



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET N.E.
ATLANTA, GEORGIA 30365

4APT-AEB

JUL 19 1993

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Wayne C. Ondler
Environmental Licensing Project Manager
Environmental Affairs Department
Florida Power & Light Company
P. O. Box 088801
North Palm Beach, Florida 33408-8801

RECEIVED

JUL 26 1993

Division of Air
Resources Management

RE: Martin County CG/CC Project (PSD-FL-146)

Dear Mr. Ondler:

The review of your February 2 and May 19, 1993, letters requesting an administrative change to the conditions of the Prevention of Significant Deterioration permit (PSD-FL-146) issued to Florida Power & Light Company (FPL) on May 31, 1991, for the Martin County CG/CC project has been completed. You requested that Specific Conditions 5 and 7 of the permit be revised to authorize: a) a different auxiliary boiler and diesel generator, both with smaller capacity but with slightly increased emission rates though overall lower total emissions; and, b) an additional two hours during cold startup periods for the combustion turbines.

The basis of your request is a concern that the lab data results have indicated that the DLN II combustor will not be able to meet the project's permitted emission limits for several pollutants during the initial periods of a "cold start." The excess emissions, as indicated in your request, are due to the fact that the combustion turbines (CT), during a "cold start," must hold loads at low levels to allow the steam turbine (ST) to warm up before engaging the pre-mix option of the DLN II combustor (i.e., 25 ppm NO_x) on natural gas and of steam injection on oil.

It should be noted that the applicable NSPS regulations under 40 CFR subpart GG do not prescribe time limits for excess emissions during periods of startup and shutdown; however, this facility shall comply with F.A.C. Rule 17-210.700, Excess Emissions.


Based on the foregoing, it is determined that the proposed revision to the Specific Conditions 5 and 7 of PSD-FL-146 is acceptable and will not result in the increase in permitted annual emissions of any pollutant subject to the PSD regulations. As an administrative change, this revision will not require additional public participation procedures.

Authority to construct a stationary source was granted for the Martin County Coal Gasification and Combined Cycle Project, subject to the conditions contained in the permit to construct on

May 31, 1991. This administrative change to PSD-FL-146 does not alter the commence construction deadline for Units 3 and 4. This authority to construct is based solely on the requirements of 40 CFR §52.21, the federal regulations governing significant deterioration of air quality, and in no way affects the approvals under other federal or State regulatory authorities. Please be advised that a violation of any condition issued as part of this approval, as well as any construction which proceeds in material variance with information submitted in your application, may subject Florida Power & Light Company to an enforcement action.

Any questions concerning this administrative permit revision may be directed to Mr. Winston A. Smith, Director; Air, Pesticides, and Toxics Management Division at (404) 347-3043.

Sincerely,



Patrick M. Tobin
Acting Regional Administrator

Enclosure

cc: C. H. Fancy, FDER

J. Heron
Y. Smallwood
B. Owen
J. Little, SE Dist.
P. Cunningham, HBG-5
CHF/PL

PSD-FL-146

**PERMIT TO CONSTRUCT UNDER THE RULES FOR THE
PREVENTION OF SIGNIFICANT DETERIORATION OF AIR QUALITY**

Pursuant to and in accordance with the provisions of Part C, Subpart 1 of the Clean Air Act, as amended, 42 U.S.C. §7470 et seq., and the regulations promulgated thereunder at 40 C.F.R. §52.21, as amended at 45 Fed. Reg. 52676, 52735-41 (August 7, 1980),

Florida Power & Light Company
P. O. Box 088801
North Palm Beach, Florida 33408-8801

is hereby authorized to construct/modify a stationary source, specifically the Martin County Coal Gasification and Combined Cycle Project, at the following location:

Florida Power & Light Company
Martin County Power Generation Facility
SR 710; 5 miles NW of Indiantown
Indiantown, Florida

UTM Coordinates: 542.87 km E, 2992.43 km N

Upon completion of this authorized construction and commencement of operation/production, this stationary source shall be operated in accordance with the emission limitations, sampling requirements, monitoring requirements and other conditions set forth in the attached Specific Conditions (Part I) and General Conditions (Part II).

The revisions to this permit shall become effective on the date signed below.

If construction does not commence within 18 months after May 31, 1991, or if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time, this permit shall expire and authorization to construct shall become invalid.

This authorization to construct/modify shall not relieve the owner or operator of the responsibility to comply fully with all applicable provisions of Federal, State, and Local law.



Patrick M. Tobin
Acting Regional Administrator

JUL 19 1993

Date Signed

The Specific Conditions of federal permit PSD-FL-146 shall be modified as follows:

Specific Condition No. 4

FROM:

The maximum allowable emissions from each CT in accordance with the BACT determination shall not exceed the following at 40°F (except during periods of startup and shutdown):

Pollutant	Fuel	Basis	Emission Limitations ^d			
			Units 3 & 4		Units 5 & 6	
			lb/hr/CT	TPY ^a	lb/hr/CT	TPY ^a
NO _x	Gas	25 ppmvd @ 15% O ₂	177	comb. tot. - 3108	177	comb. tot. - 3108
	Oil	65 ppmvd @ 15% O ₂	461		461	
	CG	42 ppmvd @ 15% O ₂	392	6868	392	6868
VOC ^b	Gas	1.6 ppmvd	3	comb. tot. - 57	3	comb. tot. - 57
	Oil	6 ppmvd	11		11	
	CG	9 ppmvd	21.4	375	21.4	375
CO	Gas	30 ppmvd	94.3	comb. tot. - 871	94.3	comb. tot. - 871
	Oil	33 ppmvd	105.8		105.8	
	CG	33 ppmvd	134	2348	134	2348
PM/PM ₁₀	Gas	-	18	comb. tot. - 100	18	comb. tot. - 100
	Oil	-	60.6		60.6	
	CG	-	19	333	19	333
Pb	Gas	-	neg.	comb. tot. - 0.015	neg.	comb. tot. - 0.015
	Oil	-	0.015		0.015	
	CG	-	0.3	5.3	0.3	5.3
SO ₂	Gas	-	91.5	comb. tot. - 568	91.5	comb. tot. - 568
	Oil	-	920		920	
	CG	-	834	14612	834	14612

- a) Tons per year (TPY) emission limits listed for natural gas and oil combined apply as an emission cap based on limiting oil firing to an annual aggregate of 2000 hours for the 4 CTs, with compliance to be demonstrated in annual operation reports.
- b) Exclusive of background concentrations.
- c) Sulfur dioxide emissions based on a maximum of 0.5 percent sulfur in oil for hourly emissions and an average sulfur content of 0.3 percent from annual emissions. These sulfur content limitations are subject to change based on the analysis required in Condition No. 12.
- d) These limitations for Units 5 and 6 and coal gasification shall not be binding for subsequent BACT determinations.

TO:

The maximum allowable emissions from each CT in accordance with the BACT determination shall not exceed the following at 40°F (except during periods of startup and shutdown):

Pollutant	Fuel	Basis	Emission Limitations ^a			
			Units 3 & 4		Units 5 & 6	
			lb/hr/CT	TPY ^a	lb/hr/CT	TPY ^a
NO _x	Gas	25 ppmvd @ 15% O ₂	177	comb. tot. - 3108	177	comb. tot. - 3108
	Oil	65 ppmvd @ 15% O ₂	461		461	
	CG	42 ppmvd @ 15% O ₂	392	6868	392	6868
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CO	Gas	30 ppmvd	94.3	comb. tot. - 871	94.3	comb. tot. - 871
	Oil	33 ppmvd	105.8		105.8	
	CG	33 ppmvd	134	2348	134	2348
PM/PM ₁₀	Gas		18	comb. tot. - 100	18	comb. tot. - 100
	Oil		60.6		60.6	
	CG		19	333	19	333
Pb	Gas		neg.	comb. tot. - 0.015	neg.	comb. tot. - 0.015
	Oil		0.015		0.015	
	CG		0.3	5.3	0.3	5.3
SO ₂	Gas		91.5	comb. tot. - 568	91.5	comb. tot. - 568
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	CG		834	14612	834	14612

- a) Tons per year (TPY) emission limits listed for natural gas and oil combined apply as an emission cap based on limiting oil firing to an annual aggregate of 2000 hours for the 4 CTs, with compliance to be demonstrated in annual operation reports.
- b) Exclusive of background concentrations.
- c) Sulfur dioxide emissions based on a maximum of 0.5 percent sulfur in oil for hourly emissions and an average sulfur content of 0.3 percent from annual emissions. These sulfur content limitations are subject to change based on the analysis required in Condition No. 12.
- d) These limitations for Units 5 and 6 and coal gasification shall not be binding for subsequent BACT determinations.
- e) The excess emissions authorized under Rule 17-210.700(1), F.A.C., shall be extended an additional two hours (four hours total) for a cold steam turbine start for the first CT of a unit. The second CT of each unit shall comply with established emission limits in accordance with Rule 17-210.700(1), F.A.C.

Specific Condition No. 7

FROM:

Auxiliary steam boilers and diesel generators shall operate only during startup and shutdown, and for emergency power generation, respectively. NO_x emissions for the auxiliary steam boilers shall not exceed 0.1 lbs/mmBTU for natural gas firing or 0.2 lbs/mmBTU for oil firing. NO_x emissions for the diesel generators shall not exceed 12.0 grams/hp-hr.

TO:

Auxiliary steam boilers and diesel generators shall operate only during startup and shutdown, and for emergency power generation, respectively. NO_x emissions for the auxiliary steam boilers shall not exceed 0.3 lbs/mmBTU for natural gas firing or oil firing. NO_x emissions for the diesel generators shall not exceed 15.0 grams/hp-hr.

HOPPING BOYD GREEN & SAMS
ATTORNEYS AND COUNSELORS
123 SOUTH CALHOUN STREET
POST OFFICE BOX 6526
TALLAHASSEE, FLORIDA 32314

(904) 222-7500
FAX (904) 224-8551
FAX (904) 681-2964

RECEIVED
JUL 28 1993
Division of Air
Resources Management

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JAMES S. ALVES
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ELIZABETH C. BOWMAN
WILLIAM L. BOYD, IV
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
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WILLIAM D. PRESTON
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MICHAEL P. PETROVICH
DOUGLAS S. ROBERTS
KRISTIN C. RUBIN
JULIE ROME STEINMEYER

OF COUNSEL
W. ROBERT FOKES

MEMORANDUM

BY HAND DELIVERY

TO: Buck Oven
Gary Smallridge

FROM: Doug Roberts *DR*

RE: FPL Martin and Lauderdale Modifications

DATE: July 26, 1993

=====

Attached for your reference are our comments on the Department's draft order for the FPL Martin modification. Also enclosed are copies of the recent EPA-issued PSD permit revisions for both the Martin and Lauderdale projects. These revisions adopt the changes recommended by the Department and are consistent with the modified conditions in the PPSA orders. With these items, the Department can now proceed to issue the modification orders for both projects.

Please call should you have any questions about these items.

DSR/mee
Encls.

cc: Willard Hanks
Teresa Heron



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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Mr. Wayne C. Ondler
Environmental Licensing Project Manager
Environmental Affairs Department
Florida Power & Light Company
P. O. Box 088801
North Palm Beach, Florida 33408-8801

ENVIRONMENTAL AFFAIRS

RE: Martin County CG/CC Project (PSD-FL-146)

Dear Mr. Ondler:

The review of your February 2 and May 19, 1993, letters requesting an administrative change to the conditions of the Prevention of Significant Deterioration permit (PSD-FL-146) issued to Florida Power & Light Company (FPL) on May 31, 1991, for the Martin County CG/CC project has been completed. You requested that Specific Conditions 5 and 7 of the permit be revised to authorize: a) a different auxiliary boiler and diesel generator, both with smaller capacity but with slightly increased emission rates though overall lower total emissions; and, b) an additional two hours during cold startup periods for the combustion turbines.

The basis of your request is a concern that the lab data results have indicated that the DLN II combustor will not be able to meet the project's permitted emission limits for several pollutants during the initial periods of a "cold start." The excess emissions, as indicated in your request, are due to the fact that the combustion turbines (CT), during a "cold start," must hold loads at low levels to allow the steam turbine (ST) to warm up before engaging the pre-mix option of the DLN II combustor (i.e., 25 ppm NO_x) on natural gas and of steam injection on oil.

It should be noted that the applicable NSPS regulations under 40 CFR subpart GG do not prescribe time limits for excess emissions during periods of startup and shutdown; however, this facility shall comply with F.A.C. Rule 17-210.700, Excess Emissions.

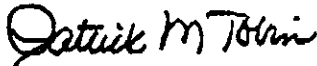
Based on the foregoing, it is determined that the proposed revision to the Specific Conditions 5 and 7 of PSD-FL-146 is acceptable and will not result in the increase in permitted annual emissions of any pollutant subject to the PSD regulations. As an administrative change, this revision will not require additional public participation procedures.

Authority to construct a stationary source was granted for the Martin County Coal Gasification and Combined Cycle Project, subject to the conditions contained in the permit to construct on

May 31, 1991. This administrative change to PSD-FL-146 does not alter the commence construction deadline for Units 3 and 4. This authority to construct is based solely on the requirements of 40 CFR §52.21, the federal regulations governing significant deterioration of air quality, and in no way affects the approvals under other federal or State regulatory authorities. Please be advised that a violation of any condition issued as part of this approval, as well as any construction which proceeds in material variance with information submitted in your application, may subject Florida Power & Light Company to an enforcement action.

