Teresa

Florida Power & Light Company, Environmental Services Dept., P.O. Box 14000, Juno Beach, FL 33408

FPL

RECEIVED

SEP 10 1999

BUREAU OF AIR REGULATION

September 7, 1999

Mr. Clair Fancy, P.E.
State of Florida
Department of Environmental Protection
Division of Air Resources Management
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: FPL Sanford Plant
Proof of Publication - Draft Air Construction Permit #1270009-004-AC (PSD-FL-270)

Dear Mr. Fancy:

Enclosed please find the subject Proof of Publication for the Sanford Air Construction permit. The notice appeared in the Daytona News Journal on August 5, 1999. Please recall that I sent you a copy of the notice in August, but did not have the notarized Affidavit from the newspaper at that time (the newspaper didn't send it initially, for some reason).

I have since received the Affidavit which is now enclosed for your records. Please do not hesitate to contact me at (561) 691-7058 if I can answer any questions.

Very truly yours,

Rich Piper
Repowering Licensing Manager
Florida Power & Light Company

cc: J. Heron
EPA
NPS
CD

The News-Journal

Published Daily and Sunday
Daytona Beach, Volusia County, Florida

State of Florida,
County of Volusia:

Before the undersigned authority personally appeared

Celeste Hart

who, on oath says that he is

Classified Sales Manager

of The News-Journal, a daily and Sunday newspaper, published at Daytona Beach in Volusia County, Florida; that the attached copy of advertisement, being a

Notice to Public

Re: Department of Environmental Protection Giving Notice of Intent to Issue Air Construction Permit.

was published in said newspaper in the issues

August 5,1999

Affiant further says that The News-Journal is a newspaper published at Daytona Beach, in said Volusia County, Florida, and that the said newspaper has heretofore been continuously published in said Volusia County, Florida each day and Sunday and has been entered as second-class mail matter at the post office in Daytona Beach, in said Volusia County, Florid... for a period of one year next preceding the first publication of the attached copy of advertisement.

Sworn to and subscribed before me

this 5th day of August

A.D. 19 99

Christine R. Grosswald

CHRISTINE R GROSSWALD
Notary Public, State of Florida
My Comm. Exp. May 17, 2002
Comm. No CC 742858

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEP File No. 1270009-004-AC
PSD-FL-270
Florida Power & Light Sanford Plant
2200 Megawatt Repowering Project
Volusia County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to Florida Power & Light Company (FPL). The permit is to install eight combined cycle units to replace two (2) residual oil and gas-fired steam generators at the Sanford Plant near DeBary, Volusia County. A Best Available Control Technology (BACT) determination was required pursuant to Rule 62-212.400, F.A.C. for emissions of volatile organic compounds (VOCs). The applicant's name and address are Florida Power & Light, Sanford Plant, 950 South Highway 17-92, DeBary, Florida 32713.

Each unit is a nominal 170 megawatt General Electric PG7241FA gas-fired combustion turbine-generator with an unfired heat recovery steam generator (HRSG) that will raise sufficient steam to produce approximately another 80 MW via the existing steam-driven electrical generators. The boilers and the tall stacks associated with existing residual oil and gas-fired Units 4 and 5 (872 MW total capacity) will be dismantled. Existing residual oil and gas-fired Unit 3 will be retained including its stack and boiler. Distillate oil will be used as back up fuel on four of the eight turbines and limited to an aggregate of 500 hours per year per turbine. The four other gas turbines will fire only natural gas but will be able to operate in simple cycle (non-steam mode). The project also includes, a cooling tower for pond water; small heaters to heat the natural gas prior to use in simple-cycle operation; and twelve relatively short stacks.

When firing natural gas, nitrogen oxides (NO_x) emissions will be controlled by Dry Low NO_x (DLN-2.6) combustors capable of achieving emissions of 9 parts per million (ppm) by volume at 15 percent oxygen. Emissions of carbon monoxide (CO) will be controlled to 12 ppm, while emissions of volatile organic compounds (VOC) will be less than 1.4 ppm. Emissions of sulfur dioxide (SO_2), sulfuric acid mist (SAM), and particulate matter (PM/PM_{10}) will be very low because of the switch to inherently clean pipeline quality natural gas. When firing fuel oil in four of the eight turbines, the NO_x emissions will be limited to 42 ppm at 15% O_2 using water injection. Very low sulfur (0.05 percent) will be used. Emissions of CO and VOC will be controlled to 20 ppm and 2 ppm, respectively when firing fuel oil. The emissions of VOCs from the repowered project have been determined to be BACT.

