



<b>Company Name:</b>	Hagood Station	<b>Permit Writer:</b>	James M Myers
<b>Agency Air Number:</b>	0560-0029	<b>Date:</b>	DRAFT
<b>Permit Number:</b>	TV-0560-0029 v2.0		

**DATE APPLICATION RECEIVED:** July 29, 2024

**DATE OF LAST INSPECTION:** April 4, 2023 - No violations of permit requirements or applicable regulations were observed during this inspection.

### **PROJECT DESCRIPTION**

This project is the renewal of the facility's Title V operating permit.

### **FACILITY DESCRIPTION**

SIC CODE: 4911 – Electric Services

NAICS CODE: 221112 – Fossil Fuel Electric Power Generation

The facility operates three (3) combustion turbines used for power generation. Each turbine is a simple cycle combustion turbine fired on natural gas or No. 2 fuel oil.

### **CHANGES SINCE LAST OP ISSUANCE**

The Title V permit has not been modified since the last renewal in 2020.

### **CHANGES FOR THIS RENEWAL**

- The <250 tpy synthetic minor PSD avoidance limit for PM<sub>2.5</sub> will be removed. Only PM and PM<sub>10</sub> were established as limits in construction CB. Because PM<sub>2.5</sub> is a fraction of PM<sub>10</sub>, removal of the limit will not allow an increase in PM<sub>2.5</sub> emissions.

### **OPERATING PERMIT STATUS**

The facility operates under a Title V permit which expires on March 31, 2025. The facility submitted a timely renewal request received on July 29, 2024, and is operating under the application shield.

### **EMISSIONS**

FACILITY WIDE EMISSIONS			
Pollutant	Uncontrolled	Controlled	PTE
	TPY	TPY	TPY
Particulate Matter (PM)	335	---	<250.0
Particulate Matter <10 Microns (PM <sub>10</sub> )	335	---	<250.0
Particulate Matter <2.5 Microns (PM <sub>2.5</sub> )	335	---	<250.0*
Sulfur Dioxide (SO <sub>2</sub> )	2850	---	<250.0
Nitrogen Oxides (NO <sub>x</sub> )	5360	1720	<250.0
Carbon Monoxide (CO)	1460	---	<250.0
Volatile Organic Compounds (VOC)	91.4	---	91.4



<b>Company Name:</b>	Hagood Station	<b>Permit Writer:</b>	James M Myers
<b>Agency Air Number:</b>	0560-0029	<b>Date:</b>	DRAFT
<b>Permit Number:</b>	TV-0560-0029 v2.0		

FACILITY WIDE EMISSIONS			
Pollutant	Uncontrolled	Controlled	PTE
	TPY	TPY	TPY
Lead (Pb)	0.109	---	0.109
Single Greatest HAP (Manganese)	6.13	---	6.13
Total HAPs	12.3	---	12.3

\*PM<sub>10</sub> limit will ensure PM<sub>2.5</sub> will not exceed the 250 tpy limit.

### **SOURCE TEST REQUIREMENTS**

Testing is required as indicated in facility's Monitoring and QA Plan for NSPS Subpart KKKK.

### **REGULATIONS**

#### **Applicable - Section II(E) (Synthetic Minor)**

Synthetic Minor Limits					
Permit ID	Equipment ID	Permit Issue Date	Pollutant	Emission Limit (TPY)	Explanation*
CB	Facility Wide	12/19/2008	PM	Less than 250.0	PSD Avoidance- The facility will use fuel usage records and the pollutant specific emission factor to determine monthly emissions.
CB	Facility Wide	12/19/2008	PM <sub>10</sub>	Less than 250.0	PSD Avoidance- The facility will use fuel usage records and the pollutant specific emission factor to determine monthly emissions.
CB	Facility Wide	12/19/2008	SO <sub>2</sub>	Less than 250.0	PSD Avoidance- The facility will use fuel usage records and the pollutant specific emission factor to determine monthly emissions.
CB	Facility Wide	12/19/2008	NO <sub>x</sub>	Less than 250.0	PSD Avoidance- The facility will use fuel usage records and the pollutant specific emission factor to determine monthly emissions.
CB	Facility Wide	12/19/2008	CO	Less than 250.0	PSD Avoidance- The facility will use fuel usage records and the pollutant specific emission factor to determine monthly emissions.
CB	CT5 and CT6	12/19/2008	PM <sub>10</sub>	Less than 85 tpy (total)	(SC Regulation 61-62.5, Standard No. 7(c), PSD Ambient Air Increments)
CB	CT5 and CT6	12/19/2008	NO <sub>x</sub>	Less than 130 tpy (total)	(SC Regulation 61-62.5, Standard No. 7(c), PSD Ambient Air Increments)