Any questions concerning this administrative permit revision may be directed to Mr. Winston A. Smith, Director, Air, Pesticides, and Toxics Management Division at (404) 347-3043.

Sincerely,



Patrick M. Tobin
Acting Regional Administrator

Enclosure

cc: C. H. Fancy, FDER

PSD-FL-146

**PERMIT TO CONSTRUCT UNDER THE RULES FOR THE
PREVENTION OF SIGNIFICANT DETERIORATION OF AIR QUALITY**

Pursuant to and in accordance with the provisions of Part C, Subpart 1 of the Clean Air Act, as amended, 42 U.S.C. §7470 ~~et seq.~~, and the regulations promulgated thereunder at 40 C.F.R. §52.21, as amended at 45 Fed. Reg. 52676, 52735-41 (August 7, 1980),

Florida Power & Light Company
P. O. Box 088801
North Palm Beach, Florida 33408-8801

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Florida Power & Light Company
Martin County Power Generation Facility
SR 710; 5 miles NW of Indiantown
Indiantown, Florida

UTM Coordinates: 542.87 km E, 2992.43 km N

Upon completion of this authorized construction and commencement of operation/production, this stationary source shall be operated in accordance with the emission limitations, sampling requirements, monitoring requirements and other conditions set forth in the attached Specific Conditions (Part I) and General Conditions (Part II).

The revisions to this permit shall become effective on the date signed below.

If construction does not commence within 18 months after May 31, 1991, or if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time, this permit shall expire and authorization to construct shall become invalid.

This authorization to construct/modify shall not relieve the owner or operator of the responsibility to comply fully with all applicable provisions of Federal, State, and Local law.

Patrick M. Tobin
Patrick M. Tobin
Acting Regional Administrator

JUL 19 1993
Date Signed

The Specific Conditions of federal permit PSD-FL-146 shall be modified as follows:

Specific Condition No. 4

FROM:

The maximum allowable emissions from each CT in accordance with the BACT determination shall not exceed the following at 40°F (except during periods of startup and shutdown):

Pollutant	Fuel	Basic	Emission Limitations ^d			
			Units 3 & 4		Units 5 & 6	
			lb/hr/CT	TPY ^a	lb/hr/CT	TPY ^a
NO _x	Gas	25 ppmvd @ 15% O ₂	177	comb. tot. - 3108	177	comb. tot. - 3108
	Oil	65 ppmvd @ 15% O ₂	461		461	
	CG	42 ppmvd @ 15% O ₂	392	6868	392	6868
VOC ^c	Gas	1.6 ppmvd	3	comb. tot. - 57	3	comb. tot. - 57
	Oil	6 ppmvd	11		11	
	CG	9 ppmvd	21.4	375	21.4	375
CO	Gas	30 ppmvd	94.3	comb. tot. - 871	94.3	comb. tot. - 871
	Oil	33 ppmvd	105.8		105.8	
	CG	33 ppmvd	134	2348	134	2348
PM/PM ₁₀	Gas		18	comb. tot. - 100	18	comb. tot. - 100
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SO ₂	Gas		91.5	comb. tot. - 568	91.5	comb. tot. - 568
	Oil		920		920	
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- a) Tons per year (TPY) emission limits listed for natural gas and oil combined apply as an emission cap based on limiting oil firing to an annual aggregate of 2000 hours for the 4 CTs, with compliance to be demonstrated in annual operation reports.
- b) Exclusive of background concentrations.
- c) Sulfur dioxide emissions based on a maximum of 0.5 percent sulfur in oil for hourly emissions and an average sulfur content of 0.3 percent from annual emissions. These sulfur content limitations are subject to change based on the analysis required in Condition No. 12.
- d) These limitations for Units 5 and 6 and coal gasification shall not be binding for subsequent BACT determinations.

TO:

The maximum allowable emissions from each CT in accordance with the BACT determination shall not exceed the following at 40°F (except during periods of startup and shutdown):

Pollutant	Fuel	Basis	Emission Limitations ^a			
			Units 3 & 4		Units 5 & 6	
			b/hr/CT	TPY ^b	b/hr/CT	TPY ^c
NO _x	Gas	25 ppmvd @ 15% O ₂	177	comb. tot. - 3108	177	comb. tot. - 3108
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Pb	Gas		neg.	comb. tot. - 0.015	neg.	comb. tot. - 0.015
	Oil		0.015		0.015	
	CG		0.3	5.3	0.3	5.3
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	CG		834	14612	834	14612

- a) Tons per year (TPY) emission limits listed for natural gas and oil combined apply as an emission cap based on limiting oil firing to an annual aggregate of 2000 hours for the 4 CTs, with compliance to be demonstrated in annual operation reports.
- b) Exclusive of background concentrations.
- c) Sulfur dioxide emissions based on a maximum of 0.5 percent sulfur in oil for hourly emissions and an average sulfur content of 0.3 percent from annual emissions. These sulfur content limitations are subject to change based on the analysis required in Condition No. 12.
- d) These limitations for Units 5 and 6 and coal gasification shall not be binding for subsequent BACT determinations.
- e) The excess emissions authorized under Rule 17-210.700(1), F.A.C., shall be extended an additional two hours (four hours total) for a cold steam turbine start for the first CT of a unit. The second CT of each unit shall comply with established emission limits in accordance with Rule 17-210.700(1), F.A.C.

Specific Condition No. 7

FROM:

Auxiliary steam boilers and diesel generators shall operate only during startup and shutdown, and for emergency power generation, respectively. NO_x emissions for the auxiliary steam boilers shall not exceed 0.1 lbs/mmBTU for natural gas firing or 0.2 lbs/mmBTU for oil firing. NO_x emissions for the diesel generators shall not exceed 12.0 grams/hp-hr.

TO:

Auxiliary steam boilers and diesel generators shall operate only during startup and shutdown, and for emergency power generation, respectively. NO_x emissions for the auxiliary steam boilers shall not exceed 0.3 lbs/mmBTU for natural gas firing or oil firing. NO_x emissions for the diesel generators shall not exceed 15.0 grams/hp-hr.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

JUL 19 1993

4APT-AEB

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Charles D. Henderson
Environmental Licensing Project Manager
Environmental Affairs Department
Florida Power & Light Company
P. O. Box 088801
North Palm Beach, Florida 33408-8801

RE: Lauderdale Repowering Project (PSD-FL-145)

Dear Mr. Henderson:

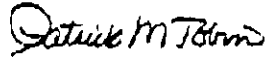
The review of Mr. Daniel MacDougall's March 12, May 18, and May 26, 1993, letters requesting administrative changes to the conditions of the Prevention of Significant Deterioration permit (PSD-FL-145) issued to Florida Power & Light Company (FPL) on March 14, 1991, for the Lauderdale Repowering project has been completed. You requested that Specific Conditions 1 and 5 of the permit be revised to account for a higher sulfur content in the natural gas and to authorize the burning of all natural gas fuel permitted for this facility in the combustion turbines. The basis of your request is that the natural gas contains more sulfur than was originally estimated, that there is a delay in installing the duct burners, and that the combustion turbines can burn the natural gas permitted for the duct burners without any increase in emissions.

Based on the foregoing, it is determined that the proposed revision to the Specific Conditions 1 and 5 of PSD-FL-145 is acceptable and will not result in the increase in permitted annual emissions of any pollutant subject to the PSD regulations. As an administrative change, this revision will not require additional public participation procedures.

Authority to construct a stationary source was granted for the Florida Power & Light Company, Lauderdale Repowering Project, subject to the conditions contained in the permit to construct on March 14, 1991. This administrative change to PSD-FL-145 does not alter the commence construction deadline for the Lauderdale Repowering Project. This authority to construct is based solely on the requirements of 40 CFR §52.21, the federal regulations governing significant deterioration of air quality, and in no way affects the approvals under other federal or State regulatory authorities. Please be advised that a violation of any condition issued as part of this approval, as well as any construction which proceeds in material variance with information submitted in your application, may subject Florida Power & Light Company to an enforcement action.

Any questions concerning this administrative permit revision may be directed to Mr. Winston A. Smith, Director; Air, Pesticides, and Toxics Management Division at (404) 347-3043.

Sincerely,



Patrick M. Tuhin
Acting Regional Administrator

Enclosure

cc: C. H. Fancy, FDER

PSD-FL-145

**PERMIT TO CONSTRUCT UNDER THE RULES FOR THE
PREVENTION OF SIGNIFICANT DETERIORATION OF AIR QUALITY**

Pursuant to and in accordance with the provisions of Part C, Subpart 1 of the Clean Air Act, as amended, 42 U.S.C. §7470 et seq., and the regulations promulgated thereunder at 40 C.F.R. §52.21, as amended at 45 Fed. Reg. 52676, 52735-41 (August 7, 1980),

Florida Power & Light Company
P. O. Box 088801
North Palm Beach, Florida 33408-8801

is hereby authorized to construct/modify a stationary source, specifically the Lauderdale Repowering Project, at the following location:

Florida Power & Light Company
Lauderdale Electric Utility Plant
Griffin Road
Dania, Florida

UTM Coordinates: Zone 17 580.1 km E, 2883.3 km N

Upon completion of this authorized construction and commencement of operation/production, this stationary source shall be operated in accordance with the emission limitations, sampling requirements, monitoring requirements and other conditions set forth in the attached Specific Conditions (Part I) and General Conditions (Part II).

The revisions to this permit shall become effective on the date signed below.

If construction does not commence within 18 months after March 14, 1991, or if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time, this permit shall expire and authorization to construct shall become invalid.

This authorization to construct/modify shall not relieve the owner or operator of the responsibility to comply fully with all applicable provisions of Federal, State, and Local law.

Patrick M. Tobin
Patrick M. Tobin
Acting Regional Administrator

JUL 19 1993

Date Signed

The Specific Conditions of federal permit PSD-FL-145 shall be modified as follows:

FROM:

Specific Condition No. 1

The maximum heat input to each combustion turbine (CT) shall neither exceed 1,685.0 mmBTU/hr while firing natural gas, nor 1,646.9 mmBTU/hr while firing fuel oil (@ 75°F). Each CT's fuel consumption shall be continuously measured and recorded. The maximum heat input to each duct burner shall not exceed 90.62 mmBTU/hr. Each duct burner's fuel consumption shall be continuously measured and recorded.

Specific Condition No. 5

The maximum allowable emissions from each CT in accordance with the BACT determination shall not exceed the following emission limitations at 75°F:

Pollutant	Basis	Fuel	Emission Limitations			
			lbs/hr/CT	lbs/hr/DB	4 CT* (TPY)	4 DB+ (TPY)
NO _x	42 ppmvd	Gas	264	10.0	4,716	152
	65 ppmvd	Oil	422			
VOC	1 ppmvd	Gas	1.3	2.0	48.3	30.5
	6 ppmvd	Oil	7.8			
CO	30 ppmvd	Gas	89	17.6	1,405	268
	33 ppmvd	Oil	100			
PM/PM ₁₀		Gas	14.7	0.7	414	10.7
		Oil	58.0			
SO ₂		Gas	0.97	0.05	1,582	0.8
		Oil	538			

CT - Combustion Turbine
DB - Duct Burner

NOTES: * Refers to the maximum facility emissions (four CTs).

With capacity factor limitations of 25 percent on oil and 87 percent for the facility.

+ Refers to maximum duct burner emissions at 87 percent capacity factor.

NO_x emissions from duct burners are based on an as-fired emission limitation of 0.11 lbs/mmBTU.

Sulfur dioxide emission assume a maximum of 0.3 percent sulfur in fuel oil for hourly emissions and an average sulfur content of 0.2 percent for annual emissions.

TO:

Specific Condition No. 1

When the duct burners are installed, the maximum heat input to each combustion turbine (CT) shall neither exceed 1,685.0 mmBTU/hr while firing natural gas, nor 1,646.9 mmBTU/hr while firing fuel oil (@ 75°F). Each CT's fuel consumption shall be continuously measured and recorded. The maximum heat input to each duct burner shall not exceed 90.62 mmBTU/hr. Each duct burner's fuel consumption shall be continuously measured and recorded.

Until the duct burners are installed, the maximum heat input to each CT shall not exceed 1,775.62 mmBTU/hr while firing natural gas nor 1,646.9 mmBTU/hr while firing fuel oil (@ 75°F). Each CT's fuel consumption shall be continuously measured and recorded.

Specific Condition No. 5

The maximum allowable sulfur (total) content of the natural gas burned at this facility shall not exceed 10 grains per 1,000 cubic feet (gr/1000 CF). The permittee shall monitor the sulfur content of the natural gas by the customized fuel monitoring schedule approved by EPA. The sulfur content of the fuel oil shall not exceed a maximum of 0.3 percent and shall not exceed an average of 0.2 percent during any 12-month period.

The maximum allowable emissions from each CT in accordance with the BACT determination shall not exceed the following emission limitations at 75°F:

MAXIMUM ALLOWABLE EMISSION PRIOR TO THE INSTALLATION OF THE DUCT BURNERS

Pollutant	Basis	Fuel	Emission Limitations**	
			lbs/hr/CT	4 CT* (TPY)
NO _x ***	42 ppmvd	Gas	264	4,868
	65 ppmvd	Oil	422	
VOC	1 ppmvd	Gas	1.3	50
	6 ppmvd	Oil	7.8	
CO	30 ppmvd	Gas	89	1,489
	33 ppmvd	Oil	100	
PM/PM ₁₀		Gas	14.7	424.7
		Oil	58.0	
SO ₂		Gas	4.9	1,582.8
		Oil	538	

CT - Combustion Turbine
 DB - Duct Burner

NOTES * Refers to the maximum facility emissions (four CTs). With capacity factor limitations of 25 percent on oil.