There will be very substantial decreases to regulated air pollutants except for a small increase in VOC emissions. The maximum potential annual emissions in tons per year are summarized below for comparison with recent annual emissions from Units 4 and 5 slated for retirement.

Pollutants	Units 4/5 Emissions	After Repowering	Increase (decrease)
PM/PM_{10}	539	387/374	(151/164)
SAM	1,276	42.3	(1,234)
SO_2	28,728	279	(28,450)
NO_x	9,984	2,757	(7,227)
VOC	62	124	57
CO	2,909	1,719	(1,190)

The lower NO_x emissions will reduce ozone (smog) formation potential and nitrate fallout. The lower PM/PM_{10}, SO_2 and SAM emissions will reduce visible emissions, fine particulate generation and acid mist fallout. An air quality impact analysis was conducted. Impacts due to the proposed project emissions are all favorable and the net effect is a "creation of available increment".

The existing 156 MW residual oil and gas-fired Unit 3 will be retained. However its future operation will be limited as a result of plant-wide emissions caps requested by FPL. These proposed caps include the emissions above and are equal to 500 TPY of PM/PM_{10}, 4900 TPY of NO_x and 4000 TPY of SO_2. According to EPA's acid rain data, the entire plant emitted 36,660 TPY of SO_2 and 19,525 TPY of NO_x in 1998. Absent this repowering project and the proposed plant-wide emissions cap, the permitted emissions from the plant are over 100,000 TPY of SO_2 alone and there is no NO_x limit.

The Department will issue the FINAL permit with the attached conditions 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 and requests for a public meeting concerning the proposed permit issuance action for a period of thirty (30) days from the date of publication of "Public Notice of Intent to Issue Air Construction Permit." 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 Sanford Repowering Project is not subject to review under Section 403.506 F.S. (Power Plant Siting Act), because it provides for no expansion in steam generating capacity.

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 proceedings; 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, as well as the rules and statutes which entitle the petitioner to relief; and (f) A demand for relief.

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 am to 5:00 pm, Mondays through Fridays, except legal holidays, at:

Florida Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Telephone: 850/488-1344
Fax: 850/922-6979

Florida Department of Environmental Protection
Central District Office
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767
Telephone: 407/894-7555
Fax: 407/897-5963

The complete project file includes the application, technical evaluation, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 904/488-0114, for additional information.

FPL ENVIRONMENTAL SERVICES DEPARTMENT
PO BOX 14000
JUNO BEACH, FL 33408

DATE: August 18, 1999

SEND TO:
NAME: AL LINERO

COMPANY: FDEP

FAX NUMBER: 850 922-6979

FROM: RICHARD PIPER
FPL ENVIRONMENTAL SERVICES
PHONE: (561) 691-7058
FAX: (561) 691-7070
rich_piper@fpl.com

NUMBER OF PAGES INCLUDING FAX COVER: 6

MESSAGE:

AL -

This is FPL's comment letter on the Sanford project. I'll be on vacation from 8/19 - 9/6. Please contact Wayne Ondler at (561) 691-2270 to discuss, unless it can wait till I return.

Thanks!

Rich

Florida Power & Light Company, Environmental Services Dept., P.O. Box 14000, Juno Beach, FL 33408

FPL

August 17, 1999

Mr. Clair Fancy, P.E.
State of Florida
Department of Environmental Protection
Division of Air Resources Management
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: FPL Sanford Plant
Draft Air Construction Permit #1270009-004-AC (PSD-FL-270)

Dear Mr. Fancy:

This correspondence provides comments regarding the subject draft Air Construction Permit for the Sanford power plant, which was received by FPL on August 3, 1999.

