FINAL DETERMINATION

PERMITTEE

Florida Power and Light Company (FPL)
700 Universe Boulevard
Juno Beach, Florida 33408

PERMITTING AUTHORITY

Florida Department of Environmental Protection (Department)
Division of Air Resource Management
Office of Permitting & Compliance
2600 Blair Stone Road, MS #5505
Tallahassee, Florida 32399-2400

PROJECT

Final Permit Nos. 0990646-004-AV & 0990646-005-AC
West County Energy Center

The purpose of this project is for the initial Title V air operation permit for the West County Energy Center and for the concurrent processing of an air construction permit revision to change underlying air construction (AC)/PSD permit conditions related to the excess emissions provisions for the Combined Cycle Combustion Turbines and Heat Recovery Steam Generators, Units 1 and 2.

The Title V air operation permit was processed using a parallel review.

PUBLIC NOTICE

A Written Notice of Intent to Issue Air Permits to Florida Power and Light Company for the West County Energy Center located in Palm Beach County at 20505 State Road 80, Loxahatchee, Florida, was clerked on April 26, 2011. The Public Notice of Intent to Issue Air Permits was published in the Palm Beach Post on May 5, 2011. The draft/proposed Title V air operation permit and the draft AC/PSD permit revision were available for public inspection at the permitting authority's office in Tallahassee. Proof of publication of the Public Notice of Intent to Issue Air Permits was received on May 10, 2011.

COMMENTS

On April 26, 2011, the Department informed US EPA Region 4 that the Title V air operation permit was being processed using a parallel review. US EPA Region 4 was notified of the publication date of the Public Notice on May 11, 2011.

No comments on the permits were received from the public during the 30-day public comment period. Comments on the permits were received from the Applicant and the US EPA Region 4 Office during the 30-day public comment period. The comments were not considered significant enough to reissue the draft/proposed Title V air operation permit and the draft AC/PSD permit revision, and to require another Public Notice, therefore, the draft/proposed Title V air operation permit and the draft AC/PSD permit revision were changed. The comments are addressed below. Additions to the permit are indicated below by double underline. Deletions from the permit are indicated below by ~~strike through~~. All changes are emphasized with yellow highlight in the electronic document.

Letter from FPL dated and received via e-mail on June 3, 2011

Applicant Comments

1. Title V Air Operation Permit - Subsection I.A. Facility Description. The applicant requested the facility description to be changed.

***Response*:** The Department finds the change to be administrative in nature. The facility description is changed to read as follows:

"**Subsection A. Facility Description.**

The West County Energy Center currently is operated as a nominal 2,500 megawatt (MW) power plant. The initial phase of the facility was for the construction of two nominal 1,250 MW gas-fired combined cycle units that use ultra low sulfur distillate (ULSD) fuel oil as backup fuel. These two combined cycle units are designated as Unit 1 and Unit 2. The permitted second phase of the facility is to add another nominal 1,250 MW gas-fired combined cycle unit, for a total of 3.75 gigawatts (GW)~~, which will make this facility the largest power plant in U.S. history~~."

2. AC/PSD Permit Revision - Specific Condition III.A.15. and as reflected in Title V Air Operation Permit - Specific Condition III.A.11. The applicant requested fuel switches to be added to the 20% opacity already authorized during periods of startup, shutdown and malfunction.

***Response*:** The Department made allowances for fuel switches for NOx and CO emissions measured by CEMS in specific condition 18.d. of the original PSD permit, PSD-FL-354. The requested change would make the fuel switching allowance similarly applied to visible emissions. The requested change is therefore made for consistency. Specific Condition III.A.15. of the PSD permit, PSD-FL-354 and as reflected in Specific Condition III.A.11. of the Title V air operation permit are changed to read as follows:

AC/PSD Permit Revision - Specific Condition III.A.15.

"15. Alternate Visible Emissions Standard: Visible emissions due to startups, shutdowns, fuel switches and malfunctions shall not exceed 10% opacity except for up to ten, 6-minute averaging periods during a calendar day, which shall not exceed 20% opacity. [Rule 62-212.400(BACT), F.A.C.]"

