

STATEMENT OF BASIS
GULFSTREAM NATURAL GAS SYSTEM, LLC
COMPRESSOR STATION 100/410
CODEN, MOBILE COUNTY, ALABAMA
FACILITY NO. 503-0046

This proposed Major Source Operating Permit (MSOP) 3rd renewal is issued under the provisions of ADEM Admin. Code Chap. 335-3-16. The above named applicant has requested authorization to perform the work or operate the facility shown on the application and drawings, plans and other documents attached hereto or on file with the Air Division of the Alabama Department of Environmental Management, in accordance with the terms and conditions of this permit. The current MSOP was issued on July 7, 2015, and is scheduled to expire on July 6, 2020.

Gulfstream Natural Gas System, LLC (Gulfstream) operates Compressor Station 100 (also known as Station 410) for the transmission of pipeline natural gas. The significant sources of air pollutants at this facility are three 37,896 hp Rolls Royce Coberra 6562 DLE natural gas-fired turbines [Combustion Turbine (CT) Nos. 1-3], one 17,250 hp Solar Mars 100-15000S natural gas-fired turbine (CT-4), and two 4,259 hp Caterpillar G3616 4-stroke, lean-burn (4SLB) natural gas-fired emergency reciprocating engines [Emergency Generator (EMRG) Unit Nos. 1 and 2]. Insignificant emission sources at this station include three gas starters, used oil and condensate liquids storage tanks, and pipeline blowdowns.

Proposed Changes

The MSOP renewal includes the following changes to the current permit:

- The removal of Emission Point Nos. HTR-1, HTR-2, and HTR-3 – Three 6 MMBtu/hr Heateac Mole Sieve Regeneration Heaters;
- The removal of Emission Point No. FF – Facility Flare;
- The removal of the requirements of 40 CFR Part 60, Subpart KKK, Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants; and
- The reorganization and numbering of emission units.

On November 17, 2017, Gulfstream submitted a letter to the Air Division outlining the intended removal of the Gas Treatment Facility (GTF) and the conversion of the existing facility flare to a new blowdown stack. On June 12, 2019, Gulfstream submitted a letter stating that the removal of the GTF and the conversion of the flare to a blowdown stack had been completed. With this action, Gulfstream was no longer required to comply with the Fugitive VOC Leak Detection and Repair (LDAR) requirements of Subpart KKK and subsequently, 40 CFR §60.18 of Subpart A, General Provisions, for the flare. All emission units and requirements associated with the GTF and flare will be removed from the renewal permit.

Due to the removal of the GTF and flare from the current permit, a reorganization and updated emission unit numbers will be implemented in this renewal permit. The updated emission unit number assignments are outlined in the table below:

Emission Unit/ Emission Point No.	Description
001	37,896 hp Rolls Royce Coberra 6562 DLE Natural Gas-fired Turbine [CT-1 (Unit 1000)]
002	37,896 hp Rolls Royce Coberra 6562 DLE Natural Gas-fired Turbine [CT-2 (Unit 1200)]
003	37,896 hp Rolls Royce Coberra 6562 DLE Natural Gas-fired Turbine [CT-3 (Unit 1300)]
004	17,250 hp Solar Mars 100-15000S Natural Gas-fired Turbine [CT-4 (Unit 1400)]
005	4,259 hp Caterpillar G3616 4SLB Natural Gas-fired Emergency Reciprocating Engine (EMRG-1)
006	4,259 hp Caterpillar G3616 4SLB Natural Gas-fired Emergency Reciprocating Engine (EMRG-2)

Applicability: Federal Regulations

Title V

This facility is a major source under Title V regulations because the potential emissions for nitrogen oxides (NO_x), carbon monoxide (CO), and Volatile Organic Compounds (VOC) exceed the 100 TPY major source threshold. It is not a major source of Hazardous Air Pollutants (HAP) because individual HAP potential emissions do not exceed 10 TPY, and the total HAP potential emissions do not exceed 25 TPY.

