STATEMENT OF BASIS

Air Construction Permit No. 0850001-016-AC
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 multiclones 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 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 and expires on December 31, 2006.

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 revisions in the concurrent Air Construction Permit Modification.

CONCURRENT AIR CONSTRUCTION PERMITTING ACTIONS

Following are the requested changes by issuance of an Air Construction Permit Modification.

- FP&L requests extension of the allowable excess emissions period from six to eight hours during the "cold" startup of the 470 MW steam turbine electrical generator (STG) for Unit 8. The single Unit 8 STG operates with the steam raised by the four heat recovery steam generators (HRSGs). FP&L requests extension of startup to allow use of only two CTs to start up the STG. The excess emissions

are from low load operation of the CT/HRSG sets as they power and provide steam for the cold STG startup.

- FP&L requests excess emissions for a one-hour duration when switching from natural gas to distillate fuel oil on Unit 8.
- FP&L requests that required annual compliance testing of Combined Cycle Units 3 and 4 be conducted within a range of 90 to 100 percent of capacity (corrected for ambient conditions) rather than a range of 95 to 100 percent.
- FP&L requests recognition of a high power mode for Combined Cycle Units 3 and 4 known as power or steam augmentation that was included in the original design and construction.
- FP&L requests addition of EPA Test Methods 25, 25A for the determination of VOC emissions and EPA Test Method 7E for the determination of NO_X concentrations for Units 3 and 4.

All of the requested changes are being made with the exception of the excess emissions allowance when switching from natural gas to distillate fuel oil operation on Combined Cycle Unit 8. A Technical Evaluation of the requested changes was prepared and is being distributed with the Draft Air Construction Permit Modification.

REVISIONS TO TITLE V OPERATION PERMIT 0850001-013-AV

Section III. Emissions Units and Conditions:

Subsection B. Specific Conditions 3 and 27.

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.

Subsection B, Specific Condition 3 is modified as follows (strikeout signifies deletion, double underline denotes addition):

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.

Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted capacity is defined as ~~95~~ 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, 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.

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.

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

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).

Subsection B, Specific Condition 27 is modified as follows

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. Initial (I) compliance tests shall be performed on each Combustion Turbine using both fuels. The stack test for each turbine shall be performed within 10% of the maximum heat rate input for the tested operating temperature. ~~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. (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.

Pollutant	EPA Reference Method	Initial testing		Annual testing	
		Gas	Oil	Gas	Oil
Particulate Matter	5 or 17		X		X
Sulfuric Acid Mist	8		X		
Visible Emissions	9	X	X	X	X
Carbon Monoxide	10	X	X	X	X
Nitrogen Oxides	7E, 20	X	X	X	X
Volatile Organic Compounds	18, 25 or 25A	X	X		
	Test Method				
Lead	EMTIC Test Method, or Method 7090, or 7091*		X		
Beryllium	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	40 CFR 61, Appendix B EPA Method 101	X	X		

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

{Note: EPA Method 18 may be conducted to account for the non-regulated methane fraction of the measured VOC emissions}

Annual (A) compliance tests shall be conducted for each combustion turbine to demonstrate compliance with CO, NO_X, PM and visible emissions (VE) standards for normal gas firing, gas firing with power augmentation, and backup distillate oil firing. Tests required on an annual basis shall be conducted at least once during each federal fiscal year (October 1st to September 30th). 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 me substituted for the required annual performance test.

For each combustion turbine that fires distillate oil for less than 200 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.

For each combustion turbine that operates with power augmentation for less than 200 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.
[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 letter 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, J and K. New Subsections H, I, J, and K 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 the of the conditions of PSD-FL-327 including the present AC/PSD Permit Modification are transferred verbatim except for obsolete construction conditions. These are too numerous to reproduce below. Please refer to the new Subsections H, I, J, and K in the attached DRAFT Title V Operation Permit Revision.

Section IV - Acid Rain Part

Section IV is updated to reflect 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 CTs 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 Units 8A and 8B.

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 includes clearer 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 CTs 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. This facility is also 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).