Title V Air Operation Permit - Specific Condition III.A.11.

"**A.11.** Visible Emissions Standard - Startups, Shutdowns, Fuel Switches and Malfunctions. Visible emissions shall not exceed 20% opacity for up to ten, 6-minute averaging periods during a calendar day due to startups, shutdowns, fuel switches and malfunctions. [Rule 62-212.400 (BACT Determination), F.A.C. and Permit Nos. 0990646-001-AC/PSD-FL-354 & 990646-005-AC/PSD-FL-354B.]"

3. AC/PSD Permit Revision - Specific Condition III.A.18. and as reflected in Title V Air Operation Permit - Specific Condition III.A.15. The applicant requested two minor changes to further clarify the excess emissions allowed for the combustion turbines.

***Response*:** The Department finds the requested changes to be administrative in nature. The specific conditions are changed to read as follows:

AC/PSD Permit Revision - Specific Condition III.A.18.

"18. Excess Emissions Allowed: As specified in this condition, excess emissions resulting from startup, shutdown, fuel switches and documented malfunctions are allowed provided that operators employ the best operational practices to minimize the amount and duration of emissions during such incidents. For each gas turbine/HRSG System excess emissions of NOx and CO resulting from startup, shutdown, or malfunction shall be excluded from CEMS data in any 24-hour period ("any 24-hour period" means a calendar day, midnight to midnight) for the following conditions (These conditions are considered separate events and each event may occur independently within any 24-hour period):"

…

e. ~~*Shutdown*~~ *Gas Turbine/HRSG System Shutdown*: For shutdown of the gas turbine/HRSG operation, excluded emissions from any gas turbine/HRSG system shall not exceed two hours in any 24-hour period.

…

Title V Air Operation Permit - Specific Condition III.A.15.

"**A.15.** Excess Emissions Allowed. As specified in this condition, excess emissions resulting from startup, shutdown, fuel switches and documented malfunctions are allowed provided that operators employ the best

operational practices to minimize the amount and duration of emissions during such incidents. For each gas turbine/HRSG System, excess emissions of NOx and CO resulting from startup, shutdown, or malfunction shall be excluded from CEMS data in any 24-hour period ("any 24-hour period" means a calendar day, midnight to midnight) for the following conditions (These conditions are considered separate events and each event may occur independently within any 24-hour period):"

…

e. ~~*Shutdown*~~ *Gas Turbine/HRSG System Shutdown*. For shutdown of the gas turbine/HRSG operation, excluded emissions from any gas turbine/HRSG system shall not exceed two hours in any 24-hour period.

…

4. Title V Air Operation Permit - Specific Condition III.A.15. The word "gauge" is misspelled.

***Response*:** The Department agrees; this was typographical error. The specific condition is corrected to read as follows:

"**A.15.** …

b. *Gas Turbine/HRSG System Cold Startup*. For cold startup of a gas turbine/HRSG system, excluded emissions shall not exceed four hours in any 24-hour period. "Cold startup of a gas turbine/HRSG system" is defined as a startup after the pressure in the high-pressure (HP) steam drum falls below 450 pounds per square inch g~~u~~auge (psig) for at least a one-hour period."

5. AC/PSD Permit Revision - Specific Condition III.A.20. and as reflected in Title V Air Operation Permit - Specific Condition III.A.17. The applicant proposed to amend specific condition A.17. of the Title V air operation permit to include Full Speed No Load (FSNL) Trip Tests that are manufacturer required for allowable exclusions of emission data for CEMS data exclusions. FPL must perform the FSNL test following routine replacement of major combustion turbine components to retain manufacturer warranties.

***Response*:** The Department routinely authorizes this activity for combustion turbines by letter. Building this routinely approved function into the permit eliminates the need for future letter requests from the facility. The specific conditions are changed to read as follows:

AC/PSD Permit Revision - Specific Condition III.A.20.

"20. DLN Tuning / FSNL Testing: CEMS data collected during initial or other major DLN tuning sessions and during manufacturer required Full Speed No Load (FSNL) trip tests shall be excluded from the CEMS compliance demonstration provided the tuning session is performed in accordance with the manufacturer's specifications. …"

Title V Air Operation Permit - Specific Condition III.A.17.