** Table revised to reflect removal of the duct burners and reallocation of the annual emissions to the CTs.

*** ppm NO_x, dry, corrected to ISO standard ambient air conditions and 15 percent oxygen.

**MAXIMUM ALLOWABLE EMISSION LIMITS WITH THE DUCT BURNERS
INSTALLED**

Pollutant	Basis	Fuel	lbs/hr/CT	Emission Limitations*		
				lbs/hr/DB	4 CT* (TPY)	4 DB* (TPY)
NO _x **	42 ppmvd	Gas	264	10.0		152
	65 ppmvd	Oil	422		4,716	
VOC	1 ppmvd	Gas	1.3	2.0		30.5
	6 ppmvd	Oil	7.8		48.3	
CO	30 ppmvd	Gas	89	17.6	1,405	268
	33 ppmvd	Oil	100			
PM/PM ₁₀		Gas	14.7	0.7		10.7
		Oil	58.0		414	
SO ₂		Gas	4.9	0.25		4.0
		Oil	538		1,582	

CT - Combustion Turbine

DB - Duct Burner

NOTES: * Refers to the maximum facility emissions (four CTs).
With capacity factor limitations of 25 percent on oil.

** ppm NO_x dry, corrected to ISO standard ambient air conditions at 15 percent oxygen.

NO_x emissions from duct burners are based on an as-fired emission limitation of 0.11 lbs/mmBTU.

The permittee shall calculate an appropriate lbs/mmBTU emission factor for each pollutant based on the compliance tests heat input rates/steam injection rate/emission measurements. After submittal to and approval by the Department, the permittee shall program the on site computer system to calculate and record the emissions of each pollutant for each CT. Results shall be reported as lbs/hr and TPY.



RECEIVED

JUN 18 1993

June 15, 1993

Division of Air
Resources Management

FPL-JEN-DER-170-93-29

Mr. Clair Fancy, Chief
Bureau of Air Regulation
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399

DAMN

**RE: Martin CC/CG Project
PSD-FL-146
Initial Fire of Unit 3B**

Dear Mr. Fancy:

In compliance with 40 CFR 60.7(a)(3), FPL is hereby notifying the Department that Martin Unit 3B initially fired the CT on June 12, 1993.

Please call Dan MacDougall at (407) 625-7661 if you have any questions.

Sincerely,

A handwritten signature in cursive script, appearing to read 'W. C. Ondler'.

^{For}
Wayne C. Ondler
Environmental Liensing Project Manager
Environemtnal Affairs

cc: Jewel Harper, EPA
H. S. Oven, DER/TAL
Tom Tittle, DER/WPB

draft BSR

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

In Re: Florida Power & Light Company)
Martin Coal Gasification/Combined)
Cycle Project Power Plant Siting)
Application No. PA 89-27) DER CASE NO. PA89-26A ⁷ <
Martin County, Florida)

FINAL ORDER MODIFYING CONDITIONS OF CERTIFICATION

On February 20, 1991, the Governor and Cabinet, acting as the Siting Board, issued a final order approving certification for the Martin Coal Gasification/Combined Cycle Facility (Martin CG/CC). That certification order approved the construction and operation of a 800 MW ^e (net) natural gas/oil fired combined cycle facility and associated facilities to be located in Martin County, Florida.

On February 2, 1993, FPL filed a request to modify the conditions of certification pursuant to section 403.516(1)(b), F.S. FPL requested that the conditions be modified to approve several recently identified changes to the project design and operation. These proposed changes include changing operating conditions for the auxiliary boiler and the emergency diesel generator, and revising emission limitations during startup conditions for the main generating units.

Copies of FPL's request were distributed to all parties to the certification proceeding and made available for public review. On February 19, 1993, the Department published a Notice of Intent to Grant the Proposed Modification in the Florida Administrative Weekly. Copies of the intent to grant

were sent to all parties to the original proceeding. The notices specified that a hearing would be held if requested by a party within 45 days from receipt of the intent to grant the modification or if requested by a person having a substantial interest within 30 days of publication of the notice. A hearing was not requested and written objections to the proposed modifications were not received by the Department.

Accordingly, in the absence of any dispute,
IT IS ORDERED THAT:

The proposed changes to the Martin CG/CC Project, described in the February 2, 1993, request for modification, are approved based on the absence of any request for a hearing or written objections.

Pursuant to Section 403.516(1)(b), F.S., the Department hereby modifies the conditions of certification for the Martin CG/CC Project as follows:

Condition II.A. Emission Limitations for Martin CG/CC Project

1-3. No Change

4. The maximum allowable emissions from each CT in accordance with the BACT determination, shall not exceed the following, at 40° F (except during periods of startup and shutdown) as prescribed by Note e. below).

* * *

e. The excess emissions authorized under Section

RULE

17-210.700(1), F.A.C., shall be extended an additional two hours (for a total not to exceed four hours) for a cold turbine start for the first CT of a CC unit. The second CT of each CC unit shall comply with established emission limits in accordance with ^{Rule} Section 17-210.700(1), F.A.C.

5 & 6. No change

RESTORE ORIGINAL TEXT

7. Auxiliary Steam Boilers and Diesel Generators may be operated as needed ^{steam} ~~shall only during startup and shutdown, periodic maintenance testing, and for emergency power generation, respectively.~~ ^{RESTORE OVER STRUCK TEXT} NO_x emissions for the auxiliary boiler shall not exceed 0.3 ± 1 lb/MMBtu for natural gas firing or 0.2 ± 1 lb/MMBtu for oil firing. NO_x emissions for the diesel generators shall not exceed 15.0 ± 0 grams/hp-hr.

ADD SPACE #

Sulfur dioxide emissions for the auxiliary steam boilers and diesel generators are established by firing natural gas or limiting the light distillate fuel oil's sulfur content to 0.3% on an annual basis.

All modifications to the original certification shall be in compliance with Rule Chapters 17-210, 17-296, and 17-297, F.A.C.

Any party to this Order has the right to seek judicial review of the Order pursuant to section 120.68, Florida Statutes, by the filing of Notice of Appeal pursuant to Rule

9.110, Florida Rules of Appellate Procedure, with the clerk of the Department of Environmental Regulation in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; 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 of Appeal must be filed within 30 days from the date that the Final Order is filed with the Department of Environmental Regulation.

DONE AND ENTERED this _____ day of June, 1993 in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

Virginia B. Wetherell
Secretary
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400
Telephone: (904) 488-4805

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing was sent by U.S.

Mail to the following this _____ day of June, 1993.

Douglas S. Roberts
Hopping Boyd Green & Sams
P.O. Box 6526
Tallahassee, FL 32314

David Jordan, Senior Attorney
Department of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2100

William H. Roberts
Assistant General Counsel
Department of Transportation
Haydon Burns Building
605 Suwannee Street
Tallahassee, FL 32399

> Toni ~~Nail~~ ^{Leidy}
South Florida Water Management District
P.O. Box 24680
3301 Gun Club Road
West Palm Beach, FL 33416-4680

M. B. Adelson
Assistant General Counsel
Department of Natural Resources
3900 Commonwealth Blvd.
Tallahassee, FL 32399

Fred Van Vonno
Deputy County Attorney
Martin County
2401 S.E. Monterey Road
Stuart, FL 34996

Michael Palecki
Division of Legal Services
Florida Public Service Commission
101 East Gaines Street
Fletcher Building, Room 212
Tallahassee, FL 32399-0850

Susan M. Coughanour
South Florida Water Management District
P.O. Box 24680
3301 Gun Club Road
West Palm Beach, FL 33416-4680

James Antista
General Counsel
Florida Game and Frest Water Fish Commission
Bryant Bldg.
620 S. Meridian Street
Tallahassee, FL 32399-1600

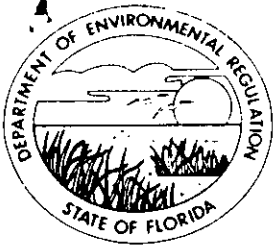
Roger Saberson
Treasure Coast Regional Planning Council
110 E. Atlantic Avenue
Delray Beach, FL 33444

Gary Simmons
Troup-Indiantown Drainage District
Post Office Box 128
Indiantown, FL 34956-0128

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

GARY. C. SMALLRIDGE
Assistant General Counsel
Florida Bar No.113005

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400
Telephone: (904) 921-9636



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Virginia B. Wetherell, Secretary

June 15, 1993

Ms. Jewell Harper, Chief
Air Enforcement Branch
United States Environmental
Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30065

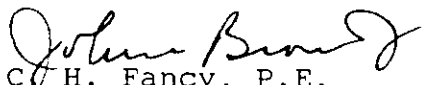
Re: Amendment of Permit No. PSD-FL-146

Dear Ms. Harper:

Florida Power & Light Company has requested that the referenced permit for the Martin Coal Gasification/Combined Cycle Project be amended to authorize: a) a different auxiliary boiler and diesel generator, both with smaller capacity but with slightly increased emission rates though overall lower total emissions, b) an additional two hours during cold startup periods for the combustion turbines. The amendment will not allow an increase in permitted annual emissions of any air pollutant.

The Department finds their proposal acceptable and has drafted the enclosed amendment to permit No. PSD-FL-146. Because this facility is subject to Florida's Power Plant Certification regulations, we request EPA review and approve the enclosed draft amendment.

Sincerely,

fr 
C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/TH/plm

Enclosure

June 15, 1993

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Wayne C. Ondler
Environmental Licensing Project Manager
Environmental Affairs Department
Florida Power & Light Company
P. O. Box 088801
North Palm Beach, Florida 33408-8801

Re: Martin County CG/CC Project
PSD-FL-146

Dear Mr. Ondler:

The review of your February 2 and May 19, 1993, letters requesting an administrative change to the conditions of the Prevention of Significant Deterioration permit (PSD-FL-146) issued to Florida Power & Light Company (FPL) on May 31, 1991, for the Martin County CG/CC project has been completed. You requested that Specific Conditions 5 and 7 of the permit be revised to authorize: a) a different auxiliary boiler and diesel generator, both with smaller capacity but with slightly increased emission rates though overall lower total emissions, b) an additional two hours during cold startup periods for the combustion turbines.

The basis of your request is a concern that the lab data results have indicated that the DLN II combustor will not be able to meet the project's permitted emission limits for several pollutants during the initial periods of a "cold start." The excess emissions, as indicated in your request, are due to the fact that the combustion turbines (CT), during a "cold start", must hold loads at low levels to allow the steam turbine (ST) to warm up before engaging the premix option of the DLN II combustor (i.e., 25 ppm NO_x) on natural gas and of steam injection on oil.

It should be noted that the applicable NSPS regulations under 40 CFR subpart GG do not prescribe time limits for excess emissions during periods of startup and shutdown; however, this facility shall comply with F.A.C. Rule 17-210.700, Excess Emissions.

Based on the foregoing, it is determined that the proposed revision to Specific Conditions 5 and 7 of PSD-FL-146 is acceptable and will not result in the increase in permitted annual emissions of any pollutant subject to the PSD regulations. As an administrative change, this revision will not require additional public participation procedures.

Mr. Wayne C. Ondler
Martin County CG/CC Project.
Page Two

Authority to construct a stationary source was granted for the Martin County Coal Gasification and Combined Cycle Project, subject to the conditions contained in the permit to construct on May 31, 1991. This administrative change to PSD-FL-146 does not alter the commence construction deadline for Units 3 and 4. This authority to construct is based solely on the requirements of 40 CFR §52.21, the federal regulations governing significant deterioration of air quality, and in no way affects approvals under other Federal or State regulatory authorities. Please be advised that a violation of any condition issued as part of this approval, as well as any construction which proceeds in material variance with information submitted in your application, may subject Florida Power & Light Company to enforcement action.

Any questions concerning this administrative permit revision may be directed to Mr. Winston A. Smith, Director; Air, Pesticides, and Toxic Management Division at (404) 347-3043.

Sincerely,

Patrick M. Tobin
Acting Regional Manager

PMT/TH/plm

Enclosure

cc: C. H. Fancy, DER

**PERMIT TO CONSTRUCT UNDER THE RULES FOR THE
PREVENTION OF SIGNIFICANT DETERIORATION OF AIR QUALITY**

Pursuant to and in accordance with the provisions of Part C, Subpart 1 of the Clean Air Act, as amended, 42 U.S.C. §7470 et seq., and the regulations promulgated thereunder at 40 C.F.R. §52.21, as amended at 45 Fed. Reg. 52676, 52735-41 (August 7, 1980),

Florida Power & Light Company
P. O. Box 088801
North Palm Beach, Florida 33408-8801

is hereby authorized to construct/modify a stationary source, specifically the Martin County Coal Gasification and Combined Cycle Project, at the following location:

Florida Power & Light Company
Martin County Power Generation Facility
SR 710; 5 miles NW of Indiantown
Indiantown, Florida

UTM Coordinates: 542.87 km E, 2992.43 km N

Upon completion of this authorized construction and commencement of operation/production, this stationary source shall be operated in accordance with the emission limitations, sampling requirements, monitoring requirements and other conditions set forth in the attached Specific Conditions (Part I) and General Conditions (Part II).

