



Oleander Power Project

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RECEIVED

APR 21 1999

BUREAU OF
AIR REGULATION

April 20, 1999

Mr. Mike Halpin
Air Regulations
2600 Blairstone Road
Twin Towers
Tallahassee, FL 32399-2400

Dear Mr. Halpin,

Enclosed is the notarized proof of insertion in the legal advertisement section of Florida Today Newspaper for the "NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT" for the Oleander Power Project. The advertisement appeared on April 8, 1999.

Sincerely,

Gwendolyn Anello

cc: File
EPA
NPS
CD



Published Daily

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEP File No: 0090180-001-AC (PSD-FL-258)
Oleander Power Project, L.P.
Oleander Power Project - Unit Nos. 1-5
Brevard County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit under the requirements for the Provision of Significant Deterioration (PSD) of Air Quality to Oleander Power Project, L.P. The permit is to construct five 190 megawatt (MW) dual-fuel "F" class combustion turbines with 60-foot stacks and two 2.8 million gallon fuel oil storage tanks for Oleander Power Project located at 3527 Townsend Road, Cocoa, Brevard County. A Best Available Control Technology (BACT) determination was required for sulfur dioxide (SO₂), particulate matter (PM/PM₁₀), nitrogen oxides (NO_x), sulfuric acid mist (SAM), volatile organic compounds (VOC) and carbon monoxide (CO) pursuant to Rule 62-212.400. The applicant's name and address are Oleander Power Project, L.P., 250 West Pratt Street, 23rd Floor, Baltimore, MD 21201.

The new units are General Electric "F" class 190 MW combustion turbine electrical generators, which will operate in simple cycle mode as peaking units. The units will operate primarily on natural gas and will be permitted to operate 3390 hours (each) per year of which no more than 1000 equivalent hours will be on maximum 0.05 percent sulfur distillate fuel oil.

NO_x emissions will be controlled by Dry Low NO_x technology combustors capable of achieving emissions of 9 ppm @ 15% O₂. Emissions of NO_x will be controlled to 42 ppm under the back-up (fuel oil) operation by water injection. SO₂ and PM/PM₁₀ will be limited by use of clean fuels. Emissions of VOC and CO will be controlled by good combustion practices.

The maximum potential annual emissions in tons per year based on the revised application are summarized below

Pollutants	Maximum Potential Emissions	PSD Significant Emission Rate
PM/PM ₁₀	96	25/15
SO ₂	291	40
NO _x	1235	40
VOC	64	40
CO	412	100

An air quality impact analysis was conducted. Maximum predicted impacts due to proposed emissions from the project are less than the applicable PSD Class I and Class II significant impact levels.

The Department will issue the FINAL Permit, in accordance with the conditions of the DRAFT Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions. The Department will accept written comments concerning the proposed DRAFT Permit issuance action for a period of 30 (thirty) days from the date of publication of this Notice. Written comments should be provided to the Department's Bureau of Air Regulation, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If comments received result in a significant change in this DRAFT Permit, the Department shall issue a Revised DRAFT Permit and require, if applicable, another Public Notice. Written and oral comments will also be received at a public meeting, scheduled for May 13, 1999 at 7:00 p.m. in the Brevard County Agricultural Center, 3695 Lake Drive, Cocoa, Florida 32926.

The Department will issue FINAL Permit with the conditions of the DRAFT Permit unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S. The procedures for petitioning for a hearing are set forth below. Mediation is not available for the proposed action.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 F.S. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000, telephone: 904/488-9370, fax: 904/487-4938. Petitions must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 20-5.207 of the Florida Administrative Code.

A petition must contain the following information: (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the 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 the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the Department's action or proposed action addressed in this notice of intent.

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

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

- | | |
|--|---|
| Florida Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32301
Telephone: (850) 488-0114
Fax: (850) 922-6979 | Florida Department of Environmental Protection
Central District Office
3319 Maguire Blvd.
Orlando, Florida 32803
Telephone: (407) 894-7555
Fax: (407) 897-2968 |
|--|---|

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

STATE OF FLORIDA
COUNTY OF BREVARD

MAUREEN FARRELL

Before the undersigned authority personally appeared _____

oath says that she is **LEGAL ADVERTISING CLERK**

of the **FLORIDA TODAY** _____ a newspaper published in

Florida; that the attached copy of advertising being a **LEGAL NOTICE (3**

_____ in the matter of _____

OLEANDER POWER PROJECT

in the _____ Court _____

DEP NOTICE

was published in the **FLORIDA TODAY NEWSPAPER**

in the issues of **APRIL 8, 1999**

Affiant further says that the said **FLORIDA TODAY NEWSPAPER**

is a newspaper published in said Brevard County, Florida, and that the said

heretofore been continuously published in said Brevard County, Florida, regularly at

and has been entered as second class mail matter at the post office in **MELBOURNE**

said Brevard County, Florida, for a period of one year next preceeding the first pu

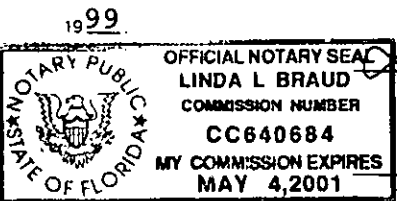
attached copy of advertisement; and affiant further says that she has neither paid no

person, firm or corporation any discount, rebate, commission or refund for the purp

this advertisement for publication in said newspaper.

Maureen Farrell
(Signature of Affiant)

Sworn to and subscribed before me this **8th** day of **APRIL**



Linda L. Braud
(Signature of Notary Public)

LINDA L. BRAUD
(Name of Notary Typed, Printed)

Personally Known _____ or Produced Identification _____

Type of Identification Produced _____

(FIRST PUBLIC MTC)
MEETING AGENDA

DEPARTMENT OF ENVIRONMENTAL PROTECTION
7:00 pm - 9:00pm MARCH 3, 1999
BREVARD COUNTY AGRICULTURAL CENTER
THIS MEETING IS OPEN TO THE PUBLIC

1. Introduction Vivian Garfein, Director, FDEP Central District
2. Public Participation Process Douglas Beason, OGC.
3. Application Details Michael P. Halpin
4. Ambient Air Impact/Modeling Cleveland G. Holladay
5. Public Comments
6. Adjourn

PUBLIC MEETING

To review application and current status of:

Oleander Power Project

Florida Dept. of Environmental Protection
Division of Air Resources Management

Michael P. Halpin
Cleveland G. Holladay



PURPOSE OF MEETING

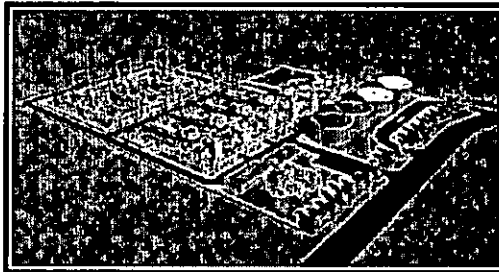
- Review the permitting process and review citizen role (Douglas Beason)
- Review the air-related details of an application to construct a power plant in the area
- Summarize the federal and state requirements for receiving an air construction permit
- Provide preliminary Department assessment of air-related issues
- Entertain questions and comments related to this project's air pollution and emission issues

DEP's Evaluation Issues:

- Whether the project is likely to conform with applicable air quality laws, regulations and standards.
- Whether the proposed process equipment and air pollution control devices are proper and will perform their functions as expected
- Whether the project is likely to cause adverse air-related environmental effects (cause new violations or contributions to existing violations of the applicable air quality standards)
- Whether any identified (air-related) adverse impacts are adequately mitigated

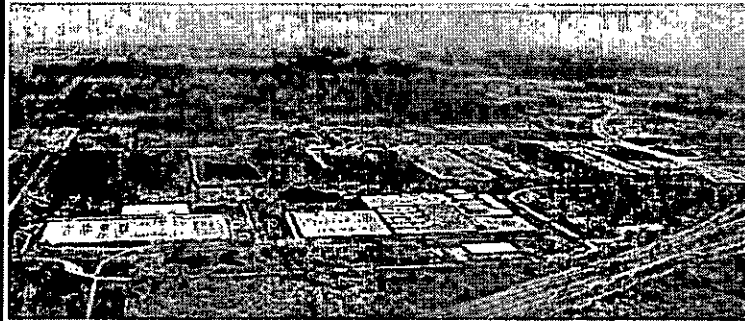
Power Plant Description

- Approximately 950 MW
- Five 190 MW Combustion Turbines (referred to as CT's); GE preferred
- Simple Cycle



Location

- 37 acres
- Townsend Road, Cocoa, Brevard County
- Near intersection I 95 & SR 520



Hwy 520
East



I-95 North



Project Sponsor

- Baltimore Gas & Electric
 - ◆ Constellation Power Development
 - ◆ Oleander Power Project

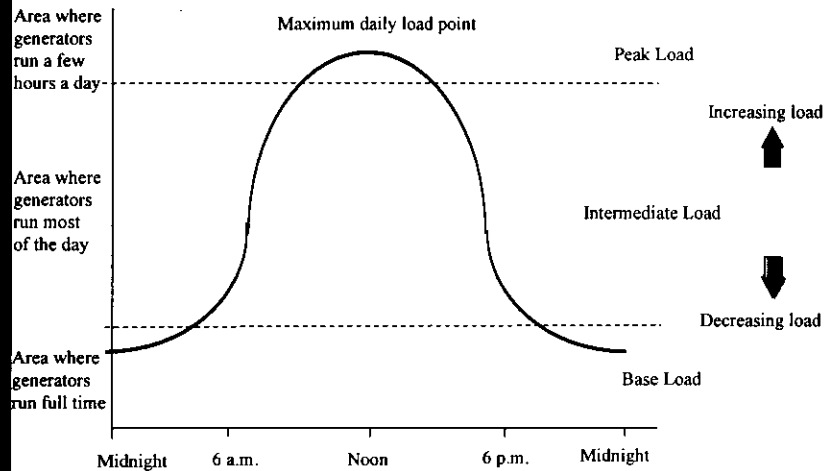
Applicant's Proposed Schedule

- Start Construction March 2000
- Start Performance Testing November 2000
- Commercial Operation January 2001

Oleander's Request

- "Peaking" Units
- Typically Used For Times of High
Electrical Usage

Example of Daily Load Curve



Application for Permit:

- 3,390 Hours of Operation for each CT
- No. 2 Fuel Oil (Diesel) for up to 1500 hours
[sulfur content of No. 2 oil to be maximum of 0.05%]. This was reduced from the applicant's original request of up to 2000 hours on oil.
- Natural Gas for remainder of 3390 hours

Maximum yearly air emissions requested (1500 hrs/yr on oil)

<u>POLLUTANT</u>	<u>One C.T. TPY</u>		
	<u>GAS</u>	<u>#2 OIL</u>	<u>5 C.T. TPY</u>
NOx	110	258	1597
PM	15	33	208
SO2	9	78	415
CO	119	75	704
VOC	14	11	94

Note: Column entitled GAS reflects an individual CT's annual emissions if all 3390 hours were on natural gas. Column entitled 5 C.T. TPY reflects the overall site's annual emissions presuming the maximum usage of fuel oil.

