallon gasoline storage tank reported by DAQ MRO staff.
April 17, 2023	Response received to the April 13 email.
XXXXX	Public notice / EPA review
XXXXX	Permit issued.

5.0 Changes to the Existing Permit

Page No.	Section	Description of Changes
Throughout	Throughout	• Updated dates and permit numbers. • Updated permit format to DAQ latest standard. Formatting changes are not expected to impact the Permittee's compliance requirements.
7	2.1 A.2.b	• Corrected SO_2 limit. Was previously "0.06", should be "0.060".
7	2.1 A.2.d	• Removed reference to General Condition JJ for emission testing, because emission testing for NSPS is handled by the NSPS itself. The testing requirements for NSPS Subpart KKKK are found in 40 CFR 60.4400 through 40 CFR 60.4415.
9	2.1 A.3	• Corrected the CEMS monitoring for this condition to reference the CEMS requirements in 15A NCAC 02D .1404, as required by 15A NCAC 02D .1418(d).
9	2.1 A.4	• Added specific condition for 15A NCAC 02D .1425.
12	2.2 A.1.a	• Corrected footnote #4 to clarify that CEMS are allowed to demonstrate compliance with the NOx BACT limit for the turbines.
14	2.2 B.1	• Noted date of resumption of operations and recordkeeping requirements.
14	2.2 B.2	• Noted date of resumption of operations and recordkeeping requirements.
16	2.2 C.1	• Noted date of resumption of operations and recordkeeping requirements.
16	2.2 C.2	• Noted date of resumption of operations and recordkeeping requirements.
19	2.3	• Added IS-4 to list of insignificant activities.

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

6.0 Regulatory Review

CCGF is subject to the following State Implementation Plan (SIP) rules, in addition to 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" (including 02D .0530(u) "Use of Projected Actual Emissions")
- 15A NCAC 02D .1418 "New Electric Generating Units, Boilers, Combustion Turbines, and I/C Engines"
- 15A NCAC 02D .1425 "NOx SIP Call Budget"
- 15A NCAC 02Q .0400 "Acid Rain Procedures"

In addition to the above SIP rules, CCGF is subject to the Cross State Air Pollution Rule (CSAPR; 40 CFR Part 97) which is not directly referenced by North Carolina's SIP.

Below is a discussion of CCGF's requirements for all applicable rules.

6.1 15A NCAC 02D .0516 "Sulfur Dioxide from Combustion Sources"

Applicability: This rule applies to combustion sources of sulfur dioxide (SO_2) emissions that are not subject to another SO_2 emission standard NSPS or MACT. The turbines are subject to an SO_2 emission standard under

NSPS Subpart KKKK, and therefore this rule does not apply. The natural gas heater (ID No. ES12) is therefore the only source at this facility subject to this rule.

Emission limits: In all cases, the limit for this rule is 2.3 pounds of SO_2 emitted per million Btu heat input.

In general, SO_2 emitted by combustion sources is a function of the sulfur in the fuel. The only fuel available to the natural gas heater is natural gas. In order to calculate SO_2 emissions from the combustion of natural gas, the emission factors published by EPA in AP-42 can be applied. The published emission factors are not in units of pounds per million Btu, so the emission factor must be converted:

SO_2 from natural gas (AP-42 Chapter 1.4, Table 1.4-2 SO_2):

$$\frac{0.6 \text{ lb}}{\text{million scf}} \times \frac{1 \text{ scf}}{1{,}020 \text{ Btu}} = \frac{0.001 \text{ lb}}{\text{million Btu}}$$

Therefore, natural gas is expected to comply with the SO_2 limit by a wide margin.

Monitoring, Recordkeeping, and Reporting: Due to the wide margin of compliance as discussed above, the existing permit does not require any monitoring, recordkeeping, or reporting for SO_2 emitted from natural gas firing. DAQ has reviewed this analysis for the existing permit and agrees with this analysis.