The revisions to this permit shall become effective on the date signed below.

If construction does not commence within 18 months after May 31, 1993, or if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time, this permit shall expire and authorization to construct shall become invalid.

This authorization to construct/modify shall not relieve the owner or operator of the responsibility to comply fully with all applicable provisions of Federal, State, and Local law.

Patrick M. Tobin
Acting Regional Administrator

Date Signed

The Specific Conditions of federal permit PSD-FL-146 shall be modified as follows:

Specific Condition No. 4

FROM:

The maximum allowable emissions from each CT in accordance with the BACT determination shall not exceed the following at 40°F (except during periods of startup and shutdown):

Pollutant	Fuel	Basis	Emission Limitations ^d			
			Units 3 & 4		Units 5 & 6	
			lb/hr/CT	TPY ^a	lb/hr/CT	TPY ^a
NO _x	Gas	25 ppmvd @ 15% O ₂	177	comb. tot. - 3108	177	comb. tot. - 3108
	Oil	65 ppmvd @ 15% O ₂	461		461	
	CG	42 ppmvd @ 15% O ₂	392	6868	392	6868
VOC ^b	Gas	1.6 ppmvd	3	comb. tot. - 57	3	comb. tot. - 57
	Oil	6 ppmvd	11		11	
	CG	9 ppmvd	21.4	375	21.4	375
CO	Gas	30 ppmvd	94.3	comb. tot. - 871	94.3	comb. tot. - 871
	Oil	33 ppmvd	105.8		105.8	
	CG	33 ppmvd	134	2348	134	2348
PM/PM ₁₀	Gas		18	comb. tot. - 100	18	comb. tot. - 100
	Oil		60.6		60.6	
	CG		19	333	19	333
Pb	Gas		neg.	comb. tot. - 0.015	neg.	comb. tot. - 0.015
	Oil		0.015		0.015	
	CG		0.3	5.3	0.3	5.3
SO ₂	Gas		91.5	comb. tot. - 568	91.5	comb. tot. - 568
	Oil ^c		920		920	
	CG		834	14612	834	14612

- a) Tons per year (TPY) emission limits listed for natural gas and oil combined apply as an emission cap based on limiting oil firing to an annual aggregate of 2000 hours for the 4 CTs, with compliance to be demonstrated in annual operation reports.
- b) Exclusive of background concentrations.
- c) Sulfur dioxide emissions based on a maximum of 0.5 percent sulfur in oil for hourly emissions and an average sulfur content of 0.3 percent for annual emissions. These sulfur content limitations are subject to change based on the analysis required in Condition No. 12.
- d) These limitations for Units 5 and 6 and coal gasification shall not be binding for subsequent BACT determinations.

TO:

The maximum allowable emissions from each CT in accordance with the BACT determination shall not exceed the following at 40°F (except during periods of startup and shutdown):

Pollutant	Fuel	Basis	Emission Limitations ^d			
			Units 3 & 4		Units 5 & 6	
			lb/hr/CT	TPY ^a	lb/hr/CT	TPY ^a
NO _x	Gas	25 ppmvd @ 15% O ₂	177	comb. tot. - 3108	177	comb. tot. - 3108
	Oil	65 ppmvd @ 15% O ₂	461		461	
	CG	42 ppmvd @ 15% O ₂	392	6868	392	6868
VOC ^b	Gas	1.6 ppmvd	3	comb. tot. - 57	3	comb. tot. - 57
	Oil	6 ppmvd	11		11	
	CG	9 ppmvd	21.4	375	21.4	375
CO	Gas	30 ppmvd	94.3	comb. tot. - 871	94.3	comb. tot. - 871
	Oil	33 ppmvd	105.8		105.8	
	CG	33 ppmvd	134	2348	134	2348
PM/PM ₁₀	Gas		18	comb. tot. - 100	18	comb. tot. - 100
	Oil		60.6		60.6	
	CG		19	333	19	333
Pb	Gas		neg.	comb. tot. - 0.015	neg.	comb. tot. - 0.015
	Oil		0.015		0.015	
	CG		0.3	5.3	0.3	5.3
SO ₂	Gas		91.5	comb. tot. - 568	91.5	comb. tot. - 568
	Oil ^c		920		920	
	CG		834	14612	834	14612

- a) Tons per year (TPY) emission limits listed for natural gas and oil combined apply as an emission cap based on limiting oil firing to an annual aggregate of 2000 hours for the 4 CTs, with compliance to be demonstrated in annual operation reports.
- b) Exclusive of background concentrations.
- c) Sulfur dioxide emissions based on a maximum of 0.5 percent sulfur in oil for hourly emissions and an average sulfur content of 0.3 percent for annual emissions. These sulfur content limitations are subject to change based on the analysis required in Condition No. 12.
- d) These limitations for Units 5 and 6 and coal gasification shall not be binding for subsequent BACT determinations.
- e) The excess emissions authorized under Rule 17-210.700(1), F.A.C., shall be extended an additional two hours (four hours total) for a cold steam turbine start for the first CT of a unit. The second CT of each unit shall comply with established emission limits in accordance with Rule 17-210.700(1), F.A.C.

Specific Condition No. 7

FROM:

Auxiliary steam boilers and diesel generators shall operate only during startup and shutdown, and for emergency power generation, respectively. NO_x emissions for the auxiliary steam boilers shall not exceed 0.1 lbs/MMBtu for natural gas firing or 0.2 lbs/MMBtu for oil firing. NO_x emissions for the diesel generators shall not exceed 12.0 grams/hp-hr.

TO:

Auxiliary steam boilers and diesel generators shall operate only during startup and shutdown, periodic maintenance testing, and for emergency power generation, respectively. NO_x emissions for the auxiliary steam boilers shall not exceed 0.3 lbs/MMBtu for natural gas firing or for oil firing. NO_x emissions for the diesel generators shall not exceed 15.0 grams/hp-hr.

HOPPING BOYD GREEN & SAMS *file*

ATTORNEYS AND COUNSELORS

123 SOUTH CALHOUN STREET

POST OFFICE BOX 6526

TALLAHASSEE, FLORIDA 32314

(904) 222-7500

FAX (904) 224-8551

FAX (904) 681-2964

June 11, 1993

CARLOS ALVAREZ
JAMES S ALVES
BRIAN H. BIBEAU
KATHLEEN BLIZZARD
ELIZABETH C. BOWMAN
WILLIAM L. BOYD, IV
RICHARD S. BRIGHTMAN
PETER C. CUNNINGHAM
RALPH A. DeMEO
THOMAS M. DeROSE
WILLIAM H. GREEN
WADE L. HOPPING
FRANK E. MATTHEWS
RICHARD D. MELSON
WILLIAM D. PRESTON
CAROLYN S. RAEPPLÉ
GARY P. SAMS
ROBERT P. SMITH
CHERYL G. STUART

C. ALLEN GULP, JR.
JONATHAN S. FOX
JAMES C. GOODLETT
GARY K. HUNTER, JR.
DALANA W. JOHNSON
RICHARD W. MOORE
ANGELA R. MORRISON
MARIBEL N. NICHOLSON
LAURA BOYD PEARCE
GARY V. PERKO
MICHAEL P. PETROVICH
D. GLAS S. ROBERTS
JULIE B. ROME
KRISTIN C. RUBIN
CECELIA C. SMITH
OF COUNSEL
W. ROBERT FOKES

RECEIVED

JUN 11 1993

Division of Air
Resources Management

Teresa Heron
Bureau of Air Resources
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32399

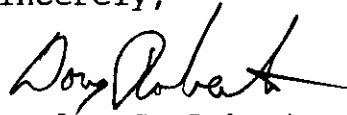
Re: Draft Letter on FPL Martin PSD Permit Amendment;
PSD-FL-146;

Dear Teresa:

In addition to the comments we submitted earlier on the draft package for the FPL Martin PSD permit modification, I wish to submit an additional comment on Specific Condition 7. That revised condition, which conforms with FPL's original request, is reflected on the attached. The suggested condition would establish a NOx emission limit for the auxiliary boiler of 0.3 lbs/mmBtu for both natural gas and oil firing. The auxiliary boiler will operate on oil infrequently. Thus, the same limit for both oil and gas firing should not result in any increased NOx emissions due to the smaller size of the auxiliary boiler actually selected for the Martin Project, as explained in the February 2, 1993, request.

Thank you for letting us submit these additional comments. Please call either Dan MacDougall at FPL (407/625-7661) or me should you have any questions.

Sincerely,



Douglas S. Roberts

DSR/mee
Encls.

cc: Willard Hanks

HOPPING BOYD GREEN & SAMS

ATTORNEYS AND COUNSELORS

123 SOUTH CALHOUN STREET

POST OFFICE BOX 6526

TALLAHASSEE, FLORIDA 32314

(904) 222-7500

FAX (904) 224-8551

FAX (904) 681-2964

File

CARLOS ALVAREZ
JAMES S. ALVES
BRIAN H. BIBEAU
KATHLEEN BLIZZARD
ELIZABETH C. BOWMAN
WILLIAM L. BOYD, IV
RICHARD S. BRIGHTMAN
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LAURA BOYD PEARCE
GARY V. PERKO
MICHAEL P. PETROVICH
DOUGLAS S. ROBERTS
LILLIE B. ROME
KRISTIN C. RUBIN
CECELIA C. SMITH
OF COUNSEL
W. ROBERT FOKES

June 10, 1993 **RECEIVED**

JUN 10 1993

Division of Air
Resources Management

Teresa Heron
Bureau of Air Resources
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32399

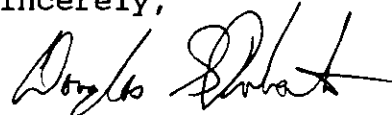
Re: Draft Letter on FPL Martin PSD Permit Amendment;
PSD-FL-146

Dear Teresa:

We appreciate the opportunity to review the draft letter on the request to amend the PSD permit for the FPL Martin Project. Several corrections are noted on the attached marked-up version of the package. The one substantive comment is to add "periodic maintenance testing" to amended Specific Condition 7 relative to the operation of the auxiliary boiler and diesel generator. This correction is consistent with FPL's revised PSD permit amendment request. This also would conform the PSD permit to operating restrictions on those facilities under the site certification issued under the Power Plant Siting Act.

Thank you for letting us submit these comments. Please call either Dan MacDougall at FPL (407/625-7661) or me should you have any questions.

Sincerely,



Douglas S. Roberts

DSR/mee
Encls.

cc: Willard Hanks
Preston Lewis
Patty Adams

2289

RECEIVED

JUN 07 1993

Hopping Boyd
Green & Sams

June ____, 1993

Ms. Jewell Harper, Chief
Air Enforcement Branch
United States Environmental
Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30065

Re: Amendment of Permit No. PSD-FL-146

Dear Ms. Harper:

*Martin Coal Gasification/
Combined Cycle*

authorize

Florida Power & Light Company has requested that the referenced permit for the ~~Lauderdale Repowering~~ Project be amended to: a) a different auxiliary boiler and diesel generator, both with smaller capacity but with slightly increased emission rates though overall lower total emissions, b) an additional two hours during cold startup periods for the combustion turbines. The amendment will not allow an increase in emissions of any air pollutant.

*permitted
6/11/93*

The Department finds their proposal acceptable and has drafted the enclosed amendment to permit No. PSD-FL-146. Because this facility is subject to Florida's Power Plant Certification regulations, we request EPA review and approve the enclosed draft amendment.

Sincerely,

C. H. Fancy, P.E.
Chief
Bureau of Air Regulation

CHF/TH/plm

Enclosure

2289 p2

June 7, 1993

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Wayne C. Ondler
 Environmental Licensing Project Manager
 Environmental Affairs Department
 Florida Power & Light Company
 P. O. Box ~~078768~~ 098501
 West Palm Beach, Florida ~~33407-0768~~ 33408-8801
 North

Re: Martin County CG/CC Project
 PSD-FL-146

Dear Mr. Ondler:

The review of your February 2 and May 19, 1993, letters requesting an administrative change to the conditions of the Prevention of Significant Deterioration permit (PSD-FL-146) issued to Florida Power & Light Company (FPL) on May 31, 1991, for the Martin County CG/CC project has been completed. You requested that Specific Conditions 5 and 7 of the permit be revised to authorize: a) a different auxiliary boiler and diesel generator, both with smaller capacity but with slightly increased emission rates though overall lower total emissions, b) an additional two hours during cold startup periods for the combustion turbines.

The basis of your request is a concern that the lab data results have indicated that the DLN II combustor will not be able to meet the project's permitted emission limits for several pollutants during the initial periods of a "cold start." The excess emissions, as indicated in your request, are due to the fact that the combustion turbines (CT), during a "cold start", must hold loads at low levels to allow the steam turbine (ST) to warm up before engaging the premix option of the DLN II combustor (i.e., 25 ppm NO_x) on natural gas and of steam injection on oil.

It should be noted that the applicable NSPS regulations under 40 CFR subpart GG do not prescribe time limits for excess emissions during periods of startup and shutdown; however, this facility shall comply with F.A.C. Rule 17-210.700, Excess Emissions.

