

Adams, Patty

From: Harvey, Mary
Sent: Thursday, February 15, 2007 8:10 AM
To: Adams, Patty
Subject: FW: Turkey Point Power Plant - DEP File #0250003-007-AC-FINAL

Attachments: 0250003.007.AC.F_pdf.zip



0250003.007.AC.F
_pdf.zip (1 MB...

-----Original Message-----

From: Ed_Nunez@fpl.com [mailto:Ed_Nunez@fpl.com]
Sent: Wednesday, February 14, 2007 3:34 PM
To: Harvey, Mary
Cc: timothy_panoff@fpl.com; Marister_Ruiz@fpl.com; gary_andersen@fpl.com;
tom_young@fpl.com; John_Hampp@fpl.com
Subject: Re: Turkey Point Power Plant - DEP File #0250003-007-AC-FINAL

I have received the attached documents,
Regards,

Heriberto (Ed) Nuñez, P.E.

Power Generation Division-FPL
Turkey Point and Cutler Power Plants
Office: (305) 242-3822
Cell: (305) 775-0294
email: ed_nunez@fpl.com

john_hampp@fpl.com, wongp@miamidade.gov, "Graziani, Darrel"
tate.fl.us> "Harvey, Mary" <Mary.Harvey@dep.s
To: ed_nunez@fpl.com, <Darrel.Graziani@dep.state.fl.us>
cc: "Cascio, Tom" <Tom.Cascio@dep.state.fl.us>, "Adams, Patty"
02/12/2007 02:25 <Patty.Adams@dep.state.fl.us>, "Gibson,
Victoria" <Victoria.Gibson@dep.state.fl.us> PM
Subject: Turkey Point Power Plant - DEP
File #0250003-007-AC-FINAL

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site:
<http://www.adobe.com/products/acrobat/readstep.html>.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,
DEP, Bureau of Air Regulation
(See attached file: 0250003.007.AC.F_pdf.zip)

Adams, Patty

From: Harvey, Mary
Sent: Wednesday, February 14, 2007 7:55 AM
To: Adams, Patty
Subject: FW: Turkey Point Power Plant - DEP File #0250003-007-AC-FINAL

From: Graziani, Darrel
Sent: Monday, February 12, 2007 4:48 PM
To: Harvey, Mary
Subject: Read: Turkey Point Power Plant - DEP File #0250003-007-AC-FINAL

Your message

To: 'ed_nunez@fpl.com'; 'john_hampp@fpl.com'; 'wongp@miamidade.gov'; Graziani, Darrel
Cc: Cascio, Tom; Adams, Patty; Gibson, Victoria
Subject: Turkey Point Power Plant - DEP File #0250003-007-AC-FINAL
Sent: 2/12/2007 2:26 PM

was read on 2/12/2007 4:48 PM.

Adams, Patty

From: Harvey, Mary
Sent: Monday, February 12, 2007 3:53 PM
To: Adams, Patty
Subject: FW: Turkey Point Power Plant - DEP File #0250003-007-AC-FINAL

-----Original Message-----

From: John_Hampp@fpl.com [mailto:John_Hampp@fpl.com]
Sent: Monday, February 12, 2007 3:52 PM
To: Harvey, Mary
Subject: Turkey Point Power Plant - DEP File #0250003-007-AC-FINAL

Return Receipt

Your Turkey Point Power Plant - DEP File #0250003-007-AC-FINAL
document:

was John Hampp/GC/FPL
received
by:

at: 02/12/2007 03:51:53 PM

Adams, Patty

From: Harvey, Mary
Sent: Monday, February 12, 2007 3:28 PM
To: Adams, Patty
Subject: FW: Turkey Point Power Plant - DEP File #0250003-007-AC-FINAL

From: Wong, Patrick (DERM) [<mailto:WongP@miamidade.gov>]
Sent: Monday, February 12, 2007 3:05 PM
To: Harvey, Mary
Subject: Read: Turkey Point Power Plant - DEP File #0250003-007-AC-FINAL

Your message

To: WongP@miamidade.gov
Subject:

was read on 2/12/2007 3:05 PM.

