To Mark Sinn

Date 12/4 Time 9:27

WHILE YOU WERE OUT

M Brian Petersmann

of

Phone 913-339-2124
Area Code Number Extension

~~TELEPHONED~~	~~PLEASE CALL~~
CALLED TO SEE YOU	~~WILL~~ CALL AGAIN
WANTS TO SEE YOU	URGENT
RETURNED YOUR CALL	

Message

Operator

Conference Call this morning
OUC Indian River
25 sources ↔ combining

Impact area - 50 km area
want idea of density - max
conc at about 10 km

Look at 1-year 1982 - must
they use all 5-years. If less
than 50-60 % of stand.
PSD guidelines require 5 years

Monitoring Background for SO_2
24-hr - get and call Brian

Nelson

380 004 F02 (97)
Titusville / TICO Airport off US1
June - Dec.

	24 hr ($\mu g/m^3$)	Arith mean
GSD-~~244~~	34 29	3

380 009 H 02
Orlando Util US1 + Kings Hwy
Jun-Dec

	24 hr	Arith. mean
	11 11	5

GSD-176

PSD APPLICABILITY ANALYSIS

POLLUTANT	MAX EMISSION RATE (LB/HR)	TPY	PSD SIGN EMISS TPY	PCT OF ALLOWABLE
PM	10	43.8	25	175.2
CO	10.1	44.238	100	44.238
NOx	118.3	518.154	40	1295.385
SO2	142.7	625.026	40	1562.565
VOC	4	17.52	40	43.80001
Pb	0	0	.6	0
Be	0	0	.0004	0
Hg	0	0	.1	0
Fl	0	0	3	0
H2SO4	0	0	7	0
ASBESTOS	0	0	.007	0
PVC	0	0	1	0
TRS	0	0	10	0
RSC	0	0	10	0

HIT ANY KEY TO CONTINUE

Gas

PSD APPLICABILITY ANALYSIS

POLLUTANT	MAX EMISSION RATE (LB/HR)	TPY	PSD SIGN EMISS TPY	PCT OF ALLOWABLE
PM	2.5	10.95	25	43.8
CO	10	43.8	100	43.8
NOx	75.1	328.938	40	822.345
SO2	25.4	111.252	40	278.13
VOC	4	17.52	40	43.80001
Pb	0	0	.6	0
Be	0	0	.0004	0
Hg	0	0	.1	0
Fl	0	0	3	0
H2SO4	0	0	7	0
ASBESTOS	0	0	.007	0
PVC	0	0	1	0
TRS	0	0	10	0
RSC	0	0	10	0

HIT ANY KEY TO CONTINUE

PSD APPLICABILITY ANALYSIS

Oil

POLLUTANT	MAX EMISSION RATE (LB/HR)	TPY	PSD SIGN EMISS TPY	PCT OF ALLOWABLE
PM	10	43.8	25	175.2
CO	10.1	44.238	100	44.238
NOx	118.3	518.154	40	1295.385
SO2	142.7	625.026	40	1562.565
VOC	4	17.52	40	43.80001
Pb	0	0	.6	0
Be	0	0	.0004	0
Hg	0	0	.1	0
Fl	0	0	3	0
H2SO4	0	0	7	0
ASBESTOS	0	0	.007	0
PVC	0	0	1	0
TRS	0	0	10	0
RSC	0	0	10	0

HIT ANY KEY TO CONTINUE

Is the source in a nonattainment area for any emitted pollutant? N

Is the source major only if fugitive emissions are considered in calculating the Total Potential to Emit?

? O
RSC -- ENTER EMISSION RATE IN LB/HR.
? O

PSD APPLICABILITY ANALYSIS

POLLUTANT	MAX EMISSION RATE (LB/HR)	TPY	PSD SIGN EMISS TPY	PCT OF ALLOWABLE
PM	40	175.2	25	700.8
CO	40.4	176.952	100	176.952
NOx	473.2	2072.616	40	5181.54
SO2	570.8	2500.104	40	6250.261
VOC	16	70.08	40	175.2
Pb	0	0	.6	0
Be	0	0	.0004	0
Hg	0	0	.1	0
F1	0	0	3	0
H2SO4	0	0	7	0
ASBESTOS	0	0	.007	0
PVC	0	0	1	0
TRS	0	0	10	0
RSC	0	0	10	0

