



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

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

RECEIVED  
AUG 17 1992  
Division of Air  
Resources Management

4APT-AEB

AUG 11 1992

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

RE: Florida Power Corp. - U of F Project (PSD-FL-181)

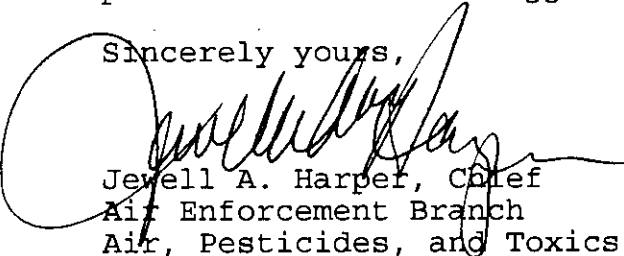
Dear Mr. Fancy:

This is to acknowledge receipt of your revised preliminary determination and draft Prevention of Significant Deterioration (PSD) permit for the above referenced facility by letter dated June 30, 1992. The proposed modification involves the shutdown of three existing boilers and the construction of a combined cycle combustion turbine (GE LM 6000 model). As a result of the shutdowns, the modification will have a significant increase in emissions for CO only.

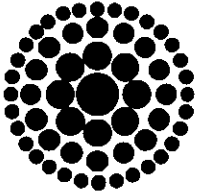
The revisions to the preliminary determination consisted of increasing the allowable fuel oil sulfur content to 0.5%; applying the new source performance standard opacity limit; increasing the duct burner CO limit to 0.15 lb/mmBTU; allowing for operation of the existing boilers until the operating permit for the new facility is obtained; and, modifying the permit language concerning the construction of duct modules for future installation of NO<sub>x</sub> and/or CO controls.

We have reviewed the package as requested and have no adverse comments. If you have any questions or comments on this project, please contact Mr. Gregg Worley of my staff at (404) 347-5014.

Sincerely yours,

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

cc: J. Reynolds  
C. Holladay, NE Dist.  
A. Rutledge  
C. Shaver, NPS  
K. Kosky, P.E.



**Florida  
Power**  
CORPORATION

Certified Mail  
P 164 730 333

July 31, 1992

Mr. C. H. Fancy, P.E., Chief  
Bureau of Air Regulation  
Florida Department of Environmental Regulation  
2600 Blair Stone Rd.  
Tallahassee, Florida 32399-2400

Dear Mr. Fancy:

Re: Proof of Publication of the Notice of Intent to Issue the  
UF Cogeneration Project Construction Air Permit

Pursuant to Section 403.315, Florida Statutes and DER Rule 17-103.150, F.A.C., the Notice of Intent to issue the UF Cogeneration Project Construction Air Permit was published July 3, 1992 in the Gainesville Sun. Enclosed is proof of this publication.

If you have any questions or require any additional information, please contact me at (813) 866-5158.

Sincerely,

Scott H. Osbourn  
Senior Environmental Engineer

Enclosure

THE GAINESVILLE SUN  
Published Daily and Sunday  
GAINESVILLE, FLORIDA

STATE OF FLORIDA  
COUNTY OF ALACHUA

Before the undersigned authority personally appeared..... Naomi Williams.....  
who on oath says that he/she is Assistant Classified Mgr. of THE GAINESVILLE SUN, a daily  
newspaper published at Gainesville in Alachua County, Florida, that the attached copy of advertisement, being a  
..... NOTICE OF INTENT.....  
in the matter of .....  
in the..... Court, was published in said newspaper in the issue of,  
..... July 3..... 19 92.....

Affiant further says that the said THE GAINESVILLE SUN is a newspaper published at Gainesville, in said Alachua County, Florida, and that the said newspaper has heretofore been continuously published in said Alachua County, each day, and has been entered as second class mail matter at the post office in Gainesville, in said Alachua County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he has neither paid nor promised any person, firm or corporation any discount for publication in the said newspaper.

