Date Application Received:

Permit No.

# Facility Name: Dahlberg Combustion Turbine Electric Generating Plant (Plant Dahlberg) City: Nicholson County: Jackson AIRS #: 04-13-15700034 Application #: TV-754020

August 24, 2023

4911-157-0034-V-07-0

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# Introduction

This narrative is being provided to assist the reader in understanding the content of referenced operating permit. Complex issues and unusual items are explained here in simpler terms and/or greater detail than is sometimes possible in the actual permit. The permit is being issued pursuant to: (1) Georgia Air Quality Act, O.C.G.A § 12-9-1, et seq. and (2) Georgia Rules for Air Quality Control, Chapter 391-3-1, and (3) Title V of the Clean Air Act. Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control incorporates requirements of Part 70 of Title 40 of the Code of Federal Regulations promulgated pursuant to the Federal Clean Air Act. The narrative is intended as an adjunct for the reviewer and to provide information only. It has no legal standing. Any revisions made to the permit in response to comments received during the public participation and EPA review process will be described in an addendum to this narrative.

#### I. **Facility Description**

- A. Facility Identification
  - 1. Facility Name: Dahlberg Combustion Turbine Electric Generating Plant (a.k.a. Plant Dahlberg)
  - 2. Parent/Holding Company Name

Prior to July 31, 2001, the Parent/Holding Company was The Southern Company and the owner was Georgia Power Company. The Southern Company formed a subsidiary named Southern Power Company and, on July 31, 2001, ownership of Plant Dahlberg was transferred to Southern Power Company. As of the date of this narrative, the Parent/Holding Company is The Southern Company; the owner is Southern Power Company; and the operator is Southern Power Company.

3. Previous and/or Other Name(s)

Previously known as the Jackson County Combustion Turbine Facility

- 4. Facility Location: 585 Jarrett Road, Nicholson, Jackson County, Georgia 30565
- 5. Attainment, Non-attainment Area Location, or Contributing Area

Jackson County is an attainment area for all criteria air pollutants but has been determined, by the Division, to be an area contributing to the ambient air level of ozone in the metropolitan Atlanta ozone maintenance area.

B. Site Determination

There are no other facilities which could possibly be contiguous or adjacent and under common control.

C. Existing Permits

Table 1 below lists all current Title V permits, all amendments, 502(b)(10) changes, and off-permit changes, issued to the facility, based on a comparative review of form A.6, Current Permits, of the Title V application and the "Permit" file(s) on the facility found in the Air Branch office.

Table 1. List of Current Fermits, Amendments, and Off-Fermit Changes					
Permit Number and/or Off-	Date of Issuance/	Purpose of Issuance			
Permit Change	Effectiveness				
4911-157-0034-V-06-0	March 4, 2019	Title V Renewal			
4911-157-0034-V-06-1	March 30, 2023	Acid Rain Permit Renewal			

- D. Process Description
  - 1. SIC Codes(s)

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The SIC Code(s) identified above were assigned by EPD's Air Protection Branch for purposes pursuant to the Georgia Air Quality Act and related administrative purposes only and are not intended to be used for any other purpose. Assignment of SIC Codes by EPD's Air Protection Branch for these purposes does not prohibit the facility from using these or different SIC Codes for other regulatory and non-regulatory purposes.

Should the reference(s) to SIC Code(s) in any narratives or narrative addendum previously issued for the Title V permit for this facility conflict with the revised language herein, the language herein shall control; provided, however, language in previously issued narratives that does not expressly reference SIC Code(s) shall not be affected.

2. Description of Product(s)

The facility produces electricity for sale.

3. Overall Facility Process Description

The facility consists of ten simple cycle combustion turbines. The units fire natural gas as primary fuel and fuel oil as backup. The turbines are equipped with dry low NOx combustors and water and/or steam injection for control of NOx emissions. Each combustion turbine generates a base load rating of approximately 75 megawatts (for natural gas combustion) and 77 megawatts (for fuel oil combustion) at 95 deg. F. Each turbine vents through its own 65-foot stack.

The facility also includes four natural gas fuel heaters and one No. 2 fuel oil storage tank.

4. Overall Process Flow Diagram

The facility provided a process flow diagram in their Title V permit application.

#### E. Regulatory Status

1. PSD/NSR

At the time of the issuance of the construction permit, the facility was a major PSD source because it had potential emissions of NOx, CO, and SO<sub>2</sub> greater than 250 tons per year. The facility is not classified as one of the 28 named source categories under 40 CFR 52.21. The facility was permitted under the PSD regulations in 1999, and the requirements of PSD applied to emissions of NOx, CO, VOC, SO<sub>2</sub>, PM/PM<sub>10</sub>, visible emissions, and sulfuric acid.

2. Title V Major Source Status by Pollutant

	Is the	If emitted, what is the facility's Title V status for the pollutant?			
Pollutant	Pollutant Emitted?	Major Source Status	Major Source Requesting SM Status	Non-Major Source Status	
PM	Yes	$\checkmark$			
PM10	Yes	$\checkmark$			
PM <sub>2.5</sub>	Yes	$\checkmark$			
SO <sub>2</sub>	Yes	~			
VOC	Yes			$\checkmark$	
NOx	Yes	$\checkmark$			
СО	Yes	$\checkmark$			
TRS	N/A				
H <sub>2</sub> S	N/A				
Individual HAP	Yes			✓	
Total HAPs	Yes			$\checkmark$	

#### Table 2: Title V Major Source Status

#### 3. MACT Standards

The site is not subject to the control requirements of any existing or proposed MACT Standard.