HIT ANY KEY TO CONTINUE

SIGNIFICANT IMPACT ANALYSIS

POLLUTANT	AVG TIME	MAX CONC (µg/m3	SIGN IMPACT LEVEL (µg/m3)	PCT OF STANDARD
SO2	3-hr	20.3	25	81.2
SO2	24-hr	4.95	5	98.99999
SO2	Annual	.4	1	40
PM	24-hr	.3	5	6
PM	Annual	.3	1	30
NOx	Annual	.3	1	30
CO	1-hr	10	2000	.5
CO	8-hr	1.3	500	.26

If each pollutant's impact is less than significant then the emissions of other facilities need not be considered.

HIT ANY KEY TO RETURN TO THE MAIN MENU

AMBIENT MONITORING REQUIREMENT ANALYSIS

POLLUTANT	AVG TIME	PREDICTED IMPACT (µg/m3)	DEMIN IMPACT LEVEL (µg/m3)	PCT OF STANDARD
PM	24-hr	.3	10	3
SO2	24-hr	4.95	13	38.07692
NO2	Annual	.3	14	2.142857
CO	8-hr	1.3	575	.226087
VOC	TPY	40	100	40

$\bar{X} = 6.05\ (10^{-5})$

$S = 3.25\ (10^{-5})$

$CV = \frac{S}{\bar{X}}(100)\%$

$= \frac{3.25}{6.05} = .54$

54%

Range

$5.9(10^{-5})$

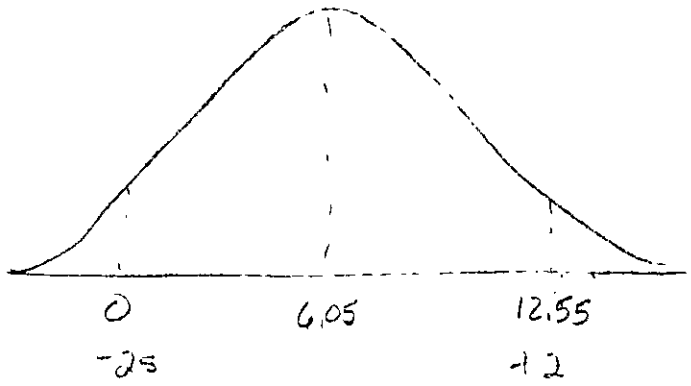
$\bar{X} = 9.23\ (10^{-4})$

$S = 2.55\ (10^{-4})$

$CV = \frac{2.55}{9.23} = .28$

28%

$5.1\ (10^{-4})$.



No buildings downwash, beyond 171.5L

MLOUC

CILITY: OUC Indian River Turbines
PE OF MODELING: SO_2 at .8% Sulfur

LLUTANT: SO_2 AVG. TIME: Annual (MAX) OR H2H?

AR	CONC.	DIR.	DIST.	DAY	PERIOD
81	0.9	180	8000		
82	1.0	220	8000		
83	0.8	190	9000		
84	1.1 *	240	7000		
85	0.9	240	7000		

SO_2 (.3)	NO_x	CO	PM_{10} TSP
.4	.3	.03	.03

LLUTANT: AVG. TIME: 3-Hr MAX OR (H2H?)

AR	CONC.	DIR.	DIST.	DAY	PERIOD
81	43.2	180	10,000	329	1
82	54.0 *	190	10,000	68	2
83	43.4	170	10,000	300	8
84	45.0	140	10,000	101	2
85	43.8	320	12,000	211	7

SO_2 (.3)	NO_x	CO	PM_{10} TSP
20.3	16.8	1.4	1.4

LLUTANT: AVG. TIME: 24-Hr MAX OR (H2H?)

AR	CONC.	DIR.	DIST.	DAY	PERIOD
81	9.7	300	8000	88	
82	13.2 *	180	10,000	313	
83	9.6	310	8000	163	
84	10.7	240	10000	267	
85	11.9	240	13000	50	

SO_2 (.3)	NO_x	CO	PM_{10} TSP
5.0	4.1	.4	.4

LLUTANT: AVG. TIME: MAX OR H2H?

AR	CONC.	DIR.	DIST.	DAY	PERIOD

LLUTANT: AVG. TIME: MAX OR H2H?