Sworn to and subscribed before me this

10 day of July, A.D., 19 92

*Bohannan*  
BOHANNAN  
Notary Public  
My Comm. Exp. 8/1/93  
Banded By S. J. [unclear]

*Naomi Williams*

STATE OF FLORIDA  
DEPARTMENT OF  
ENVIRONMENTAL  
REGULATION  
NOTICE OF INTENT  
TO ISSUE PERMIT

The Department of Environmental Regulation gives notice of its intent to issue a permit to Florida Power Corporation, 2201 14th Street South, St. Petersburg, Florida 33733, to construct a 42 MW cogeneration facility on Mowry Road at the University of Florida campus in Gainesville, Alachua County, Florida. A determination of Best Available Control Technology (BACT) was required. The proposed project is subject to Prevention of Significant Deterioration (PSD) regulations in regard to carbon monoxide emissions and federal new source performance standards for nitrogen oxides. Modeling results show that increases in ground-level concentrations are less than PSD significant impact levels for carbon monoxide. The Department is issuing this intent to issue for the reasons stated in the Technical Evaluation and Preliminary Determination.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of publication of this notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information: (1) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

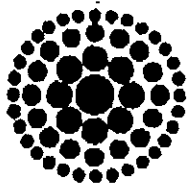
If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57 F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28.520, F.A.C.

The application is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:  
Department of Environmental Regulation, Bureau of Air Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.  
Department of Environmental Regulation, Northeast District, 7825 Baymeadows Way, Suite B700, Jacksonville, Florida 32256-2577.

Any person may send written comments on the proposed action to Mr. Preston Lewis at the Department's Tallahassee address. All comments received within 30 days of the publication of this notice will be considered in the Department's final determination.

Further, a public hearing can be requested by any person. Such requests must be submitted within 30 days of this notice.

(288) 7-23-92



**Florida  
Power  
CORPORATION**

3201 THIRTY FOURTH STREET SOUTH • ST. PETERSBURG, FLORIDA 33711  
P.O. BOX 14042 - H2G • ST. PETERSBURG, FLORIDA 33733

## FAX COVER LETTER

### ENVIRONMENTAL SERVICES DEPARTMENT

DATE: 7/30/92

7 PAGES AND COVER SHEET

TO: *Preston Lewis*  
*Air Permitting*

FAX #: (904) 922-6979

PHONE #: (813) 866-5158

FROM: *Scott Osborn*

PROJECT NUMBER:

PLEASE NOTIFY (813) 866-4940 FOR ANY PROBLEMS CONCERNING THE RECEIPT OF THIS FAX.

# RECEIVED

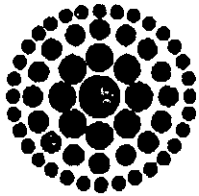
JUL 30 1992

Division of Air  
Resources Management

*~~Cheri Petty~~*

*This is Univ FL and I asked  
John R to comment on this*

*Preston*  
*7/30/92*



**Florida  
Power**  
CORPORATION

July 29, 1992

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

Subject: Alachua County- A.P.  
UF Cogeneration Project  
AC 01-204650, PSD-FL-181

Dear Mr. Fancy:

This correspondence provides comments to the revised draft air construction permit for the University of Florida (UF) Cogeneration Project. These comments are a follow-up to discussions with Messrs. Preston Lewis and John Reynolds of your staff. The comments are focused on certain specific conditions and are listed below. Requested changes to the conditions are attached.

Specific Condition 3. The fuel usage for Boiler Nos. 4 and 5 is not consistent with the information supplied to the Department on March 5, 1992, and again restated in our June 19, 1992 submittal. Specifically, the proposed fuel usage and supporting documentation are contained in the March 5, 1992 submittal, Table 2-5:

Boiler No. 4 -- Natural gas (20 MMcf/yr) and no. 2 fuel oil (15,000 gal/yr)  
Boiler No. 5 -- Natural gas (125 MMcf/yr) and no. 2 fuel oil (50,000 gal/yr)

These fuel usage rates were developed based on the same assumptions for which the Department offsets were calculated. The Department accepted the offsets submitted in the application as stated on Page 3 of the Technical Evaluation and Preliminary Determination. It should be noted that the NO<sub>x</sub> emissions in revised Table 2-5 were based on the same

Mr. C. H. Fancy  
July 29, 1992  
Page 2

emission factor as that used for the offsets. This assumption is consistent with the overall approach recommended by the Department.

In addition, the issue of operational flexibility is one of great importance to FPC. As stressed in separate conversations with John Reynolds and Preston Lewis, such flexibility is essential during natural gas curtailments or an unscheduled long-term maintenance shutdown. (During such time, the backup boilers would be required to supply hospital process steam.) Our June 19, 1992 letter contained recommended footnotes to the fuel usage table previously discussed above. The proposed footnotes would allow fuel oil and natural gas usage trade-offs between the combustion turbine (CT) and back-up boilers (e.g., fuel oil for fuel oil and natural gas for natural gas) structured to restrict trade-offs in such a way that overall NO<sub>x</sub> emissions would not be increased.

