Title V Air Operation Permit Revision and Renewal Permit No. 0950190-013-AV

APPLICANT

The applicant for this project is Florida Gas Transmission Company, LLC. The applicant's responsible official and mailing address are: David Shellhouse, Vice-President – Southeast Operations, Florida Gas Transmission Company, LLC, Compressor Station No. 18, 2301 Lucien Way, Suite 200, Maitland, Florida 32751.

FACILITY DESCRIPTION

The applicant operates the existing Compressor Station No. 18, which is located in Orange County at 7990 Steer Lake Road, Orlando, Florida.

This facility is a natural gas pipeline compressor station. It is part of a natural gas pipeline system serving the state of Florida. Six engines of various types drive compressors to maintain pressure and flow of natural gas in the pipeline. Engines 1801, 1802, 1803 and 1804 are 4 stroke lean burn reciprocating internal combustion engines (4SLB RICE). Engine 1805 is a 2 stroke lean burn (2SLB) RICE. All five of these engines are subject to 40 CFR Part 63 Subpart ZZZZ as affected units, but none must meet the requirements of the subpart (See 40 CFR Part 63 Subpart ZZZZ, Section 63.6590(b)(3)). Engine 1806 is a gas turbine with a dry low NO_x combustion system; it is subject to 40 CFR Part 60 Subpart GG. There is no external pollution control equipment on these engines. The facility also has two RICE emergency generators. All engines at this facility use pipeline natural gas as the only fuel.

The facility consists of three (3) regulated emission units (EUs) and insignificant emission units and activities as described in Appendix I, List of Insignificant Emissions Units and/or Activities and Appendix U, Unregulated Emissions Units and/or Activities

| EU No. | Brief Description |
|--------|---|
| 005 | Engine 1805 is a 2,700 bhp reciprocating internal combustion engine (RICE) installed in 1991. This Cooper-Bessemer Model GMVH-12C2 engine is a V-12, turbocharged 2 stroke lean burn (2SLB) engine. The maximum heat input is 21 MMBTU/hr (24-hour average) of natural gas. This 2SLB engine is an "existing unit" in 40 CFR Part 63, Subpart ZZZZ, rated at greater than 500 bhp. This engines does not have to meet the requirements of Subpart ZZZZ or 40 CFR Part 63 Subpart A. The fuel is natural gas from the pipeline. There are no pollution control devices on this engine. The exhaust stack is 50 ft high and 2.2 ft diameter. The exhaust flow is 19,753 ACFM. |
| 006 | Engine 1806 is a gas turbine installed in 2003. This Cooper-Rolls Royce Model 501-KC7 DLE has a dry low NO_x combustor design to minimize NO_x emissions. The gas turbine produces approximately 7,200 bhp (ISO) at 68 MMBTU/hr heat input. The maximum firing rate is approximately 65,100 standard cubic feet per hour based on a natural gas heat content of 1040 BTU/SCF. This engine is subject to 40 CFR Part 60 Subpart GG. When operating at capacity, exhaust gases exit a 6 ft diameter, 61 ft tall stack at 964°F, at a flow rate of 97,500 ACFM. |
| 008 | Engine 1808-1832 is a 306 bhp emergency generator RICE. This Caterpillar Model 3406 engine was installed in 2001. This is an "existing unit" in 40 CFR Part 63, Subpart ZZZZ, rated at less than 500 bhp. This engine must meet the requirements of Subpart ZZZZ and 40 CFR Part 63 Subpart A. |

REGULATED EMISSIONS UNIT IDENTIFICATION NUMBERS AND DESCRIPTIONS

APPLICABLE REGULATIONS

Based on the Title V air operation permit renewal application received on January 8, 2025, this facility is a major source of hazardous air pollutants (HAP), carbon monoxide (CO) and Prevention of Significant Deterioration