AR	CONC.	DIR.	DIST.	DAY	PERIOD

Table 2

OUC Indian River Plant Combustion Turbines
Maximum Air Quality Impacts for Comparison to
~~the~~ De minimimis Ambient Levels and the
~~The~~ Significant Impact Analysis

Pollutant and Averaging Time	Predicted Impact ($\mu g/m^3$)	De minimimis Ambient Impact Level ($\mu g/m^3$)	Significant Impact Level ($\mu g/m^3$)
PM (24-hour)	0.4	10	5
PM (annual)	< 0.1	—	1
SO_2 (3-hour)	20.3	—	25
SO_2 (24-hour)	5.0	13	.5
SO_2 (Annual)	0.4	—	1
NO_2 (Annual)	0.3	14	1
CO (1-hour)	1.6 (1)	—	2000
CO (8-hour)	1.4 (2)	575	500

(1) 1-hour CO concentration is based on (3-hour impact)/.9

(2) 8-hour CO concentration is based on a 3-hour impact.

(17,98)

SO_2 emissions 142.7 lb/hr/unit = 18.0 g/s/unit

4 units = 71.92 g/s

They modeled 191.76 g/s

24 hr. HSH Model says 13.17932 $\mu g/m^3$

Applicant ratios by $\frac{71.8}{191.76} = .38$ so impact of 5.01 $\mu g/m^3$

$= .375$ so impact of 4.94 $\mu g/m^3$

Sign impact = 5 $\mu g/m^3$

ORLANDO UTILITIES COMMISSION
500 SOUTH ORANGE AVENUE • P. O. BOX 3193 • ORLANDO, FLORIDA 32802 • 407/423-9100

Certified Mail No. P 971-587-783
Return Receipt Requested

July 21, 1992

Mr. C. H. Fancy, P. E.
Deputy Chief
Bureau of Air Quality Management
Florida Department of
Environmental Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Mr. Fancy:

Pursuant to 40 CFR Part 60, Chapter 17-2, and PSD FL-173, the Orlando Utilities Commission (OUC) is hereby providing notification of the anticipated dates of initial startups for Combustion Turbines C and D as follows:

CT - C	August 10, 1992
CT - D	September 14, 1992

Both Combustion Turbines are located at OUC's Indian River Plant, approximately 10 km. south of Titutsville, FL (521.5 km. East and 3151.65 km. North).

By copy of this correspondence, I am also providing Notice to DER Central District office.

If you have any questions regarding this transmittal, please contact me at 407/423-9133.

Sincerely,

Robert F. Hicks
Environmental Engineer

RFH:rc

cc: Alex Alexander - DER Central District Office
Q. Harper, EPA
CHF/PL

Best Available Control Technology (BACT) Determination
Orlando Utilities Commission-Indian River Power Plant
Brevard County

The applicant proposes to install combustion turbine Units C and D at their Indian River facility. The generator systems will consist of two nominal 129 megawatt (MW) combustion turbines.

The combustion turbine will be capable of simple cycle operation. The applicant requested that the combustion turbine use either natural gas or distillate oil. The Department's calculations indicate the maximum annual tonnage of regulated air pollutants emitted from the facility based on 25 percent capacity factor for No. 2 fuel oil firing and 50 percent capacity factor for all fuels at peak load and ISO conditions to be as follows:

	Potential Emissions (tons/year)						
	Peak Load/20 F			Baseload/ISO			PSD Significant
Pollutant	Natural Gas 50% CF*	Fuel Oil 25% CF	Combine Fuels 25% CF for oil plus 25% CF for nat. gas	Natural Gas 50% CF	Fuel Oil 25% CF	Combine Fuels 25% CF for oil plus 25% CF for nat. gas	Emission Rate (tons/yr)
NO_x	591.5	506	801.8	534.5	440	707.3	40
SO_2	2.1	953	954.1	2.5	839	840.3	40
PM	19.5	237	246.8	17.5	210	218.8	25
PM_{10}	19.5	237	246.8	17.5	210	218.8	15
CO	313	159	315.5	287	159	302.5	100
VOC	37	112	130.5	39.5	101	120.8	40
H_2SO_4	0.07	28.5	28.5	0.08	25	25	7
Be	0.0	0.01	0.01	0.0	0.01	0.01	0.0004
Hg	0.0	0.01	0.01	0.0	0.01	0.01	0.1
Pb	0.0	0.08	0.08	0.0	0.07	0.07	0.6

* CF = Capacity Factor

Florida Administrative Code Rule 17-2.500(2)(f)(3) requires a BACT review for all regulated pollutants emitted in an amount equal to or greater than the significant emission rates listed in the previous table.