Neither Messrs. Lewis nor Reynolds are opposed to providing the requested flexibility; however, there seems to be some confusion regarding the most effective method of implementation. Therefore, FPC proposes the following two different approaches:

The first approach is the same as that contained in our June 19, 1992 submittal and is reiterated below:

- o The usage of oil for boilers 4 and 5 may be increased by 0.96 gallons of oil for every gallon not burned in the turbine. The total amount of oil to be used in the turbine will be reduced by this amount.
- o The usage of natural gas for boilers 4 and 5 may be increased by 0.34 cubic feet for every cubic foot not burned in the turbine. The total amount of natural gas to be used in the turbine will be reduced by this amount.

The proposed ratios for trade-off are based on the limiting pollutant, NO<sub>x</sub>, so that overall NO<sub>x</sub> emissions would not be increased.

The second approach is less complex and involves implementing the total NO<sub>x</sub> cap. The condition could be written such that "total NO<sub>x</sub> emissions from the four sources (the CT, duct burner, boiler 4 and boiler 5) shall not exceed 194.3 tons per year (174.6 tpy from the CT and duct burner and 19.73 tpy from boilers 4 and 5). FPC shall maintain annual fuel use records and apply appropriate emission factors (or source test data, if available) to calculate and submit annual emission estimates." This approach is consistent with current Department practice which requires submittal of annual operating and emissions reports.

Specific Condition 4. As stated in our June 19, 1992 letter, the requirement to test between 96 and 100 percent of capacity does not appear to be consistent with previous permit conditions issued by the Department. Also, low ambient temperatures are required for the maximum capacity to be achieved in the CT. This ambient temperature dependence of the

Mr. C. H. Fancy  
July 29, 1992  
Page 3

CT and a minimum 96 percent requirement for testing of the CT would make it all but certain that this condition could not be met. Therefore, the required range for testing should be 90 to 100 percent of maximum permitted capacity.

Initially, the CT will only be equipped to burn natural gas. FPC realizes that compliance testing is necessary on all fuels proposed for firing and, therefore, will not burn fuel oil in the CT unless and until compliance with the Department's emission limits is demonstrated.

In addition, as previously discussed, the stack sampling requirements for the Central Heat Plant (Boilers 4 and 5) should be deleted from this condition. There are no emission limits in Specific Condition 2 for these units.

Specific Condition 7. The phrase "for CO." should be added after the second sentence since a BACT review was not performed for NO<sub>x</sub>. Further, FPC believes that the decision to require a CO oxidation catalyst will be based on a cost/benefit analysis of using such control only if compliance testing indicates that FPC is unable to meet the CO limits established in Table 2.

The Department's expeditious consideration of these comments is appreciated. As you know, this is an important project to the University of Florida and will have significant environmental benefits over the existing steam generating system. This project will reduce potential emissions from the facility by over 800 tons per year while saving the University of Florida over \$2,000,000 annually.

If you should have any questions or require clarification of the above, please do not hesitate to contact me at (813) 866-5158.

Sincerely,



Scott H. Osbourn  
Senior Environmental Engineer

cc: Preston Lewis, FDER  
John Reynolds, FDER  
Jeff Braswell, OGC/FDER

91062C2/ADNDM  
02/26/92

**Table 2-5. Emissions of Regulated Pollutants for Boilers 4 & 5 After Commercial Operation of Cogeneration Plant (Page 1 of 2)**