Prevention of Significant Deterioration (PSD)

This facility is located in an attainment area for all criteria pollutants and the facility operations are not one of the 28 listed major source categories; therefore, the applicable major source threshold is 250 TPY. The facility is a major source for PSD because the facility-wide potential emissions of NO_x, CO, and VOC each exceed 250 TPY.

On June 29, 2001, Gulfstream underwent PSD for the installation of CT-1, CT-2, and CT-3, for NO_x, CO, VOC, and PM₁₀. The Best Available Control Technology (BACT) implemented was emissions limits and an hourly operational limit. Each turbine has a NO_x, CO, VOC, and PM₁₀ emissions limit and there is a combined operational limit of 20,000 hours per rolling 12 month consecutive period.

CT-4 has a NO_x emission limitation which was established to avoid undergoing PSD review when the unit was installed in 2007. When EMRG-1 and EMRG-2 were initially placed into service they did not undergo a PSD review. However, in a letter dated June 29, 2001, EPA expressed their concerns regarding the size of these engines and the fact that they were not addressed in the PSD review along with the CT-1 through CT-3 turbines. EPA requested that the Department permit the engines and place hourly limits on these engines because of their size and the expected

level of operation. At that time, the Department did not permit emergency engines; however, an agreement was made that hourly limits would be placed on the engines. The facility elected to limit the emissions from both units by restricting each unit's hours of operation to 500 hours per year to comply with EPA's request. The hourly operation limits were not previously included in the initial Title V because the sources were originally considered insignificant activities. The engines and associated hourly operating limits were included in the current renewal permit issued July 7, 2015.

MACT

National Emission Standards for Hazardous Air Pollutants (NESHAP) –Subpart ZZZZ

The stationary reciprocating internal combustion engines (RICE) at the facility are considered affected sources under 40 CFR Part 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE MACT). Under this Subpart, EMRG-1 and EMRG-2 are classified as existing 4SLB RICE located at an area source of HAP. In accordance with 40 CFR §63.6595(a)(1), Gulfstream must meet the requirements of 40 CFR Part 63, Subpart ZZZZ and Subpart A for these engines.

According to 40 CFR §63.6603, an existing stationary RICE located at an area source of HAP emissions must comply with the applicable requirements in Table 2d to this Subpart.

According to Item 5 in Table 2d to Subpart ZZZZ, existing emergency SI RICE are subject to the following work practice requirements:

- Change oil and filter every 500 hours of operation or annually, whichever comes first; or participate in the oil analysis program as allowed by 40 CFR §63.6625(j);
- Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and
- Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

In addition, these engines will be limited to operating during:

- Emergency situations;
- Maintenance checks and readiness testing, not to exceed 100 hours per year; and
- Non-emergency situations, not to exceed 50 hours per year (those 50 hours are counted towards the 100 hours per year provided for maintenance and testing)

According to Tables 4 and 5 to Subpart ZZZZ, no initial or subsequent performance testing is required for these emergency engines. 40 CFR §63.6625(e) and Item 9 in Table 6 to Subpart ZZZZ, requires the facility to operate and maintain the engines according to the manufacturer's written instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution

control practices for minimizing emissions. 40 CFR §63.6625(f) requires the installation of a non-resettable hour meter if one is not already installed.

40 CFR §63.6655(f) requires Gulfstream to keep records of the hours of operation of each engine that are recorded through the non-resettable hour meter. They must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.

NESHAP –Subpart YYYY

This facility is not a major source of HAP emissions; therefore, none of the combustion turbines at the facility are affected sources under 40 CFR Part 63, Subpart YYYY, National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines (the Combustion Turbine MACT)[Adopted by reference in ADEM Admin. Code r. 335-3-11-.06(102)].

NSPS

New Source Performance Standards (NSPS) –Subpart GG

CT-1, 2, and 3 were manufactured after the 40 CFR Part 60, Subpart GG, applicability date of October 3, 1977; therefore, they are subject to Subpart GG, Standards for Stationary Gas Turbines [Adopted by reference in ADEM Admin. Code r. 335-3-10-.02(33)] and have applicable NO_x and SO₂ emission limits; however, these turbines are also subject to PSD/BACT limits for NO_x, which are more stringent than the Subpart GG limits. Therefore, compliance with this Subpart would be met by compliance with the PSD/BACT limit. Performance testing for each turbine demonstrated compliance with the applicable NO_x standards. Gulfstream is required to certify the fuel burned in the units meet the definition of natural gas by maintaining a current tariff sheet specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less to demonstrate compliance with the applicable SO₂ standard found in 40 CFR §60.334(h)(3)(i).