4. Program Applicability (AIRS Program Codes)

Program Code	Applicable (y/n)
Program Code 6 - PSD	Yes
Program Code 8 – Part 61 NESHAP	No
Program Code 9 - NSPS	Yes
Program Code M – Part 63 NESHAP	No
Program Code V – Title V	Yes

# **Regulatory Analysis**

### **II.** Facility Wide Requirements

A. Emission and Operating Caps:

None applicable.

B. Applicable Rules and Regulations

None applicable.

C. Compliance Status

The facility did not indicate any non-compliance issues in the application.

D. Permit Conditions

None applicable.

# III. Regulated Equipment Requirements

A. Equipment List for the Process

Emission Units		Applicable	Air Pollution Control Devices	
ID No.	Description	Requirements/Standards	ID No.	Description
CT01	Combustion Turbine	391-3-102(2)(g) 391-3-102(2)(b) 391-3-102(2)(nnn) 40 CFR 52.21(j) 40 CFR 60, Subpart A 40 CFR 60, Subpart GG 40 CFR 64 Acid Rain Regulations CSAPR Regulations	DRY1 WAT1	Dry Low NOx Combustor Water and/or Steam Injection
CT02	Combustion Turbine	391-3-102(2)(g) 391-3-102(2)(b) 391-3-102(2)(nnn) 40 CFR 52.21(j) 40 CFR 60, Subpart A 40 CFR 60, Subpart GG 40 CFR 64 Acid Rain Regulations CSAPR Regulations	DRY2 WAT2	Dry Low NOx Combustor Water and/or Steam Injection
СТ03	Combustion Turbine	391-3-102(2)(g) 391-3-102(2)(b) 391-3-102(2)(nnn) 40 CFR 52.21(j) 40 CFR 60, Subpart A 40 CFR 60, Subpart GG 40 CFR 64 Acid Rain Regulations CSAPR Regulations	DRY3 WAT3	Dry Low NOx Combustor Water and/or Steam Injection
CT04	Combustion Turbine	391-3-102(2)(g) 391-3-102(2)(b) 391-3-102(2)(nnn) 40 CFR 52.21(j) 40 CFR 60, Subpart A 40 CFR 60, Subpart GG 40 CFR 64 Acid Rain Regulations CSAPR Regulations	DRY4 WAT4	Dry Low NOx Combustor Water and/or Steam Injection
CT05	Combustion Turbine	391-3-102(2)(g) 391-3-102(2)(b) 391-3-102(2)(nnn) 40 CFR 52.21(j) 40 CFR 60, Subpart A 40 CFR 60, Subpart GG 40 CFR 64 Acid Rain Regulations CSAPR Regulations	DRY5 WAT5	Dry Low NOx Combustor Water and/or Steam Injection
CT06	Combustion Turbine	391-3-102(2)(g) 391-3-102(2)(b) 391-3-102(2)(nnn) 40 CFR 52.21(j) 40 CFR 60, Subpart A 40 CFR 60, Subpart A 40 CFR 64 Acid Rain Regulations CSAPR Regulations	DRY6 WAT6	Dry Low NOx Combustor Water and/or Steam Injection

Emission Units		Applicable         A		Air Pollution Control Devices	
ID No.	Description	Requirements/Standards	ID No.	Description	
СТ07	Combustion Turbine	391-3-102(2)(g) 391-3-102(2)(b) 391-3-102(2)(nnn) 40 CFR 52.21(j) 40 CFR 60, Subpart A 40 CFR 60, Subpart GG 40 CFR 64 Acid Rain Regulations CSAPR Regulations	DRY7 WAT7	Dry Low NOx Combustor Water and/or Steam Injection	
CT08	Combustion Turbine	391-3-102(2)(g) 391-3-102(2)(b) 391-3-102(2)(nnn) 40 CFR 52.21(j) 40 CFR 60, Subpart A 40 CFR 60, Subpart GG 40 CFR 64 Acid Rain Regulations CSAPR Regulations	DRY8 WAT8	Dry Low NOx Combustor Water and/or Steam Injection	
СТ09	Combustion Turbine	391-3-102(2)(g) 391-3-102(2)(b) 391-3-102(2)(nnn) 40 CFR 52.21(j) 40 CFR 60, Subpart A 40 CFR 60, Subpart GG 40 CFR 64 Acid Rain Regulations CSAPR Regulations	DRY9 WAT9	Dry Low NOx Combustor Water and/or Steam Injection	
CT10	Combustion Turbine	391-3-102(2)(g) 391-3-102(2)(b) 391-3-102(2)(nnn) 40 CFR 52.21(j) 40 CFR 60, Subpart A 40 CFR 60, Subpart GG 40 CFR 64 Acid Rain Regulations CSAPR Regulations	DRY10 WAT10	Dry Low NOx Combustor Water and/or Steam Injection	
TOT1	3.6 million gallon No. 2 Fuel Oil Storage Tank	40 CFR 52.21(j)	NA	None	
FGH1	Fuel Gas Heater	391-3-102(2)(d) 391-3-102(2)(g) 40 CFR 52.21(j)	NA	None	
FGH2	Fuel Gas Heater	391-3-102(2)(d) 391-3-102(2)(g) 40 CFR 52.21(j)	NA	None	
FGH3	Fuel Gas Heater	391-3-102(2)(d) 391-3-102(2)(g) 40 CFR 52.21(j)	NA	None	
FGH4	Fuel Gas Heater	391-3-102(2)(d) 391-3-102(2)(g) 40 CFR 52.21(j)	NA	None	