<b>Company Name:</b>	Hagood Station	<b>Permit Writer:</b>	James M Myers
<b>Agency Air Number:</b>	0560-0029	<b>Date:</b>	DRAFT
<b>Permit Number:</b>	TV-0560-0029 v2.0		

Synthetic Minor Limits					
Permit ID	Equipment ID	Permit Issue Date	Pollutant	Emission Limit (TPY)	Explanation*
CB	CT5 and CT6	12/19/2008	SO <sub>2</sub>	Less than 100 tpy (total)	(SC Regulation 61-62.5, Standard No. 7(c), PSD Ambient Air Increments)

\*The following algorithm will be used to determine monthly emissions to demonstrate compliance with the synthetic minor limits:

The facility shall use the following algorithm to determine the monthly emissions:

$$E = EF \times HI \times 1\text{ton}/2000 \text{ lb}$$

Where:

E = Monthly emissions (tons)

EF = Emission factor for specific pollutant and fuel (lb/millionBtu)

HI = Monthly heat input for specific fuel (millionBtu/month)

**Not Applicable - Standard No. 1 (Emissions from Fuel Burning Operations)**

The turbines at the facility do not meet the definition of a fuel burning operation

**Not Applicable - Standard No. 3 (state only) (Waste Combustion and Reduction)**

This facility does not contain any sources of waste combustion or reduction.

**Applicable - Standard No. 4 (Emissions from Process Industries)**

The turbines are subject to the 20% opacity limit from Section IX. The turbines are not subject to Section XI of this Standard since they have no process particulate emissions. The facility will be required to perform semiannual visual inspections if fuel oil is combusted during the period.

**Not Applicable - Standard No. 5 (Volatile Organic Compounds)**

This facility has no applicable existing sources defined by the regulation.

**Applicable - Standard No. 5.2 (Control of Oxides of Nitrogen (NO<sub>x</sub>))**

Combustion turbines CT5 and CT6 when combustion fuel oil. The turbines are not subject when using natural gas because they are subject to the NSPS KKKK NO<sub>x</sub> limit which is equivalent to the limit of this Standard ( $\leq 25$  ppmv at 15 % O<sub>2</sub>). In accordance with Section I(B)(7), any equipment that has NO<sub>x</sub> limits pursuant to the requirements of 40 Code of Federal Regulations (CFR) Parts 60, 61, or 63 where such limits are equivalent to, or more stringent than, the requirements of this regulation are exempt.



**STATEMENT OF BASIS**  
**Page 4 of 8**  
BAQ Air Permitting Division

<b>Company Name:</b>	Hagood Station	<b>Permit Writer:</b>	James M Myers
<b>Agency Air Number:</b>	0560-0029	<b>Date:</b>	DRAFT
<b>Permit Number:</b>	TV-0560-0029 v2.0		

Combustion turbines CT5 and CT6 when burning fuel oil are subject to the NO<sub>x</sub> limit and monitoring requirements, and tune-up requirements of this Standard.

Combustion turbine CT4 was installed in 1990 before the applicability date of this Standard. The turbine has also undergone a BACT review for NO<sub>x</sub>. In accordance with Section I(B)(4), any source that has undergone a BACT analysis for NO<sub>x</sub> is exempt from this Standard.