I would like to express my thanks to the Department, and particularly Al Linero and Teresa Heron, for their timely and professional work on our application.

FPL respectfully requests the following changes to be made:

Placard Page – Change as follows: "Permit to install eight (8) combined cycle units to replace two (2) residual oil-fired and gas-fired steam **boiler** generating units. Each **combined cycle** unit is a 170 megawatt General Electric MS7241FA gas-fired combustion turbine-generator with an unfired heat recovery steam generator (HRSG) that will ~~raise sufficient steam~~ **capture sufficient waste heat** to produce another 80 MW via the existing steam-driven electrical generators." Change the last sentence to: "The project also includes a **helper** cooling tower for once-through cooling pond water and small heaters with a **individual** 10-foot stacks to heat the natural gas prior to use during simple-cycle operation and cold start-ups."

Facility Description – Change as follows: "This permitting action (**approximately** 2,200MW Repowering Project) is to install eight (8) combined cycle units to replace two (2) residual oil-fired and gas-fired steam generating **boiler** units; **existing steam turbines will remain.** Each **combined cycle** unit is a 170 megawatt General Electric MS7241FA gas-fired combustion turbine-generator with an unfired heat recovery steam generator (HRSG) that will **capture** ~~raise~~ sufficient ~~steam~~ **waste heat** to produce another 80 MW via the existing steam-driven electrical generators.....The project also includes a **helper** cooling tower for once-through cooling pond water and small heaters with **individual** 10-foot stacks to heat the natural gas prior to use during simple cycle operation and cold start-ups.

This Project is exempt from the requirements of Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD) as ~~discussed~~ stated in the Technical Evaluation and Preliminary Determination dated July 30, 1999, for all pollutants except Volatile Organic Compounds (VOC's)."

Emission Limits and Standards

Page 7 of 14; Specific Condition 9 – In order to be consistent with the permit for Fort Myers plant, FPL requests that the same heat input specification be used (the machines are identical). In addition, it is FPL's understanding that heat input is not a limitation per se; merely a descriptor of the capacity of the emissions device. Accordingly, the following language is offered:

9. Turbine Capacity: The ~~maximum~~ **design** heat input rates for natural gas firing, based on the lower heating value (LHV) of the fuel to each combustion turbine at compressor inlet conditions of 59°F, 60% relative humidity, 100% load, and 14.7 psia **is** ~~shall not exceed~~ ~~1,600~~ **1,760** million Btu per hour (MMBtu/hr). The ~~maximum~~ **design** heat input for oil firing **is** ~~1,620~~ **2002** MMBtu/hr (LHV, 60% relative humidity, 100% load, 59°F compressor inlet and 14.7 psia). This ~~maximum~~ **design** heat input rate will vary depending upon turbine inlet conditions and the combustion turbine characteristics. Manufacturer's curves corrected for site conditions or equations for correction to other compressor inlet conditions shall be provided to the Department of Environmental Protection (DEP) within 45 days of completing the initial compliance testing [Design, Rule 62-210.200, F.A.C. (Definitions – Potential Emissions)].

For consistency with Specific Condition 18, the following change is suggested for Specific Condition 10:

10. ~~Direct-Fired Gas~~ Heaters (~~DFGHs~~). The ~~maximum~~ **design** heat input rate, based on the lower heating value (LHV) of the fuel to the ~~DFGHs~~ at ambient conditions of 59°F, 60% relative humidity, 100% load, and 14.7 psia ~~shall not exceed~~ **is** 176 MMBtu per hour.

Page 8 of 14; Specific Condition 17. Please add some clarifying language as follows: "The permittee shall provide manufacturer's emissions performance versus load diagrams for the DLN systems prior to their installation. DLN systems shall each be tuned upon initial operation to optimize emissions reductions **consistent with normal operation and maintenance practices,** and shall be maintained to minimize NOx emissions and CO emissions**, consistent with normal operation and maintenance practices.**"

Specific Condition 19 – FPL suggests a couple of clarifying changes as outlined below. Also, it is unclear why the Department is requiring adherence to the 9ppm NOx limitation at ISO conditions during the initial performance testing; if this testing is meant to demonstrate compliance to the NSPS SubPart GG limitations, it should state those limits. On the other hand, if demonstration of the 9ppm limitation is the objective, then ISO correction is inappropriate. Since adherence to the 9ppm limit would, in effect, demonstrate compliance with the NSPS limitation, FPL suggests that the ISO correction be dropped.

