



**FPL**

June 15, 2005

Ms. Cindy Mulkey  
Division of Air Resources Regulation  
Department of Environmental Protection  
2600 Blair Stone Road  
Mail Station #5505  
Tallahassee, FL 32399-2400

**RECEIVED**

JUN 17 2005

BUREAU OF AIR REGULATION

Subject: **Martin Power Plant – Unit 8 Air Construction Permit  
Request for Minor Permit Modification  
DEP File No. 0850001-015-AC (PSD-FL-327A)**

Dear Ms. Mulkey,

On June 3, 2005, Florida Power & Light Company (FPL) submitted a request for minor permit modification to PSD permit PSD-FL-327A. On June 9, FPL received the Intent to Issue Air Construction Permit Modification including requirements for public notice, from the Department via email.

Pursuant to Section 403.815, F.S., and Rule 62-110.106(7)(a)1, Florida Power & Light Company (FPL) published, at our own expense, the Public Notice of Intent to Issue Air Construction Permit Modification, provided by the Department to FPL via email on June 9, 2005.

On Monday, June 13, 2005, the Public Notice was published in the Stuart News (a paper which serves the area affected and which meets the requirements of Section 50.011 and 50.031, F.S.).

In accordance with Rule 62.110.106(5), F.A.C, enclosed is proof of publication.

Should you have any questions, or need any additional information, please contact me at (561) 691-7518 or Rachel Godino at (561) 691-7067.

Sincerely,

A handwritten signature in black ink, appearing to read 'Barbara Linkiewicz', followed by the word 'FOR' in a smaller, less legible script.

Barbara Linkiewicz  
Environmental Licensing Manager

cc: Mr. Jeff Koerner, FDEP



**FPL**

June 3, 2005

Ms. Trina Vielhauer  
Chief, Bureau of Air Regulation  
Division of Air Resources Regulation  
Department of Environmental Protection  
111 S. Magnolia Drive, Suite 4  
Tallahassee, FL 32399-2400

**RECEIVED**  
JUN 06 2005  
BUREAU OF AIR REGULATION

Subject: Martin Plant – Unit 8 Air Construction Permit – Request for Minor Permit  
Modification

*0850001-015-AC*

Dear Ms. Vielhauer,

Florida Power & Light Company (FPL) is requesting a minor permit modification to the Martin Unit 8 Combined Cycle Construction Air Permit (0850001-010-AC). Upon review of the conditions for excess emissions allowed for oil to gas fuel switch (Condition 16 d.) it was noted that the words “in simple cycle operation” were included. The Martin Unit 8 Combined Cycle Unit (including the conversion of Units 8A and 8B to combined cycle) was permitted for operation on oil and natural gas. FPL fully anticipates the need for allowance of excess emissions for oil to gas fuel switching regardless of the operating mode of the affected gas turbines.

FPL request for modification of the language is appropriate and will actually reduce the potential overall excess emissions of the Unit. Under the current language each combustion turbine would require a complete shut-down in order to switch from oil to natural gas which would result in a longer period of excess emissions. Additionally, the narrative provided by the Department in the April 16, 2003 final determination for the Construction Permit (page 6 of 8) correctly discusses the need for allowable excess emissions during oil to gas fuel switches without regard to the mode of operation and rather focuses on the nature of the the change during operation of these GE 7FA combustion turbines (see attachment 1). Furthermore, construction permits for similar FPL Combined Cycle Units, such as Turkey Point Unit 5, grant the allowance of excess emissions for oil to gas fuel changes without conditions on the operating mode of the combustion turbine (see attachment 2).

The details of the existing permit language and the specific minor change requested are provided below. We seek to remove the reference to "in simple cycle operation" from Condition 16d. The requested change for allowable excess emissions for oil to gas fuel switches during operation of the Unit 8 Gas Turbines will provide consistency with FPL's subsequent combined cycle construction permits and allow FPL to retain the flexibility of operation of this unit on natural gas and oil.