Based on the foregoing, it is determined that the proposed revision to Specific Conditions 5 and 7 of PSD-FL-146 is acceptable and will not result in the increase of any emissions subject to the PSD regulations. As an administrative change, this revision will not require additional public participation procedures.

in permitted
 annual of any
 pollutant

Mr. Wayne C. Ondler
Martin County CG/CC Project
Page Two

NOTE:
DELETE "DE"

> Authority to construct a stationary source was granted for the Martin County coal degasification and combined cycle project, subject to the conditions contained in the permit to construct on May 31, 1991. This administrative change to PSD-FL-146 does not alter the commence construction deadline for Units 3 and 4. This authority to construct is based solely on the requirements of 40 CFR §52.21, the federal regulations governing significant deterioration of air quality, and in no way affects approvals under other Federal or State regulatory authorities. Please be advised that a violation of any condition issued as part of this approval, as well as any construction which proceeds in material variance with information submitted in your application, may subject Florida Power & Light Company to enforcement action.

Any questions concerning this administrative permit revision may be directed to Mr. Winston A. Smith, Director; Air, Pesticides, and Toxic Management Division at (404) 347-3043.

Sincerely,

Patrick M. Tobin
Acting Regional Manager

PMT/TH/plm

Enclosure

cc: C. H. Fancy, DER

PERMIT TO CONSTRUCT UNDER THE RULES FOR THE
PREVENTION OF SIGNIFICANT DETERIORATION OF AIR QUALITY

Pursuant to and in accordance with the provisions of Part C, Subpart 1 of the Clean Air Act, as amended, 42 U.S.C. §7470 et seq., and the regulations promulgated thereunder at 40 C.F.R. §52.21, as amended at 45 Fed. Reg. 52676, 52735-41 (August 7, 1980),

Florida Power & Light Company
P. O. Box 088801
North Palm Beach, Florida 33408-8801

~~DELETE~~

> is hereby authorized to construct/modify a stationary source, specifically the Martin County Coal Degasification and Combined Cycle project, at the following location:

Florida Power & Light Company
Martin County Power Generation Facility
SR 710; 5 miles NW of Indiantown
Indiantown, Florida

UTM Coordinates: 542.87 km E, 2992.43 km N

Upon completion of this authorized construction and commencement of operation/production, this stationary source shall be operated in accordance with the emission limitations, sampling requirements, monitoring requirements and other conditions set forth in the attached Specific Conditions (Part I) and General Conditions (Part II).

The revisions to this permit shall become effective on the date signed below.

If construction does not commence within 18 months after May 31, 1993, or if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time, this permit shall expire and authorization to construct shall become invalid.

This authorization to construct/modify shall not relieve the owner or operator of the responsibility to comply fully with all applicable provisions of Federal, State, and Local law.

Patrick M. Tobin
Acting Regional Administrator

Date Signed

The Specific Conditions of federal permit PSD-FL-146 shall be modified as follows:

Specific Condition No. 4

FROM:

The maximum allowable emissions from each CT in accordance with the BACT determination shall not exceed the following at 40°F (except during periods of startup and shutdown):

Pollutant	Fuel	Basis	Emission Limitations ^d			
			Units 3 & 4		Units 5 & 6	
			lb/hr/CI	TPY ^a	lb/hr/CI	TPY ^a
NO _x	Gas	25 ppmvd @ 15% O ₂	177	comb. tot. - 3108	177	comb. tot. - 3108
	Oil	65 ppmvd @ 15% O ₂	461		461	
	CG	42 ppmvd @ 15% O ₂	392	6868	392	6868
VOC ^b	Gas	1.6 ppmvd	3	comb. tot. - 57	3	comb. tot. - 57
	Oil	6 ppmvd	11		11	
	CG	9 ppmvd	21.4	375	21.4	375
CO	Gas	30 ppmvd	94.3	comb. tot. - 871	94.3	comb. tot. - 871
	Oil	33 ppmvd	105.8		105.8	
	CG	33 ppmvd	134	2348	134	2348
PM/PM ₁₀	Gas		18	comb. tot. - 100	18	comb. tot. - 100
	Oil		60.6		60.6	
	CG		19	333	19	333
Pb	Gas		neg.	comb. tot. - 0.015	neg.	comb. tot. - 0.015
	Oil		0.015		0.015	
	CG		0.3	5.3	0.3	5.3
SO ₂	Gas		91.5	comb. tot. - 568	91.5	comb. tot. - 568
	Oil ^c		920		920	
	CG		834	14612	834	14612

- a) Tons per year (TPY) emission limits listed for natural gas and oil combined apply as an emission cap based on limiting oil firing to an annual aggregate of 2000 hours for the 4 CTs, with compliance to be demonstrated in annual operation reports.
- b) Exclusive of background concentrations.
- c) Sulfur dioxide emissions based on a maximum of 0.5 percent sulfur in oil for hourly emissions and an average sulfur content of 0.3 percent for annual emissions. These sulfur content limitations are subject to change based on the analysis required in Condition No. 12.
- d) These limitations for Units 5 and 6 and coal gasification shall not be binding for subsequent BACT determinations.

TO:

The maximum allowable emissions from each CT in accordance with the BACT determination shall not exceed the following at 40°F (except during periods of startup and shutdown):

Pollutant	Fuel	Basis	Emission Limitations ^d			
			Units 3 & 4		Units 5 & 6	
			lb/hr/CT	TPY ^a	lb/hr/CT	TPY ^a
NO _x	Gas	25 ppmvd @ 15% O ₂	177	comb. tot. - 3108	177	comb. tot. - 3108
	Oil	65 ppmvd @ 15% O ₂	461		461	
	CG	42 ppmvd @ 15% O ₂	392	6868	392	6868
VOC ^b	Gas	1.6 ppmvd	3	comb. tot. - 57	3	comb. tot. - 57
	Oil	6 ppmvd	11		11	
	CG	9 ppmvd	21.4	375	21.4	375
CO	Gas	30 ppmvd	94.3	comb. tot. - 871	94.3	comb. tot. - 871
	Oil	33 ppmvd	105.8		105.8	
	CG	33 ppmvd	134	2348	134	2348
PM/PM ₁₀	Gas		18	comb. tot. - 100	18	comb. tot. - 100
	Oil		60.6		60.6	
	CG		19	333	19	333
Pb	Gas		neg.	comb. tot. - 0.015	neg.	comb. tot. - 0.015
	Oil		0.015		0.015	
	CG		0.3	5.3	0.3	5.3
SO ₂	Gas		91.5	comb. tot. - 568	91.5	comb. tot. - 568
	Oil ^c		920		920	
	CG		834	14612	834	14612

- a) Tons per year (TPY) emission limits listed for natural gas and oil combined apply as an emission cap based on limiting oil firing to an annual aggregate of 2000 hours for the 4 CTs, with compliance to be demonstrated in annual operation reports.
- b) Exclusive of background concentrations.
- c) Sulfur dioxide emissions based on a maximum of 0.5 percent sulfur in oil for hourly emissions and an average sulfur content of 0.3 percent for annual emissions. These sulfur content limitations are subject to change based on the analysis required in Condition No. 12.
- d) These limitations for Units 5 and 6 and coal gasification shall not be binding for subsequent BACT determinations.
- e) The excess emissions authorized under Rule 17-210.700(1), F.A.C., shall be extended an additional two hours (four hours total) for a cold steam turbine start for the first CT of a unit. The second CT of each unit shall comply with established emission limits in accordance with Rule 17-210.700(1), F.A.C.

Specific Condition No. 7

FROM:

~~periodic~~
~~periodic~~
~~testing~~

Auxiliary steam boilers and diesel generators shall operate only during startup and shutdown, and for emergency power generation, respectively. NO_x emissions for the auxiliary steam boilers shall not exceed 0.1 lbs/MMBtu for natural gas firing or 0.2 lbs/MMBtu for oil firing. NO_x emissions for the diesel generators shall not exceed 12.0 grams/hp-hr.

TO:

periodic
maintenance
testing

Auxiliary steam boilers and diesel generators shall operate only during startup and shutdown, and for emergency power generation, respectively. NO_x emissions for the auxiliary steam boilers shall not exceed 0.3 lbs/MMBtu for natural gas firing or 0.2 lbs/MMBtu for oil firing. NO_x emissions for the diesel generators shall not exceed 15.0 grams/hp-hr.

Specific Condition No. 7

FROM:

Auxiliary steam boilers and diesel generators shall operate only during startup and shutdown, and for emergency power generation, respectively. NO_x emissions for the auxiliary steam boilers shall not exceed 0.1 lbs/MMBtu for natural gas firing or 0.2 lbs/MMBtu for oil firing. NO_x emissions for the diesel generators shall not exceed 12.0 grams/hp-hr.

TO:

*periodic maintenance
testing*

> Auxiliary steam boilers and diesel generators shall operate only during startup and shutdown, and for emergency power generation, respectively. NO_x emissions for the auxiliary steam boilers shall not exceed 0.3 lbs/MMBtu for natural gas firing or ~~0.2 lbs/MMBtu~~ for oil firing. NO_x emissions for the diesel generators shall not exceed 15.0 grams/hp-hr.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

JUN - 8 1993

RECEIVED

4APT-AEB

JUN 14 1993

Mr. Clair H. Fancy, P.E., Chief
Bureau of Air Regulation
Florida Department of Environmental
Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

D.E.R. OFFICE
OF THE SECRETARY
RECEIVED

JUN 16 1993

RE: Florida Power & Light Company - Martin (PSD-FL-146)
Customized Fuel Monitoring Schedule

Division of Air
Resources Management

Dear Mr. Fancy:

This is in response to correspondence received from the Florida Power and Light Company (FPL), dated April 28, 1993, concerning the enclosed proposed fuel monitoring schedule at their Martin Cogeneration facility. The proposed schedule from FPL fulfills the requirements for monitoring as promulgated in 40 CFR Part 60, Subpart GG, Standards of Performance for Stationary Gas Turbines. The proposal is submitted under the provisions of §60.334(b)(2). The FPL proposal satisfies the conditions required for a custom fuel sampling schedule for stationary gas turbines, including fuel nitrogen content monitoring, fuel sulfur content monitoring, notification of changes in the fuel supply, and recordkeeping.

We have reviewed the proposed fuel monitoring schedule in accordance with EPA guidance for the approval of custom fuel monitoring schedules and have no adverse comments on the FPL proposal. If you have any questions or comments, please contact Mr. Scott Davis of my staff at (404) 347-5014.

Sincerely yours,

Jewell A. Harper, Chief
Air Enforcement Branch
Air, Pesticides, and Toxics
Management Division

Enclosure

cc: B. Owen
J. Little, S. D. Daise

BEALS



April 28, 1993

FPL-JEN-EPA-170-93-18

Ms. Jewell A. Harper, Chief
Air Enforcement Branch, Region IV
Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, GA 30365

**RE: FPL Martin CG/CC Project
PA89-27, PSD-FL-146
Customized Fuel Monitoring Schedule**

Dear Ms. Harper:

The Martin CG/CC Project at the FPL Martin site has been permitted under the Power Plant Siting Act (Chp 403 Part II F.S.) and a corresponding PSD permit. These Units consist of 4 dual fuel fired "advanced" combustion turbines, with heat recovery steam generators (HRSG). The combustion turbines are subject to New Source Performance Standards (NSPS- 40 CFR 60, Subpart GG). 40 CFR 60.334(b) requires the owner/operator of any combustion turbine to monitor the sulfur and nitrogen content of the fuel as follows: 1) If the turbine fuel is supplied by a bulk storage tank then the sulfur and nitrogen content are to be determined whenever new fuel is transferred into the bulk storage tank and 2) If the turbine fuel is supplied without an intermediate bulk storage tank then daily monitoring of the sulfur and nitrogen content of the fuel is required. FPL has an intermediate bulk storage tank(s) for the light distillate oil and will test the sulfur and nitrogen content of the fuel oil as required by 40 CFR 60.334(b)(2).

Since the natural gas used by the combustion turbines does not pass through an intermediate bulk storage tank, FPL is hereby requesting a customized fuel monitoring schedule as allowed by 40 CFR 60.334(b)(2) for the Martin CG/CC Project. While firing natural gas, FPL requests the following customized fuel monitoring schedule which was developed based on an EPA guidance memorandum (Attachment A):

1. Monitoring of natural gas nitrogen content shall not be required in accordance with page 2 of the EPA guidance memorandum and the attached enclosure.
2. Sulfur Monitoring

a. Analysis for sulfur content of the natural gas shall be conducted using one of the EPA approved ASTM reference methods for the measurement of sulfur in gaseous fuels, or an approved alternate method. The reference methods are: ASTM D1072-80; ASTM D3031-81; ASTM D3245-81; and ASTM D4084-82 as referenced in 40 CFR 60.335(b)(2).

b. Effective on the commercial operation date of the CTs or the approval date of the customized fuel monitoring schedule which ever is later, sulfur monitoring shall be conducted twice a month for six months. If this monitoring shows little variability in the sulfur content and indicates consistent compliance with 40 CFR 60.333, then sulfur monitoring shall be conducted once per quarter for six quarters.

c. If the monitoring required by 2(b), above, of the sulfur content of the natural gas shows little variability and the calculated sulfur dioxide emissions, represents consistent compliance with the sulfur dioxide emission limits specified under 40 CFR 60.333, sample analysis shall be conducted twice per year. This monitoring shall be conducted during the first and third quarter of each calendar year.

d. Should any sulfur analysis as required by items 2(b) or 2(c) above indicate noncompliance with 40 CFR 60.333, FPL will notify the Department of Environmental Regulation of such excess emission and the customized fuel monitoring schedule shall be reexamined. The sulfur content of the natural gas will be monitored weekly during the interim period while this monitoring schedule is being reexamined.