"**A.17.** DLN Tuning / FSNL Testing. CEMS data collected during initial or other major DLN tuning sessions and during manufacturer required Full Speed No Load (FSNL) trip tests shall be excluded from the CEMS compliance demonstration provided the tuning session is performed in accordance with the manufacturer's specifications. …"

6. AC/PSD Permit Revision - Specific Condition III.A.25.a. and as reflected in Title V Air Operation Permit - Specific Condition III.A.20.a. The applicant requested a modification to the CO monitoring provisions for the combustion turbines to allow the use of 40 CFR 75 monitoring requirements.

***Response*:** The Department finds this request acceptable. The specific conditions are changed to read as follows:

AC/PSD Permit Revision - Specific Condition III.A.25.a.

"25. CEM Systems: …

a. *CO Monitors*. The CO monitors shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 4 or 4A. Quality assurance procedures shall conform to the requirements of 40 CFR 60, Appendix F or 40 CFR Part 75, and the Data Assessment Report of Section 7 shall be made each calendar quarter, and reported semiannually to the Compliance Authority. The RATA tests required for the CO

monitor shall be performed using EPA Method 10 in Appendix A of 40 CFR 60 and shall be based on a continuous sampling train. The CO monitor span values shall be set appropriately considering the allowable methods of operation and corresponding emission standards. … ”

Title V Air Operation Permit - Specific Condition III.A.20.a.

“**A.20.** Continuous Emission Monitoring Systems (CEMS). …

a. *CO Monitors.* The CO monitors shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 4 or 4A. Quality assurance procedures shall conform to the requirements of 40 CFR 60, Appendix F or 40 CFR Part 75, and the Data Assessment Report of Section 7 shall be made each calendar quarter, and reported semiannually to the Compliance Authority. The RATA tests required for the CO monitor shall be performed using EPA Method 10 in Appendix A of 40 CFR 60 and shall be based on a continuous sampling train. The CO monitor span values shall be set appropriately considering the allowable methods of operation and corresponding emission standards. …”

7. Title V Air Operation Permit - Specific Condition III.A.32.c. The applicant proposed to clarify the applicable NOx emission limitation for the combustion turbines under 40 CFR 60, Subpart KKKK for excess emissions reporting.

***Response*:** The Department finds this request acceptable. The AC/PSD permit simply referenced 40 CFR 60.4320. The applicable NOx emission limitation from 40 CFR 60.4320 for the combustion turbines can be inserted into the Title V air operation permit. The specific condition is changed to read as follows:

Title V Air Operation Permit - Specific Condition III.A.32.c.

“**A.32.** Excess Emissions Reporting.

…

c. *NSPS Semi-Annual Excess Emissions Reports*. For purposes of reporting emissions in excess of NSPS Subpart KKKK, excess emissions from the gas turbine are defined as: a specified averaging period over which either the NOx emissions are ~~higher than the applicable emission limit in 60.4320~~greater than 15 ppm at 15 percent O_2 on a 30-day rolling average while firing natural gas and greater than 42 ppm at 15 percent O_2 on a 30-day rolling average while firing ultra low sulfur distillate; or the total sulfur content of the fuel being combusted in the affected facility exceeds the limit specified in 60.4330.

…

8. Title V Air Operation Permit - Specific Condition III.B.4. The applicant stated that the emission limits for each process heater could be removed from the permit.

***Response*:** The emission limits for the process heaters were established in the initial AC/PSD permit, see specific condition III.D.6. Deletion of the emission limits for the process heaters were not part of the AC/PSD permit revision request dated December 21, 2010. The permits have already been publicly noticed and the public comment period has elapsed. Therefore, the Department is unable to delete these emission limits at this time. No changes are made.

9. Title V Air Operation Permit - Specific Condition III.B.6. The applicant recommended deleting the annual testing requirement specified for the natural gas-fired auxiliary boiler and the natural gas-fired process heaters.