Regional comparison of power plant annual emissions (1997)

<u>Poll.</u>	<u>OUC-IR</u> (959 MW)	<u>FPL-CC</u> (804 MW)	<u>OUC-ST</u> (925 MW)	<u>OLNDR</u> (950 MW)
NOx	7,925	7,984	9,257	1,597
PM	173	943	253	208
SO2	23,058	17,632	8,994	415
CO	1,170	587	595	704
VOC	178	49	72	94

Notes: 1) Emissions shown are "reported actuals" for the OUC and FPL sites. These are being related to Oleander's "requested maximum" emission levels for comparison purposes only.

2) Above power plants represent dissimilar technologies and fuel types.

Best Available Control Technology

Key Points of BACT review :

- 1) case-by-case basis analysis
- 2) consider energy consumption
- 3) consider environmental impacts
- 4) consider economic impacts
- 5) consider other costs
- 6) application of BACT shall in no event exceed existing standards under 40 CFR parts 60 and 61.

Federal / Florida Rules

- Federal requirements are contained in 40 CFR 52.21, Prevention of Significant Deterioration of Air Quality (PSD)
- State of Florida has an EPA approved program with control technology review (BACT) [Rule 62-212.410]

[BACT is defined in 40 CFR 52.21(b)(12) and Rule 62-210.200(40)]

BACT as proposed by applicant:

<u>Pollutant</u>	<u>Technology</u>	<u>Corresponding emission</u>		<u>NSPS</u>
NOx	dry LNB/WI	9ppm (gas)	42ppm (oil)	75ppm
PM ₁₀	clean fuels	9 lb/hr (gas)	44 lb/hr (oil)	
SO ₂	clean fuels	0.1ppm (gas)	9ppm (oil)	150ppm
CO	Comb controls	20ppm (gas)	30ppm (oil)	
VOC	Comb controls	4ppm (gas)	8ppm (oil)	

Note: "LNB" stands for Low NOx burners ; "WI" stands for water injection and is used for oil firing;
"Comb controls" stands for combustion controls.

Comments received from National Park Service

NPS commented only on the proposed NOx limits. The NPS agreed with the applicant's proposed NOx emissions while firing natural gas, but recommended that the FDEP reduce the applicant's proposed NOx emission while firing oil from 42 ppm to 25 ppm. This recommended 40% reduction was based upon the applicant's original request for firing oil up to 2000 hours per year.

The Department's BACT review will address proposed NOx emissions while firing oil.

Modeling Analysis

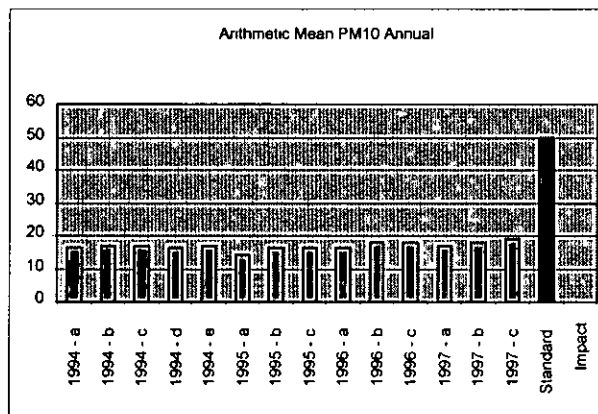
Mr. C. Holladay, Meteorologist to review air quality impacts.

Ambient Air Quality Standards (micrograms per cubic meter)

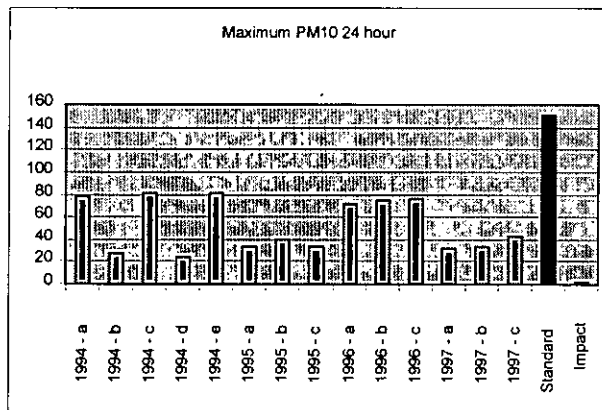
Pollutant	Averaging Time	National Primary Standard	State of Florida	Allowable Impacts	Predicted Increase in Impacts
Particulate Matter (PM10)	Annual Arithmetic Mean	50	50	17 (4) (1)	0.05
	24 hour maximum	150	150	30 (8) (5)	0.8
Sulfur Dioxide	Annual Arithmetic Mean	80	60	20 (2) (1)	0.08
	24 hour maximum	365	260	91 (5) (5)	1.1
	3 hour maximum	N/A	1300	512 (25) (25)	6.8
Carbon Monoxide	8 hour maximum	10,000	10,000	N/A (500)	3.0
	1 hour maximum	40,000	40,000	N/A (2000)	13.4
Nitrogen Oxide	Annual Arithmetic Mean	100	100	25 (2.5) (1)	0.3

Note: Numbers in (parentlesis) represent Class I levels. Numbers in (brackets) represent significant impact levels.

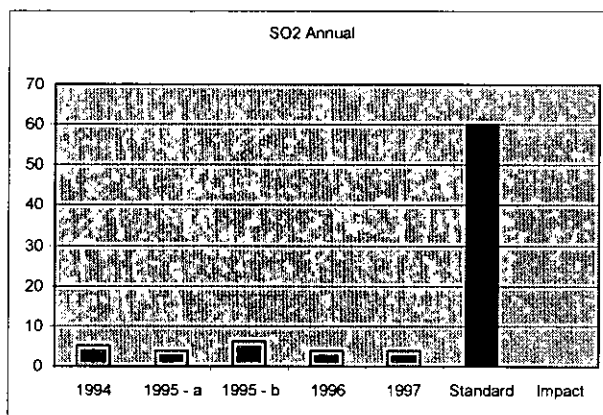
1994 - 1997 Area PM10 measurements Annual Arithmetic Mean Collected in Brevard County, Florida (units are in micrograms per cubic meter)



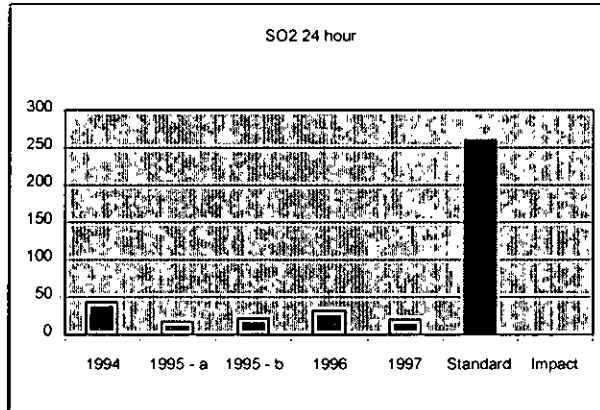
1994 - 1997 Area PM10 measurements
 Maximum 24 hour values
 Collected in Brevard County, Florida
 (units are in micrograms per cubic meter)



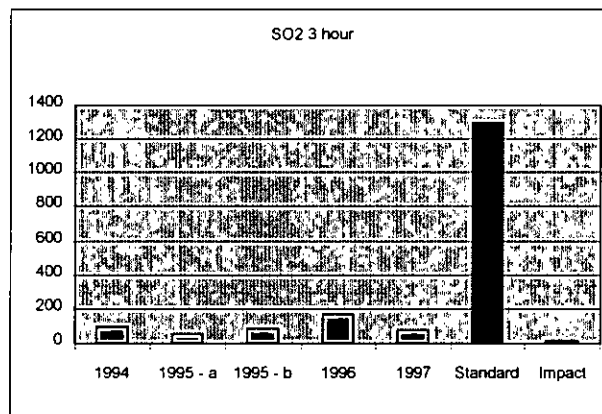
1994 - 1997 Area SO2 measurements
 Annual Arithmetic Mean
 Collected in Winter Park, Florida
 (units are in micrograms per cubic meter)