**Applicable - Standard No. 7 (Prevention of Significant Deterioration)**

PSD Limits					
Permit ID	Equipment ID	Permit Issue Date	Pollutant	Emission Limit	Explanation
CA	CT4	12/11/1989	PM	45.0 lb/hr, 78.8 tpy	No BACT controls were specified.
CA	CT4	12/11/1989	SO <sub>2</sub>	630.0 lb/hr, 1102.5 tpy	No BACT controls were specified.
CA	CT4	12/11/1989	NO <sub>x</sub>	308.0 lb/hr, 539.0 tpy	BACT is water injection.
CA	CT4	12/11/1989	CO	23.0 lb/hr, 40.3 tpy	No BACT controls were specified. These limits were listed incorrectly and did not reflect burning natural gas, therefore the PSD limits were revised to 109.0 lb/hr and 477 tpy on October 6, 1994 through a revision to the Title V permit. The facility did request in 1991 that the construction permit be changed but it was not.
CA	CT4	12/11/1989	VOC	10.0 lb/hr, 17.5 tpy	No BACT controls were specified.
CA	CT4	12/11/1989	---	2750 hours per year	Operational limit.

The facility is not one of the 28 source categories listed in Section 2(B)(32)(a)(i) so the major source PSD threshold is 250 tons per year for each PSD pollutant. The facility underwent a BACT analysis for construction CA. Facility wide PSD avoidance limits were established with construction CB. The facility is currently a minor source for all PSD pollutants.

**Applicable - 61-62.6 (Control of Fugitive Particulate Matter)**

This regulation generally applies to all facilities. This facility requires no specific conditions to reduce fugitive emissions of particulate matter.



**STATEMENT OF BASIS**  
**Page 5 of 8**  
BAQ Air Permitting Division

<b>Company Name:</b>	Hagood Station	<b>Permit Writer:</b>	James M Myers
<b>Agency Air Number:</b>	0560-0029	<b>Date:</b>	DRAFT
<b>Permit Number:</b>	TV-0560-0029 v2.0		

**40 CFR 60 and 61-62.60 (New Source Performance Standards (NSPS))**

**Applicable – Subpart GG** *(Standards of Performance for Stationary Gas Turbines)*

This Subpart applies to stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules (10 million Btu) per hour, based on the lower heating value of the fuel fired and constructed, modified, or reconstructed after October 3, 1977. Combustion Turbine 4 is subject to this Subpart.

**Applicable – Subpart KKKK** *(Standards of Performance for Stationary Gas Turbines)*

This Subpart applies to stationary combustion turbines with a heat input at peak load equal to or greater than 10 million Btu/hr that commences construction, modification, or reconstruction after February 18, 2005. Combustion Turbines 5 and 6 are stationary combustion turbines with a heat input at peak load equal to or greater than 10 MMBtu per hour, each, which commenced construction after February 18, 2005 and are therefore subject to this Subpart.

**Applicable - Subpart [IIII]** *(Standards of Performance for Stationary Compression Ignition Internal Combustion Engines)*

This Subpart applies to stationary compression ignition internal combustion engines. The facility currently operates one stationary compressor diesel-fired emergency generator (IA-ENG3) and one diesel-fired fire pump (IA-ENG1) that meet the definition of a CI ICE and which were constructed (i.e., ordered) after July 11, 2005 and manufactured after April 1, 2006 (emergency engine) or July 1, 2006 (fire pump). These engines are subject to Subpart IIII.

**Not Applicable - Subpart [JJJJ]** *(Standards of Performance for Stationary Spark Ignition Internal Combustion Engines)*

This Subpart applies to stationary spark ignition internal combustion engines. The facility currently operates and maintains one (1) stationary spark ignition internal combustion engine (IA-ENG4). Construction of IA-ENG4 began prior to June 12, 2006, and complies with the requirements of the 40 CFR 63 Subpart ZZZZ therefore no engines are subject to 40 CFR 60 Subpart JJJJ at Hagood Station.