(PSD) major source of nitrogen oxides (NO_x). A summary of applicable regulations is shown in the following table:

| Regulation | EU No(s). |
|--|---------------|
| Federal Rule Citations | |
| 40 CFR 60, Subpart A, General Provisions | |
| 40 CFR 60, Subpart GG, NSPS for Stationary Gas Turbines | 006 |
| 40 CFR 63, Subpart A, General Provisions | |
| 40 CFR 63, Subpart ZZZZ, NESHAP for Stationary RICE | 008 |
| State Rule Citations | |
| 62-4.070(3), F.A.C Standards for Issuing or Denying Permits | |
| 62-204.800, F.A.C. – Federal Regulations Adopted by Reference | |
| 62-210.300, F.A.C. – Permits Required | |
| 62-210.350, F.A.C. – Public Notice and Comment | |
| 62-210.370(3), F.A.C. – Annual Operating Reports | |
| 62-210.900, F.A.C. – Forms and Instructions | 005, 006, 008 |
| 62-212.400, F.A.C. – Prevention of Significant Deterioration (PSD) | |
| 62-213.205, F.A.C. – Annual Emission Fee | |
| 62-213.400, F.A.C. – Permits and Permit Revisions Required | |
| 62-213.430, F.A.C. – Permit Issuance, Renewal and Revision | |
| 62-213.440, F.A.C. – Permit Content | |
| 62-213.450, F.A.C. – Permit Review by EPA and Affected States | |
| 62-296.320(2) , F.A.C. – Objectionable Odor Prohibition | |
| 62-296.320(4), F.A.C Particulate Emissions Standard | |
| 62-296.320(4)(b) , F.A.C General Visible Emission Standard | |
| 62-296.320(4)(c) , F.A.C Unconfined Emissions of Particulate Matter | |
| 62-297.310, F.A.C. – General Test Requirements | |
| 62-297.320, F.A.C. – Standards for Persons Engaged in Visible Emissions Observations | 005, 006 |
| Municipal Rule Citation | |
| Orange County Ordinance Chapter 15 Article III | All |

PROJECT DESCRIPTION

The purpose of this permitting project is to revise and renew the existing Title V permit for the above referenced facility and incorporate the changes authorized by concurrent Permit No. 0950190-012-AC. This project updates EUs to reflect current facility operations nomenclature, and removes sulfur dioxide (SO_2) emission limit for all EUs.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

| Application for a Title V Air Operation Permit Renewal received | [January 8, 2025] |
|--|--------------------------------|
| Application Completeness Review completed | [March 9, 2025] |
| Draft Concurrent AC/Title V Air Operation Permit Revision/Renewal issued | [March 18, 2025] |
| Final Title V Air Construction Permit issued | [April 22, 2025] |
| Proposed Title V Air Operation Permit Revision/Renewal issued | [May 6, 2025] |
| Final Title V Air Operation Permit Revision/Renewal issued | [<mark>June 24, 2025</mark>] |

PRIMARY REGULATORY REQUIREMENTS

Standard Industrial Classification (SIC) Code: 4922 – Natural Gas Transmission.

North American Industry Classification System (NAICS): 486210, Transmission of natural gas via pipeline.

HAP: The facility is identified as a major source of hazardous air pollutants (HAP).

<u>Title V</u>: The facility is a Title V major source of air pollution in accordance with Chapter 62-213, Florida Administrative Code (F.A.C.).

<u>NSPS</u>: The facility operates a unit subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60.

<u>NESHAP</u>: The facility operates units subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) of 40 CFR 63.

<u>CAM</u>: Compliance Assurance Monitoring (CAM) does not apply to any of the units at the facility. There is no external pollution control device on these engines. Compliance is demonstrated by annual testing of EUs 005 and 006.

<u>GHG</u>: The facility is not identified as a major source of green house gas (GHG) pollutants.

PROJECT REVIEW

As part of this permit revision and renewal, EPD has updated the permit to match Florida Department of Environmental Protection Division of Air Resource Management's (DARM) most recent template and formatting guidelines.

Changes to the permit made as part of this revision and renewal were established in Permit No. 0950190-012-AC, and are shown in strike through format for deletions and in <u>double underline</u> format for additions. For ease of identification, all changes have also been highlighted in yellow within the permit document.