Adams, Patty

From: Harvey, Mary
Sent: Monday, February 12, 2007 2:26 PM
To: 'ed_nunez@fpl.com'; 'john_hampp@fpl.com'; 'wongp@miamidade.gov'; Graziani, Darrel
Cc: Cascio, Tom; Adams, Patty; Gibson, Victoria
Subject: Turkey Point Power Plant - DEP File #0250003-007-AC-FINAL
Attachments: 0250003.007.AC.F_pdf.zip

Dear Sir/Madam:

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The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

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Thank you,

DEP, Bureau of Air Regulation

8/27/2007

MEMORANDUM

To: Trina Vielhauer
Through: Al Linero *AL*
From: Tom Cascio *TOM*
Date: January 5, 2007
Subject: Draft Air Construction Permit No. **0250003-007-AC**
Turkey Point Power Plant

This Draft Air Construction Permit (0250003-007-AC) revises the language of certain specific conditions of 0250003-006-AC (authorized the construction of Unit 5). Specifically, this permit modification:

Provides consistency with recently issued air construction permits for similar facilities by: (1) allowing additional cold start and fuel switching hours of excess emissions for the combined cycle unit; and (2) clarifying the non-applicability of the federal NSPS standards to the new storage tank. There are no air pollution emissions increases associated with this permit modification. The current Air Construction Permit for Unit No. 5 has not yet expired. Therefore, the changes requested are addressed as an Air Construction Permit Modification.

I recommend your signature and forwarding to Patty for clerking.



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blairstone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary - Designee

January 9, 2007

Electronic Mail – Received Receipt Requested

Mr. H. O. Nunez, Plant General Manager
Florida Power & Light Company
Turkey Point Fossil Plant
9700 SW 344th Street
Homestead, Florida 33035

Re: Turkey Point Unit 5
DEP File No. 0250003-007-AC (PSD-FL-338B)
Modification to Air Construction Permit

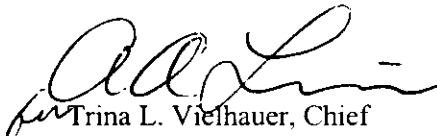
Dear Mr. Nunez:

Enclosed are documents indicating the Department's intent to issue an air construction permit to modify certain specific conditions of the previously issued air construction permit (0250003-006-AC) for Unit 5 at the Turkey Point Power Plant in Homestead. The documents include: the "Intent to Issue Air Construction Permit Modification"; the "Public Notice of Intent to Issue Air Construction Permit Modification"; the "Technical Evaluation and Preliminary Determination"; and the "Draft Permit Modification."

The Public Notice must be published one time only as soon as possible in a newspaper of general circulation in the area affected, pursuant to Chapter 50, Florida Statutes. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within seven (7) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

Please submit any other written comments you wish to have considered concerning the Department's proposed action to Mr. A. A. Linero, Program Administrator, South Permitting Section at the above letterhead address. If you have any questions, please call Tom Cascio at 850/921-9526.

Sincerely,


Trina L. Vielhauer, Chief
Bureau of Air Regulation

TLV/aal/tbc

Enclosures

In the Matter of an
Application for Permit by:

Mr. H. O. Nunez, Plant General Manager
Turkey Point Fossil Plant
Florida Power & Light Company
9700 SW 344th Street
Homestead, Florida 33035

DEP File No. 0250003-007-AC
Air Construction Permit Modification
Combined Cycle Unit 5
Miami-Dade County

INTENT TO ISSUE AIR CONSTRUCTION PERMIT MODIFICATION

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit modification (copy of draft permit modification attached) for the project, detailed in the application specified above, for the reasons stated below.

