Walton Discover Power
206-0030
Smiths Station, Lee County, Alabama

This proposed third renewal Title V Major Source Operating Permit is issued under the provisions of ADEM Admin. Code r. 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.

Walton Discover Power's current permit was effective on June 7, 2016 with an expiration of June 6, 2021. Per ADEM Admin. Code r. 335-3-16.12(2), an application for permit renewal shall be submitted at least six (6) months, but not more that eighteen (18) months, before the date of expiration of the permit. The renewal application was received on December 2, 2020. The proposed MSOP will expire on June 6, 2026.

The facility has not proposed the addition of any new emission sources or modifications to this permit during this renewal period. However, the applicable requirements of Cross-State Air Pollution Rule (CSAPR) will be included in this renewal.

FACILITY DESCRIPTION

Walton Discover Power Facility, which is a peaking power facility, is located at 230 Lee County Road, Highway 315, in Smith-Station, Lee County, AL. The only significant sources of air pollutants at this facility are two (2) - 50 MW Pratt & Whitney Twin Pac Simple Cycle Combustion Turbine Units.

Facility Emissions

Pollutants	Potential Emissions Single Turbine (TPY)	Total Potential Emissions from Four Turbines (TPY)	2019 Actual Emissions (TPY)
NO_X	337.7	1350.8	10.23
CO	360	1440	12.69
SO_2	1.10	4.36	0.02
VOC	3.82	15.3	0.11
PM	12	48	0.36
PM_{10}	11.91	47.65	0.09
$PM_{2.5}$	11.91	47.65	0.09
CO_2e (Greenhouse Gas)	33,676.5	134,706	---
Single HAP (Formaldehyde)	1.29	5.16	0.03
Combined HAP	1.87	7.46	0.03

Two (2) 50 MW Pratt & Whitney Simple Cycle Combustion Turbines

Each Twin Pac unit consists of two combustion turbines which fire natural gas as their exclusive fuel. Ambient air is drawn into the compressor inlets then compressed to a higher temperature and pressure. On days when the ambient air temperature is high, water may be injected through a "fogging system" prior to being introduced into the compressor inlets to reduce the temperature of the combustion air by evaporative cooling and to maintain higher levels of power output. The air is mixed with natural gas and ignited in the combustors upon exiting the compressors. To lower the flame temperature and reduce the formation of thermal NO_X, water is injected into the combustor. The high temperature, high pressure gases are then allowed to expand through the turbine sections which are mechanically coupled to a single generator to generate electricity.

Regulations

The following regulations may be applicable to the turbines:

40 CFR Part 60, Subpart GG," Standards of Performance for Stationary Gas Turbines"

Turbines are subject to the applicable requirements of this subpart if they have a heat input at peak load equal to or greater than 10.7 gigajoules (10 million Btu) per hour and if they commence construction, modification, or reconstruction after October 3, 1997. In the facility's application dated October 8, 1998, it was determined that the turbines were originally commissioned into service in 1973 and shipped from an existing location to Walton in 1999.

According to 40 CFR §60.14 (e)(6), the relocation of an existing facility does not constitute a modification. Prior to installation of the turbines at Walton, the turbines were modified to add water injection which resulted in a reduction in NO_X, a regulated pollutant, and an increase in CO. Since CO was not a pollutant in which a standard applied at the time these units were installed, a modification was not determined to have occurred (40 CFR §60.14 (a)). The relocation of these units to this facility also did not result in reconstruction since the definition found in 40 CFR §60. 15(b) was not met. Therefore, the turbines would not have to meet the requirements of this subpart.

40 CFR Part 60, Subpart KKKK, "Standards of Performance for Stationary Combustion Turbines"

The turbines are not subject to the applicable requirements of this subpart because the units were constructed before the February 18, 2005 applicability date for this subpart and they have not been reconstructed or modified since that date.

40 CFR Part 63, Subpart YYYY, "National Emissions Standards for Hazardous Air Pollutants (HAPS) for Stationary Combustion Turbines"

The turbines are not subject to the requirements of this subpart since the turbines are not located a facility that is a major source of HAPs as defined in 40 CFR §63.6085(b). There are currently no area source requirements under this subpart.