\* Generally applicable requirements contained in this permit may also apply to emission units listed above. The lists of applicable requirements/standards are intended as a compliance tool and may not be definitive.

# B. Equipment & Rule Applicability

#### **Combustion Turbines**

The facility consists of ten simple cycle combustion turbines. The units fire natural gas as primary fuel and fuel oil as backup. The turbines are equipped with dry low NOx burners and water injection for control of NOx emissions. Each combustion turbine generates a base load rating of

approximately 75 megawatts (for natural gas combustion) and 77 megawatts (for fuel oil combustion) at 95 deg. F. The combustion turbines require preheating of the natural gas for combustion, and the turbines are equipped with lube oil demister vents.

NOx emissions from each combustion turbine are regulated by 40 CFR 52.21, 40 CFR 60 Subpart GG [NSPS GG], and Georgia Rule 391-3-1-.02(2)(nnn) on a short term basis. Georgia Rule (nnn) is an applicable requirement during the ozone season. The following table illustrates the allowable NOx emissions limits established by these regulations:

Regulation	NOx emissions Limit ppmvd at 15% oxygen	Averaging Period
PSD Regulations – 40 CFR 52.21 These limits are referred to as	For Natural Gas Combustion 15	30 day rolling average
BACT emission limits	12 except during peak firing conditions	Based on Method 20 (i.e., 1-hr)
	For Fuel Oil Combustion 42	Based on Method 20 (i.e., 1-hr)
42NSPS GGFor Natural Gas and Fuel Oil Combustion STD = $0.0075(14.4/Y)$ +F Where; STD = allowable NOx emissions (% volume at 15% O2, dry) Where Y = heat rate in kilojoules/watt hr=6.1 to 7.8 F= fuel bound nitrogen allowance = 0 Note: the application reported a value of F = 0 and Y = 11.1 yielding an allowable NOx emission rate ppm volume (@15% oxygen_dry basis that		Based on Method 20 (i.e., 1-hr)
<u>Georgia Rule 391-3-1-</u> .02(2)(nnn)	For Natural Gas and Fuel Oil Combustion 30	Based on Method 7E (i.e., 3-hr)

As illustrated in this table, the most stringent NOx emission rate during natural gas combustion is established by 40 CFR 52.21 which subsumes the requirements of NSPS GG and Georgia Rule (nnn). The most stringent NOx emission rate during fuel oil combustion is established by Georgia Rule (nnn).

The Title V permit states that the short-term NOx BACT emissions limit will not apply during periods of startup and shutdown. The facility is a peaking power plant and as such has frequent startup and shutdown episodes. The short-term NOx emissions generated during startup and shutdown can be higher than NOx emissions generated during normal source operation. The percentage of time in startup and/or shutdown mode can be high in relationship to total operating time. It is possible to track NOx emissions occurring during normal source operation through the use of a NOx Continuous Emission Monitoring System (CEMS). In order to still regulate NOx emissions generated in part during startup and shutdown, there is a PSD Condition 3.3.5 in the Title V permit that limits annual NOx emissions per turbine to 190 tons per year.

Hours of operation per turbine are limited in the PSD Condition 3.3.3 by limiting total fuel usage (natural gas and fuel oil) to  $3.9 \times 10^{12}$  Btus during any twelve consecutive months. [Equivalent to 4,000 hours per year per turbine.] Note: This heat input limit equates to an individual turbine NOx emission rate of approximately 190 tons per year (*See PSD Permit Application No. 11191 dated February 26, 1999*). Fuel oil usage is limited to  $1.0 \times 10^{12}$  Btu/yr.

Georgia Rule (nnn) limits the short-term NOx emissions during the ozone season. This limit applies during periods which include startup and shutdown in accordance with Georgia Rule 391-3-1.

Carbon monoxide emissions from each combustion turbine are regulated by 40 CFR 52.21. The BACT CO emission limit for each turbine is 0.101 lb/MMBtu (for natural gas combustion) and 0.046 lb/MMBtu (for fuel oil combustion). The short term BACT emissions limit applies during normal source operation which includes periods of startup and shutdown.

Particulate matter emissions from each combustion turbine are regulated by 40 CFR 52.21. The BACT  $PM/PM_{10}$  emission limit for each turbine is 0.01 lb/MMBtu (for natural gas combustion) and 0.018 lb/MMBtu (for fuel oil combustion). These BACT emission rates are for filterable particulate matter. The short term BACT emissions limit applies during normal source operation which includes periods of startup and shutdown.