***From existing language on Page 11 of 19:***

16. Excess Emissions Allowed (cont'd)

- d. For oil-to-gas fuel switching **in simple cycle operation**, excess emissions shall not exceed 1 hour in any 24-hour period

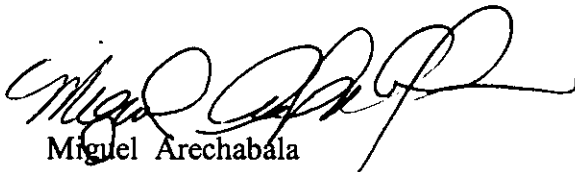
***To revised language as:***

16. Excess Emissions Allowed (cont'd)

- d. For oil-to-gas fuel switching, excess emissions shall not exceed 1 hour in any 24-hour period

We respectfully request the department process this minor change as soon as possible. Should you have any questions, or need any additional information, please contact John Hampp at (561) 691 - 2894.

Sincerely,



Miguel Arechabala  
Plant Manager

Responsible Official  
Florida Power & Light Company

cc: Mr. Jeff Koerner, FDEP

J. Araxiani, SED  
G. W. W. EPA

---

**FINAL DETERMINATION**


---

Ammonia injection shall begin as soon as operation of the gas turbine/HRSG system achieves the operating parameters specified by the manufacturer. As authorized by Rule 62-210.700(5), F.A.C., the above conditions allow excess emissions only for specifically defined periods of startup, shutdown, and documented malfunction of the gas turbines. [Design; Rules 62-212.400(BACT) and 62-210.700, F.A.C.]”

The above revised condition adds a definition for “documented malfunction”, which was inadvertently omitted from the original condition. Also, the original condition limiting “warm startups” is replaced with one limiting “cold gas turbine/HRSG startups”, which is more appropriate. Finally, there is a new allowance for excess emissions due to an oil-to-gas fuel switch. This type of switch requires the unit to be brought down to low loads and cycled back through the lean premix combustion stages, which can lead to a brief period of excess emissions. Conversely, a gas-to-oil fuel switch can occur readily as oil is added and the water injection system is initiated. Therefore, one hour of excess emissions in any 24-hour period is allowed due to an oil-to-gas fuel switch. The revisions are based on the unique equipment design for this project and are not expected to result in any increased incidents of excess emissions due to startup, shutdown, malfunction, or fuel switches.

*Page 10, Condition 17:* The following text is added to the first paragraph, “For good cause, the permittee may request that the Compliance Authority extend the steam blow period.” The notification period is changed from “24-hours” to “one working day”. Also, the following sentence is added to the permitting note, “This condition only applies if simple cycle operation begins prior to combined cycle operation and NSPS compliance tests for simple cycle operation have been performed.”

*Page 11, Condition 19:* EPA Method 5 is removed, as this test is not required by permit.

*Page 12, Condition 20:* To reflect the NSPS requirements for conducting initial tests, the second sentence is revised to, “The tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated for each unit configuration (i.e., simple cycle and combined cycle operation), but not later than 180 days after the initial startup of each unit configuration.” In the third sentence, the phrase “(or fuel measurements and approved F-factors)” is substituted for the words “and calculations” to clarify the meaning. The last sentence is revised to, “The Department may require the permittee to conduct additional tests after major replacement or major repair of any air pollution control equipment, such as the SCR catalyst, DLN combustors, etc.”

*Page 12, New Condition 23:* The following new condition is inserted as Condition No. 23.

- “23. **Additional Ammonia Slip Testing:** If the tested ammonia slip rate for a gas turbine exceeds 5 ppmvd corrected to 15% oxygen when firing natural gas during the annual test, the permittee shall:
- a. Begin testing and reporting the ammonia slip for each subsequent calendar quarter;
  - b. Before the ammonia slip exceeds 7 ppmvd corrected to 15% oxygen, take corrective actions that result in lowering the ammonia slip to less than 5 ppmvd corrected to 15% oxygen; and
  - c. Test and demonstrate that the ammonia slip is no more than 5 ppmvd corrected to 15% oxygen within 15 days after completing the corrective actions.