3. FPL will notify the Department of Environmental Regulation of any change in natural gas supply for reexamination of this monitoring schedule. A substantial change in natural gas quality (i.e. sulfur content varying greater than 10 grains/1000 cf gas) shall be considered as a change in natural gas supply. Sulfur content of the natural gas will be monitored weekly during the interim period when this monitoring schedule is being reexamined.

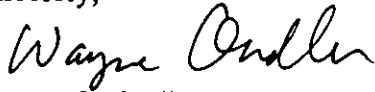
4. Records of sampling analysis and natural gas supply pertinent to this monitoring schedule shall be retained by FPL for a period of three years, and be available for inspection by appropriate regulatory personnel.

5. FPL will obtain the sulfur content of the natural gas from Florida Gas Transmission Company at its Brooker Lab.

Data from natural gas at the Brooker Lab site is considered representative of the sulfur content of the natural gas at the Martin site since there is no additional entry point for sulfur or other elements/compounds which may affect the quality of the natural gas. The data presented in Attachment B is based upon representative samples of natural gas taken by Florida Gas Transmission.

If you or your staff have any question about this request please call Dan MacDougall at (407) 625-7661.

Sincerely,



Wayne C. Ondler
Environmental Licensing Project Manager
Florida Power & Light Company

cc: Doug Neeley-EPA/Atlanta
Clair Fancy-DER/TAL
H. S. Oven-DER/TAL
Tom Title-DER/WPB



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

AUG 14 1987

OFFICE OF
AIR AND WATERMEMORANDUM

SUBJECT: Authority for Approval of Custom Fuel Monitoring
Schedules Under NSPS Subpart GG

FROM: John B. Rasnic, Chief *John B. Rasnic*
Compliance Monitoring Branch

TO: Air Compliance Branch Chiefs
Regions II, III, IV, V, VI and IX

Air Programs Branch Chiefs
Regions I-X

The NSPS for stationary Gas Turbines (Subpart GG) at 40 CFR 60.334(b)(2) allows for the development of custom fuel monitoring schedules as an alternative to daily monitoring of the sulfur and nitrogen content of fuel fired in the turbines. Regional Offices have been forwarding custom fuel monitoring schedules to the Stationary Source Compliance Division (SSCD) for consideration since it was understood that authority for approval of these schedules was not delegated to the Regions. However, in consultation with the Emission Standards and Engineering Division, it has been determined that the Regional Offices do have the authority to approve Subpart GG custom fuel monitoring schedules. Therefore it is no longer necessary to forward these requests to Headquarters for approval.

Over the past few years, SSCD has issued over twenty custom schedules for sources using pipeline quality natural gas. In order to maintain national consistency, we recommend that any schedules Regional Offices issue for natural gas be no less stringent than the following: sulfur monitoring should

be bimonthly, followed by quarterly, then semiannual, given at least six months of data demonstrating little variability in sulfur content and compliance with (60.33) at each monitoring frequency; nitrogen monitoring can be waived for pipeline quality natural gas, since there is no fuel-bound nitrogen and since the free nitrogen does not contribute appreciably to NO_x emissions. Please see the attached sample custom schedule for details. Given the increasing trend in the use of pipeline quality natural gas, we are investigating the possibility of amending Subpart CC to allow for less frequent sulfur monitoring and a waiver of nitrogen monitoring requirements where natural gas is used.

Where sources using oil request custom fuel monitoring schedules, Regional Offices are encouraged to contact SSCD for consultation on the appropriate fuel monitoring schedule. However, Regions are not required to send the request itself to SSCD for approval.

If you have any questions, please contact Sally M. Farwell at FTS 382-2873.

Attachment

cc: John Cronshaw
George Walsh
Robert Ajax
Earl Sale

Enclosure

Conditions for Custom Fuel Sampling Schedule for Stationary Gas Turbines

1. Monitoring of fuel nitrogen content shall not be required while natural gas is the only fuel fired in the gas turbine.
2. Sulfur Monitoring
 - a. Analysis for fuel sulfur content of the natural gas shall be conducted using one of the approved ASTM reference methods for the measurement of sulfur in gaseous fuels, or an approved alternative method. The reference methods are: ASTM D1072-80; ASTM D3031-81; ASTM D3245-81; and ASTM D4084-82 as referenced in 40 CFR 60.335(b)(2).
 - b. Effective the date of this custom schedule, sulfur monitoring shall be conducted twice monthly for six months. If this monitoring shows little variability in the fuel sulfur content, and indicates consistent compliance with 40 CFR 60.333, then sulfur monitoring shall be conducted once per quarter for six quarters.
 - c. If after the monitoring required in item 2(b) above, or herein, the sulfur content of the fuel shows little variability and, calculated as sulfur dioxide, represents consistent compliance with the sulfur dioxide emission limits specified under 40 CFR 60.333, sample analysis shall be conducted twice per annum. This monitoring shall be conducted during the first and third quarters of each calendar year.
 - d. Should any sulfur analysis as required in items 2(b) or 2(c) above indicate noncompliance with 40 CFR 60.333, the owner or operator shall notify the State Air Control Board of such excess emissions and the custom schedule shall be re-examined by the Environmental Protection Agency. Sulfur monitoring shall be conducted weekly during the interim period when this custom schedule is being re-examined.
3. If there is a change in fuel supply, the owner or operator must notify the State of such change for re-examination of this custom schedule. A substantial change in fuel quality shall be considered as a change in fuel supply. Sulfur monitoring shall be conducted weekly during the interim period when this custom schedule is being re-examined.
4. Records of sample analysis and fuel supply pertinent to this custom schedule shall be retained for a period of three years, and be available for inspection by personnel of federal, state, and local air pollution control agencies.

ATTACHMENT B

Sulfur Content of Natural Gas

Date	Sulfur Content (gr/1000 cf)
------	--------------------------------

02/06/90	3.0
02/13/90	0.5
02/20/90	3.5
02/27/90	4.5
03/06/90	4.5
03/13/90	3.0
03/20/90	3.5
03/27/90	3.5
04/03/90	6.0
04/10/90	2.5
04/17/90	4.0
04/24/90	3.0
05/01/90	4.0
05/08/90	2.5
05/15/90	2.0
06/05/90	4.5
06/12/90	4.0
06/19/90	7.0
06/26/90	4.5
07/03/90	5.5
07/10/90	3.5
07/17/90	4.5
07/30/90	3.0
08/07/90	5.0
08/14/90	4.5
08/21/90	4.0
08/28/90	7.0
09/04/90	5.5
09/11/90	4.0
09/18/90	4.5
09/25/90	4.0
10/02/90	4.5
10/09/90	4.5
10/16/90	7.0
10/28/90	8.0

Average	4.3
Maximum	8.0
Minimum	0.5

Source: Florida Gas Transmission Company, 1990



John Brown
Person L
PATTY-FILE
Florida Power & Light Company, P.O. Box 088801, North Palm Beach, FL 33408-8801

RECEIVED

June 2, 1993

JUN 07 1993
EPL-LEN-DER-170-93-26

Mr. Clair Fancy, Chief
Bureau of Air Regulation
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399

Division of Air
Resources Management

**RE: Martin CC/CG Project
PSD-FL-146
Initial Fire of Unit 3A**

Dear Mr. Fancy:

In compliance with 40 CFR 60.7(a)(3), FPL is hereby notifying the Department that Martin Unit 3A initially fired the CT on June 1, 1993.

Please call Dan MacDougall at (407) 625-7661 if you have any questions.

Sincerely,

Wayne Ondler

Wayne C. Ondler
Environmental Liensing Project Manager
Environemtnal Affairs

cc: Jewel Harper, EPA
H. S. Oven, DER/TAL
Tom Tittle, DER/WPB



RECEIVED

MAY 19 1993

Division of Air
Resources Management

May 19, 1993

FPL-JEN-DER-170-93-17

Mr. Hamilton S. Oven, Jr. PE.
Florida Department of Environmental Regulation
2600 Blair Stone Rd Room 612
Tallahassee, FL 32399

Re: **Martin CG/CC Project**
PA 89-27 Modification Request
Response to your Letter Dated April 19, 1993

Dear Mr. Oven:

In response to your letter dated April 19, 1993, FPL submits the following responses to the comments of the Department concerning our February 2, 1993, request for modification of the Site Certification for the Martin CG/CC Project. The following responses also reflect the additional discussions we had with the Department's staff on May 12, 1993. The actual Department comments have been repeated prior to FPL's response in order to provide a complete and coherent picture.

1.) Tables 2-7 and 2-8 of the original PSD application (SCA section 10.1.5) list emissions based on continuous operation (8760 hrs/yr) for the auxiliary boiler and the diesel generator. The PSD permit itself is silent regarding the quantity of emissions (TPY) for these sources. For the emergency diesel generator, a continuous operation of 8760 hrs/yr will cause an emission increase of over 40 TPY of NO_x. This may subject this source to PSD regulations which requires a BACT determination for this pollutant.

RESPONSE: FPL hereby withdraws its request for unlimited operation of the auxiliary boiler and emergency diesel generator and now proposes to limit operation of these sources to circumstances consistent with the current Site Certification. Specifically, FPL requests that the current condition in the Site Certification (II.A.7) and the corresponding condition of the PSD permit (Specific condition 7) be revised to read as follows:

"Auxiliary Steam Boiler and Diesel Generator shall operate only during start-up and shutdown, periodic maintenance testing and for emergency power generation. NO_x emissions for the auxiliary steam boiler shall not exceed 0.3 lb/MMBtu for natural

gas firing or for oil firing. NO_x emissions for the diesel generator shall not exceed 15.0 grams/hp-hr."

The phrase "periodic maintenance testing" is currently in the Site Certification condition but is not in the PSD permit condition. The auxiliary boiler and emergency diesel generator are each expected to operate no more than 400 hours per year under these circumstances. Since there is now no request by FPL for increased hours of operation of these sources, no new BACT determination should be required.

2.) General Electric (GE) should provide a technical explanation of why dry low NO_x combustors are not able to meet the emission limits during the initial periods of a "cold start." The explanation should include laboratory data as a verification. Furthermore, GE should indicate whether the same problem exists with the other models of Frame 7 combustion turbines.

RESPONSE: The GE Dry Low NO_x (DLN II) combustion system is capable of starting, loading and producing 25 ppm NO_x emission in less than 20 minutes in a simple cycle configuration (CT only). However, the combined cycle configuration (CT, HRSG, & ST) at Martin Unit 3 & 4 imposes certain constraints on the DLN II system during "cold start" and will require a substantially longer start-up phase as compared to the simple cycle configuration.

DLN II has three modes of operation: 1.) Diffusion firing (start up, 0 to 50 % load), 2.) Lean lean (transition, 20 to 100 % load) and 3.) Pre mix (low NO_x, 50 to 100 % load). This overlap of load in the three modes of operation allows for the optimization of emissions during field testing which will be conducted after initial firing of the combustion turbine (CT). Also the "cold start-up" procedures for Units 3 & 4 will be refined after the field testing. During a unit start-up (CT, HRSG, & ST) the control system moves the CT through the three modes of operation identified above in accordance with standard operating procedures to minimize emissions. A simple cycle CT can achieve this "cold start" in minutes since there are no large metal components downstream of the exhaust.

At the Martin Site, two large metal components are downstream of the CT. First is the heat recovery steam generator (HRSG) which will be exposed to the 1,200 F exhaust gas produced by the CT. The HRSG is comprised of heavy, thick-wall components which must be heated up gradually to avoid unacceptable thermal stresses. Secondly, as the HRSG heats up, it begins to produce large quantities of hot steam. The steam turbine (ST) is also a large, thick, metal structure which must also be heated up slowly to avoid unacceptable thermal stresses. These two constraints require the CT to remain in the diffusion firing and lean-lean modes at low load to allow the HRSG and ST to warm up. It is this procedure that produces elevated exhaust emissions for the additional two hours of a cold start-up. Even though very few "cold starts" are expected for the new Martin units, FPL

is continuing to work on minimizing the duration of "cold start" time. The combination of steam turbine heater blankets (which keep the ST warm when the HRSG is offline) and the steam by-pass around the ST (used during start-up and ST trips) coupled with the adjustability inherent in the DLN II system will result in minimizing the amount of time required to achieve the low NO_x pre mix firing mode.

3.) The pollutants subject to PSD review include: SO₂, NO_x, and PM. Why were only NO_x emissions values revised?

RESPONSE: FPL's original request addressed only those pollutants (NO_x) for which emission limits for the auxiliary boiler and emergency diesel generator were included in the Site Certification and PSD permit and which needed to be revised, based on design refinements. Generally SO₂ and PM only change if the quality of the fuel changes and no change in fuel quality is proposed. The auxiliary boiler and diesel generator have only a NO_x emission limit in the permits; SO₂ will continue to be controlled by restricting the sulfur in the fuel.

4.) As originally permitted, the auxiliary boilers and the diesel generator would only be operated during the periods of start-up and shut-down. Because of this, we agreed that emissions from these two sources could simply be added to the big sources in the original modeling study. However, if the operational restrictions are to be removed, the auxiliary boiler and diesel generators should be considered as separate sources.