***Response*:** Specific Condition III.B.6. requires an annual VE test to be conducted on the natural gas-fired auxiliary boiler and the natural gas-fired process heaters. The Department’s approved state implementation plan (SIP) Rule 62-297.310(7), F.A.C. requires an annual VE test to be conducted “unless otherwise specified by rule, order or permit.” The Department does not consider it to be burdensome to perform an annual VE test on these units. No changes are made.

10. Title V Air Operation Permit - Specific Condition III.B.7. The applicant agreed that it would be appropriate to require a compliance test prior to permit renewal to demonstrate compliance with the applicable emission standards for the natural gas-fired auxiliary boiler. The applicant did not agree that a compliance test prior to permit renewal should be required for the natural gas-fired process heaters. The applicant claimed that stack testing of the process heaters would represent a burdensome and costly activity that would provide no environmental benefit.

***Response*:** Specific Condition III.B.7 requires renewal (every 5 years) testing of CO and NOx emissions to be conducted on the natural gas-fired auxiliary boiler and the natural gas-fired process heaters.

The applicant agreed with the renewal (every 5 years) testing frequency of CO and NOx emissions for the natural gas-fired auxiliary boiler, therefore, no changes are necessary.

Concerning the renewal (every 5 years) testing of CO and NOx emissions from the natural gas-fired process heaters, the Department's guidance memorandum, DARM-PER-10 dated July 28, 2009, allows the incorporation of clarifying permit language changes to an AC permit, preserving the original meaning of the specific condition. Per the AC/PSD permit writer, the original meaning of the AC/PSD permit was to allow NOx and CO emissions testing for the natural gas fired process heaters to be satisfied by a manufacturer certification of the emissions, see Permit No. 0990646-001-AC/PSD-FL-354, specific condition III.D.7. Specific Condition B.7. is therefore changed to read as follows:

> "**B.7.** Compliance Test Prior To Renewal. Prior to permit renewal, E.U. ID Nos. 009 (Auxiliary Boiler) and 010 (Process Heaters) shall be tested to demonstrate compliance with the emission limitations and standards for CO, NOx and VE. As an alternative to testing for NOx and CO emissions from the natural gas-fired process heaters (E.U. ID No. 010), a manufacturer certification of emissions characteristics for NOx and CO that are at least as stringent as the BACT values can be used to fulfill this requirement.[1] [Rule 62-297.310(7)(a)3., F.A.C. and [1]Permit No. 0990646-001-AC/PSD-FL-354, specific condition III.D.7.]"

11. Title V Air Operation Permit - Specific Condition III.C.1. The applicant requested that the hours of operation requirement for the three emergency generators/engines be changed to conform to 40 CFR 63, Subpart ZZZZ and 40 CFR 60, Subpart IIII with a limit on operation for testing and maintenance checks not to exceed 100 hours and unlimited operation for the emergency use.

***Response*:** The hourly limitation for the three emergency generators/engines was established in the initial AC/PSD permit, see specific condition III.E.4. and the initial PSD permit application. Changing the hourly limitation for the three emergency generators/engines was not part of the AC/PSD permit revision request dated December 21, 2010. The permits have already been publicly noticed and the public comment period has elapsed. Therefore, the Department is unable to delete these emission limits at this time. No changes are made.

12. Title V Air Operation Permit - Specific Condition III.C.3. The applicant suggested that the first sentence in the fuel specifications be modified to include the word "ultra."

***Response*:** The Department agrees with the requested change. Specific Condition C.3. is therefore changed to read as follows:

> "**C.3.** Fuel Specifications. Each engine shall use ultra low-sulfur diesel fuel oil, as required …"

13. Title V Air Operation Permit - Specific Condition III.C.5. The applicant requested that the reference test methods for particulate testing should be modified to include use of Method 17 as an alternative to Method 5.

