STATEMENT OF BASIS

Title V Permit Revision No. 0850001-017-AV
Federal Acid Rain Program ORIS Code **6043**

Florida Power and Light Company
Martin Power Plant
Martin County

These permitting actions are issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, 62-213, and 62-214. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents, attached hereto or on file with the permitting authority, in accordance with the terms and conditions of this permit.

EXISTING FACILITY

This facility is owned by Florida Power & Light Company (FP&L) and is known as the Martin Power Plant, near Indiantown in Martin County, Florida. It consists of:

- Two 863 megawatts (MW) residual fuel oil and natural gas fired conventional steam electric generating units (Units 1 and 2), that started up in 1980/81 and are equipped with multicyclones and Low NO_X burners;
- Two nominal 500 MW natural gas fueled combined cycle units (Units 3 and 4), that started up in 1994 and are equipped with Dry Low NO_X (DLN) combustors;
- One nominal 1,150 MW natural gas-fueled combined cycle unit (Unit 8), that started up in 2005 and is equipped with DLN combustors and selective catalytic reduction (SCR) systems for nitrogen oxides control; and
- Ancillary equipment including an auxiliary steam boiler, gas heaters, diesel generators, fuel oil storage tanks, and mechanical cooling towers.

PRESENT AUTHORITY TO OPERATE FACILITY

With the exception of Unit 8, the facility operates under Title V Operation Permit 0850001-013-AV effective January 1, 2004 and expires on December 31, 2008. Combined Cycle Unit 8 operates under the authority of Air Construction/PSD Permit No. 0850001-010-AC (PSD-FL-327). The Unit 8 Air Construction/PSD Permit authorized construction of two combustion turbine electrical generators (CTs) along with four duct-fired heat recovery steam generators (HRSGs), a single steam turbine-electrical generator (STG) and ancillary equipment. The Unit 8 project incorporated the new construction along with two previously constructed Simple Cycle CTs (Units 8A and 8B) into a single Combined Cycle Unit 8. The mentioned construction permit was issued April 16, 2003.

PURPOSE OF REVISION TO TITLE V OPERATION PERMIT

The primary purpose of the present application is to revise the facility's Title V Operation Permit to include the recently constructed Combined Cycle Unit 8 and to incorporate the revisions in the concurrent Air Construction Permit Modification.

CONCURRENT AIR CONSTRUCTION PERMITTING ACTIONS

FP&L requested a concurrent Air Construction Permit Modification primarily to establish certain startup, testing, and operational conditions for Martin Power Plant Combined Cycle Units 3, 4 and 8. The Department evaluated each of these requests in the separate Technical Evaluation dated December 1, 2006 that supports the concurrent Air Construction Permit modification.

A Modification of the current Unit 8 Air Construction Permit will be issued that will allow excess emissions from individual CT/HRSG sets for a period of eight rather than six hours during future cold startups of the 470 MW STG. Such cold startups of a STG are infrequent and typically years apart for baseloaded combined cycle units.

The Air Construction Permit Modification also addresses a request by FP&L to allow annual testing of Units 3 and 4 to be conducted at 90 to 100 percent of capacity rather than 95 to 100 percent. The request is consistent with the requirements in the original Air Construction/PSD Permit for Units 3 and 4. The Modification will also recognize a high power mode of operation known as power or steam augmentation. This is a feature included in the original design and actual construction of Units 3 and 4 within the permitted heat input and emission limits.

This FINAL Title V Operation Permit Revision incorporates the conditions of the Unit 8 Air Construction Permit 0850001-010-AC as well as the conditions in the Air Construction Permit Modification 0850001-016-AC.

REVISIONS TO TITLE V OPERATION PERMIT 0850001-013-AV

The changes are shown below (~~strikethrough~~) or double-underlined.

Section II. Facility - Wide Conditions

FP&L requests deletion of Section II, Specific Condition No. 11 that states:

"Please be advised that the Department does not condone nor authorize the permittee to by-pass waste materials from either air or wastewater facilities at any time that would result in a violation of the rules and regulations of the Department. In case of breakdown or lack of proper functioning of the facility causing or likely to cause discharge of improperly treated sewage or air emissions, it shall be the duty of the owner of the facility to promptly notify the Department. In addition to notifying this Department, the permittee shall notify the local County Health Officer. The owner of the impaired facility causing the violation shall be responsible for any and all damages which may result. If violations of State standards occur, enforcement actions may be initiated. [AC43-4037; and AC43-4038]"

The Department notes that the condition is verbatim from the original air construction permits issued in 1977 for the two 863 megawatt units. The Department will move the condition to Section III, Subpart A, related to Units 1 and 2 so that it is not applicable to units constructed thereafter. The condition reference is A.48 in the attached Final Title V Operation Permit Revision.