RESPONSE: As stated in the response to comment 1, FPL is hereby revising its request regarding the operational limits for the auxiliary boiler and emergency diesel generator to that which is currently consistent with the Site Certification. Collocation of these sources with the CT emission sources, as the department originally accepted, should therefore remain appropriate for modeling purpose.

5.) The stack parameters for both sources have been revised. The revised stack heights and exit velocities are much lower than the permitted ones (stack height on the boiler lowered from 18.3 m to 12.8 m and on the generator from 7.6 m to 3.8 m). The screen model shows the impact from the revised parameters are much higher than the permitted ones. Further modeling study is required. What are the stack parameters for the auxiliary boiler when oil is burned? For the CT/HRSG stack, when the stack parameters are being changed, modeling study should be done to prove no larger impact than the permitted one. Use the highest emission rate including the excess emission in "Cold Start."

RESPONSE: As stated in the response to comment 1, FPL is hereby revising its request for unlimited operation of the auxiliary boiler and emergency diesel generator. Any changes in the impact associated with these two sources should be insignificant, even taking into

Hamilton S. Oven
May 19, 1993
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account the revised stack parameters, because both the auxiliary boiler and emergency diesel generator will be smaller and have lower emission rates (lb/hr) than those previously modeled. Therefore, no additional modeling should be necessary.

The stack parameters for the auxiliary boiler when firing oil are not expected to be significantly different than when firing natural gas.

FPL's modeling and impact assessment done during the licensing process was based on 100 percent firing of 0.5 percent sulfur oil in all four Martin CG/CC Units (3-6). This scenario resulted in worst case overall emissions. FPL recently used the SCREEN model to estimate the impact associated with the changes of the CT/HRSG stack parameters for Units 3 & 4. That SCREEN modeling, contained in Attachment A, shows only a 1 percent increase in ground level concentration when compared to the modeling analysis for Units 3 & 4 with the original stack parameters when firing oil under worst case ambient temperature (40 F) scenario. This increase is not considered to be significant. The predicted values will also be well below the ambient air quality standards. While the revised modeling for gas is higher than the original modeling for gas, the gas scenario is still less than the worst case oil-firing scenario previously modeled. Therefore further detailed modeling is not warranted.

The impact of the requested additional two hours of "cold start" emissions on the maximum concentrations modeled in the Site Certification Application for the ultimate site capacity (Martin Units 3-6) has also been evaluated. A conservative "ratioing" technique using the highest values previously modeled was utilized. It was assumed that there would be 12 "cold starts" per year which last longer than the 2 hours allowed by 17-210.700(1) F.A.C.

For NO_x, the increase in emissions resulting from this assumption for Units 3 & 4 would be more than offset by the elimination from immediate consideration of Units 5 & 6, which will need to be reanalyzed at a later time. Thus, by ratioing, ambient impacts would be less than previously presented.

For CO, both the 1-hour and 8-hour worst case conditions were considered and these maximum values are still well below the significance values (2000 ug/m³ and 500 ug/m³ for the 1-hour and 8-hour averaging times), and therefore, there should be no need for further modeling.

For VOC, the "cold start" emissions are relatively small and since no modeling was originally perform, no comparison is possible.

As was indicated in our meeting, the emergency diesel generator will be tested and made operational by May 22, 1993, so that it may be available to provide emergency backup power once hydrogen is loaded into the generators. The auxiliary boilers will be tested and readied for

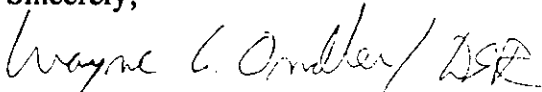
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operation beginning June 1, 1993 in order to supply steam for the startup of the steam turbines later that month.

FPL recognizes the heavy workload of the Department but respectfully requests that the Department work quickly with FPL to bring this matter to conclusion since Units 3 & 4 are scheduled soon to undergo initial start-up and field testing. Also, FPL has not received any questions on its request to modify the associated PSD permit and assumes that the permit can be revised as requested.

If you or the Department's staff have any questions regarding these responses, please call Dan MacDougall at (407) 625-7661.

Sincerely,

Handwritten signature of Wayne C. Ondler in cursive script.

Wayne C. Ondler
Environmental Licensing Project Manager
Environmental Affairs

cc: Clair Fancy DER/TAL
Preston Lewis DER/TAL
Teresa Heron DER/TAL

**FPL MARTIN CG/CC PROJECT
REQUEST FOR MODIFICATION OF CERTIFICATION**

RESPONSE TO FDER QUESTIONS

ATTACHMENT A

MAY 1993

FPL MARTIN
 SUMMARY OF SCREEN MODELLING
 ORIGINAL vs FINAL DESIGN

STACK PARAMETERS

	ORIGINAL @ 40oF		FINAL @ 40oF	
	GAS	OIL	GAS	OIL
H (ft)	213.3	213.3	213.3	213.3
D(ft)	20	20	18	18
Vs(ft/s)	61	61.7	68.1	76.2
Ts(oF)	280	280	209	275
METRIC				
H (M)	65	65	65	65
D(M)	6.1	6.1	5.5	5.5
Vs(m/s)	18.6	18.8	20.8	23.2
Ts(oK)	411	411	371	408

MODELLING SUMMARY @ 1g/s

MAX CONC. (ug/m3)	0.6565	0.6504	0.8884	0.6574
DISTANCE TO MAX(M)	1209	1212	1103	1205

	NAT GAS	OIL
MAX CONCENTRATION % DIFF.	35.3	1.1
DISTANCE TO MAX DIFFERENCE (M)	-106	-7

1
*** SCREEN-1.2 MODEL RUN ***
*** VERSION DATED 91/10 ***

ORIGINAL ***** FPL MARTIN ***** NAT. GAS *****

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
EMISSION RATE (G/S) = 1.000
STACK HEIGHT (M) = 65.00
STK INSIDE DIAM (M) = 6.10
STK EXIT VELOCITY (M/S) = 18.6000
STK GAS EXIT TEMP (K) = 411.00
AMBIENT AIR TEMP (K) = 277.00
RECEPTOR HEIGHT (M) = .00
IOPT (1=URB,2=RUR) = 2
BUILDING HEIGHT (M) = .00
MIN HORIZ BLDG DIM (M) = .00
MAX HORIZ BLDG DIM (M) = .00

*** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	.6565	1209.	0.

** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **

BUOY. FLUX = 553.18 M**4/S**3; MOM. FLUX = 2169.02 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES **

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1000.	.5198	1	2.0	2.3	816.9	815.9	265.8	482.8	NO
1100.	.6250	1	2.0	2.3	816.9	815.9	286.9	582.3	NO
1200.	.6564	1	2.0	2.3	816.9	815.9	307.6	693.0	NO
1300.	.6434	1	2.0	2.3	816.9	815.9	328.0	814.8	NO
1400.	.6137	1	2.0	2.3	816.9	815.9	348.1	947.8	NO
1500.	.5829	1	2.0	2.3	816.9	815.9	367.3	1091.9	NO
1600.	.5613	1	2.0	2.3	816.9	815.9	381.6	1245.9	NO
1700.	.5410	1	2.0	2.3	816.9	815.9	395.9	1411.7	NO
1800.	.5219	1	2.0	2.3	816.9	815.9	410.4	1589.3	NO
1900.	.5040	1	2.0	2.3	816.9	815.9	424.9	1778.7	NO

2000.	.4873	1	2.0	2.3	816.9	815.9	439.5	1379.9	NO
2100.	.4716	1	2.0	2.3	816.9	815.9	454.2	2192.9	NO
2200.	.4568	1	2.0	2.3	816.9	815.9	468.9	2417.7	NO
2300.	.4429	1	2.0	2.3	816.9	815.9	483.6	2654.4	NO
2400.	.4297	1	2.0	2.3	816.9	815.9	498.4	2903.1	NO
2500.	.4174	1	2.0	2.3	816.9	815.9	513.2	3163.7	NO
2600.	.4057	1	2.0	2.3	816.9	815.9	527.9	3436.3	NO
2700.	.3947	1	2.0	2.3	816.9	815.9	542.7	3721.0	NO
2800.	.3842	1	2.0	2.3	816.9	815.9	557.5	4017.8	NO
2900.	.3743	1	2.0	2.3	816.9	815.9	572.2	4326.7	NO
3000.	.3649	1	2.0	2.3	816.9	815.9	587.0	4647.8	NO
3500.	.3243	1	2.0	2.3	816.9	815.9	660.5	5000.0	NO
4000.	.2922	2	2.0	2.3	816.9	815.9	569.3	544.3	NO
4500.	.2993	2	2.0	2.3	816.9	815.9	622.9	608.3	NO
5000.	.2946	2	2.0	2.3	816.9	815.9	676.4	674.0	NO
5500.	.2834	2	2.0	2.3	816.9	815.9	729.6	741.1	NO
6000.	.2694	2	2.0	2.3	816.9	815.9	782.5	809.4	NO
6500.	.2548	2	2.0	2.3	816.9	815.9	835.0	878.7	NO
7000.	.2408	2	2.0	2.3	816.9	815.9	887.3	948.8	NO
7500.	.2279	2	2.0	2.3	816.9	815.9	939.1	1019.7	NO
8000.	.2161	2	2.0	2.3	816.9	815.9	990.7	1091.3	NO
8500.	.2056	2	2.0	2.3	816.9	815.9	1041.9	1163.6	NO
9000.	.2042	3	2.0	2.4	775.9	774.9	773.8	499.2	NO
9500.	.2063	3	2.0	2.4	775.9	774.9	809.4	520.5	NO
10000.	.2068	3	2.0	2.4	775.9	774.9	844.8	541.7	NO
15000.	.1755	3	2.0	2.4	775.9	774.9	1192.4	755.6	NO
20000.	.1957	5	1.0	1.9	5000.0	257.5	754.3	122.4	NO
25000.	.1993	5	1.0	1.9	5000.0	257.5	917.3	131.0	NO
30000.	.1977	5	1.0	1.9	5000.0	257.5	1075.9	138.7	NO
40000.	.1877	5	1.0	1.9	5000.0	257.5	1382.8	152.1	NO
50000.	.1706	5	1.0	1.9	5000.0	257.5	1678.6	161.2	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1000. M:
1209. .6565 1 2.0 2.3 816.9 815.9 309.2 702.3 NO

- DIST = DISTANCE FROM THE SOURCE
- CONC = MAXIMUM GROUND LEVEL CONCENTRATION
- STAB = ATMOSPHERIC STABILITY CLASS (1=A, 2=B, 3=C, 4=D, 5=E, 6=F)
- U10M = WIND SPEED AT THE 10-M LEVEL
- USTK = WIND SPEED AT STACK HEIGHT
- MIX HT = MIXING HEIGHT
- PLUME HT= PLUME CENTERLINE HEIGHT
- SIGMA Y = LATERAL DISPERSION PARAMETER
- SIGMA Z = VERTICAL DISPERSION PARAMETER
- DWASH = BUILDING DOWNWASH:
DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

*** END OF SCREEN MODEL OUTPUT ***

*** SCREEN-1.2 MODEL RUN ***
*** VERSION DATED 91/10 ***

ORIGINAL ***** FPL MARTIN ***** OIL *****

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
EMISSION RATE (G/S) = 1.000
STACK HEIGHT (M) = 65.00
STK INSIDE DIAM (M) = 6.10
STK EXIT VELOCITY (M/S) = 18.8000
STK GAS EXIT TEMP (K) = 411.00
AMBIENT AIR TEMP (K) = 277.00
RECEPTOR HEIGHT (M) = .00
IOPT (1=URB,2=RUR) = 2
BUILDING HEIGHT (M) = .00
MIN HORIZ BLDG DIM (M) = .00
MAX HORIZ BLDG DIM (M) = .00

*** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	.6504	1212.	0.

** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **

BUOY. FLUX = 559.13 M**4/S**3; MOM. FLUX = 2215.92 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES **

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1000.	.5108	1	2.0	2.3	821.8	820.8	266.2	483.0	NO
1100.	.6171	1	2.0	2.3	821.8	820.8	287.2	582.5	NO
1200.	.6501	1	2.0	2.3	821.8	820.8	308.0	693.2	NO
1300.	.6382	1	2.0	2.3	821.8	820.8	328.4	814.9	NO
1400.	.6092	1	2.0	2.3	821.8	820.8	348.5	948.0	NO
1500.	.5782	1	2.0	2.3	821.8	820.8	368.1	1092.2	NO
1600.	.5569	1	2.0	2.3	821.8	820.8	382.3	1246.2	NO
1700.	.5368	1	2.0	2.3	821.8	820.8	396.7	1412.0	NO
1800.	.5179	1	2.0	2.3	821.8	820.8	411.1	1589.5	NO
1900.	.5003	1	2.0	2.3	821.8	820.8	425.6	1778.9	NO