***Response*:** The Department agrees with the requested change. Specific Conditions C.5 and D.4. are therefore changed to read as follows:

> "**#.#.** Test Methods. If required, tests shall be performed in accordance with the following reference methods:

Method(s)	Description of Method(s) and Comment(s)
EPA Methods 1-4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
EPA Method 5 or 17	Determination of PM Emissions

> …"

14. Title V Air Operation Permit - Specific Condition III.C.7. The applicant requested that Specific Condition **C.7.** be required only upon determination that the owner or operator had not operated or performed required maintenance according to the manufacturer's recommendations and instructions.

***Response*:** The Department agrees with the requested change. Specific Condition **C.7**. is therefore changed to read as follows:

"**C.7.** Compliance Test Prior To Renewal. Except as provided in Specific Condition **C.8.**, these emergency generators/engines shall be tested to demonstrate compliance with the emission limitations and standards for NMHC, NOx, CO and PM/PM_{10} prior to permit renewal when the owner has not operated or maintained the engine in accordance with the manufacturer's recommendations and instructions. [Rule 62-297.310(7)(a)3., F.A.C.]"

15. Title V Air Operation Permit - Specific Condition III.D.6. The applicant requested that Specific Condition **D.6.** be required only upon determination that the owner or operator had not operated or performed required maintenance according to the manufacturer's recommendations and instructions.

***Response*:** The Department agrees with the requested change. Specific Condition **D.6**. is therefore changed to read as follows:

"**D.6.** Compliance Test Prior To Renewal. Except as provided in Specific Condition **D.7.**, the fire pump engine shall be tested to demonstrate compliance with the emission limitations and standards for NMHC, NOx, CO and PM/PM_{10} prior to permit renewal when the owner has not operated or maintained the engine in accordance with the manufacturer's recommendations and instructions. [Rule 62-297.310(7)(a)3., F.A.C.]"

16. Appendix I, Insignificant Emission Units/Activities. The brief description for emissions unit/activity number 26. should be changed to reflect two sulfuric acid (H_2SO_4) storage tanks.

***Response*:** The Department finds the requested change acceptable. The brief description for emissions unit/activity number 26. is therefore changed to read as follows:

"26. Cooling tower ~~hydrochloric acid (HCl)~~sulfuric acid (H_2SO_4) storage tanks (2)"

17. Appendix I, Insignificant Emission Units/Activities. The applicant requested that the following emissions units/activities to be added:

Temporary portable air compressors used during unit outages;
Temporary portable generators used during unit outages; and,
Temporary portable welders used during unit outages.

***Response*:** The Department finds the requested changes acceptable. 40 CFR 63.6585(a) defines the "stationary reciprocating internal combustion engines (RICE)" to which the RICE MACT (40 CFR 63, Subpart ZZZZ) applies. A "stationary RICE" is not a "non-road engine" as defined at 40 CFR 1068.30. The definition at 40 CFR 1068.30 for a "non-road engine" includes engines that are portable. Portable engines are therefore exempt from the RICE MACT (40 CFR 63, Subpart ZZZZ). The additional phrase "(non-road engines)" is added for further clarification of these emissions units/activities. The emissions units/activities are added as follows:

"60. Temporary portable air compressors, generators and welders (non-road engines) used during unit outages; these engines are not regulated under 40 CFR 63, Subpart ZZZZ"

Memorandum from US EPA Region 4 dated and received via e-mail on June 14, 2011

US EPA Region 4 Comments

The EPA had only general comments on Permit No. 0990646-004-AV which where provided as recommendations to be incorporated into the final permit.

1. Title V Air Operation Permit - Facility-wide Specific Condition II.FW3. The sentence reading "Nothing was deemed necessary and ordered at this time." is not part of the referenced state rule.

***Response*:** The Department agrees with the comment and EPA's suggestion to turn this sentence into a permitting note. Statewide Title V air operation permit formats were changed to reflect this comment. FW3. is therefore changed to read as follows:

"**FW3.** General Volatile Organic Compounds (VOC) Emissions or Organic Solvents (OS) Emissions. The permittee shall allow no person to store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor

emission control devices or systems deemed necessary and ordered by the Department. ~~Nothing was deemed necessary and ordered at this time.~~ [Rule 62-296.320(1), F.A.C.]"