Please change as follows:

- **Natural Gas Firing** – The ~~concentration of~~ NOx concentrations in the exhaust gas of each CT shall not exceed 9ppmvd at 15%O_2 on a 30-day rolling average basis when firing natural gas as measured by the CEMS (maintained in accordance with 40 CFR 75). Based on CEMS data at the end of each operating day, a new 30-day average rate is calculated from the arithmetic average of all valid hourly emission rates during the previous 30 operating days. **Valid hourly**

emission rates shall not include periods of startup, shutdown or malfunction. In addition, NO_x emissions calculated as NO_2 ~~(at ISO conditions)~~ shall exceed neither 9ppmvd at 15% O_2 nor 65 lb. / hr to be demonstrated by initial performance test. **Demonstration of compliance to the 9ppmvd limitation shall be considered to be demonstration of compliance with the NSPS limitation.**

- **Distillate Oil Firing** - The ~~concentration of~~ NOx concentrations in the exhaust gas of each CT shall not exceed 42 ppmvd at 15%O_2 on a 24-hour block average basis when firing distillate oil as measured by the CEMS (maintained in accordance with 40 CFR 75). Based on CEMS data at the end of each operating day, a new 24-hour average rate is calculated from the arithmetic average of all valid hourly emission rates during the previous day. **Valid hourly emission rates shall not include periods of startup, shutdown or malfunction.** In addition, NOx emissions calculated as NO2 ~~(at ISO conditions)~~ shall exceed neither 42 ppmvd at 15% O_2 nor 355 lb. / hr to be demonstrated by initial **distillate oil-firing** performance test. **Demonstration of compliance to the 42ppmvd limitation shall be considered to be demonstration of compliance with the NSPS limitation.**

Page 11 of 14; Specific Condition 30 – "Notwithstanding the requirements of Rule 62-297.340, F.A.C., the use of pipeline natural gas is the method for determining compliance for SO_2 and PM_{10} **when firing natural gas**. The use of very low sulfur (0.05% or less) oil is the method of compliance for SO_2 and PM_{10} **when firing distillate oil**."

MONITORING REQUIREMENTS

Specific Conditions 39 and 40 appear to have elements of both excess emissions reporting as well as CEM requirements in each condition. In addition, the requirements of both 40 CFR 60 and 40 CFR 75 do not always agree. FPL suggests the following change:

39. Continuous Monitoring System: The permittee shall install, calibrate, maintain and operate a continuous emission monitor in the stack to measure and record the nitrogen oxides emissions from each CT **in accordance with the requirements of 40 CFR 75**. ~~Thirty-day rolling average periods when NOx emissions (ppmvd at 15% oxygen) are above the standards, listed in Specific Conditions No. 18 and 19, shall be provided to the DEP Bureau of Air Monitoring and Mobile Sources pursuant to 40 CFR 75 and a copy to the DEP Central District Office within one working day (verbally) followed up by a written explanation not later than three (3) working days (alternately by facsimile within one working day). [Rule 62-210.700 F.A.C., Rule 62-4.130, F.A.C., and~~ 40 CFR 75].

40. CEMS for reporting excess emissions:, The NOx CEMS may be used in lieu of the requirement for reporting excess emissions in 40 CFR 60.334©(1), Subpart GG (1998 version). **Thirty day rolling average periods when NOx emissions (ppmvd at 15% oxygen) are above the standards, listed in Specific Conditions No 18 and 19, shall be provided to the DEP Central District Office within one working day (verbally) followed up by a written explanation not later than three (3) working days (alternately by facsimile).** ~~within one working day).~~ Frequency data reports shall be **submitted** as specified in 40 CFR 60.7(c). **CEM monitor downtime shall be calculated and reported according to the requirements of 40 CFR 75 in lieu of the requirements of 40 CFR 60.7(c)(3) and 40 CFR 60.7(d)(1) and 40 CFR 60.7(d)(2).** Upon request from DEP, the CEMS emission rates for NOx on each CT shall be correct to ISO conditions to

demonstrate compliance with the NOx standard established in 40 CFR 60.332. [Rule 62-204.800 F.A.C., and 40 CFR 60.7].