Section III. Emissions Units and Conditions

Subsection B. Specific Condition 3. Subsection B contains the conditions applicable to Combined Cycle Units 3 and 4. Changes to Specific Condition 3 are needed to allow annual testing in the range of 90 to 100 percent of capacity. The rationale is given in the Technical Evaluation in support of the air construction permit modification where the underlying enforceable conditions are being changed. The condition has been rewritten to accurately state the Department's rule and the concurrent air construction permit modification. Specific Condition B.3 is modified as follows:

B.3. Permitted Capacity. The maximum heat input to each Combustion Turbine (CT) shall neither exceed 1966 mmBtu/hr while firing natural gas, nor 1846 mmBtu/hr while firing fuel oil @ 40 degrees F. These heat input limitations are subject to change. Any changes shall be provided at least 90 days before commercial operation for each fuel available to the site which a unit is capable of firing, at which time this condition may be modified to reflect those parameters. Each combined cycle's fuel consumption shall be continuously determined and recorded.

Operation During Testing. Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted c~~C~~apacity is defined as ~~95~~ 90 to 100 percent of the ~~manufacturer's rated heat input achievable for the average ambient (or conditioned) air temperature during the test~~ maximum operation rate allowed by the permit. Permitted capacity and operating data may be adjusted for the appropriate site conditions in accordance with the performance curves and/or equations on file with the Department.

If it is impractical to test at permitted capacity, ~~then the units~~ an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110

percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity.

~~In such cases~~, If tested at less than capacity, the entire heat input versus inlet temperature curves will be adjusted by the increment equal to the difference between the design heat input value and ~~105~~ 110 percent of the value reached during the test. Data, curves, and calculations necessary to demonstrate the heat input rate correction at both design and test conditions shall be submitted to the Department with the compliance test report.

[Rule 62-4.160(2), Rule 62-297.310(2), and Rule 62-210.200(PTE), F.A.C.; PSD-FL-146 and PSD-FL-146A (0850001-002 and 0850001-003-AC issued 9/6/96); Specific Condition No. 1. Rescission of Guidance DARM-EM-05; and Applicant Request dated April 5, 2006, Permit No. 0850001-016-AC]

Subsection B. Specific Condition 27. Subsection B, Specific Condition 27 relates to annual testing. The condition is being revised to reflect certain changes authorized through the concurrent Air Construction Permit Modification. These include use of EPA Methods 25 and 25A and 7E to determine VOC and NO_X emissions during all conditions (including power augmentation). Specific Condition B. 27 is reorganized and modified as follows:

B.27. ~~It is not necessary to plan the firing of a fuel solely to complete the initial compliance test; instead, the initial test may be postponed until such time as the untested fuel is ready for service~~.

Compliance Test Methods. Tests shall be conducted using EPA reference methods, or equivalent, in accordance with ~~the July 1, 1996 version of~~ 40 CFR 60 Appendix A.

Pollutant	EPA Reference Method	Initial testing		Annual testing	
		Gas	Oil	Gas	Oil
Particulate Matter (PM)	5 or 17		X		X
Sulfuric Acid Mist (SAM)	8		X		
Visible Emissions (VE)	9	X	X	X	X
Carbon Monoxide (CO)	10	X	X	X	X
Nitrogen Oxides (NOx)	7E, 20	X	X	X	X
Volatile Organic Compounds	18, 25 or 25A**	X	X		
	Test Method				
Lead (Pb)	EMTIC Test Method, or Method 7090, or 7091*		X		
Beryllium (Be)	EMTIC Test Method, or Method 104, or Method 7090, or 7091*		X		
Sulfur content	ASTM D 2880-96		X		X
	ASTM D 1072-90(94) E-1, ASTM D 3031-81(86), ASTM D 4084-94, or ASTM D 3246-92	X		X	
Mercury (Hg)	40 CFR 61, Appendix B EPA Reference Method 101*	X	X		

* Method 3040 sample extraction shall be used as described in the EPA solid waste regulations SW 846.

** EPA Method 18 may be conducted to account for the non-regulated methane fraction of the measured VOC emissions.

The stack test for each turbine shall be performed within 10% of the maximum heat rate input for the tested operating temperature. See Specific Condition B.3 for utilization of ambient temperature versus heat input curves during compliance testing. ~~Annual (A) compliance tests shall be performed on each combustion turbine with the fuel(s) used for more than 400 hours in the preceding 12-month period. Tests shall be conducted using EPA reference methods, or equivalent, in accordance with the July 1, 1996 version of 40 CFR 60 Appendix A~~.