	Boiler No. 4 <sup>a</sup>		Boiler No. 5 <sup>b</sup>		Total
	Natural Gas	No. 2 Fuel Oil	Natural Gas	No. 2 Fuel Oil	
Natural Gas Burned <sup>c</sup> (MM ft <sup>3</sup> /yr)	20		125		
No. 2 Fuel Oil <sup>c</sup> (gal/yr)		15,000		50,000	
(% sulfur)		0.5		0.5	
<b>Emission Factor</b>	lb/MM scf	lb/1,000 gal	lb/MM scf	lb/1,000 gal	
Particulate Matter	3	8 <sup>d</sup>	3	8 <sup>d</sup>	
Particulate Matter (PM10)	3	5.68 <sup>d</sup>	3	5.68 <sup>d</sup>	
Sulfur Dioxide	0.6	78.5 <sup>e</sup>	0.6	78.5 <sup>e</sup>	
Nitrogen Oxides	140	20	281.2	24	
Carbon Monoxide	35	5	40	5	
Volatile Organic Compounds (methane)	3	0.052	0.3	0.052	
Volatile Organic Compounds (nonmethane)	2.8	0.2	1.4	0.2	
Lead	Neg.	0.0013	Neg.	0.0042	
Fluorides	Neg.	0.0049	Neg.	0.052	
Mercury	Neg.	0.00045	Neg.	0.00048	
Beryllium	Neg.	0.00038	Neg.	0.00063	
Arsenic	Neg.	0.00063	Neg.	0.0029	
Sulfuric Acid Mist	Neg.	1.225	Neg.	1.225	
<b>Emission Rate (TPY)</b>					
Particulate Matter	0.03	0.06	0.19	0.20	0.48
Particulate Matter (PM10)	0.03	0.04	0.19	0.14	0.40
Sulfur Dioxide	0.01	0.59	0.04	1.96	2.59
Nitrogen Oxides	1.40	0.15	17.58	0.61 <sup>f</sup>	19.73
Carbon Monoxide	0.35	0.04	2.50	0.13	3.01
Volatile Organic Compounds (methane)	0.03	0.00	0.02	0.00	0.05
Volatile Organic Compounds (nonmethane)	0.03	0.00	0.09	0.01	0.12

Fuel use as accepted in technical evaluation



91062C2/ADNDM  
03/04/92

Table 2-5. Emissions of Regulated Pollutants for Boilers 4 & 5 After Commercial Operation of Cogeneration Plant (Page 2 of 2)

	Boiler No. 4 <sup>a</sup>		Boiler No. 5 <sup>b</sup>		Total
	Natural Gas	No. 2 Fuel Oil	Natural Gas	No. 2 Fuel Oil	
Lead	Neg.	0.00001	Neg.	0.00011	0.0001
Fluorides	Neg.	0.00004	Neg.	0.00130	0.001
Mercury	Neg.	0.00000	0.0000	0.00001	0.00000
Beryllium	Neg.	0.00000	Neg.	0.00002	0.00002
Arsenic	Neg.	0.00000	Neg.	0.00007	0.0001
Sulfuric Acid Mist	Neg.	0.01	Neg.	0.03	0.04

Note: Calculations in this table are performed as follows: Fuel use times emission factor equals emission rate; e.g. 20 MM scf/yr x 3 lb/MM scf + 2,000 lb/ton = 0.03 TPY (Note: Roundoff from Lomis may slightly different than calculations using a calculator.).

- ft<sup>3</sup>/yr = cubic feet per year
- gal/yr = gallons per year
- % = percent
- lb/mm = pounds per millimeter
- scf = standard cubic feet
- gal = gallons
- Btu/hr = British thermal unit per hour
- PM = particulate matter
- PM10 = particulate matter (PM10)
- TPY = tons per year

- <sup>a</sup> Boiler 4 has a heat input capacity of less than 100 x 10<sup>6</sup> Btu/hr; therefore, emissions factors for industrial boilers were used.
- <sup>b</sup> Boiler 5 has a heat input capacity of greater than 100 x 10<sup>6</sup> Btu/hr; therefore, emission factors for utility boilers were used.
- <sup>c</sup> Based on annual operating reports (See Appendix A).
- <sup>d</sup> Based on equation: 10 S + 3, where S = sulfur content. PM10 is 71% of PM emissions.
- <sup>e</sup> Based on equation: 157 S, where S = sulfur content.
- <sup>f</sup> Nitrogen oxides emissions based on ratio of residual and distillate oil emission factors [67 lb/10<sup>3</sup> gallons x 20 lb/10<sup>3</sup> gallons (for distillate) ÷ 55 lb/10<sup>3</sup> gallons (for residual)].

91062C2/ADNDM  
03/04/92

Table 2-6. Net Emission Reductions From Boilers 1 Through 5 at UF Central Heating Plant

Pollutant	Net Emission Reduction (TPY)		
	Boilers <sup>a</sup> 1, 2 and 3	Boilers <sup>b</sup> 4 and 5	Total
Particulate Matter	-1.00	-3.13	-4.13
Particulate Matter (PM10)	-0.96	-2.42	-3.38
Sulfur Dioxide	-1.99	-34.08	-36.07
Nitrogen Oxides	-72.18	-62.69	-134.87
Carbon Monoxide	-11.04	-9.38	-20.41
Volatile Organic Compounds (methane)	-0.37	-0.31	-0.67
Volatile Organic Compounds (nonmethane)	-0.55	-0.49	-1.05
Lead	-0.0000	-0.0004	-0.0004
Fluorides	-0.0003	-0.0051	-0.0054
Mercury	-0.00000	-0.00	-0.00
Beryllium	-0.00000	-0.00006	-0.00006
Arsenic	-0.0000	-0.0003	-0.0003
Sulfuric Acid Mist	-0.0411	-0.7366	-0.7777

*These offsets accepted by Dept. and were based on Table 2-5*

Note: TPY = tons per year.