The applicant, Florida Power & Light Company (FPL), operates the Turkey Point Fossil Plant located east of Homestead and Florida City and next to Biscayne Bay in Miami-Dade County, Florida. FPL currently holds an Air Construction Permit No. 0250003-006-AC (PSD-FL-338) pursuant to the Rule for the Prevention of Significant Deterioration (PSD) to install Combined Cycle Unit 5 at the facility. On December 12, 2006, FPL submitted an application to modify the Air Construction Permit. This Air Construction Permit Modification (0250003-007-AC) provides consistency with recently issued air construction permits for similar facilities by: (1) allowing additional cold start and fuel switching hours of excess emissions for the combined cycle unit; and (2) clarifying the non-applicability of the federal NSPS standards to the new storage tank. There are no air pollution emissions increases associated with this permit modification.

The Department has permitting jurisdiction under the provisions of Chapter 403.087, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210 and 62-213. This action is not exempt from permitting procedures. The Department has determined that an air construction permit modification is required.

The Department intends to issue this air construction permit modification based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-110.106(7)(a)1., F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Air Construction Permit Modification. The notice shall be published one time only in the legal advertisement section of a newspaper of general circulation in the area affected. Rule 62-110.106(7)(b), F.A.C., requires that the applicant cause the notice to be published as soon as possible after notification by the Department of its intended action. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-0114; Fax 850/ 922-6979). You must provide proof of publication within seven days of publication, pursuant to Rule 62-110.106(5), F.A.C. No permitting action for which published notice is required shall be granted until proof of publication of notice is made by furnishing a uniform affidavit in substantially the form prescribed in section 50.051, F.S. to the office of the Department issuing the permit. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rules 62-110.106(9) & (11), F.A.C.

The Department will issue the final construction permit modification unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of fourteen (14) days from the date of publication of Public Notice. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the construction permit modification with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation is not available in this proceeding.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.



Trina L. Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Draft Air Construction Permit Modification, Technical Evaluation and Preliminary Determination, Intent to Issue an Air Construction Permit Modification, and Public Notice of Intent to Issue an Air Construction Permit Modification, and all copies were sent electronically (with Received Receipt) before the close of business on 1/10/07 to the person(s) listed below.

H. O. Nunez, Plant General Manager, FPL: ed_nunez@fpl.com

John C. Hampp, Principal Specialist, FPL: john_hampp@fpl.com

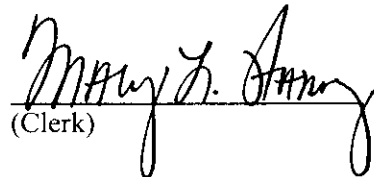
H. Patrick Wong, Miami-Dade DERM: wongp@miamidade.gov

Darrel Graziani, Southeast District Office: darrel.graziani@dep.state.fl.us

Jim Little, EPA Region 4: little.james@epa.gov

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to §120.52, Florida Statutes,
with the designated Department Clerk, receipt of
which is hereby acknowledged.


(Clerk)

1/10/07
(Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT MODIFICATION

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP File No. 0250003-007-AC

Florida Power & Light Company
Turkey Point Fossil Plant, Miami-Dade County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit modification to Florida Power & Light Company (FPL) for the Turkey Point Fossil Plant located east of Homestead and Florida City and next to Biscayne Bay in Miami-Dade County, Florida. The applicant's mailing address is: Florida Power & Light Company, 9700 SW 344th Street, Homestead, Florida 33035.

This facility consists of two oil and natural gas fired conventional steam electric generating stations (Units 1 and 2) and three natural gas fueled combined-cycle units (Units 3, 4, and 8). Combined Cycle Unit 8 is a nominal 1,150 megawatt (MW) unit that recently began operation. It consists of four combustion turbine/heat recovery steam generator (CT/HRSG) sets and a nominal 470 MW steam turbine electric generator (STG). Pollutants from Unit 8 are controlled by use of inherently clean natural gas, Dry Low NO_x/CO combustors, and selective catalytic reduction (SCR).