Volatile organic compound emissions from each combustion turbine are regulated by 40 CFR 52.21. The BACT VOC emission limit for each turbine is 0.003 lb/MMBtu (for natural gas combustion) and 0.006 lb/MMBtu (for fuel oil combustion), as methane. The short term BACT emissions limit applies during normal source operation which includes periods of startup and shutdown.

Sulfur dioxide emissions from each combustion turbine are regulated by 40 CFR 52.21 and Georgia Rule 391-3-1-.02(2)(g). The requirements of 40 CFR 52.21 subsume the requirements of Georgia Rule 391-3-1-.02(2)(g). The Permittee shall not burn in any combustion turbine natural gas or fuel oil which contains sulfur in excess of 0.05 percent by weight in accordance with BACT for sulfur dioxide. BACT for sulfur dioxide also includes a per turbine fuel oil usage limit of 1.0 x  $10^{12}$  Btu during any twelve consecutive months.

The opacity from each turbine is regulated by 40 CFR 52.21 and Georgia Rule 391-3-1-.02(2)(b). The requirements of 40 CFR 52.21 subsume the requirements of Georgia Rule 391-3-1-.02(2)(b). The BACT limits for opacity are noted as follows: (1) For Natural Gas Combustion: 10 percent; and (2) For Fuel Oil Combustion: 20 percent. The short term BACT visible emissions limit applies during normal source operation which includes periods of startup and shutdown.

# Fuel Gas Heaters

The fuel handling equipment includes four 8.16 MMBtu/hr fuel (natural) gas heaters, and the fuel gas heaters are used to condition the natural gas prior to its introduction to the combustion turbine. These emission units were subject to BACT under the PSD regulations. The Division agreed with the conclusions drawn by Georgia Power in a letter to the Division dated April 12, 2001, that the addition of the NOx emissions from the fuel gas preheaters had a negligible impact on potential emissions from the facility. Facility-wide NOx emissions increased by 0.21 percent. This resulted in negligible differences in the predicted concentrations in the ambient air impact assessment for Application No. 11191 dated February 26, 1999 (the original PSD Application for the site). Thus, the results of an updated modeling analysis indicated that air emissions associated with the revised facility configuration will comply with applicable state and federal regulations.

BACT limits for these fuel gas heaters were proposed, as part of the initial Title V permit 4911-157-0034-V-03-0 that are consistent with other fuel gas heaters that have gone through the air quality permitting process in Georgia.

Upon review, the Division found Georgia Power's proposal to be acceptable. The NOx BACT emissions limit was set at 100 ppmvd at 3% oxygen. The CO BACT emissions limit was set at 85 ppmvd at 3% oxygen. The VOC, SO<sub>2</sub>, PM, and visible emissions BACT was set as a work practice standard, namely, that the Permittee shall only fire pipeline quality natural gas in each fuel gas heater. This BACT work practice standard will subsume the requirements of Georgia Rule 391-3-1-.02(2)(d) for PM and visible emissions and of Georgia Rule 391-3-1-.02(2)(g) for fuel sulfur content.

# Fuel Oil Storage Tanks

The initial PSD permit included authorization to construct and operate two fuel oil storage tanks. Georgia Power decided not to construct the second tank and thus this tank was not included in the initial Title V permit 4911-157-0034-V-03-0. Storage tank TOT1 is subject to PSD [40 CFR 52.21]. PSD imposes no emission standard or work practice standard for this storage tank. Storage Tank TOT1 is not subject to NSPS Subpart Kb. NSPS Kb does not apply because the 151 m<sup>3</sup> (~39,890 gallons) tank, constructed after July 23, 1984, stores a volatile organic liquid (No. 2 fuel oil) that has a vapor pressure below 3.5 kPa (0.51 psia).

# C. Permit Conditions

Condition 3.3.1 defines the fuel sulfur content limit.

Condition 3.3.2 defines the required fuel oil ASTM specifications.

Condition 3.3.3 defines the heat input limit for all fuels, on a combined basis, for each combustion turbine.

Condition 3.3.4 defines the heat input limit for fuel oil for each combustion turbine.

Condition 3.3.5 defines the rolling annual NOx emission limit per combustion turbine.

Condition 3.3.6 specifies the Best Available Control Technology to be used for each combustion turbine for NOx purposes.

Condition 3.3.7 defines the terms "startup" and "shutdown" for each combustion turbine.

Condition 3.3.8 states the combustion turbines must follow the requirements of NSPS Subpart A – "General Provisions".

Condition Nos. 3.3.9 through 3.3.11 specify the short term BACT emission limits for each combustion turbine during natural gas combustion.

Condition Nos. 3.3.12 through 3.3.13 specify the short term BACT emission limits for each combustion turbine during fuel oil combustion.

Condition Nos. 3.3.14 through 3.3.16 specify the short term BACT emissions limits and work practice standard for each fuel gas heater.

Condition 3.4.1 defines the NOx limit under Georgia Rule (nnn).

