Orlando Utilities Commission, Indian River Plant
Title V Air Operation Permit Renewal
Permit No. 0090008-010-AV

APPLICANT

The applicant for this project is the Orlando Utilities Commission (OUC). The applicant's responsible official and mailing address are: Mr. Chip Merriam, Vice President, Orlando Utilities Commission, Indian River Plant, Reliable Plaza, 100 West Anderson Street, Orlando, Florida 32801.

FACILITY DESCRIPTION

The applicant operates the existing Indian River Plant, which is located in Brevard County at US 1 and Kings Highway Titusville, Florida.

The existing facility consists primarily of four combustion turbines. Emissions units 004 and 007 (combustion turbines A and B) consist of simple cycle General Electric Frame 6 combustion turbines, each with a 35 megawatt (MW) rating. Although the turbines primarily fire natural gas, distillate oil may be fired during periods of curtailed or uneconomical natural gas supply. Nitrogen oxides emissions are reduced by using water injection. Both turbines began commercial operation on August 1, 1990.

Emissions units 005 and 006 (combustion turbines C and D) consist of simple cycle Westinghouse Model Number 501-D5 combustion turbines, each with a 129 MW rating. The turbines primarily fire natural gas. Distillate oil may be fired during periods of curtailed or uneconomical natural gas supply. Nitrogen oxides emissions are controlled by water injection. Both turbines began commercial operation on November 1, 1991.

This facility also consists of three boilers and a lime storage silo that were recently purchased from the adjacent facility formerly owned by GenOn. Emissions units 001, 002 and 003 are three Combustion Engineering steam generators (boilers). The existing boilers currently may burn a variable combination of natural gas and propane, Emissions units 001 and 002 share a common stack, with a height of 300 feet. Emissions unit 003 has a separate 300 foot stack. Unit 001 began operation on February 1, 1960; Unit 002 on September 1, 1964; and Unit 003 on February 1, 1974.

The lime storage silo is located at the water treatment building and is an insignificant emissions unit.

Also included in this permit are miscellaneous unregulated/insignificant emissions units and/or activities.

A compliance assurance monitoring (CAM) plan is included in the facility's Title V permit for the water injection control of nitrogen oxides emissions.

PROJECT DESCRIPTION

The purpose of this permitting project is to renew the existing Title V permit for the above referenced facility. A concurrent air construction permit revision is also issued as part of this permitting action.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Application for a Title V Air Operation Permit Renewal was received May 20, 2014. It was deemed complete.

PRIMARY REGULATORY REQUIREMENTS

Title III: The facility is now identified as a major source of hazardous air pollutants (HAP). When the operations from the GenOn Florida, LP site authorized under Permit No. 0090196-013-AV were

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combined with the operations from the OUC Indian River Plant site authorized under Permit No. 0090008-005-AV, the combined operations became a major source of HAP.

MATS: The facility does not operate units subject to the federal mercury and air toxics standards (MATS) for power plants as set forth in 40 Code of Federal Regulations (CFR) 60 and 63. This regulation applies to new and existing coal and oil-fired electric utility steam generating units (EGUs). Since the boilers at the facility are no longer oil-fired, MATS does not apply.

Title IV: The facility operates units subject to the acid rain provisions of the Clean Air Act.

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

PSD: The facility is a Prevention of Significant Deterioration (PSD)-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility operates units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60.

CAIR: The facility is subject to the Clean Air Interstate Rule (CAIR) set forth in Rule 62-296.470, F.A.C.

CAM: Compliance Assurance Monitoring (CAM) applies to emissions units 004, 005, 006 and 007 (the four combustion turbines) at the facility. Nitrogen oxides emissions are reduced by using water injection.

GHG: The facility is identified as a major source of greenhouse gas (GHG) pollutants.

PROJECT REVIEW AND REQUESTED CHANGES

The overall project includes a concurrent air construction permit revision (0090008-009-AC) that reflects changes to prior air construction permits to implement changes to the Title V air operation permit requested by the applicant and approved by the Department. Details follow below.