**40 CFR 61 and 61-62.61 (National Emission Standards for Hazardous Air Pollutants (NESHAP))**

Not Applicable - This facility does not emit the pollutants in a way that is subject to this standard (asbestos, benzene, beryllium, coke oven emissions, arsenic, mercury, radio nuclide, radon, or vinyl chloride). Within Subpart M, only the "Standard for demolition and renovation" in §61.145 applies. This standard specifies notification and asbestos emission control requirements for demolition and renovation activities.

**40 CFR 63 and 61-62.63 (National Emission Standards for Hazardous Air Pollutants (NESHAP) for Source Categories)**

**Applicable - Subpart ZZZZ** *(Stationary Reciprocating Internal Combustion Engines)*



**STATEMENT OF BASIS**  
**Page 6 of 8**  
BAQ Air Permitting Division

<b>Company Name:</b>	Hagood Station	<b>Permit Writer:</b>	James M Myers
<b>Agency Air Number:</b>	0560-0029	<b>Date:</b>	DRAFT
<b>Permit Number:</b>	TV-0560-0029 v2.0		

This regulation applies to internal combustion engines operated at a facility that is either a major or area source of HAP emissions. The 208 hp No. 2 fuel oil-fired emergency fire water pump (IA-ENG1) is considered a new source under the RICE MACT (installed after June 12, 2006). As noted in §63.6590 (c)(1), the No. 2 fuel oil-fired emergency fire pump is required to meet the requirements of the RICE MACT by complying with 40 CFR Part 60, Subpart IIII.

The facility operates a 74 hp natural gas fired emergency engine (IA-ENG4) and 860 kW emergency diesel-fired generator (IA-ENG3). The natural gas fired engine was installed in 2006 and thus meets the definition of an existing stationary RICE. The 860 kW emergency diesel fired generator was installed at the facility in December 2008, however, it was ordered, and thus began construction, prior to June 12, 2006. Therefore, this regulation applies to the 74 hp natural gas emergency engine and the 860 kW emergency diesel-fired generator.

**Not Applicable – Subpart YYYY (Stationary Combustion Turbines)**

This regulation applies to combustion turbines operated at a facility that is a major source of HAP emissions. The facility has the potential to emit less than 10 tons per year of single HAP and less than 25 tons per year of combined HAP which makes the facility an area source. Therefore, this regulation does not apply.

**Not Applicable - 61-62.68 (Chemical Accident Prevention Provisions)**

The facility does not store or use chemicals subject to 112(r) above threshold quantities.

**Applicable - 40 CFR 64 (Compliance Assurance Monitoring)**

The facility is subject to the CAM regulation since the combustion turbine units use water injection as a NO<sub>x</sub> control device to achieve compliance with a federally enforceable limit or standard. The CAM requirements are listed in the current Title V operating permit. No revision is being requested for Hagood Station and therefore, no update to the CAM plans is required. Combustion turbine CT4 uses water injection to comply with Standard 7 (BACT) and 40 CFR 60 Subpart GG NO<sub>x</sub> limits. CT5 and CT6 both use water injection to comply with the Standard 5.2 and 40 CFR 60 Subpart KKKK NO<sub>x</sub> limits.

**Applicable – 61-62.72 (Acid Rain)**

The facility is an affected unit under the Acid Rain Program. A Title IV Acid Rain renewal permit application from the facility was submitted and received by the Department with this Title V renewal. The Title IV Acid Rain Permit will be renewed and included as an attachment to this Title V renewal permit.

**Applicable – 61-62.96 (NO<sub>x</sub> Budget Trading)**

The facility participates in the NO<sub>x</sub> and SO<sub>2</sub> Budget Trading Program and has applicable requirements in their TV operating permit.

**Applicable – 61-62.97 (CSAPR)**

The facility is subject to the applicable requirements of this rule (CSAPR).