<sup>a</sup>Based on emissions in Table 2-3.

<sup>b</sup>Based on subtracting emissions in Table 2-4 from emissions in Table 2-5.

two year period is more representative of normal operation. This is summarized in the following excerpt from EPA's 1991 workshop document on creditable emission changes:

"In certain limited situations where the applicant adequately demonstrates that the prior two years is not representative of normal source operation, a different two year time period may be used upon a determination by the reviewing agency that it is more representative of normal source operation."  
(emphasis added)

Therefore, since EPA requires that any alternate representative period be no more than two years, 1989 and 1991 would be the proper two years on which to base actual emissions for this project. As it turns out, the applicant's proposed offsets based on ~~1988 through 1990~~ are within 1% of the 1989/1991 average, therefore the Department can use the applicant's offset estimates. The increased emissions from this project are:

Allowable Emissions (TPY)

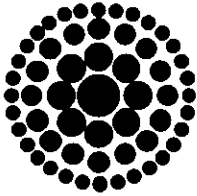
↑  
OFFSETS BASED  
ON FUEL USE IN  
Table 2-5.

	<u>Gas Turbine</u>		<u>Duct Burner</u>	<u>Total</u>	<u>Offsets</u>	<u>Net Increase</u>
	<u>NG</u>	<u>Oil</u>	<u>NG</u>			
NO <sub>x</sub>	142.7	7.3	24.6	174.6	134.9	39.7
SO <sub>2</sub>	4.3	21.6*	0.7	26.6*	36.1	- 9.5*
PM/PM <sub>10</sub>	10.2	1.1	2.5	13.8	3.4	10.4
CO	158.0	7.7	36.9	202.6	20.4	182.2
VOC	6.5	0.4	10.6	17.5	1.1	16.4
H <sub>2</sub> SO <sub>4</sub>	0.3	2.0	0.1	2.4	0.8	1.6

\* Estimate based on 0.5% fuel sulfur content

III. Rule Applicability

The construction permit application is subject to review under Chapter 403, Florida Statutes, and Florida Administrative Code (F.A.C.) Chapters 17-2 and 17-4. The proposed facility is subject to the provisions of F.A.C. Rule 17-2.500, Prevention of Significant Deterioration (PSD). The facility is located in an area classified as attainment for all regulated air pollutants. The proposed increase in carbon monoxide (CO) emissions exceeds the significant level set forth in Table 500-2 of F.A.C. Rule 17-2.500. Preconstruction review must include a determination of Best Available Control Technology (BACT), good-engineering practice stack height, ambient impact analysis, impact on soils, vegetation and visibility. Applicable emission limit rules are F.A.C. Rules 17-2.660, Table 660-1, Section 60.330, New Source Performance Standards for Stationary Gas Turbines, Subpart GG, and Section 60.40b, Subpart Db, Industrial/Commercial/Institutional Steam Generating Units. Limits for nitrogen oxides (NO<sub>x</sub>) and particulate matter (PM) emissions will be based on the turbine manufacturer's performance guarantees since they are more stringent than the NSPS



**Florida  
Power**  
CORPORATION

RECEIVED

JUL 31 1992

Division of Air  
Resources Management

July 29, 1992

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

Subject: Alachua County- A.P.  
UF Cogeneration Project  
AC 01-204650, PSD-FL-181

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These fuel usage rates were developed based on the same assumptions for which the Department offsets were calculated. The Department accepted the offsets submitted in the application as stated on Page 3 of the Technical Evaluation and Preliminary Determination (attached). It should be noted that the NO<sub>x</sub> emissions in revised Table 2-5 were based on

Mr. C. H. Fancy  
July 29, 1992  
Page 2

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In addition, the issue of operational flexibility is one of great importance to FPC. As stressed in separate conversations with John Reynolds and Preston Lewis, such flexibility is essential during natural gas curtailments or an unscheduled long-term maintenance shutdown. (During such time, the backup boilers would be required to supply hospital process steam.) Our June 19, 1992 letter contained recommended footnotes to the fuel usage table previously discussed above. The proposed footnotes would allow fuel oil and natural gas usage trade-offs between the combustion turbine (CT) and back-up boilers (e.g., fuel oil for fuel oil and natural gas for natural gas) structured to restrict trade-offs in such a way that overall NO<sub>x</sub> emissions would not be increased.