Best Management Practice Plan

Title V air operation Permit Conditions **B.2** and **B.3.** currently require that a Best Management Practices (BMP) Plan be implemented for CTs C and D (EU 005 and EU006, respectively), as initially required under OGC File No. 94-3376-C-05 in 1996. In addition to this BMP Plan, OUC has several other documents that provide direction and guidance in the proper operation and maintenance of Combustion Turbines C and D, as well as other associated operational, monitoring, and control systems. Many of these documents are original equipment manufacturer (OEM) manuals prepared and provided by specific equipment manufacturers. Others are documents prepared by OUC (or by consultants under contract with OUC) for its use in ensuring proper plant operation and compliance with applicable air quality related statutory, regulatory, and permit requirements. Specifically, OUC has numerous sources of information that guide best operational practices of these units, as well as many years of practical operating experience. These permit condition, as well as the document, date to July 1996. OUC has successfully operated these units in compliance since that time and requests removal of these permit conditions.

Department Response

The Department agrees that these specific conditions are obsolete since they are based on a document that is 18 years old and technology and management practices have advanced significantly during that time frame.

Changes made to the facility's Title V permit are the following. Text deletions are indicated by strikethrough; text additions are indicated by double underline.

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~~**B.2.** Management Practices. The permittee shall conduct its operation of combustion turbines C and D using the Department approved Air Pollution Prevention and Operator's Best Management Practice Training Plan. [OGC File No. #94-3376-C-05]~~

~~**B.3.** Training. All watch engineers, control center personnel, plant operators, and apprentice operators, directly involved with the operation of combustion turbines C and D and/or the related monitoring systems shall be trained annually on the approved final plan referenced above. The OUC shall keep documentation of the employee training in the plan on file in the facility records. All watch engineers, control center personnel, plant operators, and apprentice operators, directly involved with the operation of combustion turbines C and D and/or the related monitoring systems shall be trained of these plans prior to their initial operation of combustion turbines C and D. This training shall be documented and filed as provided above. [OGC File No. #94-3376-C-05]~~

Extended Cold Shutdown Status

OUC has confirmed that the three electric steam generating units (EU001, EU002 and EU003) are currently "not commercially available". Another term typically used to describe this status is "extended cold shutdown". OUC has requested the Department's concurrence with the practice that routine compliance activities such as fuel sampling, emissions monitoring, and stack testing are not required while the facility is not operating. It was further proposed that the Department would be notified at least 60 days before resuming commercial operation.

OUC will continue to submit quarterly reports, semi-annual monitoring reports, annual statements of compliance, annual operating reports, and the annual Title V fee submissions. OUC requests that the revised TV permit reflect the extended cold shutdown status of these units.

Department Response

The Department agrees with this change. Specific Conditions affected are noted below.

D.10. Sulfur Dioxide. The permittee elected to demonstrate compliance by accepting a fuel sulfur limit. OUC shall monitor the sulfur content of the as-fired fuel through information provided by the fuel vendor(s). This protocol is allowed since the emissions unit has no operating flue gas desulfurization device.

Under "extended cold shutdown" status for the production suspension: Fuel shall be sampled on the last day fuel is fired and shall resume on the first day fuel is fired following the period of not operating.

[Rule 62-296.405(1)(f)1.b., F.A.C. and Permit No. 0090008-008-AC, Specific Condition 2.; Permit No. 0090008-009-AC, Specific Condition 2.]

D.11. COMS for Periodic Monitoring. OUC has installed continuous opacity monitoring systems (COMS) pursuant to 40 CFR Part 75. The permittee shall maintain and operate the COMS and shall make and maintain records of opacity measured by the COMS, for purposes of periodic monitoring.

Under "extended cold shutdown" status for the production suspension: While the facility is not operating, the continuous opacity monitoring equipment shall be removed from the stacks and placed in storage to protect the equipment. Prior to any fuel combustion, the equipment shall be checked and returned to the stacks.

[Rule 62-213.440, F.A.C.]