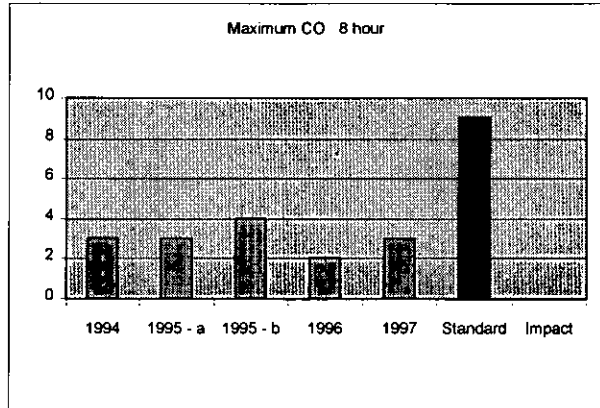
1994 - 1997 Area SO₂ measurements
 Maximum 24 hour values
 Collected in Winter Park, Florida
 (units are in micrograms per cubic meter)



1994 - 1997 Area SO₂ measurements
 Maximum 3 hour values
 Collected in Winter Park, Florida
 (units are in micrograms per cubic meter)

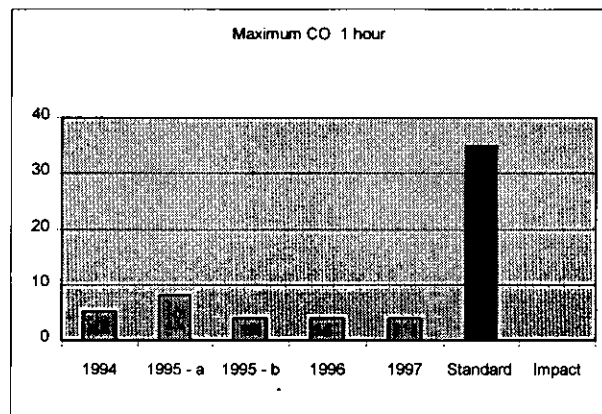


1994 - 1997 Area CO measurements
 Maximum 8 hour values
 Collected in Winter Park, Florida
 (units are in parts per million)



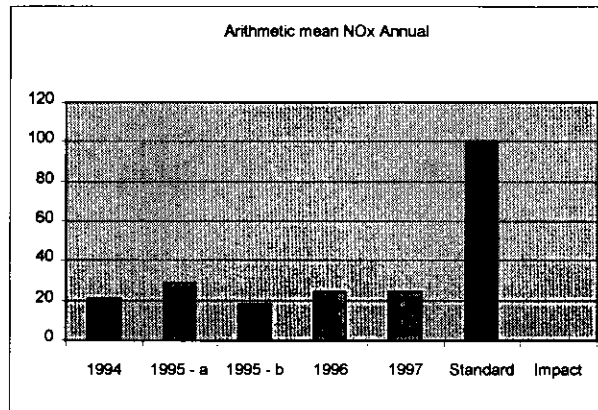
(note: 10,000 micrograms per cubic meter approximately equals 9 ppm)

1994 - 1997 Area CO measurements
 Maximum Hourly values
 Collected in Winter Park, Florida
 (units are in parts per million)



(note: 40,000 micrograms per cubic meter approximately equals 35ppm)

1994 - 1997 Area NO_x measurements
Annual Arithmetic Mean
Collected in Winter Park, Florida
(units are in micrograms per cubic meter)

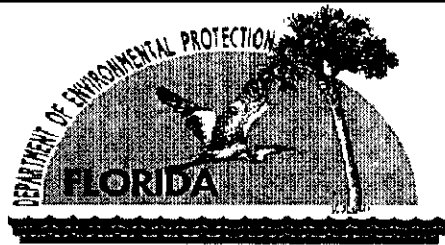


Current Status

- Application becomes complete on 3/4.
- Project appears to be capable of meeting all State and Federal air standards.
- Department has completed preliminary (*DRAFT*) Technical Evaluation.
- Current intentions are to issue an Air Construction Permit, however the Department wishes to entertain public comment beforehand.

Public Comment period

- Interested parties may comment within the allotted time frame.
- Interested parties may provide comments in writing from now through the end of the public comment period (30 days following published [newspaper] notice).



Address Comments to:

FDEP Air Resources Management
Michael P. Halpin, P.E.
2600 Blair Stone Rd M.S. #5505
Tallahassee, Florida 32399-2400

Please remember that we are only authorized to address **air pollution** issues as *this project* relates to the regulations.

TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION

Oleander Power Project, L.P.

Oleander Power Project Units 1-5
Five 190 Megawatt Combustion Turbines
Cocoa, Brevard County

DEP File No. 0090180-001-AC
PSD-FL-258

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation

March ^, 1999

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

1. APPLICATION INFORMATION

1.1 Applicant Name and Address

Oleander Power Project
250 West Pratt Street, 23rd Floor
Baltimore, MD 21201

Authorized Representative: Mr. Richard L. Wolfinger, Vice President

1.2 Reviewing and Process Schedule

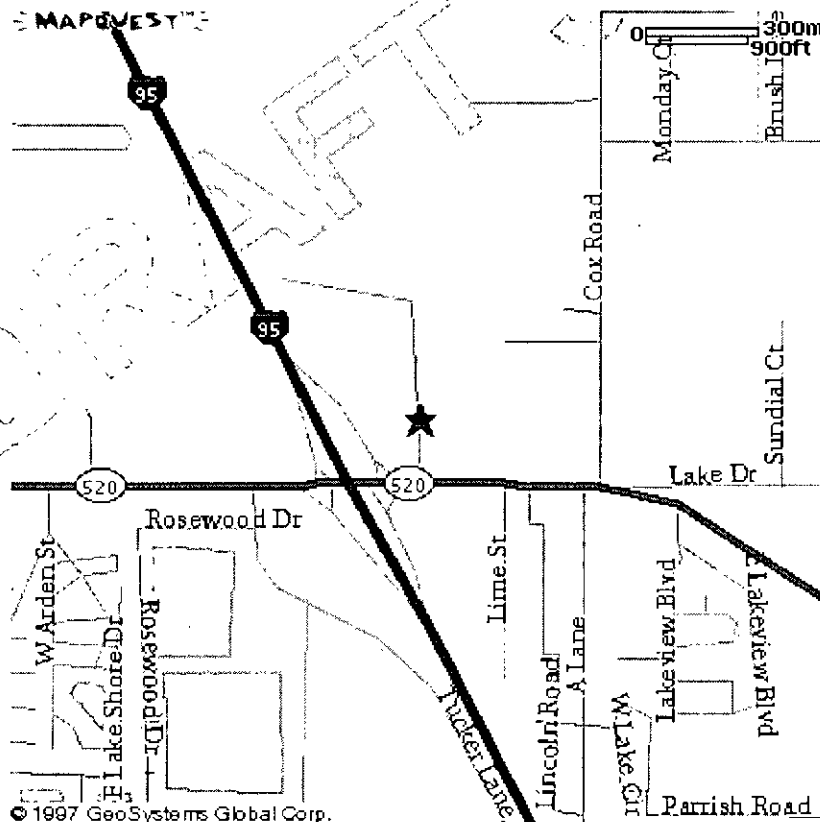
11-24-98: Date of Receipt of Application
12-17-98: DEP Incompleteness Letter
12-22-98: DEP Incompleteness Letter
02-02-99: Received Oleander Response to Incompleteness Letters
^^-99: Intent Issued

2. FACILITY INFORMATION

2.1 Facility Location

The Oleander Power Project is located at 527 Townsend Road in Cocoa, Brevard County (See Figure 1). This site is approximately 180 kilometers from the Chassahowitzka National Wilderness Area, a Class I PSD Area. The UTM coordinates for this facility are Zone 17; 520.1-km E; 3137.6 km N.

FIGURE 1



TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

2.2 Standard Industrial Classification Codes (SIC)

Industry Group No.	49	Electric, Gas, and Sanitary Services
Industry No.	4911	Electric Services

2.3 Facility Category

This facility generates electric power from five 190-MW dual-fuel "F" class combustion turbines. The combustion turbines are serviced by General Electric.

The facility is classified as a Major or Title V Source of air pollution because emissions of at least one regulated air pollutant, such as particulate matter (PM/PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), or volatile organic compounds (VOC) exceeds 100 TPY.

This facility is within an industry included in the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. Because emissions are greater than 100 TPY for at least one criteria pollutant, the facility is also a major facility with respect to Rule 62-212.400, Prevention of Significant Deterioration (PSD). Per Table 62-212.400-2, modifications at the facility resulting in emissions increases greater than the following require review per the PSD rules as well as a determination for Best Available Control Technology (BACT) per Rule 62-212.410, F.A.C.: 40 TPY of NO_x, 40 TPY of SO₂, 25/15 TPY of PM/PM₁₀, 7 TPY of Sulfuric Acid Mist, 100 TPY of CO or 40 TPY of VOC.

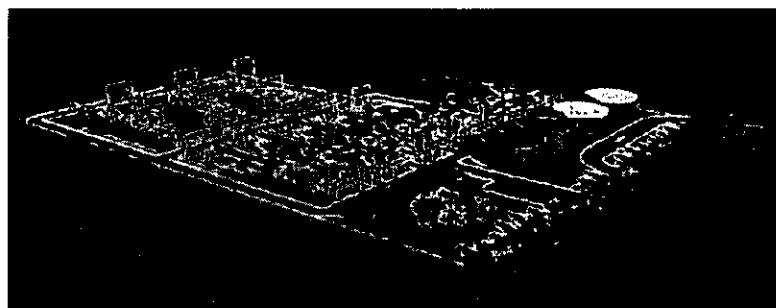
3. PROJECT DESCRIPTION

This permit addresses the following emissions units:

EMISSION UNIT NO.	SYSTEM	EMISSION UNIT DESCRIPTION
001	Power Generation	190 Megawatt Combustion Turbine
002	Power Generation	190 Megawatt Combustion Turbine
003	Power Generation	190 Megawatt Combustion Turbine
004	Power Generation	190 Megawatt Combustion Turbine
005	Power Generation	190 Megawatt Combustion Turbine
006	Fuel Storage	2.8 Million Gallon Fuel Oil Storage Tank
007	Fuel Storage	2.8 Million Gallon Fuel Oil Storage Tank

Oleander Power Project, L.P. proposes to install a nominal 950-megawatt (MW) independent power production facility (5 new simple cycle combustion turbines, Units 1-5) for the Oleander Power Project located at 527 Townsend Road in Cocoa, Brevard County. The project includes five advanced Frame "7" class (or GE Frame 7FA) combustion turbines operating primarily on natural gas and a two fuel oil storage tanks. See Figure 2.