All physical construction related to Combined Cycle Unit 5 is complete and the unit is in operation. A Modification of the current Unit 5 Air Construction/PSD Permit will be issued to 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 steam turbine generator. Such cold startups of a STG are infrequent and typically years apart for baseloaded combined cycle units.

The modification also clarifies that Federal standard 40 CFR 60, Subpart Kb (Standards of Performance for Volatile Liquid Storage Vessels) is not applicable to this facility. However, the Department will require the applicant to keep records to substantiate the exclusion criteria of maximum true vapor pressure (MVP) less than 3.5 kilopascals (kPa). Compliance with this condition may be demonstrated by using the information from the respective Material Safety Data Sheets (MSDS) for the ultra low sulfur fuel oil(s) stored in the tanks.

The Department will issue the Final Air Construction Permit Modification unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed construction permit issuance action for a period of fourteen (14) days from the date of publication of this Public Notice of Intent to Issue Air Construction Permit Modification. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee,

Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection
Bureau of Air Regulation
Suite 4, 111 S. Magnolia Drive
Tallahassee, Florida, 32301
Telephone: 850/488-0114
Fax: 850/922-6979

Miami-Dade County Department of
Environmental Resources Management
33 Southwest Second Avenue, Suite 900
Miami, Florida 33130-1540
Telephone: 305/372-6925
Fax: 305/372-6954

The complete project file includes the permit application, draft air construction permit modification, technical evaluation, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Department's reviewing engineer for this project, Tom Cascio at MS 5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, or Tom.Cascio@dep.state.fl.us, or call 850/921-9526 for additional information. Key documents may also be viewed at: www.dep.state.fl.us/Air/permitting/construction.htm and clicking on FPL Turkey Point Unit 5 in the power plant category.

Technical Evaluation and Preliminary Determination
DEP Project No. 0250003-007-AC

This document describes the technical analysis supporting the draft air construction permit included in this Intent to Issue package. The issues addressed are noted below, and a discussion follows that includes operating scenarios developed by Florida Power & Light (FPL). The conclusions have the Department's concurrence.

Excess Emissions during Operational Switching from Natural Gas to Fuel Oil on Combined Cycle Unit 5
The Department previously recognized the need for excess emissions considerations for switching from fuel oil to natural gas during operation of the combustion turbines. The Air Construction/PSD Permit for Combined Cycle Unit 5 provides that for fuel oil-to-gas fuel switching, excess emissions shall not exceed one (1) hour in any 24-hour period.

The excess emissions are at least partially caused by the need to reduce load to less than 50 percent of capacity at which level the dry low NO_x/CO features of the GE 7FA combustion turbines are not fully employed.

Operational switching from natural gas to fuel oil firing can be accomplished without a significant load reduction. However, FPL requests the Department consider the possibility that FPL may want to make the switch at low load instead of high load, thus requiring as much time as a fuel oil to natural gas switch. According to FPL:

"Although operational switching from gas to oil can be accomplished at higher loads, it does not allow the option of aborting the transfer. At lower loads, GE process control logic allows enough time to perform a pressure check of the fuel nozzles, which will provide us an early indication of transfer issues. The same check can be made at high loads, but without the ability to abort. Combustion instability in a burner can (e.g. a plugged fuel oil nozzle) will cause a combustion issue, resulting in a CT trip requiring subsequent restart. The restart of the CT will result in higher overall NO_x than the shorter duration excess emissions from a CT load reduction to allow the switch from natural gas to fuel oil with the option of aborting and avoiding a unit trip and subsequent restart."

This requested flexibility to avoid unit trips that would result in a unit restart and greater NO_x emissions is acceptable to the Department. It is expected that the oil-to-gas and gas-to-oil fuel switching operational practices will be very infrequent. Because the revised practices can lead to lower mass NO_x emissions, the Department's conclusion is that prevention of significant deterioration (PSD) review is not warranted. Therefore, the Department will revise the condition as indicated in the attached Draft Air Construction Permit Modification to allow FPL to conduct its fuel switches in the manner they have described.