6.2 15A NCAC 02D .0521 "Control of Visible Emissions"

Applicability: This rule applies to sources of visible emissions (VE) that are not subject to another VE standard under 02D .0500. Generally, this rule is not applied to sources that are not expected to produce any VE (*e.g.*, from a storage tank). The turbines and natural gas heater are subject to this rule.

Emission limits: The VE limit for this rule depends on the construction date of the individual source in question. At this facility, the VE limit is 20% for each source subject to this rule. The rule allows for one exceedance of the 20% limit per hour, and four exceedances per 24-hour period.

Monitoring, Recordkeeping, and Reporting: DAQ generally does not require monitoring, recordkeeping, or reporting for VE from well-operated combustion turbines and other natural gas-fired sources due to the low possibility of VE from those activities. The operating and monitoring activities required by NSPS Subpart KKKK and PSD (discussed below) are expected to show proper operation of these sources, and therefore the existing permit does not require any specific monitoring, recordkeeping, or reporting for VE from these sources. DAQ has reviewed this analysis for the existing permit and agrees with this analysis.

6.3 15A NCAC 02D .0524 "New Source Performance Standards"

Applicability: This rule incorporates the NSPS rules under 40 CFR Part 60 into North Carolina's SIP. Because at least one NSPS rule applies to this facility, a specific condition for 02D .0524 is included in the permit. See Section 7.1 for a discussion of CCGF's requirements for NSPS.

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

6.4 15A NCAC 02D .0530 "Prevention of Significant Deterioration"

Applicability: This rule applies to facilities that make a major modification or construct a new major source as defined in 40 CFR 51.166. CCGF is a major source for PSD because it has potential emissions of a regulated

pollutant greater than 250 tpy. CCGF was constructed as a new major source; revision R00 of the permit (issued September 10, 2009) discusses the applicability and requirements of PSD for this facility. See Section 7.3 for a discussion of CCGF's requirements for PSD.

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

6.5 15A NCAC 02D .0530(u) "Use of Projected Actual Emissions"

Applicability: When a facility makes a modification to a PSD-major source, the facility may opt to show the modification is not a PSD-major modification by comparing the pre-modification baseline emissions of that source to the projected actual emissions (PAE) of the source after the modification. If a facility chooses to use the PAE method to avoid a major modification, the facility must keep records of actual emissions post-modification to show that the PAE were reasonable compared to the actual emissions.

Since the previous Title V permit renewal, CCGF has made minor upgrades to all four of the combustion turbines. For each upgrade, CCGF used the PAE method to show that these upgrades did not constitute a major modification. See the T08 and T09 permit revisions (issued October 22, 2019 and September 28, 2020) for additional discussion regarding the PAE method and the turbine upgrades.

Monitoring, Recordkeeping, and Reporting: For each of the turbines, CCGF must calculate the actual annual emissions from that turbine and compare them to the PAE used to justify that a major modification did not take place. The PAE for each turbine, the initial permit application, and initial permit revision is included in the permit. CCGF must submit an annual report of the PAE calculation. For each turbine, this recordkeeping and reporting requirement lasts for five calendar years following the completion of the upgrade.

Updates to the existing permit: CCGF has completed the upgrade projects mentioned above on each of the four turbines. According to CCGF, the upgrade projects were completed on:[1]

- ES1 – May 25, 2021
- ES2 – May 13, 2020
- ES3 – May 20, 2020
- ES4 – November 25, 2020

These dates will be noted in the permit, along with the corresponding recordkeeping years.

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

6.6 15A NCAC 02D .1418 "New Electric Generating Units, Boilers, Combustion Turbines, and I/C Engines"

Applicability: This rule applies to electric generating units (EGUs) permitted after October 31, 2000. Each turbine at this facility is subject to this rule.

[1] Email from Scott McMillan (Project Manager, Southern Power Company) to Russell Braswell (Engineer, NC DAQ) on January 24, 2023.

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Emission limits: For combustion turbines, the rule's NOx limits are equal to limits set by PSD BACT during the summer ozone period (see 02D .1418(a)(2)).