1. Update A.1. Permitted Capacity.

<u>Permitted Capacity</u>. The maximum natural gas consumption for EU 005 shall not exceed 20,400 20.640 scf/hr (24 hour average) and the maximum heat input shall not exceed 21 MMBTU/hr (24 hour average). [Rules 62-210.200(PTE), F.A.C.; Permit No. AC48-189456]

2. Remove SO_2 emission limit and compliance requirement for all EUs.

EU 005 – Engine 1805 – 2,700 bhp RICE (2SLB).

Condition A.5 Emission Standards.

| Pollutant | Lbs/hr | Tons/yr | Emission factor |
|-------------------|--------|---------------------------|-----------------|
| Nitrogen Oxides | 10.6 | <mark>46.<u>34</u></mark> | 1.78 g/bhp-hr |
| Carbon Monoxide | 11.1 | 48.7 | 1.87 g/bhp-hr |
| VOC (non-methane) | 2.6 | 11.6 | 0.44 g/bhp-hr |

| <mark>Sulfur Dioxide</mark> | <u> </u> | <mark>2.0</mark> | <mark>7.90 gr S/100 scf</mark> |
|-----------------------------|----------|---------------------------|--------------------------------|
| HAPs | 1.67 | <mark>7.3<u>4</u>2</mark> | 0.000618 lb/bhp-hr |

[Permit Nos. AC48-189456, 0950190-006-AC & 0950190-012-AC]

Condition A.6 <u>Annual Compliance Tests Required</u>. During each calendar year (January 1st to December 31st), EU 005 shall be tested to demonstrate compliance with the emission standards for CO, NO_x, and visible emissions. CO and NO_x emissions shall be tested concurrently at permitted capacity. SO₂-emissions shall be eacled and reported based on fuel flow and vendor analysis of fuel sulfur content. In addition to the test results, each report shall include a general description of the maintenance activities and operation of this facility since the last test. [Rules 62-4.070(3) and 62-297.310(8), F.A.C.]

Condition A.9 <u>Test Methods</u>. Compliance with the NO_x, SO2, CO, visible emissions, and VOC standards for EU 005 shall be determined by the following reference methods as described in 40 CFR 60, Appendix A and adopted by reference in Rule 62-297.401, F.A.C.

3. Update EU 006 Description due to a like-kind replacement (June, 2024).

EU 006 – Engine 1806 – 7,200 bhp Gas Turbine.

Engine 1806 is a Cooper-Rolls Royce $\frac{\text{Model 501-KC7 DLE SGT-A05}}{\text{Model 501-KC7 DLE SGT-A05}}$ gas turbine* installed in 2003. The turbine is equipped with a dry low NO_x combustor design to minimize NO_x emissions. The gas turbine produces approximately 7,200 bhp (ISO) at 68 MMBTU/hr heat input. The maximum firing rate is approximately 65,100 standard cubic feet (SCF) per hour based on a natural gas heat content of 1040 BTU/SCF. When operating at capacity, exhaust gases exit a 6 ft diameter, 61 ft tall stack at 964°F, at a flow rate of 97,500 ACFM.

{*Permitting Note: This gas turbine is a 2024 like-kind replacement unit (Model No. SGT-A05 KC7 DLE ASP-2254). A like-kind replacement does not meet the definition of a modification in NSPS Subpart A, so the unit is not subjected to NSPS Subpart KKKK.}

4. Update Condition B. 4. Emission Standards.

Condition **B.4** Emission Standards.