#### **IV.** Testing Requirements (with Associated Record Keeping and Reporting)

A. General Testing Requirements

The permit includes a requirement that the Permittee conduct performance testing on any specified emission unit when directed by the Division. Additionally, a written notification of any performance test(s) is required 30 days (or sixty (60) days for tests required by 40 CFR Part 63) prior to the date of the test(s) and a test plan is required to be submitted with the test notification. Test methods and procedures for determining compliance with applicable emission limitations are listed and test results are required to be submitted to the Division within 60 days of completion of the testing.

B. Specific Testing Requirements

None applicable.

# V. Monitoring Requirements

A. General Monitoring Requirements

Condition 5.1.1 requires that all continuous monitoring systems required by the Division be operated continuously except during monitoring system breakdowns and repairs. Monitoring system response during quality assurance activities is required to be measured and recorded. Maintenance or repair is required to be conducted in an expeditious manner.

B. Specific Monitoring Requirements

**Combustion Turbines CT01, CT02, CT03, CT04, CT05, CT06, CT07, CT08, CT09, and CT10** are subject to the requirements of 40 CFR 52.21 for NOx, CO, PM/PM<sub>10</sub>, VOC, SO<sub>2</sub> emissions and visible emissions; 40 CFR 60 Subpart GG [NSPS GG] for NOx and SO<sub>2</sub> emissions; and Georgia Rules 391-3-1-.02(2)(b), (g), and (nnn) for visible emissions, fuel sulfur content, and NOx emissions.

The monitoring provisions of NSPS GG [40 CFR 60.334(a)] specify the use of water-to-fuel rates and fuel nitrogen content to identify periods of NOx excess emissions. NSPS GG [40 CFR 60.334(b)] specifies as an alternative, a Continuous Emissions Monitoring System (CEMS) consisting of NOx and  $O_2$  monitors that is installed, certified, maintained and operated and quality-assured. As an alternative, a CO<sub>2</sub> monitor may be used to adjust the measured NOx concentrations to 15 percent  $O_2$  by either converting the CO<sub>2</sub> hourly average to equivalent  $O_2$  concentrations using Equation F-14a or F-14b in appendix F to part 75 and making the adjustments to 15 percent  $O_2$ , or by using the CO<sub>2</sub> readings directly to make the adjustments, as described in Method 20. Please refer to Section 60.334(b) Monitoring of Operations for the procedures to install, certify, maintain and operate the CEMS.

The combustion turbines are equipped to utilize water injection only during periods of fuel oil combustion. To reasonably assure compliance with the requirements of 40 CFR 52.21 and NSPS Subpart GG, the Continuous Emissions Monitoring System (CEMS), required by the Acid Rain regulations, are used to monitor NOx emissions. The NOx CEMS provides an indicator of compliance regarding each combustion turbine's compliance status on a continuous basis following the initial tests. The values reported by the NOx CEMS will be used to assess the existence of an excess emission or exceedance as noted in the following table:

Fuel Type	Allowable Emissions Limit ppmvd at 15% oxygen	Legal Authority for Allowable Emissions Limit	Classification for Condition Nos. 6.1.4 and 6.1.7
Natural Gas	15 on a 30-day rolling average	40 CFR 52.21(j)(2)	Exceedance
Natural Gas	12 on a 1-hour average	40 CFR 52.21(j)(2)	Excess Emission as defined by PSD permit
Fuel Oil	42 on a 1-hour average	40 CFR 52.21(j)(2)	Excess Emission as defined by PSD permit
Natural Gas and Fuel Oil	30 on a 3-hour average	Georgia Rule 391-3- 102(2)(nnn) during ozone season	Exceedance

Carbon monoxide emissions from each combustion turbine are regulated by 40 CFR 52.21. In general, carbon monoxide emissions increase as the load decreases. There is the likelihood of violating the CO BACT limit at loads less than or equal to 50% while the likelihood of violating the same limit above 50% load is minimal. The Permittee tested NOx emissions at a low load point of 64 MW (natural gas) and 65 MW (fuel oil combustion) which showed compliance. The Permittee shall continuously monitor the megawatts (MWs) of each turbine and record the hourly average value in order to provide a reasonable assurance of compliance. An excursion is defined as any one-hour period of operation, excluding startup, shutdown, and malfunction, in which the average electrical output generated by the combustion turbine is less than 64 MWs (for natural gas combustion) or 65 MWs (for fuel oil combustion).

Particulate matter, visible, and VOC emissions from each combustion turbine are regulated by 40 CFR 52.21. Initial compliance with the short-term  $PM/PM_{10}$ , visible, and VOC BACT emission limits were verified through initial performance tests. Natural gas and very low sulfur distillate fuel oil are clean burning fuels and the likelihood of violating the established BACT limits is minimal. Thus, no additional periodic monitoring is prescribed for  $PM/PM_{10}$ , visible, and VOC emissions.

The Division requires that the natural gas and fuel oil consumption by the turbines be continuously monitored and recorded and that the Permittee has installed a device on each turbine for measuring these parameters. Such monitoring is necessary to verify compliance with the BACT limits on the total heat input from burning all fuels and the total heat input from burning fuel oil.

The Division believes that it is important to clarify how excess emissions are viewed during periods of startup and shutdown. In addition, the Division wants to clarify how it believes the Title V permit is designed to maintain the PSD BACT emission limits when including emissions from startup and shutdown.