Specific Condition 46: FPL suggests the following language to make this specific condition enforceable, and to clarify when the facility-wide emissions caps take effect:

46. Facility-wide Emission Caps. The entire facility including repowered Units 4 and 5 and existing Unit 3, shall be limited to emission caps of 500 TPY of PM / PM_{10}, 4,500 TPY of NO_x, and 4,000 of SO_2. **This limitation shall not become effective until 2003, following the initial startup testing and placing into commercial operation of repowered Units 4 and 5.** [Applicant Request]

a. For the purpose of complying with the facility-wide emission cap, particulate matter emissions shall be calculated as follows:

Facility-wide Particulate Emissions (PM_{Total}) = Unit 3 PM emissions (PM_3) + Unit 4 PM emissions (PM_4)+ Unit 5 PM emissions (PM_5), where

PM_4 = annual heat input (mmBtu) x 0.006 lb. / mmBtu

PM_5 = PM_{5gas} + PM_{5oil}

PM_{5gas} = annual gas operation heat input (mmBtu) x 0.006 lb. / mmBtu

PM_{5oil} = annual oil operation heat input (mmBtu) x 0.01 lb. / mmBtu

PM_3 = PM_{3oil} + PM_{3gas}

PM_{3oil} = Annual oil heat input (mmBtu) x normalized annual stack test results Fp), where

Fp = [(steady-state PM test result x 16 hours) + (sootblowing PM test result x 8 hours)] / 24 hours

PM_{3gas} = Annual gas operation heat input x 0.0076 lb. / mmBtu

b. For the purpose of complying with the facility-wide emission cap, sulfur dioxide emissions shall be calculated by annually summing the data collected in the continuous emissions monitoring system required by Title IV of the Clean Air Act.

c. For the purpose of complying with the facility-wide emission cap, nitrogen oxide emissions shall be calculated by annually summing the data collected in the continuous emissions monitoring system required by Title IV of the Clean Air Act.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION:

Page TE-4, second-to-last sentence in the first paragraph: "The HRSGs will ~~raise steam~~ **capture waste heat** to repower the existing steam turbines thus producing approximately another 80 MW of electricity per unit or 2,200 for the eight combined cycle units."

In the second paragraph, second sentence: "Each turbine will have a nominal heat input of ~~1,600~~ **1,760** million BTUs per hour, lower heating value (MMBtu/hr, LHV) at 59°F. The HRSGs will not be

supplementally fired and will ~~raise steam~~ **capture waste heat** only from hot ~~(1,100~~ **1,130°F)** combustion turbine exhaust."

Page TE-16, second-to-last sentence in first paragraph: "The limit for oil ~~in~~ **is** consistent...."

I look forward to discussing these issues with your at your earliest convenience. Please do not hesitate to contact me at (561) 691-7058 if I can answer any questions.

Very truly yours,

Rich Piper
Repowering Licensing Manager
Florida Power & Light Company

Public

Notice

Rec'd

18 Aug '99

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEP File No. 1270009-004-AC
PSD-FL-270
Florida Power & Light Sanford Plant
2200 Megawatt Repowering Project
Volusia County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to Florida Power & Light Company (FPL). The permit is to install eight combined cycle units to replace two (2) residual oil and gas-fired steam generators at the Sanford Plant near DeBary, Volusia County. A Best Available Control Technology (BACT) determination was required pursuant to Rule 62-212.400, F.A.C. for only emissions of volatile organic compounds (VOCs). The applicant's name and address are Florida Power & Light, Sanford Plant, 950 South Highway 17-92, DeBary, Florida 32713.

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The Sanford Repowering Project is not subject to review under Section 403.506 F.S. (Power Plant Siting Act), because it provides for no expansion in steam generating capacity.