Date of Receipt of a BACT Application

March 7, 1991

BACT Determination Requested by the Applicant

Pollutant	Determination
NO_x	25 ppmvd @ 15% O_2 (natural gas burning) 42 ppmvd @ 15% O_2 (diesel oil firing)
SO_2	Firing of natural gas or No. 2 fuel oil with a maximum sulfur content of 0.30%
PM and PM_{10}	Combustion control
H_2SO_4	Firing of No. 2 fuel oil with a maximum sulfur content of 0.30%
Be	Firing of No. 2 fuel oil

BACT Determination Procedure

In accordance with Florida Administrative Code Chapter 17-2, Air Pollution, this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, taking into account energy, environmental and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that in making the BACT determination the Department shall give consideration to:

(a) Any Environmental Protection Agency determination of Best Available Control Technology pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 (Standards of Performance for New Stationary Sources) or 40 CFR Part 61 (National Emission Standards for Hazardous Air Pollutants).

(b) All scientific, engineering, and technical material and other information available to the Department.

(c) The emission limiting standards or BACT determinations of any other state.

(d) The social and economic impact of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine for the emission source in question the most stringent control available for a similar or identical source or source category. If it is shown that this level of control is technically or economically infeasible for the source in question, then the next most stringent level of control is determined and similarly

evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

The air pollutant emissions from simple cycle power plants can be grouped into categories based upon what control equipment and techniques are available to control emissions from these facilities. Using this approach, the emissions can be classified as follows:

- Combustion Products (Particulates and Heavy Metals). Controlled generally by good combustion of clean fuels.

- Products of Incomplete Combustion (CO, VOC, Toxic Organic Compounds). Controlled generally by proper combustion techniques.

- Acid gases (SOx, NOx, HCl, Fl). Controlled generally by gaseous control devices.

Grouping the pollutants in this manner facilitates the BACT analysis because it enables the equipment available to control the type or group of pollutants emitted and the corresponding energy, economic, and environmenal impacts to be examined on a common basis. Although all of the pollutants addressed in the BACT analysis may be subject to a specific emission limiting standard as a result of PSD review, the control of "nonregulated" air pollutants is considered in imposing a more stringent BACT limit on a "regulated" pollutant (i.e., particulates, sulfur dioxide, fluorides, sulfuric acid mist, etc.), if a reduction in "nonregulated" air pollutants can be directly attributed to the control device selected as BACT for the abatement of the "regulated" pollutants.

Combustion Products

The Orlando Utility Commission's projected emissions of particulate matter, PM10, and beryllium surpass the significant emission rates given in Florida Administrative Code Rule 17-2.500, Table 500-2 for No.2 fuel oil firing only.

A PM/PM10 emissions limitation of 0.08 lb/MMBtu for No. 2 fuel oil firing is reasonable as BACT for the Indian River facility.

In general, the BACT/LAER Clearinghouse does not contain specific emission limits for beryllium from turbines. BACT for these heavy metals is typically represented by the level of particulate control. As this is the case, the emission factor of 0.08 lb/MMBtu for particulate matter PM10 is judged to also represent BACT for beryllium.

Products of Incomplete Combustion

The emissions of carbon monoxide and volatile organic compounds are each above the significant level and therefore require a BACT analysis.

Carbon monoxide and VOC are formed during the incomplete combustion of the fuel. High combustion temperatures, adequate excess air and good fuel/air mixing during combustion will minimize CO and VOC emissions. Therefore, NO_x control methods which use combustion staging and lowering combustion temperature by water injection, can be counterproductive with regard to CO and VOC emissions.

To achieve the proposed NO_x BACT levels requires that these control techniques be used. Therefore, this turbine design will have significantly higher CO and VOC emissions than associated with a standard combustor. At the proposed BACT NO_x emissions of 25/42 ppmvd (gas/oil), the turbine will be capable of maintaining CO and VOC emission rates of 25 ppmvd and 5 ppmvd, respectively while burning natural gas. For fuel oil firing, the CO and VOC emission rates will be 25 ppmvd and 15 ppmvd, respectively.