In accordance with Georgia Rule 391-3-1-.02(a)(7), excess emissions resulting from startup, shutdown, malfunction of any source which occur through which ordinary diligence is employed shall be allowed provided that: (1) the best operational practices to minimize emissions are adhered to; (2) all associated air pollution control equipment is operated in a manner consistent with good air pollution control practice for minimizing emissions; and (3) the duration of excess emissions is minimized.

Excess emissions which are caused entirely or in part by poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown or malfunction are prohibited and are violations of the Permit.

Plant Dahlberg utilizes NOx CEMS to track NOx emissions during startup, shutdown, and malfunction, and steady-state operation. This type of periodic monitoring is more than sufficient to track NOx emissions from any type of operational scenario as an indicator of compliance.

**Fuel Gas Heaters FGH1, FGH2, FGH3, and FGH4** are subject to 40 CFR 52.21 for NOx, CO, VOC,  $PM/PM_{10}$ , SO<sub>2</sub> and visible emissions; and Georgia Rules 391-3-1-.02(d) and (g) for PM and visible emissions and fuel sulfur content. The requirements of 40 CFR 52.21 subsume the requirements of Georgia Rules (d) and (g) because the heaters are limited to only burning natural gas. Natural gas is a clean burning fuel and therefore the likelihood of violating the opacity and PM emission standards of 40 CFR 52.21 are minimal. Hence, no additional periodic monitoring is prescribed to verify compliance with these standards. Natural gas contains negligible amounts of sulfur and the likelihood of violating the fuel sulfur content limit of 40 CFR 52.21 is minimal. Consequently, no additional periodic monitoring is prescribed to verify compliance with these standards.

The average tested NOx emission rate is approximately 55 ppmvd at 3% oxygen. The average tested NOx emission rate is approximately 55% of the BACT emission limit of 100 ppmvd at 3% oxygen. With this in mind, the Division believes the likelihood of violation is minimal and no additional periodic monitoring is prescribed.

The average tested CO emission rate is approximately 18.32 ppmvd at 15% oxygen. The average tested CO emission rate is approximately 22% of the BACT emission limit of 85 ppmvd at 3% oxygen. With this in mind, the Division believes the likelihood of violation is minimal and no additional periodic monitoring is prescribed.

**Storage tank TOT1** is subject to PSD and this regulation does not impose emission standards. No periodic monitoring is prescribed for this storage tank.

Condition No. 5.2.1 requires a CEMS for continuous monitoring of NOx emissions.

Condition No. 5.2.2 specifies the parameter monitoring requirements for the combustion turbines (Source Code CT01, CT02, CT03, CT04, CT05, CT06, CT06, CT07, CT08, CT09, and CT10).

Condition No. 5.2.3 specifies the parameter monitoring requirements to show compliance with Condition Nos. 3.3.5, 3.3.9, 3.3.10, 3.3.12, and 3.4.1.

Condition No. 5.2.4 specifies the monitoring requirement to demonstrate compliance with Condition No. 3.3.9.

C. Compliance Assurance Monitoring (CAM)

**40 CFR Part 64 – Continuous Assurance Monitoring**: This review analyzes the applicability of 40 CFR Part 64 – "Continuous Assurance Monitoring." The requirements of Part 64 do not apply to the fuel gas heaters or fuel oil storage tanks because these units are not equipped with a *control device* as defined in Part 64.1. The requirements of Part 64 do not apply to each combustion turbine during natural gas combustion because the dry low NOx combustion systems do not meet the definition of *control device* as defined in Part 64.1. The requirements of Part 64 do not apply to each combustion turbine for CO, VOC, and PM emissions generated from natural gas and fuel oil combustion because there is no *control device* for these air pollutants.

CAM does apply to NOx emissions from the combustion turbines when burning fuel oil. The facility submitted a CAM Plan as part of their application and the appropriate requirements have been included in Conditions 5.2.5 and 5.2.6 of the permit.

Condition Nos. 5.2.5 and 5.2.6 reflect the latest CAM Plan requirements.

Condition 5.2.7 state the monitoring requirement to comply with Georgia Rule 391-3-1-.02(2)(nnn) during ozone season.

#### VI. Record Keeping and Reporting Requirements

A. General Record Keeping and Reporting Requirements

The Permit contains general requirements for the maintenance of all records for a period of five years following the date of entry and requires the prompt reporting of all information related to deviations from the applicable requirements. Records, including identification of any excess emissions, exceedances, or excursions from the applicable monitoring triggers, the cause of such occurrence, and the corrective action taken, are required to be kept by the Permittee and reporting is required on a semiannual basis.

B. Specific Record Keeping and Reporting Requirements

#### Verification of Compliance with the Operational Limits on the Turbines

The Permit specifies record keeping for the monthly fuel usage, per fuel type, and the monthly combined fuel heat input and fuel oil heat input, per turbine. An exceedance is defined as any rolling combined heat input which exceeds  $3.9 \times 10^{12}$  Btu and  $1.0 \times 10^{12}$  Btu for fuel oil combustion only.