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

Florida Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Telephone: 850/488-1344
Fax: 850/922-6979

Florida Department of Environmental Protection
Central District Office
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767
Telephone: 407/894-7555
Fax: 407/897-5963

The compete project file includes the application, technical evaluation, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 904/488-0114, for additional information.

Florida Power & Light Company, Environmental Services Dept., P.O. Box 14000, Juno Beach, FL 33408

FPL

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August 17, 1999

Mr. Clair Fancy, P.E.
State of Florida
Department of Environmental Protection
Division of Air Resources Management
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: FPL Sanford Plant
Draft Air Construction Permit #1270009-004-AC (PSD-FL-270)

Dear Mr. Fancy:

This correspondence provides comments regarding the subject draft Air Construction Permit for the Sanford power plant, which was received by FPL on August 3, 1999.

I would like to express my thanks to the Department, and particularly Al Linero and Teresa Heron, for their timely and professional work on our application.

FPL respectfully requests the following changes to be made:

Placard Page – Change as follows: "Permit to install eight (8) combined cycle units to replace two (2) residual oil-fired and gas-fired steam **boiler** generating units. Each **combined cycle** unit is a 170 megawatt General Electric MS7241FA gas-fired combustion turbine-generator with an unfired heat recovery steam generator (HRSG) that will ~~raise sufficient steam~~ **capture sufficient waste heat** to produce another 80 MW via the existing steam-driven electrical generators." Change the last sentence to: "The project also includes a **helper** cooling tower for once-through cooling pond water and small heaters with ~~a~~ **individual** 10-foot stack**s** to heat the natural gas prior to use during simple-cycle operation and cold start-ups."

Facility Description – Change as follows: "This permitting action (**approximately** 2,200MW Repowering Project) is to install eight (8) combined cycle units to replace two (2) residual oil-fired and gas-fired steam generating **boiler** units**; existing steam turbines will remain**. Each **combined cycle** unit is a 170 megawatt General Electric MS7241FA gas-fired combustion turbine-generator with an unfired heat recovery steam generator (HRSG) that will **capture** ~~raise~~ sufficient ~~steam~~ **waste heat** to produce another 80 MW via the existing steam-driven electrical generators.....The project also includes a **helper** cooling tower for once-through cooling pond water and small heaters with **individual** 10-foot stacks to heat the natural gas prior to use during simple cycle operation and cold start-ups.

This Project is exempt from the requirements of Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD) as ~~discussed~~ stated in the Technical Evaluation and Preliminary Determination dated July 30, 1999, for all pollutants except Volatile Organic Compounds (VOC's)."
Emission Limits and Standards

Page 7 of 14; Specific Condition 9 – In order to be consistent with the permit for Fort Myers plant, FPL requests that the same heat input specification be used (the machines are identical). In addition, it is FPL's understanding that heat input is not a limitation per se; merely a descriptor of the capacity of the emissions device. Accordingly, the following language is offered:

9. Turbine Capacity: The ~~maximum~~ **design** heat input rates for natural gas firing, based on the lower heating value (LHV) of the fuel to each combustion turbine at compressor inlet conditions of 59°F, 60% relative humidity, 100% load, and 14.7 psia **is** ~~shall not exceed~~ ~~1,600~~ **1,760** million Btu per hour (MMBtu/hr). The ~~maximum~~ **design** heat input for oil firing **is** ~~1,820~~ **2002** MMBtu/hr (LHV, 60% relative humidity, 100% load, 59°F compressor inlet and 14.7 psia). This ~~maximum~~ **design** heat input rate will vary depending upon turbine inlet conditions and the combustion turbine characteristics. Manufacturer's curves corrected for site conditions or equations for correction to other compressor inlet conditions shall be provided to the Department of Environmental Protection (DEP) within 45 days of completing the initial compliance testing [Design, Rule 62-210.200, F.A.C. (Definitions – Potential Emissions)].

For consistency with Specific Condition 18, the following change is suggested for Specific Condition 10:

10. ~~Direct Fired~~ **Gas** Heaters (~~DF~~**GHs**). The ~~maximum~~ **design** heat input rate, based on the lower heating value (LHV) of the fuel to the ~~DF~~**GHs** at ambient conditions of 59°F, 60% relative humidity, 100% load, and 14.7 psia ~~shall not exceed~~ **is** 176 MMBtu per hour.