Monitoring and Recordkeeping: This rule requires facility to demonstrate compliance with the NOx limit using a CEMS that meets the requirements of 02D .1404(d). In addition, 02D .1404(e) requires that data collected by the CEMS follow the data substitution requirements under 40 CFR Part 75, Subpart D as applicable.

Reporting: CCGF must submit a semiannual summary report that includes the CEMS output and CEMS performance report.

Updates to the existing permit: Per 02D .1418(d), any CEMS used to comply with this rule must meet the requirements of 02D .1404(d). In the existing permit, the CEMS requirement for this rule is linked to the CEMS requirement under NSPS Subpart KKKK. Although these are similar requirements, data gathered using a CEMS under NSPS Subpart KKKK does not include any data substitution. Per 02D .1404(e), a CEMS used to comply with 02D .1418 must employ data substitution. Therefore, the CEMS requirements under NSPS Subpart KKKK are not sufficient to demonstrate compliance with 02D .1418, and the specific condition for 02D .1418 in the existing permit is deficient. To correct this issue, the new permit will specify that a CEMS used to comply with 02D .1418 must comply with the applicable requirements of 02D .1404. The following changes will be made to the existing permit (struck out text will be removed, underlined text will be added):

2.1 A.3 15A NCAC 02D .1418: NEW ELECTRIC GENERATING UNITS

…

Monitoring [15A NCAC 02Q .0508(f)]

~~b. The Permittee shall install, certify, maintain, and operate a continuous emissions monitoring system (CEMS) consisting of a NOx monitor and a diluent gas (CO2 or O2) monitor to determine the hourly NOx emission rate in parts per million (ppm) or in pounds per million Btu, and a fuel flow meter to continuously measure the heat input for each combustion turbine burning natural gas and/or fuel oil during the ozone season. The monitoring requirements in Section 2.1 A.2.h.i through vi shall apply for each required CEMS.~~

c. The Permittee shall show compliance using a continuous emission monitor (CEMS) that meets the requirements of 15A NCAC 02D .1404(d). For each combustion turbine, the CEMS shall be operated each day during the ozone season that turbine operates. [15A NCAC 02D .1418(d)]

d. The Permittee shall install, operate, and maintain the CEMS according to 40 CFR Part 75, Subpart H. [15A NCAC 02D .1404(d)(1)]

e. If data from CEMS required to meet the requirements of 40 CFR Part 75 are not available at a time the associated turbine is operated, the procedures in 40 CFR Part 75, Subpart D shall be used to supply the missing data. [15A NCAC 02D .1404(e)]

Reporting [15A NCAC 02Q .0508(f)]

~~c. The Permittee shall submit summary reports to the Regional Supervisor postmarked on before January 30 of each calendar year for the preceding six-month period between July and December and by July 30 of each calendar year for the preceding six-month period between January and June. The reports shall include any excess emission and any period of monitor downtime for all periods of operation during the ozone season, including start-up, shutdown, and malfunction.~~

f. The Permittee shall submit summary reports to the Regional Supervisor postmarked on before January 30 of each calendar year for the preceding six-month period between July and December and by July 30 of each calendar year for the preceding six-month period between January and June. The report shall contain an excess emissions and monitoring systems performance report for each of the CEMS required in Sections 2.1 A.3.c, above. The reports shall contain the information required in 40 CFR 60.7(c) and (d). The emissions and monitoring system performance results shall be calculated on a quarterly basis. The format for the report will be provided by the DAQ.

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

6.7 15A NCAC 02D .1425 "NOx SIP Call Budget"

Applicability: This rule applies to EGUs and large non-EGUs as defined in 02D .1401. Each turbine 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, CCGF must calculate the total NOx emissions from the four turbines during the summer ozone period and submit an annual NOx report. CCGF must use data gathered by the CEMS required by 02D .1418 to prepare the report.

Compliance: The existing permit does not include a specific condition for this rule. A specific condition for this rule will be added to the renewed Title V permit. Compliance will be determined when the first annual NOx report is received.

Updates to the existing permit: A specific condition for this rule will be added to the permit.