FIGURE 2



TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

The main fuel will be natural gas and the unit will operate up to 3390 hours per year, of which no more than 1500 hours represent fuel oil operation and approximately 730 represent "low load" operation (2 hours per day). The project will result in emissions of carbon monoxide (CO), sulfur dioxide (SO₂), sulfuric acid mist (H₂SO₄), particulate matter (PM/PM₁₀), volatile organic compounds (VOC) and nitrogen oxides (NO_x). PSD review is required for each of these pollutants, since emissions (per the application) will increase by more than their respective significant emissions levels.

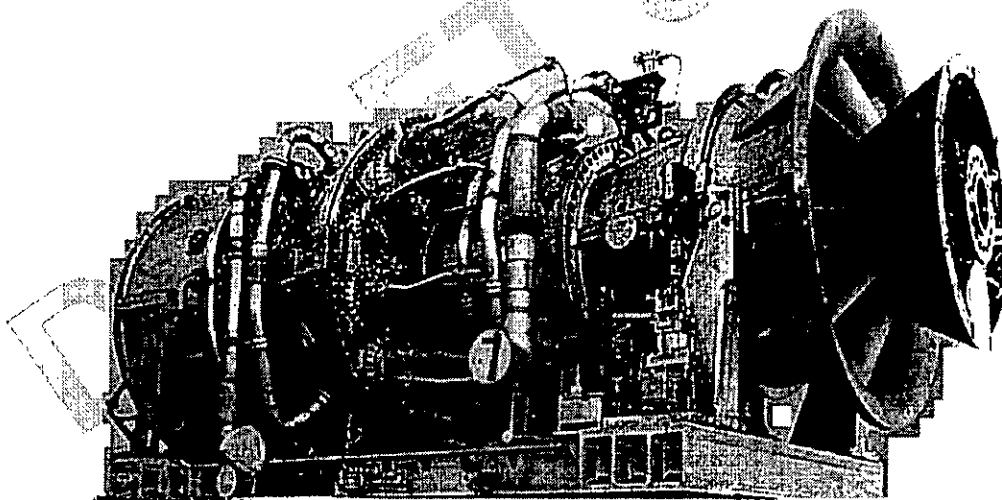
4. PROCESS DESCRIPTION

Much of the following discussion is from a 1993 EPA document on Alternative Control Techniques for NO_x Emissions from Stationary Gas turbines. Project specific information is interspersed where appropriate.

A gas turbine is an internal combustion engine that operates with rotary rather than reciprocating motion. Ambient air is drawn into the 18-stage compressor of the GE 7FA where it is compressed by a pressure ratio of about 15 times atmospheric pressure. The compressed air is then directed to the combustor section, where fuel is introduced, ignited, and burned. The combustion section consists of 14 separate can-annular combustors.

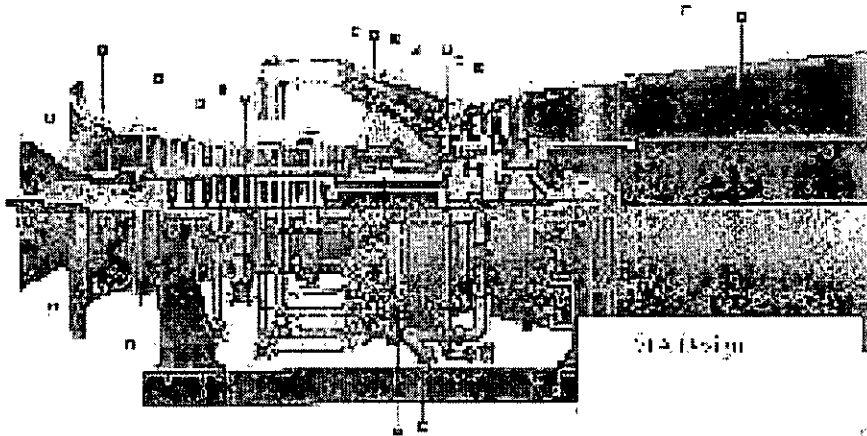
An exterior view of the GE MS 7001FA (a predecessor of the MS 7241FA) is shown in Figure 3. An internal view is shown in Figure 4.

FIGURE 3



TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

FIGURE 4



Flame temperatures in a typical combustor section can reach 3600 degrees Fahrenheit (°F). Units such as the 7FA operate at lower flame temperatures, which minimize NO_x formation. The hot combustion gases are then diluted with additional cool air and directed to the turbine section at temperatures of approximately 2400 °F. Energy is recovered in the turbine section in the form of shaft horsepower, of which typically more than 50 percent is required to drive the internal compressor section. The balance of recovered shaft energy is available to drive the external load unit such as an electrical generator.

In the Oleander project, the units will operate primarily as peaking units in the simple cycle mode. Cycle efficiency, defined as a percentage of useful shaft energy output to fuel energy input, is approximately 35 percent for F-Class combustion turbines in the simple cycle mode. In addition to shaft energy output, 1 to 2 percent of fuel input energy can be attributed to mechanical losses. The balance is exhausted from the turbine in the form of heat. In combined cycle operation, the gas turbine drives an electric generator while the exhausted gases are used to raise steam in a heat recovery steam generator (HRSG). In combined cycle mode, the thermal efficiency of the 7FA can exceed 56 percent.

Additional process information related to the combustor design, and control measures to minimize NO_x formation are given in the draft BACT determination.

5. RULE APPLICABILITY

The proposed project is subject to preconstruction review requirements under the provisions of Chapter 403, Florida Statutes, and Chapters 62-4, 62-204, 62-210, 62-212, 62-214, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.).

This facility is located in Brevard County, an area designated as attainment for all criteria pollutants in accordance with Rule 62-204.360, F.A.C. The proposed project is subject to review under Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD), because the potential emission increases for PM/PM₁₀, CO, SAM, SO₂, VOC and NO_x exceed the significant emission rates given in Chapter 62-212, Table 62-212.400-2, F.A.C.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

This PSD review consists of a determination of Best Available Control Technology (BACT) for PM/PM₁₀, VOC, CO, SAM and NO_x. An analysis of the air quality impact from proposed project upon soils, vegetation and visibility is required along with air quality impacts resulting from associated commercial, residential, and industrial growth

The emission units affected by this PSD permit shall comply with all applicable provisions of the Florida Administrative Code (including applicable portions of the Code of Federal Regulations incorporated therein) and, specifically, the following Chapters and Rules:

5.1 State Regulations

Chapter 62-4	Permits.
Rule 62-204.220	Ambient Air Quality Protection
Rule 62-204.240	Ambient Air Quality Standards
Rule 62-204.260	Prevention of Significant Deterioration Increments
Rule 62-204.800	Federal Regulations Adopted by Reference
Rule 62-210.300	Permits Required
Rule 62-210.350	Public Notice and Comments
Rule 62-210.370	Reports
Rule 62-210.550	Stack Height Policy
Rule 62-210.650	Circumvention
Rule 62-210.700	Excess Emissions
Rule 62-210.900	Forms and Instructions
Rule 62-212.300	General Preconstruction Review Requirements
Rule 62-212.400	Prevention of Significant Deterioration
Rule 62-213	Operation Permits for Major Sources of Air Pollution
Rule 62-214	Requirements For Sources Subject To The Federal Acid Rain Program
Rule 62-296.320	General Pollutant Emission Limiting Standards
Rule 62-297.310	General Test Requirements
Rule 62-297.401	Compliance Test Methods
Rule 62-297.520	EPA Continuous Monitor Performance Specifications

5.2 Federal Rules

40 CFR 60	Applicable sections of Subpart A, General Requirements, NSPS Subparts GG and Kb
40 CFR 72	Acid Rain Permits (applicable sections)
40 CFR 73	Allowances (applicable sections)
40 CFR 75	Monitoring (applicable sections including applicable appendices)
40 CFR 77	Acid Rain Program-Excess Emissions (future applicable requirements)
40 CFR 52	Prevention of Significant Deterioration of Air Quality (applicable requirements)

6. SOURCE IMPACT ANALYSIS

6.1 Emission Limitations

The proposed Units 1-5 will emit the following PSD pollutants (Table 212.400-2): particulate matter, sulfur dioxide, nitrogen oxides, volatile organic compounds, carbon monoxide, sulfuric acid mist, and negligible quantities of fluorides, mercury and lead. The applicant's proposed annual emissions are summarized in the Table below and form the basis of the source impact review. The Department's proposed permitted allowable emissions for these Units 1-5 are summarized in the Draft BACT document and Specific Condition Nos.xx-xx of Draft Permit PSD-FL-258.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

6.2 Emission Summary

Table 1 PSD Applicability Summary			
POLLUTANTS	POTENTIAL EMISSIONS (TPY)	PSD SIGNIFICANT EMISSION RATE (TPY)	PSD REVIEW REQUIRED
PM	208	25	Yes
PM ₁₀	208	15	Yes
SO ₂	413	40	Yes
NO _x	1587	40	Yes
CO	704	100	Yes
Ozone (VOC)	95	40	Yes
Sulfuric Acid Mist	63	7	Yes
Total Reduced Sulfur	NEG ^b	10	No
Hydrogen Sulfide	NEG ^b	10	No
Reduced Sulfur Compounds	NEG ^b	10	No
Total Fluorides	NEG ^b	3	No
Mercury	NEG ^b	0.1	No
Beryllium	NEG ^b	0.0004	No
Lead	NEG ^b	0.6	No
MWC Organics	$< 8.8 \times 10^{-8}$	3.5×10^{-6}	No
MWC Metals	NEG ^b	15	No
MWC Acid Gases	17	40	No

a Based on emissions from operating at baseload conditions at 59 °F; firing natural gas and distillate fuel oil for 1,890 and 1,500 hours per year, respectively;

b NEG = negligible emissions

6.3 Control Technology

The PSD regulations require new major stationary sources to undergo a control technology review for each pollutant that may be potentially emitted above significant amounts. The control technology review requirements of the PSD regulations are applicable to emissions of NO_x, SO₂, CO, SAM, VOC and PM/PM₁₀. Emissions control will be accomplished primarily by good combustion of clean natural gas and the limited use of low sulfur (0.05 percent) distillate fuel oil. The combustors will operate in lean pre-mixed mode to minimize the flame temperature and nitrogen oxides formation potential. A full discussion is given in the Draft Best Available Control Technology (BACT) Determination (see Permit Appendix BD). The Draft BACT is incorporated into this evaluation by reference.