40 CFR 60, Subpart Kb Requirements

FPL requested clarifying the non-applicability of the federal NSPS standards to the new storage tank. The Department agrees that this large storage vessel is not subject to 40 CFR 60, NSPS Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984. Section 60.110b(c) exempts all vessels with greater than 151 m³ (40,000 gallons) storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa). Information collected by the Department indicates that the true vapor pressure of typical low sulfur (less than 0.05% S) is less than 1 kPa.

The Department will clarify the non-applicability of Subpart Kb. However, the Department will keep the emissions unit designation. The tanks were part of a project that was subject to PSD for VOC. The use of 0.05% sulfur fuel is part of the BACT requirement. The condition will be modified consistent with some of the more recent permits (such as West County and Martin) that are not subject to Subpart Kb, but

**Technical Evaluation and Preliminary Determination
DEP Project No. 0250003-007-AC**

are subject to PSD for VOC and the maintenance of records is required. The changes are indicated in the attached Draft Air Construction Permit Modification.

Cold Start-up of the Steam Turbine/Generator on a Four-on-One Combined Cycle

The Applicant requested that for cold startup of the steam turbine system, the excess emission limit be extended from six to eight hours in any 24-hour period.

The following scenario, authored by FPL, is specific to Manatee Unit 3, but also applies to Martin Unit 8 and Turkey Point Unit 5.

All three units have "four-on-one" combined cycles that consist of: 4 General Electric 7FA combustion turbine-electrical generators (CTs); four duct-fired heat recovery steam generators (HRSGs); and a single steam turbine-electrical generator (STG).

Although a cold steam start-up is a complex procedure done infrequently, actual operating experience now shows that the six hours originally permitted by the PSD and AC permits is inadequate to successfully, and smoothly, execute a cold Steam Turbine start. The Steam Turbine Start Up process has CTs sequentially started so that the respective HRSG is able to provide a sufficient quantity of steam at the appropriate temperature, pressure, and flow to maintain accurate Steam Turbine speed control and warm the STG slowly. This requires that the CT's be run at low loads, during which time the full Dry Low NO_x (DLN) features are not fully enabled.

Typically, one CT is started ahead of the others, and a second CT is started somewhat later. When the steam conditions from the second CT/HRSG match the pressure and temperature of the first HRSG, it is "blended" by means of valving operations with the first CT/HRSG steam and the start-up progresses. Later, a third CT/HRSG combination is started, warmed up, and "blended". This is done in order to "unblend" the first CT/HRSG as it approaches the 6-hour excess emissions window. That is, the steam from the first CT's HRSG is routed by means of valving operations from the Main Steam Turbine Header to the condenser. The first CT's load is then ramped up to a point where the SCR can be placed into service and render the CT in compliance with its normally permitted emissions. Afterward, it is "re-blended" with the other two starting units.

This process of "unblending" one CT while ensuring the other CT's have been sequentially started up, and in the right configuration to provide steam of adequate temperature, pressure, and quantity to be "blended" to the steam turbine has proven to be challenging. During the "unblending" and "blending" valving operations, CT HRSG's temperatures, pressure and drum levels become very difficult to control.

Any HRSG instability can trip the CT's which would require a new restart and potentially more excess emissions, either from a restart of the CTs, or more typically, the start-up must be postponed until the next calendar day as insufficient start-up time remains in the current 24-hour period. Postponing the start-up until the next day necessitates that the needed generation is supplied from elsewhere. In the case of Manatee Unit 3 (or Martin Unit 8 or Turkey Point Unit 5), alternate residual fuel oil-fired units are greater emitters.

Extending the 6 hour emission limit to 8 hours would significantly reduce the number of "unblending/blending" operations, and provide more certainty of a successful timely start using as few as two CTs. It also will allow more operational flexibility in cases where the load from 3 or 4 CT's is not needed, or when 2 CT's are out of service for routine maintenance.