#### Verification of Compliance with the Fuel Sulfur and Nitrogen Content Limits on the Turbines

The fuel sulfur content limit for the fuel consumed by the turbines is 0.05 weight percent. NSPS GG [*see 40 CFR 60.334(h)(ii)*] allows instead of monitoring of natural gas, sampling of gaseous fuel to demonstrate the fuel is natural gas. Currently the facility provides a semiannual certification of natural gas as part of their monitoring and reporting requirements, and this meets NSPS GG requirements. For fuel oil, NSPS GG [*see 40 CFR 60.334(h)(4)(i)*] allows the facility to sample each fuel shipment. The facility does not have a NOx emission allowance for fuel-bound nitrogen and the F factor in the NSPS GG equation in 60.332(a)(1) is zero. According to 60.334(h)(2), the facility is not required to monitor the fuel for nitrogen content.

#### Verification of Compliance with the NOx Mass Emission Rate

Compliance with the twelve-month rolling total NOx emission rate from each simple cycle combustion turbine is tracked using the NOx CEMS data to compute the NOx mass emission rate. The Permittee is required to maintain monthly records which specify the twelve consecutive month total NOx emissions (in tons) from each turbine. Failure to maintain NOx emissions from each turbine below 190 tons during any twelve consecutive months must be reported as an exceedance.

#### Recordkeeping Requirements

Condition 6.2.1 requires monitoring of the sulfur content of natural gas by submittal of semiannual analyses.

Condition 6.2.2 states that no determination of nitrogen content of the natural gas is required.

Condition 6.2.3 states the recordkeeping requirements for the combustion turbines (Source Code CT01, CT02, CT03, CT04, CT05, CT06, CT06, CT07, CT08, CT09 and CT10).

Condition Nos. 6.2.7, 6.2.8, and 6.2.9 state the recordkeeping requirements for verification of compliance with NOx Emission Limits.

#### NSPS Kb Requirements

As noted earlier in the narrative, fuel oil storage tank TOT1 is not subject to the NSPS Kb requirements specified in 40 CFR 60.116b.

#### Reporting Requirements

Condition 6.1.4 outlines the semiannual reporting requirements. Conditions 6.2.4, 6.2.5, 6.2.6 and 6.2.10 specify additional information which must be included in these semiannual reports. The additional parameters are:

\*The twelve consecutive month combined fuel heat input and fuel oil heat input per turbine for each month in the reporting period.

\*The fuel oil supplier certifications for each shipment of fuel oil received during the reporting period and a statement signed by a responsible official that the records of fuel supplier certifications submitted represent all of the fuel oil received during the semiannual reporting period. If no fuel oil has been received during the report should so state.

The facility currently has semiannual reporting requirements per Condition 6.1.4. NSPS Subpart GG (60.334(b)(3)) references the monitoring performance report required in §60.7(7)(c) which states that reporting shall be semiannually except when: more frequent reporting is specifically required by an applicable subpart; or the Administrator. The facility is currently in compliance and the semiannually reporting requirements are acceptable as there is no particular need for quarterly reporting requirements.

#### VII. Specific Requirements

A. Operational Flexibility

This permit includes the standard conditions allowing section 502(b)(10) changes and off-permit changes. Additional operational flexibility provisions do not need to be incorporated into this Title V Permit as their permit already provides sufficient flexibility for the facility. The applicant did not include any alternative operating scenarios in their Title V permit application.

B. Alternative Requirements

There are no alternative requirements that need to be incorporated into the Title V Permit.

C. Insignificant Activities

See Permit Application on GEOS website. See Attachment B of the permit

D. Temporary Sources

This section is not applicable to this facility. 40 CFR 70.6(e) requires the Division to provide for the permitting of certain types of temporary sources. This facility currently has no such sources and is unlikely to have such sources in the future. However, they may add temporary sources provided that the facility follows any necessary regulatory procedures for the operation of such sources. This may include amending the Title V permit, if necessary.

E. Short-Term Activities

The facility has not requested to operate any short-term activities.

F. Compliance Schedule/Progress Reports

No compliance schedule or progress reports are required.

G. Emissions Trading

This facility is not involved in any emission trading programs besides being part of the Acid Rain Program.

H. Acid Rain Requirements

Each combustion turbine is an affected unit under the Acid Rain regulations because they meet the definition of *new unit* under §72.2. A *new unit* is defined as "a unit that commences commercial operation on or after November 15, 1990, including any such unit that serves a generator with a

nameplate capacity of 25 MWe or less or that is a simple combustion turbine." Each simple combustion turbine serves a generator with a nameplate capacity greater than 25 MWe. The applicant is subject to 40 CFR 72 (permits), 73 (sulfur dioxide), and 75 (monitoring). They are not subject to the nitrogen oxide provisions (40 CFR 76) of the Acid Rain regulations because the turbines do not have the capability to burn coal. Each of the turbines is an affected unit under the Acid Rain regulations.

The facility had submitted Application No. TV-672444 for a renewal of the Phase II Acid Rain Permit for the years 2023 through 2027, yet Section 7.9 is updated in the current draft permit for the current years 2024 through 2028. The Phase II Acid Rain Application is located in Appendix D of the Permit No. 4911-157-0034-V-07-0. The facility is required, under 40 CFR 75, to monitor certain pollutants and parameters, including NOx emissions, SO<sub>2</sub> emissions, CO<sub>2</sub> emissions, and heat input. These pollutants and parameters are reported directly to EPA, electronically, on a quarterly basis.