6.4 Air Quality Analysis

6.4.1 Introduction

The proposed project will increase emissions of six pollutants at levels in excess of PSD significant amounts: PM₁₀, CO, SO₂, NO_x, SAM and VOC. PM₁₀, SO₂, and NO_x are criteria pollutants and have national and state ambient air quality standards (AAQS), PSD increments, and significant impact levels defined for them. CO and VOC are criteria pollutants and have only AAQS and significant impact levels defined for them. Since the project's VOC emissions increase is less than

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

100 tons per year no air quality analysis is required for VOC. SAM is a non-criteria pollutant and has no AAQS or PSD increments defined for it; therefore, no air quality impact analysis was required for SAM. PM is a criteria pollutant, but has no AAQS or PSD increments defined for it; therefore, no air quality impact analysis was required for it either. Instead, the BACT requirement will establish the PM and SAM emission limits for this project.

A review of the applicant's initial PM₁₀, CO, SO₂ and NO_x air quality impact analyses for this project revealed no predicted significant impacts; therefore, further applicable AAQS and PSD increment impact analyses for these pollutants were not required. Based on the preceding discussion the air quality analyses required by the PSD regulations for this project are the following:

- A significant impact analysis for PM₁₀, CO, SO₂ and NO_x;
- An analysis of impacts on soils, vegetation, and visibility and of growth-related air quality modeling impacts.

Based on these required analyses, the Department has reasonable assurance that the proposed project, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. However, the following EPA-directed stack height language is included: "In approving this permit, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification if and when EPA revises the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators." A more detailed discussion of the required analyses follows.

6.4.2 Analysis of Existing Air Quality and Determination of Background Concentrations

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review unless otherwise exempted or satisfied. The monitoring requirement may be satisfied by using existing representative monitoring data, if available. An exemption to the monitoring requirement may be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined by air quality modeling, is less than a pollutant-specific de minimus concentration. In addition, if EPA has not established an acceptable monitoring method for the specific pollutant, monitoring may not be required:

If preconstruction ambient monitoring is exempted, determination of background concentrations for PSD significant pollutants with established AAQS may still be necessary for use in any required AAQS analysis. These concentrations may be established from the required preconstruction ambient air quality monitoring analysis or from existing representative monitoring data. These background ambient air quality concentrations are added to pollutant impacts predicted by modeling and represent the air quality impacts of sources not included in the modeling.

The table below shows that predicted SO₂, CO, PM₁₀ and NO_x impacts from the project are predicted to be below the appropriate de minimus levels; therefore, preconstruction ambient air quality monitoring is not required for these pollutants.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Maximum Project Air Quality Impacts for Comparison
to De Minimus Ambient Levels

Pollutant	Averaging Time	Max Predicted Impact (ug/m ³)	De Minimus Ambient Impact Level (ug/m ³)	Impact Above/Below De Minimus
SO ₂	24-hour	1.1	13	BELOW
PM ₁₀	24-hour	0.8	10	BELOW
CO	8-hour	3	500	BELOW
NO ₂	Annual	0.3	14	BELOW

6.4.3 Models and Meteorological Data Used in the Significant Impact Analysis

The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project. The model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. The model incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST3 model allows for the separation of sources, building wake downwash, and various other input and output features. A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options. Direction-specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project all satisfy the good engineering practice (GEP) stack height criteria.

Meteorological data used in the ISCST3 model consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) stations at Orlando International Airport, Florida (surface data) and Ruskin, Florida (upper air data). The 5-year period of meteorological data was from 1987 through 1991. These NWS stations were selected for use in the study because they are the closest primary weather stations to the study area and are most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

For determining the project's significant impact area in the vicinity of the facility, the highest predicted short-term concentrations and highest predicted annual averages were compared to their respective significant impact levels.

6.4.4 Significant Impact Analysis

Initially, the applicant conducts modeling using only the proposed project's emissions. If this modeling shows significant impacts, further modeling is required to determine the project's impacts on the existing air quality and any applicable AAQS and PSD increments. The receptor grid for predicting maximum concentrations in the vicinity of the project was a polar receptor grid comprised of 578 receptors. This grid included receptors located on 18 radials. Along each radial,

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

36 receptors were located at 10° intervals and distances of 0.1, 0.2, 0.3 0.5, 0.7, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 7.0, 10.0, 12.0 and 15.0 km from the proposed CT stack locations. The tables below show the results of this modeling.

Maximum Project Air Quality Impacts for Comparison to the PSD Class II Significant Impact Levels in the Vicinity of the Facility				
Pollutant	Averaging Time	Max Predicted Impact (ug/m ³)	Significant Impact Level (ug/m ³)	Significant Impact?
PM ₁₀	Annual	0.05	1	NO
	24-hour	0.8	5	NO
CO	8-hour	3	500	NO
	1-hour	13	2000	NO
NO ₂	Annual	0.30	1	NO
SO ₂	Annual	0.08	1	NO
	24-hour	1.1	5	NO
	3-hour	6.8	25	NO

The results of the significant impact modeling show that there are no significant impacts predicted from emissions from this project; therefore, no further modeling was required.

6.4.5 Impacts Analysis

Impact Analysis Impacts On Soils, Vegetation, Visibility, And Wildlife

The maximum ground-level concentrations predicted to occur for PM₁₀, CO, NO_x, SO₂, and VOC as a result of the proposed project, including background concentrations and all other nearby sources, will be below the associated AAQS. The AAQS are designed to protect both the public health and welfare. As such, this project is not expected to have a harmful impact on soils and vegetation in the PSD Class II area.

Growth-Related Air Quality Impacts

The proposed project is being constructed to meet electric demands. Additional growth as a direct result of the additional electric power provided by the project is not expected. The project will be constructed and operated with minimum labor and associated facilities and is not expected to significantly affect growth in the area. Therefore, no additional growth impacts are expected as a result of the proposed project.

7. CONCLUSION

Based on the foregoing technical evaluation of the application and additional information submitted by the applicant, the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations, provided the Department's BACT determination is implemented.

A. A. Linero, P.E., Administrator
Michael P. Halpin, P.E. Review Engineer
Cleveland Holladay, Meteorologist

PUBLIC MEETING

To review current status of:

Oleander Power Project

Florida Dept. of Environmental Protection
Division of Air Resources Management

Michael P. Halpin
Cleveland G. Holladay
Tammy Eagan



PURPOSE OF MEETING

- Update the current status of the permitting process (D. Beason)
- Update on the project emissions from what was shown at the previous meeting (M. Halpin)
- Summarize Department assessment of two air-related issues raised at previous meeting
 - ◆ Fuel oil usage limitations (M. Halpin)
 - ◆ Pre-construction ozone monitoring (T. Eagan)

Application for Permit:

- 3,390 Hours of Operation for each CT
- No. 2 Fuel Oil (Diesel) for up to 1500 **1000** hours

[sulfur content of No. 2 oil to be maximum of 0.05%]. This was reduced from the applicant's original request of up to 2000 hours on oil.

Natural Gas for remainder of 3390 hours

Maximum yearly air emissions requested (1000 hrs/yr. on oil)

<u>POLLUTANT</u>	<u>One C.T. TPY</u>		
	<u>GAS</u>	<u>#2 OIL</u>	<u>5 C.T. TPY</u>
NO _x	75	172	1235
PM	11	8	96
SO ₂	7	52	291
CO	49	34	412
VOC	7	6	64

Note: Column entitled GAS reflects an individual CT's annual emissions if 2390 hours were on natural gas. Column entitled 5 C.T. TPY reflects the overall site's annual emissions presuming the maximum usage of fuel oil.

Regional comparison of power plant annual emissions (1997)

<u>Poll.</u>	<u>OUC-IR</u>	<u>FPL-CC</u>	<u>OUC-ST</u>	<u>OLNDR</u>
	(959 MW)	(804 MW)	(925 MW)	(950 MW)
NO _x	7,925	7,984	9,257	1,235
PM	173	943	253	96
SO ₂	23,058	17,632	8,994	291
CO	1,170	587	595	412
VOC	178	49	72	64

Notes: 1) Emissions shown are “reported actuals” for the OUC and FPL sites. These are being related to Oleander’s “requested maximum” emission levels for comparison purposes only.

2) Above power plants represent dissimilar technologies and fuel types.