Page 8 of 14; Specific Condition 17. Please add some clarifying language as follows: "The permittee shall provide manufacturer's emissions performance versus load diagrams for the DLN systems prior to their installation. DLN systems shall each be tuned upon initial operation to optimize emissions reductions **consistent with normal operation and maintenance practices**, and shall be maintained to minimize NOx emissions and CO emissions**, consistent with normal operation and maintenance practices.** "

Specific Condition 19 – FPL suggests a couple of clarifying changes as outlined below. Also, it is unclear why the Department is requiring adherence to the 9ppm NOx limitation at ISO conditions during the initial performance testing; if this testing is meant to demonstrate compliance to the NSPS SubPart GG limitations, it should state those limits. On the other hand, if demonstration of the 9ppm limitation is the objective, then ISO correction is inappropriate. Since adherence to the 9ppm limit would, in effect, demonstrate compliance with the NSPS limitation, FPL suggests that the ISO correction be dropped.

Please change as follows:

- **Natural Gas Firing** – The ~~concentration of~~ NOx concentrations in the exhaust gas of each CT shall not exceed 9ppmvd at 15%O_2 on a 30-day rolling average basis when firing natural gas as measured by the CEMS (maintained in accordance with 40 CFR 75). Based on CEMS data at the end of each operating day, a new 30-day average rate is calculated from the arithmetic average of all valid hourly emission rates during the previous 30 operating days. **Valid hourly**

emission rates shall not include periods of startup, shutdown or malfunction. In addition, NO_x emissions calculated as NO_2 ~~(at ISO conditions)~~ shall exceed neither 9ppm**vd** at 15% O_2 nor 65 lb. / hr to be demonstrated by initial performance test. **Demonstration of compliance to the 9ppmvd limitation shall be considered to be demonstration of compliance with the NSPS limitation.**

- **Distillate Oil Firing** - The ~~concentration of~~ NOx concentrations in the exhaust gas of each CT shall not exceed 42 ppmvd at 15%O_2 on a 24-hour block average basis when firing distillate oil as measured by the CEMS (maintained in accordance with 40 CFR 75). Based on CEMS data at the end of each operating day, a new 24-hour average rate is calculated from the arithmetic average of all valid hourly emission rates during the previous day. **Valid hourly emission rates shall not include periods of startup, shutdown or malfunction.** In addition, NOx emissions calculated as NO2 ~~(at ISO conditions)~~ shall exceed neither 42 ppm**vd** at 15% O_2 nor 355 lb. / hr to be demonstrated by initial **distillate oil-firing** performance test. **Demonstration of compliance to the 42ppmvd limitation shall be considered to be demonstration of compliance with the NSPS limitation.**

Page 11 of 14; Specific Condition 30 – "Notwithstanding the requirements of Rule 62-297.340, F.A.C., the use of pipeline natural gas is the method for determining compliance for SO_2 and PM_{10} **when firing natural gas**. The use of very low sulfur (0.05% or less) oil is the method of compliance for SO_2 and PM_{10} **when firing distillate oil**."

MONITORING REQUIREMENTS

Specific Conditions 39 and 40 appear to have elements of both excess emissions reporting as well as CEM requirements in each condition. In addition, the requirements of both 40 CFR 60 and 40 CFR 75 do not always agree. FPL suggests the following change:

39. Continuous Monitoring System: The permittee shall install, calibrate, maintain and operate a continuous emission monitor in the stack to measure and record the nitrogen oxides emissions from each CT **in accordance with the requirements of 40 CFR 75**. ~~Thirty day rolling average periods when NOx emissions (ppmvd at 15% oxygen) are above the standards, listed in Specific Conditions No 18 and 19, shall be provided to the DEP Bureau of Air Monitoring and Mobile Sources pursuant to 40 CFR 75 and a copy to the DEP Central District Office within one working day (verbally) followed up by a written explanation not later than three (3) working days (alternately by facsimile within one working day). [Rule 62-210.700 F.A.C., Rule 62-4.130, F.A.C., and~~ 40 CFR 75].