Based on a review of EPA's BACT/LAER Clearinghouse--A Compilation of Control Technology Determinations (1985 and 1990 editions), a combustion turbine with proper combustion control and an oxidizing catalyst that limits CO emissions to 2 ppmvd represents LAER. An oxidizing catalyst is also LAER technology for VOC emissions but the specific ppmvd emission rate was not specified in the clearinghouse document.

Catalytic reduction is a post-combustion method for controlling CO and VOC emissions. The process uses a precious metal to oxidize CO to CO_2 with the use of a catalyst and VOC hydrocarbons to CO_2 and H_2O. None of the catalyst components are considered toxic. The optimum flue gas temperature range for CO/VOC catalyst operation is between 850°F and 1,100°F. Flue gas from the combustion turbine will typically be between 950°F to 1,100°F. Therefore, a CO/VOC catalyst could be installed at the discharge of the combustion turbine.

The applicant states that the levelized annual cost for the catalyst system is about $3.5 million/year. This system would reduce about 310 tons per year of CO/VOC at a 50% capacity factor. This reduction results in an incremental removal cost of approximately $11,000 per ton of CO/VOC removed. This cost is well above that previously accepted as representative of BACT.

In addition, a CO/VOC catalyst located downstream of the combustion turbine exhaust will create additional back pressure reducing output by approximately 600 KW per turbine.

Other Emissions

The project will emit trace quantities of other pollutants at levels which are below the significant emission levels established for the PSD program. Federal and state regulations do not require that BACT be applied for these pollutants but the effects of the proposed BACT determinations on these pollutants must be considered.

Other Regulated and Hazardous Pollutants

The emission rates for mercury, lead and hazardous pollutants, when firing No. 2 fuel oil, have been developed based on manufacturers' information and on information contained in the EPA publications Toxic Air Pollutant Emission Factors--A Compilation for Selected Air Toxic Compounds and Sources (EPA-450/2-88-006a).

The most reliable method of controlling these emissions are complete combustion and the inherent quality of the fuel. Injection of water into the turbines to control NO_x emissions has a significant effect on controlling these pollutants. Further control has been accomplished by using either a baghouse or scrubber.

Acid Gases

The emission of sulfur dioxide, nitrogen oxides, and sulfuric acid mist represents a significant proportion of the total emissions and need to be controlled, if deemed appropriate. Sulfur dioxide emissions from combustion turbines are directly related to the sulfur content of the fuel being combusted.

The applicant has proposed the use of natural gas and No. 2 fuel oil with a maximum sulfur content of 0.30 percent to control sulfur dioxide emissions. A review of the latest edition (1990) of the BACT/LAER Clearinghouse indicates that sulfur dioxide emissions from combustion turbines have been controlled by limiting fuel oil sulfur content to a range of 0.1 to 0.30 percent, with the average for the facilities listed being approximately 0.24 percent. As this is the case, the applicant's proposal to use No. 2 fuel oil with a maximum sulfur content of 0.30 percent is judged to represent BACT.

The applicant has stated that BACT for nitrogen oxides will be met using wet (water or steam) injection necessary to limit emissions to 42 ppmvd or 25 ppmvd at 15 percent oxygen when burning No. 2 fuel oil or natural gas, respectively.

A review of the EPA's BACT/LAER Clearinghouse indicates that the lowest NOx emission limit established to date for a combustion turbine is 4.5 ppmvd at 15 percent oxygen. This level of control was accomplished through the use of water injection and a selective catalytic reduction (SCR) system contained within the heat recovery steam generator (combined cycle operation). A review of the EPA's BACT/LAER Clearinghouse also indicated that the lowest NOx emission levels established to date for a combustion turbine operating in a simple cycle mode was the use of water or steam injection with an improved low NOx burner design. The OUC Indian River project will operate in the simple cycle mode.