NSPS –Subpart KKKK

CT-4 was constructed after the 40 CFR Part 60, Subpart KKKK, applicability date of February 18, 2005, and has a heat input at peak load greater than 10 MMBtu/hr; therefore, it is subject to Subpart KKKK, Standards of Performance for Stationary Combustion Turbines [Adopted by reference in ADEM Admin. Code r. 335-3-10-.02(89)] and has applicable NO_x and SO₂ emission limits. It is classified as a new turbine firing natural gas with a heat input at peak load between 50 MMBtu/hr and 850 MMBtu/hr. Performance testing for this turbine has demonstrated compliance with the applicable NO_x standard. The facility has elected to comply with the SO₂ emission standards under this Subpart by not burning any fuel that contains potential sulfur emissions of 26 nanograms per joule (ng/J) (0.060 lb SO₂/MMBtu) heat input in this turbine. The total sulfur content of the fuel being fired in this turbine is not required to be monitored since the sulfur content in the fuel is demonstrated not to exceed 0.060 lb SO₂/MMBtu. The facility is required to demonstrate compliance through the submittal of a current, valid tariff sheet that the natural gas fuel burned in this turbine has a total sulfur content of 20.0 grains of sulfur or less per 100 standard cubic feet and the potential sulfur emissions are 0.060 lb SO₂/MMBtu heat input or less.

NSPS –Subpart 0000

The compressors associated with the units at this facility commenced construction prior to the August 23, 2011 applicability date of 40 CFR Part 60, Subpart 0000, Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification or Reconstruction Commenced After August 23, 2011, and on or before September 18, 2015 [Adopted by reference in ADEM Admin. Code r. 335-3-10-.02(91)]; therefore, these units are not subject to this Subpart.

NSPS –Subpart 0000a

Compressor Station 100/410 is considered a natural gas compressor facility and is potentially subject to 40 CFR Part 60, Subpart 0000a, Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification, or Reconstruction Commenced After September 18, 2015 [Adopted by reference in ADEM Admin. Code r. 335-3-10-.02(91)(a)]. However, all equipment and processes potentially subject to this regulation commenced construction or were modified prior to the applicability date, therefore, this facility is not subject to this Subpart.

Applicability: State Regulations

Although the reciprocating engines and turbines at this facility are fuel combustion sources, they are not subject to any particulate matter (as TSP) emission limitation of ADEM Admin. Code Chap. 335-3-4 or any sulfur dioxide (SO₂) emission limitation of ADEM Admin. Code Chap. 335-3-5 because they do not meet the definition of fuel burning equipment nor is this facility considered one of the process industries, general or specific. The engines and turbines would, however, be subject to the visible emissions standards of ADEM Admin. Code r. 335-3-4-.01(1), which states that no air emission source may emit particulate of an opacity greater than 20% (as measured by a six-minute average) more than once during any 60minute period and at no time shall emit particulate of an opacity greater than 40% (as measured by a six-minute average). They are expected to be able to comply with this standard because they are exclusively fired by natural gas.

Emission Testing and Monitoring

Gulfstream would be required to certify on a semiannual basis that only natural gas was burned in all units as a method for monitoring compliance with the visible emission requirements of ADEM Admin. Code r. 335-3-4-.01(1) because opacity would be negligible while combusting natural gas.