Neither Messrs. Lewis nor Reynolds are opposed to providing the requested flexibility; however, there seems to be some confusion regarding the most effective method of implementation. Therefore, FPC proposes the following two different approaches:

The first approach is the same as that contained in our June 19, 1992 submittal and is reiterated below:

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Mr. C. H. Fancy

July 29, 1992

Page 3

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In addition, as previously discussed, the stack sampling requirements for the Central Heat Plant (Boilers 4 and 5) should be deleted from this condition. There are no emission limits in Specific Condition 2 for these units which would require stack sampling.

Specific Condition 7. The phrase "for CO." should be added after the second sentence since a BACT review was not performed for NO<sub>x</sub>. Further, FPC believes that the decision to require a CO oxidation catalyst will be based on a cost/benefit analysis of using such control only if compliance testing indicates that FPC is unable to meet the CO limits established in Table 2. The current wording should be modified to make this requirement clear.

The Department's expeditious consideration of these comments is appreciated. As you know, this is an important project to the University of Florida and will have significant environmental benefits over the existing steam generating system. This project will reduce potential emissions from the facility by over 800 tons per year while saving the University of Florida over \$2,000,000 annually.

If you should have any questions or require clarification of the above, please do not hesitate to contact me at (813) 866-5158.

Sincerely,



Scott H. Osbourn  
Senior Environmental Engineer

Enclosure

cc: Preston Lewis, FDER  
John Reynolds, FDER  
Jeff Braswell, OGC/FDER  
*A. Kutyra, NE Dept*  
*G. Harple, EPA*  
*C. Shaver, NPS*

**Table 2-5. Emissions of Regulated Pollutants for Boilers 4 & 5 After Commercial Operation of Cogeneration Plant (Page 1 of 2)**

	Boiler No. 4 <sup>a</sup>		Boiler No. 5 <sup>b</sup>		Total
	Natural Gas	No. 2 Fuel Oil	Natural Gas	No. 2 Fuel Oil	
Natural Gas Burned <sup>c</sup> (MM ft <sup>3</sup> /yr)	20		125		
No. 2 Fuel Oil <sup>c</sup> (gal/yr)		15,000		50,000	
(% sulfur)		0.5		0.5	
<u>Emission Factor</u>	lb/MM scf	lb/1,000 gal	lb/MM scf	lb/1,000 gal	
Particulate Matter	3	8 <sup>d</sup>	3	8 <sup>d</sup>	
Particulate Matter (PM10)	3	5.68 <sup>d</sup>	3	5.68 <sup>d</sup>	
Sulfur Dioxide	0.6	78.5 <sup>e</sup>	0.6	78.5 <sup>e</sup>	
Nitrogen Oxides	140	20	281.2	24	
Carbon Monoxide	35	5	40	5	
Volatile Organic Compounds (methane)	3	0.052	0.3	0.052	
Volatile Organic Compounds (nonmethane)	2.8	0.2	1.4	0.2	
Lead	Neg.	0.0013	Neg.	0.0042	
Fluorides	Neg.	0.0049	Neg.	0.052	
Mercury	Neg.	0.00045	Neg.	0.00048	
Beryllium	Neg.	0.00038	Neg.	0.00063	
Arsenic	Neg.	0.00063	Neg.	0.0029	
Sulfuric Acid Mist	Neg.	1.225	Neg.	1.225	
<u>Emission Rate (TPY)</u>					
Particulate Matter	0.03	0.06	0.19	0.20	0.48
Particulate Matter (PM10)	0.03	0.04	0.19	0.14	0.40
Sulfur Dioxide	0.01	0.59	0.04	1.96	2.59
Nitrogen Oxides	1.40	0.15	17.58	0.61 <sup>f</sup>	19.73
Carbon Monoxide	0.35	0.04	2.50	0.13	3.01
Volatile Organic Compounds (methane)	0.03	0.00	0.02	0.00	0.05
Volatile Organic Compounds (nonmethane)	0.03	0.00	0.09	0.01	0.12