Selective catalytic reduction is a post-combustion method for control of NOx emissions. The SCR process combines vaporized ammonia with NOx in the presence of a catalyst to form nitrogen and

water. The vaporized ammonia is injected into the exhaust gases prior to passage through the catalyst bed. The SCR process can achieve up to 90 percent reduction of NOx with a new catalyst. As the catalyst ages, the maximum NOx reduction will decrease to approximately 86 percent. The optimum temperature range for an SCR is approximately 650 to 750 F. Flue gas from a combustion turbine operating in a simple cycle mode will typically be 950 F to 1,100 F. Therefore, the flue gas would have to be cooled prior to the injection of ammonia and to protect the catalyst from damage due to the high flue gas temperatures. SCR manufacturers are currently experimenting with a catalyst that can withstand the high flue gas temperatures associated with simple cycle operation. However, high temperature catalysts are still in a development stage and have not been demonstrated on full scale projects.

Given the applicant's proposed BACT level for nitrogen oxides control stated above, an evaluation can be made of the cost and associated benefit of using SCR as follows:

The applicant had indicated that the total levelized annual cost (operating plus amortized capital) to install SCR for natural gas firing at 50 percent capacity factor is $3,840,000. For fuel oil firing at 25 percent capacity factor, the total levelized annual cost to install SCR is $2,940,000. Taking into consideration the total levelized annual cost, a cost/benefit analysis of using SCR can now be developed.

Based on the information supplied by the applicant, it is estimated that the maximum annual NOx emissions with wet injection from the Indian River facility will be 707 tons/year while firing natural gas 25% and fuel oil 25% of the year. Assuming that the SCR would reduce the NOx emissions by an additional 80 to 85 percent, the SCR would control approximately 560 tons of NOx annually. When this reduction is taken into consideration with the total levelized annual cost of $3,840,000, the cost per ton of controlling NOx is $6,860. This cost is higher than has previously been approved as BACT.

Environmental Impact Analysis

The predominant environmental impacts associated with this proposal would be related to the use of SCR for NOx control. The use of SCR results in emissions of ammonia, which may increase with increasing levels of NOx control. In addition, some catalysts may contain substances which are listed as hazardous waste, thereby creating an additional environmental burden. Although the use of SCR does have some environmental impacts, the disadvantages normally do not outweigh the benefit which would be provided by reducing nitrogen oxide emissions by 80 percent.

In addition to the criteria pollutants, the impacts of toxic pollutants associated with the combustion of natural gas and No. 2 fuel oil have been evaluated. Beryllium for oil fired operation

exceeds PSD significance levels. Other toxics are expected to be emitted in minimal amounts, with the total emissions combined to be less than 0.1 tons per year.

Although the emissions of the toxic pollutants could be controlled by particulate control devices such as a baghouse or scrubber, the amount of emission reductions would not warrant the added expense. As this is the case, the Department does not believe that the BACT determination would be affected by the emissions of the toxic pollutants associated with the firing of natural gas or No. 2 fuel oil.

Potentially Sensitive Concerns

With regard to controlling NOx emission with SCR, the applicant has identified the following technical limitations:

1. SCR would reduce output of combustion turbines by one percent.

2. SCR could result in the release of unreacted quantities of ammonia to the atmosphere.

3. SCR would require handling of ammonia by plant operators. Since it is a hazardous material, there is concern about safety and productivity of operators.

4. SCR results in contaminated catalyst from flue gas trace elements which could be considered hazardous. Safety of operators and disposal of spent catalyst is a concern.

BACT Determination by DER

Nox Control

A review of permitting activities for simple cycle proposals across the nation indicates that water or steam injection with improved low NOx burner design is the predominant control technology that has been required. The cost and other concerns expressed by the applicant for using additional control measures are valid.

The information that the applicant presented and Department calculations indicate that the incremental cost of controlling NOx ($6,860/ton) when firing natural gas (maximum 25%) and No. 2 fuel oil (maximum 25%) is high compared to other BACT determinations which require SCR. Based on the information presented by the applicant and the studies conducted, the

Department believes that the use of SCR for NOx control is not justifiable at this time as BACT. Therefore, the Department is willing to accept low NOx burner design with the firing of natural gas as the primary fuel.

SO2 Control

For sulfur dioxide, BACT is represented by firing natural gas (max. 50% CF) or No. 2 fuel oil with an average sulfur content not to exceed 0.30 percent, provided that the capacity attributed to oil firing does not exceed 25 percent.