D.12. Fuel Monitoring. The permittee shall calibrate, operate and maintain devices to continuously monitor and record the fuel flow rate and heat input rates.

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Under "extended cold shutdown" status for the production suspension: Fuel shall be sampled on the last day fuel is fired and shall resume on the first day fuel is fired following the period of not operating.

[0090196-010-AC, Specific Condition 2; and Rule 62-4.070(3), F.A.C.; Permit No. 0090008-009-AC, Specific Condition 3.]

D.15. Annual Compliance Tests Required. During each federal fiscal year (October 1st to September 30th), each EU shall be tested to demonstrate compliance with the emissions standards for visible emissions.

Under "extended cold shutdown" status for the production suspension: The facility does not need to test to demonstrate compliance for visible emissions if no operations occur during the fiscal year (October 1st through September 30th).

[Rule 62-297.310(7), F.A.C.]

D.16. Compliance Tests Prior To Renewal. Compliance tests shall be performed for visible emissions and particulate matter emissions prior to obtaining a renewed operating permit to demonstrate compliance with the emission limits in Specific Conditions **D.5. & D.6.**

Under "extended cold shutdown" status for the production suspension: The facility does not need to test to demonstrate compliance for visible emissions and particulate matter if no operations occur during the renewal period.

[Rules 62-210.300(2)(a) and 62-297.310(7)(a), F.A.C.]

D.17. Visible Emissions. The test method for visible emissions shall be DEP Method 9, incorporated in Chapter 62-297, F.A.C. In lieu of Method 9 testing, a transmissometer utilizing a 6-minute block average for opacity measurements may be used, provided such transmissometer is installed, certified, calibrated, operated and maintained in accordance with the provisions of 40 C.F.R. Part 75.

Under "extended cold shutdown" status for the production suspension: Visible Emissions compliance testing by Reference Method 9 or by opacity monitor need not be completed until the station returns to service.
[Rule 62-296.405(1)(e)1., F.A.C.]

D.18. DEP Method 9. The provisions of EPA Method 9 (40 CFR 60, Appendix A) are adopted by reference with the following exceptions:

a. EPA Method 9, Section 2.4, Recording Observations. Opacity observations shall be made and recorded by a certified observer at sequential fifteen second intervals during the required period of observation.
b. EPA Method 9, Section 2.5, Data Reduction. For a set of observations to be acceptable, the observer shall have made and recorded, or verified the recording of, at least 90 percent of the possible individual observations during the required observation period. For single-valued opacity standards (e.g., 20 percent opacity), the test result shall be the highest valid six-minute average for the set of observations taken.

In order to be valid, any required average (i.e., a six-minute or two-minute average) shall be based on all of the valid observations in the sequential subset of observations selected, and the selected subset shall contain at least 90 percent of the observations possible for the required averaging time. Each required average shall be calculated by summing the opacity value of each of the valid observations in the appropriate subset, dividing this sum by the number of valid observations in the subset, and rounding the result to the nearest whole number. The number of missing observations in the subset shall be indicated in parenthesis after the subset average value.

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Under "extended cold shutdown" status for the production suspension: Visible Emissions compliance testing by Reference Method 9 or by opacity monitor need not be completed until the station returns to service.

[Rule 62-297.401, F.A.C.]

D.19. Particulate Matter. The test method for particulate emissions shall be EPA Method 17 incorporated by reference in Chapter 62-297, F.A.C. The minimum sample volume shall be 30 dry standard cubic feet. For EPA Method 17, stack temperature shall be less than 375 degrees Fahrenheit. OUC may use EPA Method 5 to demonstrate compliance. EPA Method 3 or 3A with Orsat analysis shall be used when the oxygen based F-factor, computed according to EPA Method 19, is used in lieu of heat input. Acetone wash shall be used with EPA Method 17.

Under "extended cold shutdown" status for the production suspension: Compliance testing for particulate matter need not be conducted until the station returns to service.

[Rule 62-296.405(1)(e)2., F.A.C.]

CONCLUSION

This project renews the Title V air operation permit for the facility. 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, 62-213 and 62-214, F.A.C.

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