Ambient Air Quality Standards

(micrograms per cubic meter)

Pollutant	Averaging Time	National Primary Standard	State of Florida	Allowable Impacts	Predicted Increase in Impacts
Particulate Matter (PM10)	Annual Arithmetic Mean	50	50	17 (4) {1}	0.02
	24 hour maximum	150	150	30 (8) {5}	0.3
Sulfur Dioxide	Annual Arithmetic Mean	80	60	20 (2) {1}	0.08
	24 hour maximum	365	260	91 (5) {5}	1.1
	3 hour maximum	N/A	1300	512 (25) {25}	7.9
Carbon Monoxide	8 hour maximum	10,000	10,000	N/A {500}	2
	1 hour maximum	40,000	40,000	N/A {2000}	19
Nitrogen Oxide	Annual Arithmetic Mean	100	100	25 (2.5) {1}	0.3

Note: Numbers in (parenthesis) represent Class I levels. Numbers in {brackets} represent significant impact levels.

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Florida Dept. of Environmental Protection
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	1 hour maximum	40,000	40,000	N/A {2000}	19
Nitrogen Oxide	Annual Arithmetic Mean	100	100	25 (2.5) {1}	0.3

Note: Numbers in (parenthesis) represent Class I levels. Numbers in {brackets} represent significant impact levels.



Indoor Air Quality in Florida: Houseplants to Fight Pollution¹

Virginia Peart²

Houseplants under some conditions can effectively remove benzene, formaldehyde, CO and nitrogen oxides (undesirable products of burning tobacco and wood). In a NASA research project, Spider plants were placed in closed chambers with 120 ppm carbon monoxide (CO) or 50 ppm nitrogen oxide (NO₂).

After 24 hours, spider plants removed:
96% CO, 99% NO₂

After 24 hours, Golden pothos removed:
75% CO

A second research project conducted through NASA and the Associated Landscape Contractors of America screened house plants for the removal of Benzene, Trichlorethylene and Formaldehyde. Plants used include Bamboo palm, Chinese evergreen, English ivy, Ficus, Gerbera daisy, Janet Craig, Marginata, Mass cane/Corn cane, Mother-in-law's tongue, Peace lily, Pot mum and Warneckeii.

The results of these tests suggest:

- Low-light-requiring houseplants with activated carbon plant filters have potential for improving indoor air quality.
- The plant root-zone is effective area for removing volatile organic chemicals. (Maximum air

exposure to plant root-soil area for best air filtration.

- Use of activated carbon filter should be a part of the houseplant/air cleaning plan.

Additional research conducted through NASA Laboratories indicates other plants can assist in reducing indoor air contaminants in certain conditions. They are listed in descending order of effectiveness.

- Heart leaf philodendron
- Elephant ear philodendron
- Green spider plant
- Lacy tree philodendron
- Aloe vera
- Golden pothos
- Chinese evergreen
- Mini-scheffle
- Peperomia
- Peace lily

1. This document is Fact Sheet HE 3208, a series of the Home Economics Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Publication date: April 1993. This document was originally published as IAQ-14 in February 1992.
2. Virginia Peart, associate professor, Housing, Home Economics Department, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville FL 32611.

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Florida Cooperative Extension Service / Institute of Food and Agricultural Sciences / University of Florida / John T. Woeste, Dean

The most effective plants to use in removing pollutants like formaldehyde are those with a large leaf surface area.

- Heart-leaf philodendron (*philodendron scandens*)
- Elephant ear philodendron (*philodendron domesticum*)
- Green spider plant (*chlorophytum elatum*)
- Lacy tree philodendron (*philodendron selloum*)
- Golden pothos (*epipremnum aureum*)
- Chinese evergreen (*aglonema modestum*)
- Mini-Schefflera (*bassaia arboricola*)
- Peperomia (*peperomia obtusifolia*)
- Peace lily (*spathiphyllum clevelandii*)
- Corn plant (*dracaena fragrans 'massangeana'*)
- Snake plant (*sansevieria traifasciata*)

Careful selection of indoor plants is necessary if anyone suffers from exposure to molds pollens, odors or dust. Remember also, houseplants add moisture to the environment. All the water used on the plants goes into the air. This is a plus in dry parts of the country or during dry times of the year. In Florida

each gallon of water added for watering plants will require about 3.5 Kwh of electricity to remove. If moisture and mildew problems are being experienced in a home or office, plants can have negative energy and comfort effects; and can also increase moisture and mildew problems.

Before considering the use of plants to control indoor air pollution:

1. Identify contaminants that are above the Threshold Limit Value.
2. Control source of pollution.
3. Check structure for air leakage and correct.
4. Check for the proper design, use, and maintenance of HVAC systems.

REFERENCES

- Barner, P.A. *The Sick Home*. Educational Program. Pennsylvania Cooperative Extension. 1990.
- Horticultural Abstracts*, 56(12) Abstract-9873. December, 1986 and *Garden Supply Retailer*, April, 1989.

Applicant has represented to the Department that the proposed Oleander Power Plant would be a natural-gas-fired unit with oil backup. This is a devious and deceptive strategy to conceal the true nature of the plant. Applicant wants to be able to run this plant on 100% fuel oil at his own whim. To achieve this objective, Applicant is seeking approval for annual FUEL OIL use for a period much longer than any reasonable projection of his TOTAL annual operating hours.

To delineate the details of this deception, I would first direct the Department's attention to statements made by Mr. Rick Wolfinger on radio station WMEL on December 14, 1998. Mr. Wolfinger stated that he expects the Oleander plant to run "between 150 and 400 hours per year, total." At other times and places, Applicant's representatives have projected total operating times not in excess of 500 to 600 hours per year.

Those projections certainly seem to be reasonable, given the economics of the inefficient simple-cycle gas turbines that have been proposed for this project. During a public meeting held at this facility on December 9, 1998, Applicant displayed a graph indicating that the heat rate of the proposed plant would be approximately 10,300 BTU/kWh. By comparison, FERC reports that the two 405 MWe steam turbine-generator units at the nearby FP&L Cape Canaveral plant have heat rates of 9,409 and 9,505 BTU/kWh respectively. Even with those excellent heat rates, the Cape Canaveral plant operated at a capacity factor of less than 45% in 1997. The proposed Oleander plant would have a huge heat rate disadvantage of 800 to 900 BTU/kWh against this neighboring plant, and would operate economically only at a much lower capacity factor.

So it appears that these statements of Applicant's representatives are plausible: The annual operation of the proposed plant would indeed be in the order of 500 hours maximum. A reasonable interpretation of the term "back-up" indicates that fuel oil firing would represent less than 20% of that total operation; that is, no more than 100 hours per year.

But this leads to a mystery. The Department's Best Available Control Technology (BACT) determinations "include minimization of fuel oil-firing and maximization of natural gas use." Oleander's initial application to the Department sought approval for up to 2,000 hours of fuel oil operation per year. In his February 1 response, Applicant reduced that request to 1,500 hours of fuel oil operation per year. If Applicant truly intends to operate on fuel oil less for less than 100 hours per year, why would Applicant expose himself to the difficulties of obtaining approval for fuel oil operations 15 to 20 times greater than what is realistically needed?

The answer has two parts. First, Applicant has made an unrealistically high initial request of 2,000 hours so that he could appear to be cooperative by subsequently reducing that request to "only" 1,500 hours. If the need arises, I fully expect that Applicant will later reduce this request to 1,000 hours in a further demonstration of pretended cooperation.

But even 1,000 hours of permitted oil operation will provide an ample factor-of-two cushion over the anticipated 500 hours of total plant operation. Thus, even after making these supposed concessions, Applicant will still be able to operate the proposed facility as a 100% oil-fired unit.

I commend the Department for the fact that you have already noted these anomalies. You have observed in your written comments that Applicant's proposed permit conditions would allow essentially 100% firing with fuel oil at the proposed facility. Applicant's devious and evasive responses to your comments confirm what we both suspected: Applicant is engaging in deceptive behavior to secure unwarranted approval for a 100% oil-fired power plant.

I urge the Department to impose operating restrictions sufficient to undo the deceitful actions of Applicant. By Applicant's own testimony, the expected operation of this plant will not exceed 500 hours per year. Consistent with that total operating time, the Department should limit use of fuel oil to no more than 100 hours per year.

There may be years in which unforeseen special circumstances lead to total operations somewhat longer than 500 hours. To allow for those special conditions, the Department may want to allow Applicant to operate on fuel oil for up to 200 hours in any particular year, as long as average fuel oil operation does not exceed 100 hours per year over any five-year period.

By imposing these very reasonable restrictions, the Department will ensure that fuel oil-firing is minimized and natural gas use is maximized, consistent with the Department's documented policies for BACT determinations.

Roger Heinig, 32 Yacht Haven Drive, Cocoa Beach, FL 32931-2623
March 3, 1999

WHAT??

Another Power Plant in Brevard County?

This is what I hear every time I ask another Brevard County resident if they have heard about an out of state company (Constellation Power) proposing to build a 950MW, gas/oil fired power plant, with five 60' stacks in West Cocoa. The proposed plant site is just 38 acres, surrounded by hundreds of residents, is probably going to be classified as a Title V facility (major source of pollution), will use up to 1.9 millions of gallons of water per day (reclaimed and potable), and will only employ twelve. The electricity produced is to be sold out of our area and will not even be used by Brevard County residents.

The Oleander Power Project is promoting themselves as a **clean and safe** energy provider (Florida Today, 02/28/99). Just because you cannot **see** the pollution, does not mean it is not there.

Take a look at this map from EPA showing 53 power plants in Florida and you can see that Central Florida can already call itself power plant heaven.

Why are there fewer plants in the northern and southern parts of Florida?? Perhaps their restrictions are stronger.