To monitor compliance with the applicable PSD/BACT NO_x, CO, and VOC emission limits for CT-1, 2, and 3, emissions testing would be required twice per calendar year at a frequency of once per semiannual period (Jan 1st-Jun 30th and Jul 1st-Dec 31st) during which a unit operates for the purposes of production (i.e. the compression/transmission of natural gas), with a minimum of three (3) calendar months elapsing between tests. Gulfstream is not required to test for the applicable PSD/BACT PM₁₀ emission limit. The first emissions test conducted following the issuance of this renewal permit shall be conducted using an approved US EPA Reference Method or an alternate method if approved in advance by the Air Division. If results from the performance test are less than or equal to the emission limit, then the frequency of subsequent performance tests may be reduced from a semiannual to annual basis. If the results of any subsequent performance test

exceed the emission limit, then semiannual performance testing must resume until the unit shows compliance for two consecutive testing events demonstrating emissions are less than or equal to the emission limit, at which time annual testing may resume. After the first emissions test conducted following the issuance of this renewal permit, no periodic monitoring testing will be required if a unit does not operate for production purposes for more than 480 hours during the semiannual testing period or 960 hours during the annual testing period, whichever applies. This testing exception was requested by Gulfstream during the initial Title V permit issuance process and was agreed upon by the Air Division.

To determine compliance with the NO_x standard in 40 CFR Part 60, Subpart KKKK and the synthetic minor source NO_x emission limit for CT-4, Gulfstream shall conduct NO_x performance tests on an annual basis. 40 CFR §60.4340(a) states that if NO_x emission results from the initial performance test are less than or equal to 75% of the NO_x emission limit, then the frequency of subsequent performance tests may be reduced to once every two years. If the results of any subsequent performance test exceed 75% of the NO_x emission limit, then annual performance testing must resume. Gulfstream would also be required to perform subsequent emission testing once per calendar year during which a unit operates for the purposes of production (i.e. the compression/transmission of natural gas). The subsequent annual emission testing may be conducted using either an approved EPA Reference Method or with a portable analyzer. Periodic monitoring for the turbine may be conducted concurrently with the annual or biannual EPA Reference Method test that is required by 40 CFR Part 60, Subpart KKKK. After the first emissions test conducted following the issuance of this renewal permit, no periodic monitoring will be required if a unit does not operate for production purposes during the annual testing period.

To determine compliance with the SO₂ standard in 40 CFR Part 60, Subpart GG, for CT-1, 2, and 3, and the SO₂ standard in 40 CFR Part 60, Subpart KKKK, for CT-4, Gulfstream shall continue to demonstrate the fuel meets the definition of natural gas in 40 CFR §60.331(u) as per Gulfstream's Federal Energy Regulatory Commission (FERC) Natural Gas Tariff.

Recordkeeping and Reporting

As part of the Semiannual Monitoring Report, in addition to the recordkeeping and reporting required to comply with 40 CFR Part 63, Subpart ZZZZ for EMRG-1 and 2, Gulfstream would be required to include a statement addressing whether only natural gas was fired in each unit during the respective reporting period. Gulfstream would also be required to include a statement addressing whether a unit operated for production purposes during the respective reporting period. Gulfstream would be required to maintain monthly records of the operating hours, fuel gas consumption, fuel heat input, and emissions to comply with the PSD/BACT limits for CT-1, 2, and 3. Gulfstream would be required to submit the results of all emission tests conducted to the Air Division within 30 days of the actual completion of the test. Gulfstream would be required to maintain the most current fuel tariff sheet on-site in a form suitable for inspection.

Compliance Assurance Monitoring (CAM)

The combustion turbines are subject to emission limits or standards; however, they are not equipped with a control device to meet the limits or standards. The turbines are equipped with Low NO_x burners; however, Low NO_x burner technology is not included in the definition of a

“control device” under 40 CFR §64.1. Therefore, the turbines would not be subject to CAM. The emergency generator engines have pre-controlled emissions that are greater than or equal to 100 tons per year for criteria pollutants and they are subject to an emission limit or standard; however, they are not equipped with a control device. Therefore, the engines would not be subject to CAM.

Public Notice

The renewal of this Title V MSOP would require a 30-day public comment period and a 45-day EPA review period.

Recommendation

Based on the above analysis, I recommend that Gulfstream Natural Gas System’s Title V MSOP be renewed with the conditions noted above pending the resolution of any comments received during the 30-day public comment period and the 45-day EPA review.

Andrea Sellers

Andrea Sellers
Chemical Branch
Air Division

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Date

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