6.8 15A NCAC 02Q .0400 "Acid Rain Procedures"

Applicability: This rule requires electric generating facilities to comply with 40 CFR Part 72 and obtain an acid rain permit (a.k.a. a Title IV permit).

The acid rain permit regulates NOx and SO_2 emissions and requires annual reporting of those emissions. Generally, compliance with these limits is determined by US EPA, not DAQ. The Title V permit includes a reference to the acid rain permit.

7.0 NSPS, NESHAPS/MACT, PSD, 112(r), CAM, CSAPR

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

There is only one NSPS rule applicable to this facility: NSPS Subpart KKKK. There are other NSPS rules that could potentially apply to the activities at CCGF, but ultimately do not.

7.1.1 NSPS Subpart Dc "Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units" [not applicable]

Applicability: This rule applies to steam-generating units (*i.e.,* boilers) with a heat input capacity between 10 and 100 million Btu per hour and that were constructed or modified after June 9, 1989. The only combustion units at this facility are simple-cycle turbines, which are not steam-generating units, and the natural gas heater, which has a heat input capacity less than 10 million Btu per hour. Therefore, this rule does not apply to this facility.

7.1.2 NSPS Subpart GG "Standards of Performance for Stationary Gas Turbines" [not applicable]

Applicability: This rule applies to turbines constructed after October 3, 1977. Each of the turbines at this facility were constructed after that date. However, NSPS Subpart KKKK explicitly states that turbines subject to Subpart KKKK are exempt from Subpart GG (see 40 CFR 60.4305(b)). Each turbine at this facility is subject to Subpart KKKK, and therefore Subpart GG does not apply to this facility.

7.1.3 NSPS Subpart KKKK "Standards of Performance for Stationary Combustion Turbines"

Applicability: This rule applies to combustion turbines built after February 18, 2005 and that have a heat input greater than 10 million Btu per hour. Each of the four turbines at this facility are subject to this rule. For the purposes of this rule, each turbine at this facility is:

- New,
- natural gas and oil-fired,
- controlled with water injection (only during fuel oil firing), and
- capacity greater than 850 million Btu per hour

Emission Standards: This rule includes emission limits for NOx and SO_2. In general, the limits are:

- NOx: based on turbine loading and fuel, see Table 1 to Subpart KKKK [§60.4320(a)]
- SO_2: 0.060 pounds per million Btu heat input [§60.4330(a)(2)]

Monitoring: This rule includes several different methods of demonstrating compliance with the NOx limits. CCGF has chosen to use a NOx CEMS meeting the requirements of §60.4345(a) and a fuel flow meter (see §60.4335(b) and §60.4340(b)). In order to comply with the SO_2 emission limit, CCGF monitors the sulfur content of the fuel per §60.4345(a).

Recordkeeping: CCGF must keep records of sulfur content and CEMS monitoring, downtime, excess emissions, and maintenance.

Reporting: CCGF must submit a summary report twice per year.

Updates to the existing permit:

- The existing permit lists the SO_2 limit as "0.06" pounds per million Btu. The limit should instead be "0.060" pounds per million Btu (note the extra significant figure).

- The existing permit requires emission testing according to General Condition JJ, which in turn references 15A NCAC 02D .2600. This is incorrect because 15A NCAC 02D .2601(c) exempts tests performed under NSPS, NESHAP, and MACT; facilities are required to perform testing as required by the NSPS instead. The permit will be corrected to require testing according to 40 CFR 60.4400 through 40 CFR 60.4415 instead of General Condition JJ.

7.1.4 NSPS Subpart TTTT "Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units" [not applicable]

Applicability: This rule applies to combustion turbines that commenced construction after January 8, 2014. All of the turbines at this facility were constructed before that date. Therefore, this rule does not apply to this facility.

7.2 National Emission Standards for Hazardous Air Pollutants (NESHAP; 40 CFR Part 61) and Maximum Achievable Control Technology (MACT; 40 CFR Part 63)

NESHAP: There are no NESHAP rules that apply to CCGF. Therefore, the permit does not include a specific condition for 15A NCAC 02D .1110.