Corrective actions may include, but are not limited to, adding catalyst, replacing catalyst, or other SCR system maintenance or repair. After demonstrating that the ammonia slip level is no more than 5 ppmvd corrected to 15% oxygen, testing and reporting shall resume on an annual basis. [Rules 62-4.070(3) and 62-297.310(7)(b), F.A.C.]”

The new condition requires the permittee to take corrective action should the ammonia slip exceed 5 ppmvd @ 15% O<sub>2</sub> and begin more frequent monitoring. Note that all of the subsequent conditions are renumbered accordingly.

*Page 12, Condition 23(24):* Original condition 23 is renumbered to “24”. Minor rewording to, “Each

### SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

#### A. UNIT 5 COMBINED CYCLE GAS TURBINE (EUs 005, 006, 007, AND 008)

13. **Excess Emissions Prohibited:** Excess emissions caused entirely or in part by poor maintenance, poor operation or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. All such preventable emissions shall be included in any compliance determinations based on CEMS data. [Rule 62-210.700(4), F.A.C.]
14. **Alternate Visible Emissions Standard:** Visible emissions due to startups, shutdowns, 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.]
15. **Excess Emissions Allowed:** As specified in this condition, excess emissions resulting from startup, shutdown, oil-to-gas 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. A "documented malfunction" means a malfunction that is documented within one working day of detection by contacting the Compliance Authority by telephone, facsimile transmittal, or electronic mail. For each gas turbine/HRSG system, excess emissions resulting from startup, shutdown, or documented malfunctions shall not exceed two hours in any 24-hour period except for the following specific cases.
- a. For cold startup of the steam turbine system, excess emissions from any gas turbine/HRSG system shall not exceed six hours in any 24-hour period. Cold startup of the steam turbine system shall be completed within twelve hours. A cold "startup of the steam turbine system" is defined as startup of the 4-on-1 combined cycle system following a shutdown of the steam turbine lasting at least 48 hours. *{Permitting Note: During a cold startup of the steam turbine system, each gas turbine/HRSG system is sequentially brought on line at low load to gradually increase the temperature of the steam-electrical turbine and prevent thermal metal fatigue. Note that shutdowns and documented malfunctions are separately regulated in accordance with the requirements of this condition.}*
  - b. For shutdown of the combined cycle operation, excess emissions from any gas turbine/HRSG system shall not exceed three hours in any 24-hour period.
  - c. For cold startup of a gas turbine/HRSG system, excess 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 psig for at least a one-hour period.
  - d. For oil-to-gas fuel switching excess emissions shall not exceed 1 hour in any 24-hour period.
- Ammonia injection shall begin as soon as operation of the gas turbine/HRSG system achieves the operating parameters specified by the manufacturer. As authorized by Rule 62-210.700(5), F.A.C., the above conditions allow excess emissions only for specifically defined periods of startup, shutdown, fuel switching, and documented malfunction of the gas turbines. [Design; Rules 62-212.400(BACT) and 62-210.700, F.A.C.]
16. **DLN Tuning:** CEMS data collected during initial or other major DLN tuning sessions shall be excluded from the CEMS compliance demonstration provided the tuning session is performed in accordance with the manufacturer's specifications. A "major tuning session" would occur after completion of initial construction, a combustor change-out, a major repair or maintenance to a combustor, or other similar circumstances. Prior to performing any major tuning session, the permittee shall provide the Compliance Authority with an advance notice that details the activity and proposed tuning schedule. The notice may be by telephone, facsimile transmittal, or electronic mail. [Design; Rule 62-4.070(3), F.A.C.]