I. Stratospheric Ozone Protection Requirements

The facility indicated that they are subject to 40 CFR 82 Subpart F.

J. Pollution Prevention

There are no pollution prevention provisions incorporated into this Title V permit.

K. Specific Conditions

None

L. Cross State Air Pollution Rule (CSAPR) Allowance Trading Program Requirements

The U.S. EPA issued the Cross-State Air Pollution Rule (CSAPR) in July 2011. In the CSAPR rulemaking, EPA determined that air pollution transported from EGUs in Georgia would unlawfully affect other states' ability to attain or maintain the 1997 8-hour Ozone NAAQS, the 1997 Annual PM<sub>2.5</sub> NAAQS, and the 2006 24-hour PM<sub>2.5</sub> NAAQS and included Georgia in the CSAPR ozone season NOx trading program and the annual SO<sub>2</sub> and NOx trading programs.

In 2017 Georgia updated its rules for Georgia units for CSAPR state trading programs for annual NOx, annual SO<sub>2</sub> emissions, and ozone season NOx emissions. The update revised the Georgia Rules for Air Quality Control to include CSAPR as follows: 391–3–1–.02(12) was revised to include Georgia's "Cross State Air Pollution Rule NOx Annual Trading Program;" 391–3–1–.02(13) was revised to include Georgia's "Cross State Air Pollution Rule SO<sub>2</sub> Annual Trading Program;" and 391–3–1–.02(14) was added to include "Georgia's Cross State Air Pollution Rule NOx Ozone Season Trading Program."

With a few exceptions, the Georgia rules comprising Georgia's CSAPR state trading program for annual NOx emissions either incorporated by reference or adopted full-text replacements for all of the provisions of 40 CFR 97.401 through 97.435; the Georgia rules comprising Georgia's CSAPR state trading program for SO<sub>2</sub> emissions either incorporated by reference or adopted full-text replacements for all of the provisions of 40 CFR 97.701 through 97.735; and the Georgia rules comprising Georgia's CSAPR state trading program for NOx ozone season emissions either incorporated by reference or adopted full-text replacements for all of the provisions of 40 CFR 97.701 through 97.735; and the Georgia rules comprising Georgia's CSAPR state trading program for NOx ozone season emissions either incorporated by reference or adopted full-text replacements for all of the provisions of 40 CFR 97.501 through 97.535.

Since the Georgia CSAPR state trading programs have been integrated with the federal CSAPR NOx Annual Trading Program, the federal CSAPR SO<sub>2</sub> Group 2 Trading Program, and the federal CSAPR NOx Ozone Season Group 1 Trading Program, respectively, and are substantively identical to the federal trading programs.

Hence, the U.S. EPA website maintains a table indicating the applicable CSAPR programs for Georgia as follows:

State	Required to Reduce	Required to Reduce	Required to Reduce	Required to Reduce	
	Emissions of NO <sub>X</sub> during	Emissions of NO <sub>X</sub> during	Annual Emissions of SO <sub>2</sub>	Annual Emissions of SO <sub>2</sub>	$*SO_2$
	the Ozone Season (1997	the Ozone Season (2008	and NO <sub>X</sub> (1997 Annual	and NO <sub>X</sub> (2006 24-Hour	Group
	Ozone NAAQS)	Ozone NAAQS)	PM <sub>2.5</sub> NAAQS)	PM <sub>2.5</sub> NAAQS)	
Georgia	Х		Х	Х	2

\* The final CSAPR divides the states required to reduce SO<sub>2</sub> into two groups. Both groups must reduce their SO<sub>2</sub> emissions beginning in Phase I. Group 1 states must make significant additional reductions in SO<sub>2</sub> emissions for Phase II in order to eliminate their significant contribution to air quality problems in downwind areas.

Permit Condition 7.15.1 identifies the units subject to CSAPR, and the applicable CSAPR Programs.

Permit Condition 7.15.2 outlines the Annual NOx,  $SO_2$ , and Ozone Season NOx Emissions Requirements

Permit Condition 7.15.3 outlines the monitoring, reporting, and recordkeeping requirements associated with CSAPR.

#### VIII. General Provisions

Generic provisions have been included in this permit to address the requirements in 40 CFR Part 70 that apply to all Title V sources, and the requirements in Chapter 391-3-1 of the Georgia Rules for Air Quality Control that apply to all stationary sources of air pollution.

Template Condition 8.14.1 was updated in September 2011 to change the default submittal deadline for Annual Compliance Certifications to February 28.

Template Condition Section 8.27 was updated in August 2014 to include more detailed, clear requirements for emergency generator engines currently exempt from SIP permitting and considered insignificant sources in the Title V permit.

Template Condition Section 8.28 was updated in August 2014 to more clearly define the applicability of the Boiler MACT or GACT for major or minor sources of HAP.

#### Addendum to Narrative

The 30-day public review started on month day, year and ended on month day, year. Comments were/were not received by the Division.

//If comments were received, state the commenter, the date the comments were received in the above paragraph. All explanations of any changes should be addressed below.//