Manatee Unit 3, for example, conducted a cold start-up of the STG on June 12, 2005. Three CTs were used during the start-up. To remain within the 6-hour excess emissions window, CT-A was unblended at the end of its 6-hour period, ramped up in firing rate, and the SCR placed into service. The CEM emissions data in Table 1 below is from that start-up. The "Additional 2 hours" of emissions data is projected from the actual emissions of the last 2 hours (hours 5 and 6) of CT-A and CT-C operation.

**Technical Evaluation and Preliminary Determination
DEP Project No. 0250003-007-AC**

A two CT start-up with 8-hours of excess emissions versus a three CT start-up with 6-hours of excess emissions allows: greater operational flexibility; a simplified start-up process; less risk from unintended CT trips associated with blending/unblending operations; and a modest net reduction in NOx mass emissions over the duration of the start-up.

Table 1. PMT* UNIT 3 COLD TURBINE S/U JUNE 12, 2005. NOx emissions in pounds from CEM data

	CT-A	CT-B	CT-C	A+C	A+B+C
First 6 hours	554	509	574		
Additional 2 hours *Projected from hours 5 and 6 actual emissions	209*		230*		
Projected total for 2 CTs @ 8 hours each (CTs A & C)	763		804	1,567	
Total for 3 CTs @ 6 hours each	554	509	574		1,637

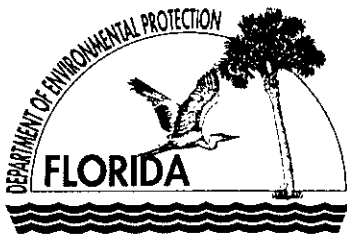
*Manatee Power Plant

Source: FPL

Estimated NOx reduction (using CT-A and CT-B for 8 hours vs. CT-A and CT-B and CT-C for 6 hours)

$$= 1637 - 1567 = 70 \text{ pounds}$$

Because it is expected that NOx emissions will be reduced under this operational practice, the Department's conclusion is that PSD review is not warranted. The change is approved by the Department, and is indicated in the attached Draft Air Construction Permit Modification.



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blairstone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary - Designee

January 9, 2007

Electronically Sent – Received Receipt Requested

Mr. H. O. Nunez, Plant General Manager
Turkey Point Power Plant
Florida Power & Light Company
9700 SW 344th Street
Homestead, Florida 33035

Re: DEP File No. 0250003-007-AC

Air Construction Permit Modification -- Unit 5 Combined Cycle

Dear Mr. Nunez:

The Florida Department of Environmental Protection (“the Department”) has reviewed your application to make some minor modifications to previously issued Air Construction Permit No. 0250003-006-AC that authorized the construction of Unit 5 at the existing FPL Turkey Point Power Plant, a “4-on-1” combined cycle unit with an electrical generating capacity of approximately 1150 MW. That project includes four 170 MW gas turbine-electrical generators sets, four heat recovery steam generators, a single 470 MW steam turbine-electrical generator, a mechanical draft cooling tower, and a distillate fuel oil storage tank. The existing facility is located east of Homestead and Florida City and next to Biscayne Bay in Miami-Dade County, Florida. This Air Construction Permit Modification (0250003-007-AC) revises the language of certain specific conditions of the previously issued permit. Specifically, this permit modification provides consistency with recently issued air construction permits for similar facilities by: (1) allowing additional cold start and fuel switching hours of excess emissions for the combined cycle unit; and (2) clarifying the non-applicability of the federal NSPS standards to the new storage tank. There are no air pollution emissions increases associated with this permit modification. The current Air Construction Permit for Unit No. 5 has not yet expired. Therefore, the changes requested are addressed as an Air Construction Permit Modification.

MODIFICATIONS OF AIR CONSTRUCTION PERMIT NO. 0250003-006-AC

Certain specific conditions in Air Construction Permit No. 0250003-006-AC are hereby modified as shown below.