2000.	.4837	1	2.0	2.3	821.8	820.8	440.2	1980.0	NO
2100.	.4681	1	2.0	2.3	821.8	820.8	454.9	2193.0	NO
2200.	.4535	1	2.0	2.3	821.8	820.8	469.5	2417.8	NO
2300.	.4397	1	2.0	2.3	821.8	820.8	484.3	2654.5	NO
2400.	.4267	1	2.0	2.3	821.8	820.8	499.0	2903.2	NO
2500.	.4145	1	2.0	2.3	821.8	820.8	513.7	3163.8	NO
2600.	.4029	1	2.0	2.3	821.8	820.8	528.5	3436.4	NO
2700.	.3919	1	2.0	2.3	821.8	820.8	543.3	3721.1	NO
2800.	.3816	1	2.0	2.3	821.8	820.8	558.0	4017.9	NO
2900.	.3718	1	2.0	2.3	821.8	820.8	572.8	4326.8	NO
3000.	.3624	1	2.0	2.3	821.8	820.8	587.5	4647.9	NO
3500.	.3222	1	2.0	2.3	821.8	820.8	660.9	5000.0	NO
4000.	.2902	1	2.0	2.3	821.8	820.8	733.8	5000.0	NO
4500.	.2960	2	2.0	2.3	821.8	820.8	623.4	608.8	NO
5000.	.2919	2	2.0	2.3	821.8	820.8	676.8	674.4	NO
5500.	.2812	2	2.0	2.3	821.8	820.8	730.0	741.5	NO
6000.	.2675	2	2.0	2.3	821.8	820.8	782.9	809.7	NO
6500.	.2531	2	2.0	2.3	821.8	820.8	835.4	879.0	NO
7000.	.2392	2	2.0	2.3	821.8	820.8	887.6	949.1	NO
7500.	.2264	2	2.0	2.3	821.8	820.8	939.5	1020.0	NO
8000.	.2148	2	2.0	2.3	821.8	820.8	991.0	1091.6	NO
8500.	.2043	2	2.0	2.3	821.8	820.8	1042.1	1163.8	NO
9000.	.2015	3	2.0	2.4	780.5	779.5	774.1	499.8	NO
9500.	.2037	3	2.0	2.4	780.5	779.5	809.7	521.0	NO
10000.	.2045	3	2.0	2.4	780.5	779.5	845.2	542.2	NO
15000.	.1742	3	2.0	2.4	780.5	779.5	1192.6	755.9	NO
20000.	.1938	5	1.0	1.9	5000.0	258.2	754.3	122.4	NO
25000.	.1976	5	1.0	1.9	5000.0	258.2	917.3	131.1	NO
30000.	.1961	5	1.0	1.9	5000.0	258.2	1076.0	138.8	NO
40000.	.1864	5	1.0	1.9	5000.0	258.2	1382.8	152.2	NO
50000.	.1696	5	1.0	1.9	5000.0	258.2	1678.6	161.3	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1000. M:

1212.	.6504	1	2.0	2.3	821.8	820.8	310.2	706.0	NO
-------	-------	---	-----	-----	-------	-------	-------	-------	----

DIST = DISTANCE FROM THE SOURCE
 CONC = MAXIMUM GROUND LEVEL CONCENTRATION
 STAB = ATMOSPHERIC STABILITY CLASS (1=A, 2=B, 3=C, 4=D, 5=E, 6=F)
 U10M = WIND SPEED AT THE 10-M LEVEL
 USTK = WIND SPEED AT STACK HEIGHT
 MIX HT = MIXING HEIGHT
 PLUME HT= PLUME CENTERLINE HEIGHT
 SIGMA Y = LATERAL DISPERSION PARAMETER
 SIGMA Z = VERTICAL DISPERSION PARAMETER
 DWASH = BUILDING DOWNWASH:
 DWASH= MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 *** END OF SCREEN MODEL OUTPUT ***

*** SCREEN-1.2 MODEL RUN ***
*** VERSION DATED 91/10 ***

FINAL DESIGN ***** FPL MARTIN ***** OIL *****

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
EMISSION RATE (G/S) = 1.000
STACK HEIGHT (M) = 65.00
STK INSIDE DIAM (M) = 5.50
STK EXIT VELOCITY (M/S) = 23.2000
STK GAS EXIT TEMP (K) = 408.00
AMBIENT AIR TEMP (K) = 277.00
RECEPTOR HEIGHT (M) = .00
IOPT (1=URB,2=RUR) = 2
BUILDING HEIGHT (M) = .00
MIN HORIZ BLDG DIM (M) = .00
MAX HORIZ BLDG DIM (M) = .00

*** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	.6574	1208.	0.

** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **

BUOY. FLUX = 552.40 M**4/S**3; MOM. FLUX = 2763.51 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES **

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1000.	.5210	1	2.0	2.3	816.3	815.3	265.8	482.7	NO
1100.	.6261	1	2.0	2.3	816.3	815.3	286.8	582.3	NO
1200.	.6572	1	2.0	2.3	816.3	815.3	307.5	693.0	NO
1300.	.6441	1	2.0	2.3	816.3	815.3	327.9	814.7	NO
1400.	.6143	1	2.0	2.3	816.3	815.3	348.1	947.8	NO
1500.	.5835	1	2.0	2.3	816.3	815.3	367.2	1091.9	NO
1600.	.5619	1	2.0	2.3	816.3	815.3	381.5	1245.9	NO
1700.	.5415	1	2.0	2.3	816.3	815.3	395.8	1411.7	NO
1800.	.5224	1	2.0	2.3	816.3	815.3	410.3	1589.3	NO
1900.	.5045	1	2.0	2.3	816.3	815.3	424.8	1778.7	NO

2000.	.4878	1	2.0	2.3	816.3	815.3	439.5	1979.9	NO
2100.	.4720	1	2.0	2.3	816.3	815.3	454.1	2192.8	NO
2200.	.4572	1	2.0	2.3	816.3	815.3	468.8	2417.7	NO
2300.	.4433	1	2.0	2.3	816.3	815.3	483.6	2654.4	NO
2400.	.4301	1	2.0	2.3	816.3	815.3	498.3	2903.1	NO
2500.	.4178	1	2.0	2.3	816.3	815.3	513.1	3163.7	NO
2600.	.4061	1	2.0	2.3	816.3	815.3	527.9	3436.3	NO
2700.	.3950	1	2.0	2.3	816.3	815.3	542.6	3721.0	NO
2800.	.3846	1	2.0	2.3	816.3	815.3	557.4	4017.8	NO
2900.	.3746	1	2.0	2.3	816.3	815.3	572.2	4326.7	NO
3000.	.3652	1	2.0	2.3	816.3	815.3	586.9	4647.8	NO
3500.	.3246	1	2.0	2.3	816.3	815.3	660.4	5000.0	NO
4000.	.2927	2	2.0	2.3	816.3	815.3	569.2	544.2	NO
4500.	.2997	2	2.0	2.3	816.3	815.3	622.9	608.2	NO
5000.	.2950	2	2.0	2.3	816.3	815.3	676.3	673.9	NO
5500.	.2837	2	2.0	2.3	816.3	815.3	729.5	741.1	NO
6000.	.2697	2	2.0	2.3	816.3	815.3	782.4	809.3	NO
6500.	.2550	2	2.0	2.3	816.3	815.3	835.0	878.6	NO
7000.	.2410	2	2.0	2.3	816.3	815.3	887.2	948.8	NO
7500.	.2280	2	2.0	2.3	816.3	815.3	939.1	1019.7	NO
8000.	.2163	2	2.0	2.3	816.3	815.3	990.6	1091.3	NO
8500.	.2057	2	2.0	2.3	816.3	815.3	1041.8	1163.5	NO
9000.	.2046	3	2.0	2.4	775.3	774.3	773.8	499.2	NO
9500.	.2066	3	2.0	2.4	775.3	774.3	809.3	520.4	NO
10000.	.2071	3	2.0	2.4	775.3	774.3	844.8	541.7	NO
15000.	.1756	3	2.0	2.4	775.3	774.3	1192.4	755.5	NO
20000.	.1959	5	1.0	1.9	5000.0	257.4	754.3	122.3	NO
25000.	.1995	5	1.0	1.9	5000.0	257.4	917.3	131.0	NO
30000.	.1979	5	1.0	1.9	5000.0	257.4	1075.9	138.7	NO
40000.	.1878	5	1.0	1.9	5000.0	257.4	1382.8	152.1	NO
50000.	.1708	5	1.0	1.9	5000.0	257.4	1678.6	161.2	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1000. M:
1208. .6574 1 2.0 2.3 816.3 815.3 309.0 701.1 NO

DIST = DISTANCE FROM THE SOURCE
CONC = MAXIMUM GROUND LEVEL CONCENTRATION
STAB = ATMOSPHERIC STABILITY CLASS (1=A, 2=B, 3=C, 4=D, 5=E, 6=F)
U10M = WIND SPEED AT THE 10-M LEVEL
USTK = WIND SPEED AT STACK HEIGHT
MIX HT = MIXING HEIGHT
PLUME HT= PLUME CENTERLINE HEIGHT
SIGMA Y = LATERAL DISPERSION PARAMETER
SIGMA Z = VERTICAL DISPERSION PARAMETER
DWASH = BUILDING DOWNWASH:
DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

*** END OF SCREEN MODEL OUTPUT ***



February 19, 1993

FPL-JEN-DER-170-93-12

Mr. C. H. Fancy, Chief
Bureau of Air Permitting
Department of Environmental Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399

RECEIVED

FEB 26 1993

Division of Air
Resources Management

**RE: Martin Units 3 & 4
PA89-27, PSD-FL-146
Revised Information**

Dear Mr. Fancy:

The FPL Martin Units 3 & 4 were licensed (PA89-27) in 1991 under the Power Plant Siting Act (Ch 403 Part II F.S.) and a corresponding PSD permit (PSD-FL-146). These units consist of 4 "advanced" General Electric (GE) Model 7001 F/A combustion turbines, each with a heat recovery steam generator, firing natural gas and light distillate oil. Condition of Certification II.A.15 and PSD Condition 16 require FPL to obtain DER approval for any change in the method of operation, fuels, or equipment for these two units.

With the completion of detailed engineering and shop testing, refinement of the information previously provided to DER as part of the certification process has occurred in two general areas. The first area is the development of the peak mode of operation (i.e. power augmentation). The second area is refinement of the combustion turbine stack parameters. Each of these areas are addressed below.

Power Augmentation

Units 3 & 4 at Martin utilize advanced combustion turbines (CT's). The term "advanced" refers to a very high firing temperature design. The higher firing temperature requires use of exotic materials coupled with very sophisticated internal cooling techniques. This design approach results in a machine which operates very close to its true maximum capability in normal operation (e.g., base load).

Conventional power generation combustion turbines have two ratings, base and peak loads. Conventional units operate at a base load firing temperature of 1900° F to 2100° F and have reasonable design margins. Peak load is a temporary operating mode which is accomplished by simply raising the firing temperature by 50° F to 100° F in the conventional combustion turbine.

Peak load operation for Units 3 & 4 cannot be accomplished by simply raising the firing temperature since these units operate at 2350° F. To obtain a peak load rating for these units, steam is injected into the combustion turbine at temperatures lower than the combustion gases.

The lower temperature steam allows overfiring of the CT without exceeding 2350° F. Furthermore, the additional mass flow contributed by the steam produces more power from the turbine. GE refers to this peaking mode of operation as "power augmentation". When operating in this mode, emission limits will remain within the already permitted levels.

Operating in this mode has economic and environmental benefits. Economically, the additional power supply is at a very desirable incremental heat rate, thus lowering fuel costs. Environmentally, the use of this peaking mode displaces other higher emission units in the FPL system. Therefore, the benefits accrue to both the environment and FPL customers.

Martin Units 3 & 4 are designed to use the power augmentation mode sparingly. The auxiliary equipment necessary to support power augmentation is limited in capacity. For example, the water treatment plant and demineralizer can support continuous power augmentation for only 48 hours at a time. On a consistent daily use basis, Units 3 & 4 would only be able to run two hours per day in the power augmentation mode. FPL expects to use this peak mode of operation approximately 228 hours per year. This estimate is based on several assumptions that cannot be verified without actual plant operational data and yearly weather patterns.

CT Stack Refinements

As a result of final detailed design and a cost reduction program, certain design features have been refined from what was originally permitted. The refined combustion turbine stack parameters are presented in the enclosed table.

If you have any question about these design refinements, please call me at (407) 625-7624 or Dan MacDougall at (407) 625-7661.

Sincerely,



Wayne Ondler
Environmental Licensing Project Manager
Environmental Affairs

Enclosure

cc: Jewel Harper-EPA/Atlanta
H.S. Owen-DER/TAL
Tom Tittle-DER/WPB

ltpowaug J. Nelson
K. Zhang

FPL MARTIN UNITS 3 & 4 DESIGN REFINEMENTS

CHANGE IN CT/HRSG STACK PARAMETERS

	ORIGINAL DESIGN				REFINED DESIGN			
FUEL	GAS		OIL		GAS		OIL	
AMBIENT TEMPERATURE (°F)	40	95	40	95	40	95	40	95
HRSG STACK DIAMETER (FT)	20	20	20	20	18	18	18	18
HRSG EXHAUST TEMP. (°F)	280	280	280	280	209	204	275	274
HRSG EXIT VELOCITY (FT/SEC)	61	54.1	61.7	54.8	68.1	59.9	76.2	67.7

HRSG - HEAT RECOVERY STEAM GENERATOR

STCKDIAM.DRW

Petty
Who did the
Martin - Barry 2 of 20
who do you suggest do this?
Preston
2/4/93 -

TO: Power Plant Siting Review Committee
FROM: Buck Oven
DATE: February 3, 1993
SUBJECT: FPL Martin CG/CC Project Modification
PA 89-27A, Module 8037

Please review the attached information from FPL for completeness and sufficiency and forward your comments to me by March 3, 1993.

7-0472