What can you do? Get involved and call all five county commissioners and tell them you oppose more polluting industry in Brevard County, such as power plants that **will not** benefit the public. Ask to be put on the county's mailing list for a notice to be mailed to you when a meeting, that concerns this issue, comes up. We do not expect this to be over with for months.

Spread the word. Tell your neighbors, family members, and friends about this important issue.

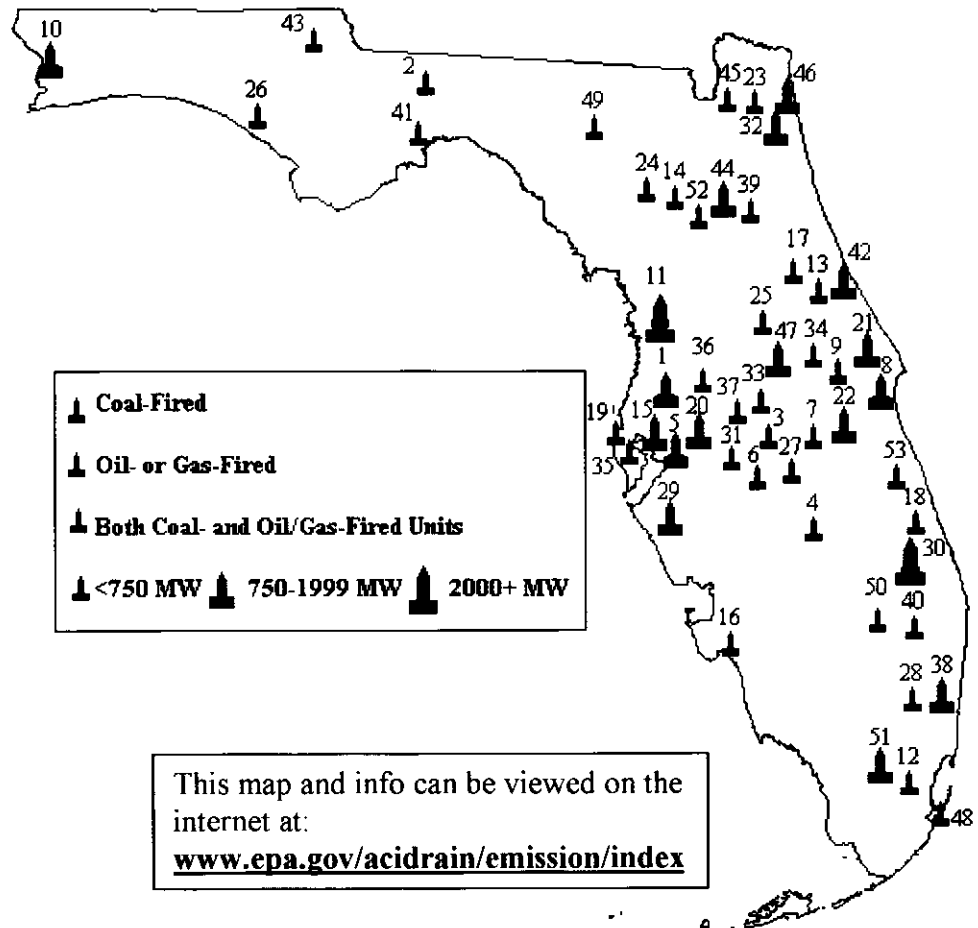
For more info and news updates, visit the website:

www.floridaspacecoast.com

and click on NO POWER PLANT.

Help us shape the future of Brevard County.

United We Stand, Divided We Fall.



MEMORANDUM

TO: Richard Zwolak
FROM: David S. Dee
DATE: February 26, 1999
RE: Questions for DEP Public Meeting
in Brevard County

You have asked me to provide you with some questions that should be addressed by the Florida Department of Environmental Protection during the public meeting in Brevard County on March 3, 1999 for the Oleander Project. I offer the following suggestions for your consideration.

1. **Will the Oleander Project cause any adverse impacts on human health or the environment?**

No. The Project will comply with state and federal ambient air quality standards which are designed to protect human health and the environment.

2. **Will the Oleander Project, together with the other power plants and industrial sources in the area, cause adverse impacts on human health and the environment?**

No. The computer modeling and other analyses of the Project demonstrate that the Facility will comply with state and federal ambient air quality standards.

3. **Is Oleander's 60' stack tall enough to protect the**

environment?

Yes. The computer analyses demonstrate that the stack will provide sufficient dispersion of the airborne emissions from the Facility.

Memo to Richard Zwolak
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February 26, 1999

4. Will DEP restrict Oleander's use of fuel oil?

Yes. DEP will restrict the sulfur content of the fuel oil and will restrict the amount of time that Oleander may use fuel oil.

5. Will DEP restrict the hours of operation at the Facility?

Yes. DEP will restrict the total number of hours that the Facility is operated.

6. Are peaking units used elsewhere in Florida?

Yes.

7. How does the Oleander Project compare to other peaking units?

It will use cleaner fuel and be more energy efficient. Oleander will produce power with less fuel and will have less air emissions per unit of fuel.

8. Will the Oleander Project have a dirty, smokey plume, like the older power plants in Florida?

No.

9. Will the Oleander Project be exempt from regulation by DEP?

No. Oleander must comply with the air quality standards and other regulations adopted by DEP;

however, Oleander is not subject to the Power Plant Siting Act.

10. What is the Best Available Control Technology for this Project?

Low sulfur fuel oil and the use of combustion turbines that incorporate dry low NOx design features.

Memo to Richard Zwolak
Page Three
February 26, 1999

11. **Is there a need for new power plants in Central Florida?**

Yes. Many new power plants are being proposed to meet the public's demand for electricity.

12. **Will the Oleander Facility reduce the use of older, dirtier facilities?**

Yes, eventually. Oleander and the new generation of power plants are more efficient and less costly to operate.



Oleander Power Project

111 Market Place, Suite 200
Baltimore, MD 21202
Phone: 410-230-4600
Fax: 410-230-4847

RECEIVED

APR 16 2001

BUREAU OF AIR REGULATION

CERTIFIED MAIL

April 12, 2001

Mr. Leonard T. Kozlov, P.E.
Administrator, Air Resources Management
Florida Department of Environmental Protection
Central District Office
3319 Maguire Boulevard
Orlando, FL 32803

DEP File No. 0090180-001-AC
Permit No. PSD-FL-258
Facility Name: Oleander Power Project
Facility Location: Brevard County

SUBJECT: NOTIFICATION OF COMMENCEMENT OF CONSTRUCTION

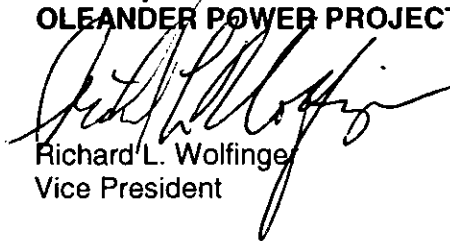
Dear Mr. Kozlov:

In accordance with 40 CFR 60.7(a)1 and Section III Condition 3 of Permit PSD-FL-258, please be advised that the Oleander Power Project located in Brevard County commenced construction on March 20, 2001. This notice fulfills the requirement for written notification of the date construction commenced, no later than 30 days after that date.

If you have any questions, please give me a call at 410-230-4614 or Mr. Steve Mange (Environmental Manager) at 410-230-4754.

Sincerely,

OLEANDER POWER PROJECT, L.P.



Richard L. Wolfinger
Vice President

cc:

Gregg Worley
USEPA, Region IV
Air Programs Branch
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-8960

Al A. Linero, P.E., FDEP
FDEP Bureau of Air Regulation
New Source Review Section
2600 Blair Stone Road, MS 5500
Tallahassee, FL 32399-2400

Craig Fierstein, Oleander Power Project
Ray Guidry, Oleander Power Project

Peggy Stover-Catha, Oleander Power Project
Steve Mange, Oleander Power Project

Applicant has represented to the Department that the proposed Oleander Power Plant would be a natural-gas-fired unit with oil backup. This is a devious and deceptive strategy to conceal the true nature of the plant. Applicant wants to be able to run this plant on 100% fuel oil at his own whim. To achieve this objective, Applicant is seeking approval for annual FUEL OIL use for a period much longer than any reasonable projection of his TOTAL annual operating hours.

To delineate the details of this deception, I would first direct the Department's attention to statements made by Mr. Rick Wolfinger on radio station WMEL on December 14, 1998. Mr. Wolfinger stated that he expects the Oleander plant to run "between 150 and 400 hours per year, total." At other times and places, Applicant's representatives have projected total operating times not in excess of 500 to 600 hours per year.

Those projections certainly seem to be reasonable, given the economics of the inefficient simple-cycle gas turbines that have been proposed for this project. During a public meeting held at this facility on December 9, 1998, Applicant displayed a graph indicating that the heat rate of the proposed plant would be approximately 10,300 BTU/kWh. By comparison, FERC reports that the two 405 MWe steam turbine-generator units at the nearby FP&L Cape Canaveral plant have heat rates of 9,409 and 9,505 BTU/kWh respectively. Even with those excellent heat rates, the Cape Canaveral plant operated at a capacity factor of less than 45% in 1997. The proposed Oleander plant would have a huge heat rate disadvantage of 800 to 900 BTU/kWh against this neighboring plant, and would operate economically only at a much lower capacity factor.

So it appears that these statements of Applicant's representatives are plausible: The annual operation of the proposed plant would indeed be in the order of 500 hours maximum. A reasonable interpretation of the term "back-up" indicates that fuel oil firing would represent less than 20% of that total operation; that is, no more than 100 hours per year.