40. CEMS for reporting excess emissions:, The NOx CEMS may be used in lieu of the requirement for reporting excess emissions in 40 CFR 60.334©(1), Subpart GG (1998 version). **Thirty day rolling average periods when NOx emissions (ppmvd at 15% oxygen) are above the standards, listed in Specific Conditions No 18 and 19, shall be provided to the DEP Central District Office within one working day (verbally) followed up by a written explanation not later than three (3) working days (alternately by facsimile).** ~~within one working day).~~ Frequency data reports shall be **submitted** as specified in 40 CFR 60.7(c). **CEM monitor downtime shall be calculated and reported according to the requirements of 40 CFR 75 in lieu of the requirements of 40 CFR 60.7(c)(3) and 40 CFR 60.7(d)(1) and 40 CFR 60.7(d)(2).** Upon request from DEP, the CEMS emission rates for NOx on each CT shall be correct to ISO conditions to

demonstrate compliance with the NOx standard established in 40 CFR 60.332. [Rule 62-204.800 F.A.C., and 40 CFR 60.7].

Specific Condition 46: FPL suggests the following language to make this specific condition enforceable, and to clarify when the facility-wide emissions caps take effect:

46. Facility-wide Emission Caps. The entire facility including repowered Units 4 and 5 and existing Unit 3, shall be limited to emission caps of 500 TPY of PM / PM_{10}, 4,500 TPY of NO_x, and 4,000 of SO_2. **This limitation shall not become effective until 2003, following the initial startup testing and placing into commercial operation of repowered Units 4 and 5.** [Applicant Request]

a. For the purpose of complying with the facility-wide emission cap, particulate matter emissions shall be calculated as follows:

Facility-wide Particulate Emissions (PM_{Total}) = Unit 3 PM emissions (PM_3) + Unit 4 PM emissions (PM_4)+ Unit 5 PM emissions (PM_5), where

PM_4 = annual heat input (mmBtu) x 0.006 lb. / mmBtu

PM_5 = PM_{5gas} + PM_{5oil}

PM_{5gas} = annual gas operation heat input (mmBtu) x 0.006 lb. / mmBtu

PM_{5oil} = annual oil operation heat input (mmBtu) x 0.01 lb. / mmBtu

PM_3 = PM_{3oil} + PM_{3gas}

PM_{3oil} = Annual oil heat input (mmBtu) x normalized annual stack test results (Fp), where

Fp = [(steady-state PM test result x 16 hours) + (sootblowing PM test result x 8 hours)] / 24 hours

PM_{3gas} = Annual gas operation heat input x 0.0076 lb. / mmBtu

b. For the purpose of complying with the facility-wide emission cap, sulfur dioxide emissions shall be calculated by annually summing the data collected in the continuous emissions monitoring system required by Title IV of the Clean Air Act.

c. For the purpose of complying with the facility-wide emission cap, nitrogen oxide emissions shall be calculated by annually summing the data collected in the continuous emissions monitoring system required by Title IV of the Clean Air Act.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION:

Page TE-4, second-to-last sentence in the first paragraph: "The HRSGs will ~~raise steam~~ **capture waste heat** to repower the existing steam turbines thus producing approximately another 80 MW of electricity per unit or 2,200 for the eight combined cycle units."

In the second paragraph, second sentence: "Each turbine will have a nominal heat input of ~~1,600~~ **1,760** million BTUs per hour, lower heating value (MMBtu/hr, LHV) at 59°F. The HRSGs will not be

supplementally fired and will ~~raise steam~~ **capture waste heat** only from hot (~~1,100~~ **1,130°F**) combustion turbine exhaust."

Page TE-16, second-to-last sentence in first paragraph: "The limit for oil ~~in~~ **is** consistent...."

I look forward to discussing these issues with your at your earliest convenience. Please do not hesitate to contact me at (561) 691-7058 if I can answer any questions.

Very truly yours,

Rich Piper
Repowering Licensing Manager
Florida Power & Light Company