MACT: The MACT rules apply to facilities based on if a facility a major source or area source of hazardous air pollutants (as defined in 40 CFR 63.2). For the purposes of MACT applicability, this facility is an area source of HAP. Rules that apply exclusively to major sources (*e.g.*, Subpart YYYYY) therefore do not apply to this facility. The only MACT rule that applies to this facility is Subpart CCCCCC; this rule only applies to an insignificant activity, and is therefore not referenced in the body of the Title V permit. Therefore, the permit does not include a specific condition for 15A NCAC 02D .1111. As discussed below, MACT Subpart JJJJJJ could potentially apply to this facility, but ultimately does not.

7.2.1 MACT Subpart JJJJJJ "National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources" [not applicable]

Applicability: This rule applies to certain types of boilers. The rule defines a boiler as "an enclosed device using controlled flame combustion in which water is heated to recover thermal energy in the form of steam and/or hot water." The natural gas heater (ID No. ES12) does not heat water, and therefore is not a boiler and cannot be subject to this rule.

7.2.2 MACT Subpart CCCCCC "National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities"

Applicability: This rule applies to facilities that are area sources of HAP that operate a gasoline dispensing facility (GDF) (see 40 CFR 63.11110). The rule defines a GDF as:

> "*Gasoline dispensing facility (GDF)* means any stationary facility which dispenses gasoline into the fuel tank of a motor vehicle, motor vehicle engine, nonroad vehicle, or nonroad engine, including a nonroad vehicle or nonroad engine used solely for competition. These facilities include, but are not limited to, facilities that dispense gasoline into on- and off-road, street, or highway motor vehicles, lawn equipment, boats, test engines, landscaping equipment, generators, pumps, and other gasoline-fueled engines and equipment."

The gasoline storage tank IS-4 is used to dispense gasoline into motor vehicles, and therefore subject to this rule.

Requirements: For GDFs with a throughput less than 10,000 gallons per month, the facility is required to maintain records of malfunctions and maintenance (see 40 CFR 63.11125(d)) and not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time (see 40 CFR 63.11116(a)).

Reporting: No reporting is required (see 40 CFR 63.11116(b)).

Compliance: Compliance with this rule will be determined during the next inspection.

Changes to the existing permit: This rule only applies to an insignificant activity. Therefore, the Title V permit will not include a specific condition for this rule. The list of insignificant activities in Section 3 of the Title V permit will be updated to note that the storage tank is subject to this rule.

7.3 Prevention of Significant Deterioration (PSD)

Background: As of the issuance of the R00 permit, CCGF was designated as a new major source for PSD.

Emission Limits: As a new major source, CCGF was required to perform a BACT analysis and air dispersion modeling for the emission sources at the facility. The emission limits in Section 2.2 A.1 of the existing permit are a result of this analysis.

Monitoring: In order to comply with PSD, CCGF must:

- Use water injection in the turbines while firing fuel oil;
- Use low-NOx combustors while firing natural gas;
- Use good combustion control practices;
- Use low-sulfur diesel and/or pipeline quality natural gas;
- Limit the total heat input to the turbines on an annual and 24-hour basis

Recordkeeping/Reporting: CCGF must keep records of the monitoring activities above and submit a semiannual summary report.

Updates to the existing permit: CCGF demonstrates compliance with the NOx BACT limit for the turbines using a CEMS. In CCGF's application for permit renewal, CCGF notes that the existing permit contains contradictory language with regards to the NOx BACT limit for the turbines. This limit is an exhaust concentration (*e.g.*, 9 ppm @15% O_2) averaged over a 24-hour period. Demonstrating compliance with this limit would require a CEMS. Furthermore, this facility is subject to 02D .1418 (see Section 6.6 for additional discussion), which requires the facility to demonstrate compliance with the BACT limit using a CEMS. Additionally, the facility is subject to 02Q .0400 and NSPS Subpart KKKK, both of which require the use of a NOx CEMS. However, the existing permit includes the following footnote to the table of BACT limits:

> "4. Compliance with the BACT limits shall be based on a 3-run average of a stack test. Any use of CEMS data for demonstrating compliance with BACT for any pollutants will require reevaluation of applicable BACT limits."