| Pollutant | Standards | Equiv Maximum 1 | valent Emissions ^f | Rule Basis ^g |
|------------------------------|---------------------------------|----------------------------|----------------------------------|--------------------------------|
| | | lb/hour | TPY | |
| CO ^a | 50.0 ppmvd @ 15% O2 | <mark>6.9<u>1</u></mark> | <mark>30.227</mark> | Avoid Rule 62-212.400, F.A.C. |
| NO _x ^b | 25.0 ppmvd @ 15% O2 | 5.7 | 24.97 | Avoid Rule 62-212.400, F.A.C. |
| | | | | 40 CFR 60.332 |
| SO_2^{c} | 10.0 grains of sulfur per | <mark>1.9</mark> | <mark>8.15</mark> | Avoid Rule 62-212.400, F.A.C. |
| | 100 SCF of gas | | | 4 0 CFR 60.333 |
| Opacity ^d | 10% opacity, 6-minute average | Not Ap | plicable | Rule 62-4.070(3), F.A.C. |
| PM ^e | Efficient combustion of natural | 0.5 <u>0.45</u> | <mark>1.96<u>7</u></mark> | Rule 62-4.070(3), F.A.C. |
| | gas | | | |
| VOC ^e | Efficient combustion of natural | <mark>0.2</mark> | <mark>0.88</mark> | Rule 62-4.070(3), F.A.C. |
| | gas | | | |

a. The CO standards are based on the average of three test runs as determined by EPA Method 10.

b. The NO_x standards are based on the average of three test runs as determined by EPA Method 20.

c. The fuel sulfur specification is based on the maximum limit specified by the Federal Energy Regulatory Commission (FERC) and effectively limits the potential SO₂ emissions. Expected fuel sulfur levels are less than 1 grain/100 SCF of natural gas from the pipeline.

d. The opacity standard is based on a 6-minute average, as determined by EPA Method 9.

- e. For both PM and VOC, the efficient combustion of natural gas is indicated by compliance with opacity and CO standards. Equivalent maximum PM emissions are based on a factor of 0.0066 lb/MMBtu heat input from AP-42 Table 3.1-2a. Equivalent maximum VOC emissions are based on a total hydrocarbon factor of 1.58 lb/eng-hr from the vendor and the conservative assumption that 10% of the hydrocarbons are regulated (non-methane) VOC. No testing is required.
- f. Equivalent maximum emissions are based on the maximum expected emissions, permitted capacity, a compressor inlet air temperature of 59°F, and 8,760 hours of operation per year. For comparison purposes, the permittee shall provide a reference table with the initial compliance test report of mass emission rates versus the compressor inlet temperatures. Each test report shall include measured mass emission rates for CO, and NO_x and SO2. Mass emission rates for SO2 shall be calculated based on actual fuel sulfur content and fuel flow rate. For tests conducted at 59°F or greater, measured mass emission rates shall be compared to the equivalent maximum emissions above. For tests conducted below 59°F, measured mass emission rates shall be compared to the tabled mass emission rates provided by the manufacturer based on compressor inlet temperatures.
- g. Compliance with the emissions standards of this permit ensures that the project remains a minor source of air pollution with respect to PSD.

[Rule 62-4.070(3), F.A.C.; Permit No. 0950190-006-AC]

5. Update Condition B.5. Annual Compliance Tests Required.

Condition **B.5** <u>Annual Compliance Tests Required</u>. During each calendar year (January 1st to December 31st), EU 006 shall be tested to demonstrate compliance with the emission standards for CO, NO_x, and visible emissions. CO and NO_x emissions shall be tested concurrently at permitted capacity. SO₂ emissions shall be ealculated and reported based on fuel flow and vendor analysis of fuel sulfur content. In addition to the test results, each report shall include a general description of the maintenance activities and operation of this facility since the last test. [Rules 62-4.070(3) and 62-297.310(8), F.A.C.]

6. The following EU descriptions were changed to reflect current facility operations nomenclature:

UNREGULATED EMISSIONS UNIT (Appendix U, List of Unregulated Emission Units And/Or Activities)

| EU No. | Brief Description |
|--------|---|
| 007 | Engine 1807 1831 is a 691 bhp emergency generator RICE installed in 2002. |

REGULATED EMISSIONS UNIT

| EU No. | Brief Description |
|--------|---|
| 008 | Engine 1808-1832 is a 306 bhp emergency generator RICE. |

CONCLUSION

This project revises and renews Title V air operation Permit No. 0950190-010-AV (as revised by Permit No. 0950190-011-AV), which was effective on August 18, 2020. This Title V air operation permit renewal is issued under the provisions of Chapter 403, Florida Statues (F.S.), and Chapters 62-4, 62-210, and 62-213, F.A.C.