**STATEMENT OF BASIS**  
**Page 7 of 8**  
BAQ Air Permitting Division

<b>Company Name:</b>	Hagood Station	<b>Permit Writer:</b>	James M Myers
<b>Agency Air Number:</b>	0560-0029	<b>Date:</b>	DRAFT
<b>Permit Number:</b>	TV-0560-0029 v2.0		

**AMBIENT AIR STANDARDS REVIEW**

**Applicable - Standard No. 2 (Ambient Air Quality Standards)**

The facility has Ambient Air Quality Standards pollutants. A new modeling analysis was not required for this renewal. See Modeling Summary date XXXX

**Not Applicable - Standard No. 8 (state only) (Toxic Air Pollutants)**

All toxic air pollutants (TAPs) are the result of burning virgin fuels. The TAPs from virgin fuel combustion are not subject to this Standard.

PERIODIC MONITORING					
ID	Regulatory Requirement	Measured Parameter	Required Monitoring Frequency	Reporting Frequency	Monitoring Basis/ Justification
CT4, CT5, CT6	SC Standard 4	Opacity	Semiannual	Semiannual	No specific monitoring is required by the Standard. Semiannual inspections are the minimum required for Title V sources when no visible emissions are expected. There are no process PM emissions from these sources.
CT5, CT6	SC Standard 5.2	Tune-ups	24 months	Semiannual if the tune-up occurs within the period	Tune-ups may help the turbines to operate more efficiently which will can decrease NO <sub>x</sub> formation.
CT4	SC Standard 7	Hours of operation	Monthly	Semiannual	Recording the monthly hours of operation can demonstrate the 2750 hour per year operational limit will not be exceeded.
CT4	SC Standard 7	Fuel Usage records	Monthly	Semiannual	Recording the monthly fuel usage will allow the facility to calculate the monthly heat input to demonstrate compliance with the PM, SO <sub>2</sub> , NO <sub>x</sub> , CO, and VOC emission limits by multiplying the heat input by the emission factor.





<b>Company Name:</b>	Hagood Station	<b>Permit Writer:</b>	James M Myers
<b>Agency Air Number:</b>	0560-0029	<b>Date:</b>	DRAFT
<b>Permit Number:</b>	TV-0560-0029 v2.0		

PERIODIC MONITORING					
ID	Regulatory Requirement	Measured Parameter	Required Monitoring Frequency	Reporting Frequency	Monitoring Basis/ Justification
CT5, CT6	SC Standard 7(c)	Fuel Usage records	Monthly	Semiannual	Recording the monthly fuel usage will allow the facility to calculate the monthly heat input to demonstrate compliance with the PM <sub>10</sub> , SO <sub>2</sub> , and NO <sub>x</sub> emission limits by multiplying the heat input by the emission factor.
CT4	40 CFR 60.334(g)	Water to fuel ratio	Continuous	Semiannual	The water to fuel ratio is developed during source testing and is then used to ensure the NO <sub>x</sub> limit is not exceeded.
CT4	40 CFR 60.334(h)	Fuel sulfur content	Per delivery	Semiannual	Monitoring the fuel sulfur content will ensure the SO <sub>2</sub> limits are not exceeded when the fuel is combusted in the turbines.
CT5, CT6	40 CFR 60.4335	Water to fuel ratio	Continuous	Semiannual	The water to fuel ratio is developed during source testing and is then used to ensure the NO <sub>x</sub> limit is not exceeded.
CT5, CT6	40 CFR 60.4365	Fuel sulfur content	Per delivery	Semiannual	Monitoring the fuel sulfur content will ensure the SO <sub>2</sub> limits are not exceeded when the fuel is combusted in the turbines.

#### **PUBLIC NOTICE**

This Title V Permit will undergo a 30-day public notice period and a 45-day EPA comment period in accordance with SC Regulation 61-62.1, Section II(N) and SC Regulation 61-62.70.7(h).

#### **SUMMARY AND CONCLUSIONS**

It has been determined that this source, if operated in accordance with the submitted application, will meet all applicable requirements and emission standards.