Initial (I) compliance tests shall be performed on each Combustion Turbine using both fuels. (Note: Based on information provided in the Title V Permit Application, initial testing using distillate oil has not been done). ~~See Specific Condition B.3 for utilization of ambient temperature versus heat input curves during compliance testing~~. It is not necessary to plan the firing of a fuel solely to complete the initial compliance test; instead, the initial test may be postponed until such time as the untested fuel is ready for service.

Annual (A) compliance tests shall be conducted for each combustion turbine to demonstrate compliance with the permitted emissions standards for normal gas firing, gas firing with power augmentation, and backup distillate oil firing. CO and NOx performance tests shall be conducted concurrently. If conducted at permitted capacity, NO_X emissions data collected during the annual NOx continuous monitor RATA required pursuant to 40 CFR 75 may be substituted for the required annual performance test. Tests required on an annual basis shall be conducted at least once during each federal fiscal year (October 1st to September 30th).

For each combustion turbine that fires distillate oil for less than 400 hours during the previous federal fiscal year, the annual performance tests when firing distillate oil for the current federal fiscal year of operation are not required. Combustion turbines firing more than 400 hours on oil will also be required to demonstrate compliance with PM standards.

For each combustion turbine that operates with power augmentation for less than 400 hours during the previous federal fiscal year, the annual performance tests when operating with power augmentation for the current federal fiscal year of operation are not required. During power augmentation each unit shall comply with the emission limits stated in Specific Condition B.6.

[40 CFR Appendix A; Rule 62-204.800, F.A.C. and Rule 62-297.310(7)(a)4., F.A.C.; PSD-FL-146, Specific Condition No. 10; and applicant request letters dated July 28, 1998 and April 5, 2006.]

Subsections F and G. Subsections F and G comprise the Specific Conditions applicable to Units 8A and 8B when they operated as Simple Cycle Units. These Subsections will be marked "reserved" and the Specific Conditions are deleted in their entirety. The operation of Units 8A and 8B will be fully addressed in Subsection H that describes the operation of the recently constructed and tested Combined Cycle Unit 8.

Subsections H, I and J. New Subsections H, I and J include all of the Specific Conditions applicable to the new Combined Cycle Unit 8 (including ancillary equipment) authorized under AC/PSD Permit No. 0850001-010-AC (PSD-FL-327) and any modification thereto.

All conditions of PSD-FL-327 including the present AC/PSD Permit Modification are transferred verbatim except for obsolete construction conditions. Please refer to the new Subsections H, I, and J in the attached FINAL Title V Operation Permit Revision.

Section IV - Acid Rain Part

Section IV is updated to reflect the Combined Cycle Unit 8 operation system. This involves adding Units 8C and 8D. Previously permitted Units 8A and 8B that, together with Units 8C and 8D, comprise Unit 8 were added during the previously issued Title V Operation permit.

Compliance Plan CP-1

The revised Compliance Plan CP-1 addresses test requirements applicable to Combined Cycle Unit 8 when the individual combustion turbines operate and are tested in high power modes known as peaking and power augmentation. The revised Compliance Plan CP-1 replaces the previous CP-1 that addressed similar incomplete testing of simple cycle Units 8A and 8B (that now comprise part of Unit 8).

Additional Applicable Requirements

No changes were requested by the applicant with respect to the incorporation of new applicable requirements. However, the Department proposes to incorporate in this permit the recent promulgation or modifications of Federal regulations related to combustion turbines.

40CFR60, Subpart GG. The Department is clarifying the applicability of 40CFR Part60, Subpart GG – Standards of Performance for Stationary Gas Turbines. In the previous permits, adherence to the requirements of the determinations of Best Available Control Technology under the various PSD permits issued to the facility would insure compliance with Subpart GG. However, the Subpart GG provisions are clearly applicable requirements that must be included in the Title V Operation Permit. Additionally, the most recent version of Subpart GG issued on July 8, 2004 clarifies compliance methods for modern combustion turbines compared with those in existence at the time the original rule was promulgated (1977). These requirements are added as new Appendix GG (part of the permit).

40CFR63, Subpart YYYY. This subpart is the MACT for combustion turbines. By electronic communication dated October 26, 2004, the Department previously determined that the combustion turbines that comprise Combined Cycle Unit 8 qualify as existing units for purposes of the 40CFR63, Subpart YYYY. Existing combustion turbines are not required to meet the notification requirements or the emission limitations of Subpart YYYY.

40CFR63, Subparts DDDDD and ZZZZ. The Department includes these subparts since there are emission units at this facility subject to 40 CFR 63, Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, or Institutional Boilers or Process Heaters and 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE), adopted by reference in Rule 62-204.800(11), F.A.C. These requirements are added as new Appendices DDDDD and ZZZZ (part of the permit).