Fuel use as accepted in technical evaluation

91062C2/ADNDM  
03/04/92

Table 2-5. Emissions of Regulated Pollutants for Boilers 4 &amp; 5 After Commercial Operation of Cogeneration Plant (Page 2 of 2)

	Boiler No. 4 <sup>a</sup>		Boiler No. 5 <sup>b</sup>		Total
	Natural Gas	No. 2 Fuel Oil	Natural Gas	No. 2 Fuel Oil	
Lead	Neg.	0.00001	Neg.	0.00011	0.0001
Fluorides	Neg.	0.00004	Neg.	0.00130	0.001
Mercury	Neg.	0.00000	0.0000	0.00001	0.00000
Beryllium	Neg.	0.00000	Neg.	0.00002	0.00002
Arsenic	Neg.	0.00000	Neg.	0.00007	0.0001
Sulfuric Acid Mist	Neg.	0.01	Neg.	0.03	0.04

Note: Calculations in this table are performed as follows: Fuel use times emission factor equals emission rate; e.g. 20 MM scf/yr x 3 lb/MM scf + 2,000 lb/ton = 0.03 TPY (Note: Roundoff from Lotus may slightly different than calculations using a calculator.).

ft<sup>3</sup>/yr = cubic feet per year

gal/yr = gallons per year

% = percent

lb/mm = pounds per millimeter

scf = standard cubic feet

gal = gallons

Btu/hr = British thermal unit per hour

PM = particulate matter

PM10 = particulate matter (PM10)

TPY = tons per year

- <sup>a</sup> Boiler 4 has a heat input capacity of less than  $100 \times 10^6$  Btu/hr; therefore, emissions factors for industrial boilers were used.
- <sup>b</sup> Boiler 5 has a heat input capacity of greater than  $100 \times 10^6$  Btu/hr; therefore, emission factors for utility boilers were used.
- <sup>c</sup> Based on annual operating reports (See Appendix A).
- <sup>d</sup> Based on equation:  $10 S + 3$ , where S = sulfur content. PM10 is 71% of PM emissions.
- <sup>e</sup> Based on equation:  $157 S$ , where S = sulfur content.
- <sup>f</sup> Nitrogen oxides emissions based on ratio of residual and distillate oil emission factors [ $67 \text{ lb}/10^3 \text{ gallons} \times 20 \text{ lb}/10^3 \text{ gallons}$  (for distillate)  $\div 55 \text{ lb}/10^3 \text{ gallons}$  (for residual)].



91062C2/ADNDM  
03/04/92

Table 2-6. Net Emission Reductions From Boilers 1 Through 5 at UF Central Heating Plant

Pollutant	Net Emission Reduction (TPY)		
	Boilers <sup>a</sup> 1, 2 and 3	Boilers <sup>b</sup> 4 and 5	Total
Particulate Matter	-1.00	-3.13	-4.13
Particulate Matter (PM10)	-0.96	-2.42	-3.38
Sulfur Dioxide	-1.99	-34.08	-36.07
Nitrogen Oxides	-72.18	-62.69	-134.87
Carbon Monoxide	-11.04	-9.38	-20.41
Volatile Organic Compounds (methane)	-0.37	-0.31	-0.67
Volatile Organic Compounds (nonmethane)	-0.55	-0.49	-1.05
Lead	-0.0000	-0.0004	-0.0004
Fluorides	-0.0003	-0.0051	-0.0054
Mercury	-0.00000	-0.00	-0.00
Beryllium	-0.00000	-0.00006	-0.00006
Arsenic	-0.0000	-0.0003	-0.0003
Sulfuric Acid Mist	-0.0411	-0.7366	-0.7777

These  
offsets  
accepted  
by Dept.  
and were  
based on  
Table 2-5

Note: TPY = tons per year.

<sup>a</sup>Based on emissions in Table 2-3.

<sup>b</sup>Based on subtracting emissions in Table 2-4 from emissions in Table 2-5.

two year period is more representative of normal operation. This is summarized in the following excerpt from EPA's 1991 workshop document on creditable emission changes:

"In certain limited situations where the applicant adequately demonstrates that the prior two years is not representative of normal source operation, a different two year time period may be used upon a determination by the reviewing agency that it is more representative of normal source operation."  
(emphasis added)

Therefore, since EPA requires that any alternate representative period be no more than two years, 1989 and 1991 would be the proper two years on which to base actual emissions for this project. As it turns out, the applicant's proposed offsets based on 1988 through 1990 are within 1% of the 1989/1991 average, therefore the Department can use the applicant's offset estimates. The increased emissions from this project are:

↑  
OFFSETS BASED  
ON FUEL USE IN  
TABLE 2-5.