Emission Standards

Emissions of nitrogen oxide (NO_X) from Units 1A, 1B, 2A, and 2B shall not exceed a total of 240 tons during any consecutive 12-month period.

ADEM Admin. Code r. 335-3-14-.04 (Anti-PSD)

Emissions of carbon monoxide (CO) from Units 1A, 1B, 2A, and 2B shall not exceed a total of 240 tons during any consecutive 12-month period.

ADEM Admin. Code r. 335-3-14-.04 (Anti-PSD)

Sulfur dioxide emissions shall not exceed 4.0 lb/MMBtu.

ADEM Admin. Code r. 335-3-5-.01(b)

Expected Emissions

Particulate Matter (PM) and Opacity:

- These units fire only natural gas. As a result, PM and opacity emissions are expected to be minimal.

Sulfur Dioxide (SO_2):

- Natural gas is the only fuel for these units. Based on the sulfur content of natural gas, an SO2 emission rate of approximately 0.0006 lb/MMBtu is expected.

Nitrogen Oxides (NO_x):

- The expected NO_x emissions from these units would be 0.1858 lb/MMBtu and 77.09 lb/hr, based on 2015 RATA averages and the maximum heat input capacity for these units.

Carbon Monoxide (CO):

- The expected CO emissions from these units would be 0.1980 lb/MMBtu and 82.15 lb/hr, based on 2015 RATA averages and the maximum heat input capacity for these units.

Periodic Monitoring

CO and NO_x emission rates shall be monitored by CEMS in accordance with the procedures of 40 CFR Part 75.

ADEM Admin. Code r. 335-3-14-.04 & 40 CFR Part 75

40 CFR 64, "Compliance Assurance Monitoring (CAM)"

The turbines are subject to the applicable requirements of this part for NO_x because they meet all of the following criteria: they are subject to an emission limit or standard, they use a control device to achieve compliance with the emissions limit or standard, and they have pre-controlled emissions from regulated air pollutants that are equal to or greater than 100 percent of the

amount, in tons per year, required for a source to be classified as a major source (40 CFR §64.2(a)). A continuous compliance determination method, as defined in 40 CFR §64.1, is used for the emission limit or standard (40 CFR §64.2(b)(1)(vi)); therefore, the turbines are exempt from the requirements of this subpart.

Acid Rain Program

This subpart covers multi-state SO_2 and NO_X air pollution control and emission reductions. Turbines are exempt from the requirements of this subpart if they are simple combustion turbines that commenced commercial operation before November 15, 1990 (40 CFR §72.6(b)(1)). Because the units began their initial operation in 1973, they would not be affected units subject to the requirements of this subpart.

Cross-State Air Pollution Rule (CSAPR)

ADEM Admin. Code r. 335-3-5-.06 through 335-3-5-.36 and 335-3-8-.07 through 335-3-8-.70

These units are subject to the applicable provisions of Cross-State Air Pollution Rule (CSAPR).

Walton determines annual SO_2 emissions and annual and ozone season NO_X mass emissions using a NO_X-diluent continuous emission monitoring (CEMS) system and a data acquisition handling system (DAHS). These systems are installed, calibrated, operated and maintained according to the provisions of Part 75. Continuous compliance is met by maintaining the required CEMS monitoring plans, performing ongoing quality assurance and quality control on the CEMS, submitting quarterly reports of emissions, and maintaining sufficient SO_2 and annual and ozone season NO_X allowances in the facility's compliance account.

Recordkeeping and Reporting

- A Departmentally approved data substitution plan for the NO_x and CO CEMS shall be maintained.

- All the original data charts, performance evaluations, calibration checks, adjustment and maintenance records and other information regarding the CEMS shall be maintained in a permanent form suitable for inspection.

- An emission report will be submitted to the ADEM within 30 days of the end of each semi-annual reporting period.

ADEM Admin. Code r. 335-3-14-.04

RECOMMENDATION

I recommend that the Department issue Walton Discover Power's renewal for Major Source Operating Permit No.: 206-0030 after the appropriate public comment and EPA review periods.

Tyler Phillips

Tyler Phillips
Industrial Minerals Section
Energy Branch
Air Division

February 5, 2021
Date