As written in the existing permit, the above statement applies to all BACT limits in the permit, and there is no exception for the NOx BACT limit for the turbines. Therefore, as written, the facility is not permitted to use CEMS data to comply with the NOx BACT; this is contradictory because the facility can only demonstrate compliance with this limit using CEMS data.

In the renewal application, CCGF suggests that this contradiction is the result of an error in the permit and that the above statement should apply to each BACT limit except the NOx BACT limit for the turbines. Based on DAQ's initial PSD permit and determination for this facility (issued September 10, 2009), it appears that CCGF had always planned to use a NOx CEMS for the turbines. The permit will therefore be corrected to allow for the use of the NOx CEMS (underlined text will be added):

2.2 A.1 15A NCAC 02D .0530: PREVENTION OF SIGNIFICANT DETERIORATION

a. The following Best Available Control Technology (BACT) limits shall not be exceeded:

…

4. Compliance with the BACT limits (except for NOx from the combustion turbines) shall be based on a 3-run average of a stack test. Any use of CEMS data for demonstrating compliance with BACT for any pollutants (except for NOx from the combustion turbines) will require reevaluation of applicable BACT limits.

7.4 Section 112(r) of the Clean Air Act

Under certain scenarios, a facility may be required to develop a Risk Management Plan (RMP) under §112(r) if it stores materials above their respective thresholds in 40 CFR 68.130.

In the application on Form A3, CCGF indicated that an RMP is not required for this facility because no such materials are stored in quantities above their thresholds. Because no RMP is required, the permit does not include a specific condition for 15A NCAC 02D .2100.

Note that other parts of §112(r), such as the general duty clause, may still apply to this facility. However, those requirements are outside the purview of the Title V permit.

7.5 Compliance Assurance Monitoring (CAM; 40 CFR Part 64)

The compliance assurance monitoring (CAM) rule requires owners and operators to conduct monitoring to provide a reasonable assurance of compliance with applicable requirements under the act. Monitoring focuses on emissions units that rely on pollution control device equipment to achieve compliance with applicable standards. An emission unit is subject to CAM, under 40 CFR Part 64, if all of the following three conditions are met:

I. The unit is subject to any (non-exempt, e.g., pre-November 15, 1990, Section 111 or 112 standard) emission limitation or standard for the applicable regulated pollutant.
II. The unit uses any control device to achieve compliance with any such emission limitation or standard.
III. The unit's pre-control potential emission rate exceeds 100 percent of the amount required for a source to be classified as a major source, i.e., either 100 tpy (for criteria pollutants) or 10 tpy of any individual/25 tpy of any combination of HAP.

CAM applicability for each control device at this facility is examined in the table below:

Control Device	Associated Emission Sources	Applicable Emission Limits	Triggers CAM?	Notes
Water injection, controlling NOx (only while firing fuel oil)	ES1, ES2, ES3, and ES4	42 ppm @ 15% O_2 (PSD BACT)	No	1
		42 ppm @ 15% O_2 (NSPS Subpart KKKK)	No	
		Comply with PSD during ozone season (15A NCAC 02D .1418)	No	
		Annual NOx emission report (15A NCAC 02D .1425)	No	2
		Comply with acid rain permit requirements (15A NCAC 02Q .0400)	No	3
		Comply with CSAPR requirements (CSAPR)	No	4

Notes:
1: The facility demonstrates compliance with these limits using a CEMS. A CEMS meets the definition of "continuous compliance determination method," and therefore these limits are exempt from CAM applicability per 15A NCAC 02D .0614(b)(1)(F) and Condition I above.
2: This rule requires an annual NOx summary report, but does not include a specific emission limit and therefore cannot trigger CAM.

3: Acid rain permit requirements are exempt from CAM applicability per 15A NCAC 02D .0614(b)(1)(C) and Condition I above.
4. CSAPR is an emission trading program and is therefore exempt from CAM applicability per 15A NCAC 02D .0614(b)(1)(D) and Condition I above.