{Permitting note: Nothing is deemed necessary and ordered at this time.}

2. Title V Air Operation Permit - Facility-wide Specific Condition II.FW5. The reference to "proposed by applicant in initial Title V air operation permit application received on November 12, 2009" in the regulatory citations at the end of the specific condition is not the origin of and the authority for the permit condition.

***Response*:** The first sentence of FW5. is directly from Rule 62-296.320(4)(c)1., F.A.C. FW5. also includes those specific measures taken by the facility to control emissions of unconfined particulate matter in the second sentence. The second sentence of FW5. contains specifically what the applicant proposed in the permit application. The authority for the origin of the second sentence of this permit condition is more specifically Rule 62-296.320(4)(c)2., F.A.C. The authority for the entire FW5. remains Rule 62-296.320(4)(c), F.A.C. This response should be a satisfactory explanation; therefore no change is made at this time.

3. Title V Air Operation Permit - Specific Condition III.A.3.e. The reference to "40 CFR 60.130" is an incorrect citation for the storage of ammonia.

***Response*:** This permit condition was directly quoted from the PSD permit, PSD-FL-354, specific condition III.A.3.e. and is an error. 40 CFR 68 contains ammonia storage applicable requirements. Specific condition III.A.3.e. is therefore changed to read as follows:

"**A.3.e.** *Ammonia Storage.* ~~In accordance with 40 CFR 60.130, t~~The storage of ammonia shall comply with all applicable requirements of the Chemical Accident Prevention Provisions in 40 CFR 68."

4. Title V Air Operation Permit - Specific Condition III.B.9. The permit does not specify a recording frequency for the sulfur content of the natural gas used in the heaters.

***Response*:** The Department agrees with the comment. A frequency of sulfur content analysis of the natural gas used in the heaters is needed. The gas used in theaters is the same natural gas as the gas burned in the combustion turbines, therefore the same frequency and analysis is sufficient to satisfy what is burned in the process heaters. Specific condition B.9. is therefore changed to read as follows:

"**B.9.** Recordkeeping Requirement - Heaters. Since the process heaters burn the same natural gas as the combustion turbines, the permittee fulfills a fuel sulfur content analysis for the heaters by the sulfur content analysis of the natural gas fired in the combustion turbines. The permittee shall maintain records of the sulfur content and the amount of natural gas used in the heaters. The records shall be maintained for a minimum of 5 (five) years and made available to the Department upon request. [Rules 62-212.400 (BACT) & 62-213.440, F.A.C.; and, Permit No. 0990646-001-AC/PSD-FL-354."

5. Title V Air Operation Permit - Section V. CAIR Part - Specific Condition 1. The citation to Rule 62-210.200, F.A.C. is incorrect.

***Response*:** As pointed out, the citation is to Rule 62-210.200, F.A.C. which contains definitions for the air rules in the state of Florida. The citation to Rule 62-210.200, F.A.C. was intended to be for the definition of "CAIR Part" or "CAIR Permit." A "CAIR Part" is included as part of the Title V source permit. Since the definitions seem to move often due to rulemaking renumbering, a simple reference to "Rule 62-210.200, F.A.C." was used. This response should be a satisfactory explanation; therefore no change is made at this time.

6. Title V Air Operation Permit - Specific Condition III.C.8. and III.D.7. The citation to 40 CFR 60.411 appears to be a typographical error.

***Response*:** The citation was a typographical error and should be 40 CFR 60.4211. The reference to 40 CFR 60.4211 found in the regulatory citations for Specific Conditions III.C.8. and III.D.7. are therefore changed to read as follows:

"**C.8.** and **D.7.** Engine Manufacturer's Recommendations and Instructions. If the owner/operator does not install, configure, operate, and maintain the engines according to the manufacturer's recommendations and instructions, any required testing shall be completed in accordance with 40 CFR 60, Subpart IIII. [Rule 62-212.400 (BACT), F.A.C.; Permit No. 0990646-001-AC/PSD-FL-354; and, 40 CFR 60.4211.]"

CONCLUSION

The draft/proposed Title V air operation permit and draft AC/PSD permit revision were changed. The final action of the Department is to issue the final permits with the changes noted above.