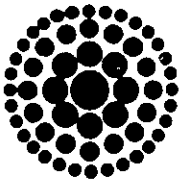
Allowable Emissions (TPY)

	<u>Gas Turbine</u>		<u>Duct Burner</u>	<u>Total</u>	<u>Offsets</u>	<u>Net Increase</u>
	<u>NG</u>	<u>Oil</u>	<u>NG</u>			
NO <sub>x</sub>	142.7	7.3	24.6	174.6	134.9	39.7
SO <sub>2</sub>	4.3	21.6*	0.7	26.6*	36.1	- 9.5*
PM/PM <sub>10</sub>	10.2	1.1	2.5	13.8	3.4	10.4
CO	158.0	7.7	36.9	202.6	20.4	182.2
VOC	6.5	0.4	10.6	17.5	1.1	16.4
H <sub>2</sub> SO <sub>4</sub>	0.3	2.0	0.1	2.4	0.8	1.6

\* Estimate based on 0.5% fuel sulfur content

III. Rule Applicability

The construction permit application is subject to review under Chapter 403, Florida Statutes, and Florida Administrative Code (F.A.C.) Chapters 17-2 and 17-4. The proposed facility is subject to the provisions of F.A.C. Rule 17-2.500, Prevention of Significant Deterioration (PSD). The facility is located in an area classified as attainment for all regulated air pollutants. The proposed increase in carbon monoxide (CO) emissions exceeds the significant level set forth in Table 500-2 of F.A.C. Rule 17-2.500. Preconstruction review must include a determination of Best Available Control Technology (BACT), good-engineering practice stack height, ambient impact analysis, impact on soils, vegetation and visibility. Applicable emission limit rules are F.A.C. Rules 17-2.660, Table 660-1, Section 60.330, New Source Performance Standards for Stationary Gas Turbines, Subpart GG, and Section 60.40b, Subpart Db, Industrial/Commercial/Institutional Steam Generating Units. Limits for nitrogen oxides (NO<sub>x</sub>) and particulate matter (PM) emissions will be based on the turbine manufacturer's performance guarantees since they are more stringent than the NSPS



**Florida  
Power**  
CORPORATION

**RECEIVED**

JUL 29 1992

Division of Air  
Resources Management

July 24, 1992

Mr. Jeff Braswell, Esq.  
Office of General Counsel  
Florida Department of Environmental Regulation  
2600 Blairstone Road  
Tallahassee, FL 32399-2400

Dear Mr. Braswell:

Re: Florida Power Corporation/University  
of Florida Cogeneration Project  
Permit No. AC 01-204652, PSD-FL-181

On June 8, 1992, Florida Power Corporation (FPC) received the Technical Evaluation and Preliminary Determination and proposed air construction permit for the above referenced facility. Because of unresolved issues at the time, an extension to July 24, 1992 in which to file a petition for an administrative hearing was subsequently granted. As of today, based on a conversation with Mr. Preston Lewis of FDER, unresolved issues still remain. Therefore, pursuant to Section 17-120.070, FAC, FPC respectfully requests an additional extension of time in which to file a petition for an administrative hearing under Section 120.57 FS, up to and including August 24, 1992.

Thank you for your consideration of this request. Please contact Mr. Scott Osbourn at (813)866-5158 if you have any questions.

Sincerely,

W. Jeffrey Pardue, Manager  
Environmental Programs

cc: C. Fancy, FDER-Tallahassee



Richard W. Neiser  
Senior Vice President  
Legal and  
Governmental Affairs

May 29, 1992

TO WHOM IT MAY CONCERN

Subject: Letter of Authorization

Please be advised that Patricia K. Blizzard, Director, Environmental Services Department, and Mr. W. Jeffrey Pardue, Manager of Environmental Programs, are authorized to represent Florida Power Corporation in matters relating to necessary permits and reporting documentation required from regulatory authorities in the areas of air, water, power plant site certifications and transmission line certifications, or hazardous and solid materials issues.

Sincerely,

A handwritten signature in cursive script that reads "Richard W. Neiser". The signature is written in black ink and is positioned above the printed name.

Richard W. Neiser

RWN:db