CO/VOC Control

Based on the additional cost of using an oxidation catalyst (cost $11,000/ton of reduction), energy (reduce by 600 KW) and environmental considerations, BACT is represented by good combustion controls to achieve 25 ppmvd for CO and 15 ppmvd VOC firing #2 fuel oil.

Other Emissions Control

The emission limitations for PM and PM10, are based on previous BACT determinations for similar facilities, with the heavy metal beryllium being addressed through the particulate limitation and sulfuric acid mist being addressed through the sulfur dioxide limitation.

The emission limits for the Orlando Utilities Commission project are thereby established as follows:

Pollutant	Emission Limit*	
	Natural Gas Firing	No. 2 Fuel Oil Firing
NOx	25 ppmvd @ 15% O_2	42 ppmvd @ 15% O_2
SO_2	Natural gas as fuel	Sulfur content not to exceed 0.30%, by weight
PM & PM_{10}	0.003 lb/MMBtu	0.08 lb/MMBtu
CO	25 ppmvd	25 ppmvd
VOC	5 ppmvd	15 ppmvd
Sulfuric Acid Mist	Emissions limited by firing natural gas and No. 2 fuel oil with 0.3% sulfur, by weight	
Beryllium	Emissions limited by firing natural gas and No. 2 fuel oil with 0.3% sulfur, by weight	

*Both turbines are limited to a maximum of 50% capacity factor with a maximum of 25% attributed to oil firing.

Details of the Analysis May be Obtained by Contacting:

Preston Lewis, P.E., BACT Coordinator
Department of Environmental Regulation
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended by:

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

November 1 1991
Date

Approved by:

Carol M. Browner, Secretary
Dept. of Environmental Regulation

Nov. 5 1991
Date

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

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

JAN 10 1990

4APT-APB-cdw

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

RE: Orlando Utilities Commission, Indian River Plant (PSD-FL-130)

Dear Mr. Fancy:

This is to acknowledge receipt of your final determination and permits for the above referenced facility's permit modification request, dated December 19, 1989.

As stated in the review of your preliminary determination, we concur with your determination.

Thank you for the opportunity to review and comment on this package. If you have any questions or comments, please contact Mr. Gregg Worley of my staff at (404) 347-2864.

Sincerely yours,

Bruce P. Miller

Bruce P. Miller, Chief
Air Programs Branch
Air, Pesticides, and Toxics
Management Division

cc: P. Kayal
C. Collins, C Dist.
CHF/BT

Florida Department of Environmental Regulation

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

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary

January 9, 1990

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. William Herrington
Orlando Utilities Commission
500 South Orange Avenue
Orlando, Florida 32802

Dear Mr. Herrington:

Re: Permit Nos. AC 05-144482, -146749, -146750, -146751 and PSD-FL-130 for Orlando Utilities Commission's Indian River Combustion Turbines.

A typographical error in the above referenced permits should be corrected to reflect that the PM_{10} (particulate matter less than 10 microns in size) emissions, tabulated for inventory purposes, are equal to the total particulate emissions - 20 lbs/hr/unit, 87.6 tons per year (TPY)/unit, and 350 TPY for 4 units, when fired with distillate oil.

This letter shall be attached to your construction permits mentioned above, and shall become a part of those permits.

Sincerely,

Dale Twachtmann
Secretary

DT/plm

c: C. Collins, C. District
W. Aronson, EPA
C. Shaver, NPS
J. Crall, OUC
S. Day, Black & Veatch

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.
1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)*
2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:
Mr. William Herrington
Orlando Utilities Commission
500 South Orange Avenue
Orlando, FL 32802

4. Article Number
P 938 762 806

Type of Service:
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Address
X

6. Signature — Agent
X *D. William*

7. Date of Delivery

8. Addressee's Address (ONLY if requested and fee paid)

CERTIFIED MAIL ORLANDO, FLA. JAN 12 1990

PS Form **3811**, Mar. 1988 * U.S.G.P.O. 1988-212-865 **DOMESTIC RETURN RECEIPT**

P 938 762 806

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
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Sent to Mr. William Herrington, OUC	
Street and No. 500 South Orange Ave.	
P.O., State and ZIP Code Orlando, FL 32802	
Postage	$
Certified Fee	
Special Delivery Fee	
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Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$
Postmark or Date Mailed: 1-12-90 Permit: AC 144482, -146749 -50, -51 PSD-130	

PS Form 3800, June 1985