Double-underline denotes additions and ~~strikethrough~~ indicates deletions.

Specific Condition **15.** in Section **III.A.** is modified as follows:

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~~ eight 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 ~~4 hours~~ 2 hours 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.]

Section **III.B.** is modified as follows:

NSPS APPLICABILITY

1. NSPS Subpart Kb Applicability: The distillate fuel oil tank is not subject to Subpart Kb, which applies to any storage tank with a capacity greater than or equal to 10,300 gallons (40 cubic meters) that is used to store volatile organic liquids for which construction, reconstruction, or modification is commenced after July 23, 1984. Tanks with a capacity greater than or equal to 40,000 gallons (151 cubic meters) storing a liquid with a maximum true vapor pressure less than 3.5 kPa are exempt from the General Provisions (40 CFR 60, Subpart A) and from the provisions of NSPS Subpart Kb, except for the record keeping requirements specified below.
[40 CFR 60.110b(a) and (c); Rule 62-204.800(7)(b), F.A.C.; and Section 24.41.6, Miami-Dade County Code.]

The listed emission unit shall comply with 40 CFR 60, Subpart Kb, only to the extent that the regulations apply to the emission unit and its operation.

EQUIPMENT SPECIFICATIONS

2. Equipment: The permittee is authorized to install, operate, and maintain one, 4.3 million gallon distillate fuel oil storage tank designed to provide ultra low sulfur fuel oil to the Unit 5 gas turbines.
[Applicant Request and Rule 62-210.200(PTE), F.A.C.]

EMISSIONS AND PERFORMANCE REQUIREMENTS

3. Hours of Operation: The hours of operation are not restricted (8760 hours per year).
[Applicant Request and Rule 62-210.200(PTE), F.A.C.]

NOTIFICATION, REPORTING AND RECORDS

4. Oil Tank Records: The permittee shall keep readily accessible records showing the dimension of each storage vessel and an analysis showing the capacity of each storage tank. Records shall be retained for the life of the facility. The permittee shall also keep records sufficient to determine the annual throughput of distillate fuel oil for each storage tank for use in the Annual Operating Report. [Rule 62-204.800(7)(b)16, F.A.C. and 40 CFR 60.116b(a) and (b)]

5. Fuel Oil Records: The permittee shall keep readily accessible records showing the maximum true vapor pressure of the stored liquid. The maximum true vapor pressure shall be less than 3.5 kPa. Compliance with this condition may be demonstrated by using the information from the respective MSDS for the low or ultra low sulfur fuel oil stored in the tank.
[Rule 62-4.070(3), F.A.C.]

{Permitting Note: An evaluation of several Material Safety Data Sheets (MSDS) by the Department demonstrated that the vapor pressure is much less than 3.5 kPa for low sulfur fuel oil and for ultra low sulfur fuel oil.}

A copy of this letter shall be filed with the referenced permit and shall become part of the permit. Any party to this permitting decision (order) has the right to seek judicial review of it under Section 120.68 of the Florida Statutes, by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel, Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000, and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within thirty days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

Joseph Kahn, Director
Division of Air Resource Management

JK/tlv/aal/tbc

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this PERMIT MODIFICATION was sent electronically (with Received Receipt) before the close of business on _____ to the person(s) listed below:

H. O. Nunez, Plant General Manager, FPL: ed_nunez@fpl.com
John C. Hampp, Principal Specialist, FPL: john_hampp@fpl.com
H. Patrick Wong, Miami-Dade DERM: wongp@miamidade.gov
Darrel Graziani, Southeast District Office: darrel.graziani@dep.state.fl.us
James Little, EPA Region 4: little.james@epa.gov

Clerk Stamp
FILED AND ACKNOWLEDGMENT FILED,
on this date, pursuant to §120.52, Florida Statutes,
with the designated Department Clerk, receipt of
which is hereby acknowledged.

(Clerk)

(Date)