Based on the above analysis, CAM does not apply to this facility. Therefore, the permit does not include a specific condition for 15A NCAC 02D .0614.

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

Applicability: 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. In general, compliance with this rule is determined by US EPA, not DAQ. The Title V permit includes a reference to CSAPR, but no specific requirements.

8.0 North Carolina Toxic Air Pollutants

According to the 1st-time Title V permit issued to this facility, "NC air toxic pollutants are only emitted from combustion sources which are exempt from NC air toxic rules because they were permitted prior to July 10, 2010."[2]

Since the above determination was made, CCGF has not made any changes to the permit that would qualify as a modification under 15A NCAC 02Q .0706. Therefore, the permit does not include any specific conditions for 15A NCAC 02D .1100 or 15A NCAC 02Q .0711.

9.0 Compliance Status and Other Regulatory Concerns

- *Compliance status*: This facility was most recently inspected on August 15, 2022 by Joe Foutz. CCGF appeared to be in compliance with the existing permit during that inspection.

- *Compliance history*: CCGF was issued an "informal" Notice of Violation on February 15, 2019 due to an exceedance of the natural gas sulfur content limit included in the permit. DAQ did not take an enforcement action. The NOV was resolved when CCGF demonstrated that the sulfur content limit was not required for the permit and could therefore be removed. The limit was subsequently removed when the T07 permit revision was issued.

  No other compliance issues have been noted with CCGF since the previous Title V permit renewal.

- *Application fee*: Title V and Title IV permit renewals do not require an application fee.

- *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

[2] See the review of the T03 permit modification (issued January 21, 2014), page 7.

for new sources and modifications of existing sources as defined in 02Q .0103. A PE Seal was not required for this Title V or Title IV permit renewal.

- *Zoning*: A Zoning Consistency Determination per 15A NCAC 02Q .0304(b) was not required for this Title V or Title IV permit renewal.

10.0 Facility Emissions Review

- The table on the first page of this permit review presents the criteria pollutant (plus total HAP) from the latest available approved facility emissions inventory (2021).

- CCGF is classified as a major source for Title V due to actual emissions of NOx greater than the Title V major source threshold (100 tpy). This permit renewal will not affect CCGF's status as a Title V facility.

- CCGF is classified as an area source of HAP (*i.e.*, not a major source) because it does not have the potential to emit HAP greater than the HAP major source threshold (10 tpy of an individual HAP, 25 tpy of total HAP). This permit renewal will not affect CCGF's status as an area source of HAP.

- CCGF is classified as a major source for PSD because it has potential emissions of a regulated NSR pollutant greater than the PSD major source threshold (250 tpy). This renewal will not affect CCGF's status as a major source for PSD.

11.0 Draft Permit Review Summary

Initial draft: An initial draft of the permit and this application review were sent to DAQ Permits staff (Rahul Thaker) on February 2, 2023. Comments were received on April 10, 2023. The comments pointed out typos and corrections in the permit and review.

Subsequent draft: A revised draft of the permit and this application review were sent to DAQ SSCB staff (Samir Parekh), DAQ MRO staff (Joe Foutz, Jennifer Manning), and CCGF staff (Scott McMillan, Corey Ladner) on April 11, 2023.

DAQ MRO Comment 1: During last year's inspection, the facility indicated they have a 300 gallon gasoline storage tank. The fuel is used for facility vehicles. From what I understand, any gasoline storage tank is subject to NESHAP 6C. Due to the limited amount of gasoline used, the facility's requirement is to track the amount of gasoline used per month.

Response: I confirmed with CCGF staff that the gasoline storage tank should be added to the list of insignificant activities. The application review will discuss the applicability and requirements of 40 CFR Part 63, Subpart CCCCCC.

CCGF Comment 1: The comment indicated typos in the application review.

Response: I corrected the indicated typos.

12.0 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 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

13.0 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. 09881T11. MRO, SSCG, and CCGF staff have received a draft copy of the permit and application review, and all submitted comments were incorporated as described in Section 11.0.