But this leads to a mystery. The Department's Best Available Control Technology (BACT) determinations "include minimization of fuel oil-firing and maximization of natural gas use." Oleander's initial application to the Department sought approval for up to 2,000 hours of fuel oil operation per year. In his February 1 response, Applicant reduced that request to 1,500 hours of fuel oil operation per year. If Applicant truly intends to operate on fuel oil less for less than 100 hours per year, why would Applicant expose himself to the difficulties of obtaining approval for fuel oil operations 15 to 20 times greater than what is realistically needed?

The answer has two parts. First, Applicant has made an unrealistically high initial request of 2,000 hours so that he could appear to be cooperative by subsequently reducing that request to "only" 1,500 hours. If the need arises, I fully expect that Applicant will later reduce this request to 1,000 hours in a further demonstration of pretended cooperation.

But even 1,000 hours of permitted oil operation will provide an ample factor-of-two cushion over the anticipated 500 hours of total plant operation. Thus, even after making these supposed concessions, Applicant will still be able to operate the proposed facility as a 100% oil-fired unit.

I commend the Department for the fact that you have already noted these anomalies. You have observed in your written comments that Applicant's proposed permit conditions would allow essentially 100% firing with fuel oil at the proposed facility. Applicant's devious and evasive responses to your comments confirm what we both suspected: Applicant is engaging in deceptive behavior to secure unwarranted approval for a 100% oil-fired power plant.

I urge the Department to impose operating restrictions sufficient to undo the deceitful actions of Applicant. By Applicant's own testimony, the expected operation of this plant will not exceed 500 hours per year. Consistent with that total operating time, the Department should limit use of fuel oil to no more than 100 hours per year.

There may be years in which unforeseen special circumstances lead to total operations somewhat longer than 500 hours. To allow for those special conditions, the Department may want to allow Applicant to operate on fuel oil for up to 200 hours in any particular year, as long as average fuel oil operation does not exceed 100 hours per year over any five-year period.

By imposing these very reasonable restrictions, the Department will ensure that fuel oil-firing is minimized and natural gas use is maximized, consistent with the Department's documented policies for BACT determinations.

Roger Heinig, 32 Yacht Haven Drive, Cocoa Beach, FL 32931-2623
March 3, 1999



Indoor Air Quality in Florida: Houseplants to Fight Pollution¹

Virginia Peart²

Houseplants under some conditions can effectively remove benzene, formaldehyde, CO and nitrogen oxides (undesirable products of burning tobacco and wood). In a NASA research project, Spider plants were placed in closed chambers with 120 ppm carbon monoxide (CO) or 50 ppm nitrogen oxide (NO₂).

After 24 hours, spider plants removed:
96% CO, 99% NO₂

After 24 hours, Golden pothos removed:
75% CO

A second research project conducted through NASA and the Associated Landscape Contractors of America screened house plants for the removal of Benzene, Trichlorethylene and Formaldehyde. Plants used include Bamboo palm, Chinese evergreen, English ivy, Ficus, Gerbera daisy, Janet Craig, Marginata, Mass cane/Corn cane, Mother-in-law's tongue, Peace lily, Pot mum and Warneckeii.

The results of these tests suggest:

- Low-light-requiring houseplants with activated carbon plant filters have potential for improving indoor air quality.
- The plant root-zone is effective area for removing volatile organic chemicals. (Maximum air

exposure to plant root-soil area for best air filtration.

- Use of activated carbon filter should be a part of the houseplant/air cleaning plan.

Additional research conducted through NASA Laboratories indicates other plants can assist in reducing indoor air contaminants in certain conditions. They are listed in descending order of effectiveness.

- Heart leaf philodendron
- Elephant ear philodendron
- Green spider plant
- Lacy tree philodendron
- Aloe vera
- Golden pothos
- Chinese evergreen
- Mini-scheffle
- Peperomia
- Peace lily

1. This document is Fact Sheet HE 3208, a series of the Home Economics Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Publication date: April 1993. This document was originally published as IAQ-14 in February 1992.
2. Virginia Peart, associate professor, Housing, Home Economics Department, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville FL 32611.

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Florida Cooperative Extension Service / Institute of Food and Agricultural Sciences / University of Florida / John T. Woeste, Dean

The most effective plants to use in removing pollutants like formaldehyde are those with a large leaf surface area.

- Heart-leaf philodendron (*philodendron scandens*)
- Elephant ear philodendron (*philodendron domesticum*)
- Green spider plant (*chlorophytum elatum*)
- Lacy tree philodendron (*philodendron selloum*)
- Golden pothos (*epipremnum aureum*)
- Chinese evergreen (*aglonema modestum*)
- Mini-Schefflera (*bassaia arboricola*)
- Peperomia (*peperomia obtusifolia*)
- Peace lily (*spathiphyllum clevelandii*)
- Corn plant (*dracaena fragrans 'massangeana'*)
- Snake plant (*sansevieria traifasciata*)

Careful selection of indoor plants is necessary if anyone suffers from exposure to molds pollens, odors or dust. Remember also, houseplants add moisture to the environment. All the water used on the plants goes into the air. This is a plus in dry parts of the country or during dry times of the year. In Florida

each gallon of water added for watering plants will require about 3.5 Kwh of electricity to remove. If moisture and mildew problems are being experienced in a home or office, plants can have negative energy and comfort effects; and can also increase moisture and mildew problems.

Before considering the use of plants to control indoor air pollution:

1. Identify contaminants that are above the Threshold Limit Value.
2. Control source of pollution.
3. Check structure for air leakage and correct.
4. Check for the proper design, use, and maintenance of HVAC systems.

REFERENCES

- Barner, P.A. *The Sick Home*. Educational Program. Pennsylvania Cooperative Extension. 1990.
- Horticultural Abstracts*, 56(12) Abstract-9873. December, 1986 and *Garden Supply Retailer*, April, 1989.

Speakers for Oleander Public Meeting March 3, 1999:

1. Mike Stallings
2. Craig Bock
3. Robert Knodel
4. Roger Heinig
5. Tom Berringer
6. Douglas Sphar
7. Dorothy Amstadt
8. Florence Broaddus
9. Susan Giesecke
10. Denise Beasley
11. Catherine Stallings
12. Amy Tidd
- 13.



Florida Cooperative Extension Service

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Roger Heinig, 32 Yacht Haven Drive, Cocoa Beach, FL 32931-2623
March 3, 1999

IN MODULE EVERY ONE

DOUG BEASON

AL LINCOLN

MIKE HALPIN

CLARE HOLMES

KIM TOBIAS

Review Agenda, NOTE-

① WE WILL HAVE A QUESTION/COMMENT SESSION AFTER PRESENTATION - PLEASE HOLD QUESTIONS & COMMENTS UNTIL THAT TIME

② SPEAKER CARDS / COMMENT CARDS
PLEASE USE THESE

③ NOTE THAT A HANDOUT WILL BE GIVEN AT THE BEGINNING OF THE PRESENTATION AS WELL ~~AS~~ AS THE AFTERWARDS

INTRODUCE DOUG BEASON TO START

①

**SPEAKER CARD
DEP PUBLIC MEETING
MARCH 3, 1999**

(please print)

NAME: MIKE STALLINGS

ADDRESS: PRES- FOREST LAKES OF COCOA CONDOMINIO

121 ROSEWOOD DR
COCOA, FL 32926

②

**SPEAKER CARD
DEP PUBLIC MEETING
MARCH 3, 1999**

(please print)

NAME: CRAIG BOCK

ADDRESS: 865 CLIFTONS COVE CT

③

**SPEAKER CARD
DEP PUBLIC MEETING
MARCH 3, 1999**

(please print)

NAME: ROBERT KNODEL

ADDRESS: 824 HERON ROAD, COCOA, FL.

4

**SPEAKER CARD
DEP PUBLIC MEETING
MARCH 3, 1999**

(please print)

NAME: Roger Heinig

ADDRESS: 32 Yacht Haven Dr, Cocoa Beach
FL 32931

5

**SPEAKER CARD
DEP PUBLIC MEETING
MARCH 3, 1999**

(please print)

NAME: Tom BERRINGER

ADDRESS: 117 ROSEWOOD DR COLT

6

**SPEAKER CARD
DEP PUBLIC MEETING
MARCH 3, 1999**

(please print)

NAME: DOUGLAS H. SPHAR

ADDRESS: 819 HERON RD
COCOA, FL 32926

7

**SPEAKER CARD
DEP PUBLIC MEETING
MARCH 3, 1999**

(please print)

NAME: DOROTHY AMSTADT

ADDRESS: 202 River Heights Dr
Cocoa, FL 32922

8

**SPEAKER CARD
DEP PUBLIC MEETING
MARCH 3, 1999**

(please print)

NAME: FLORENCE BROADDUS

ADDRESS: 410 Westchester Drive, Cocoa 32926

8

**SPEAKER CARD
DEP PUBLIC MEETING
MARCH 3, 1999**

(please print)

NAME: Susan Giesecke

ADDRESS: 2556 N. Pacer Ln
Cocoa, FL 32926

10

SPEAKER CARD
DEP PUBLIC MEETING
MARCH 3, 1999

(please print)

NAME: Denise Beasley

ADDRESS: 2490 Forest Run Dr, Melb.

LAST
not sure if
she'll talk

SPEAKER CARD
DEP PUBLIC MEETING
MARCH 3, 1999

(please print)

NAME: Catherine Stallings

ADDRESS: 121 Rosewood Dr
Cocoa FL 32926

**COMMENT CARD
DEP PUBLIC MEETING
MARCH 3, 1999**

(please print)

NAME: Amy Tidd

ADDRESS: 4110 Sany Dr

COMMENTS:

Pollution CONCERNS

**COMMENT CARD
DEP PUBLIC MEETING
MARCH 8, 1999**

(please print)

NAME: Martha Franco

ADDRESS: 1918 Exeter Dr.
Cocoa, FL 32922

COMMENTS:

I am very much opposed to a power plant
Company coming to our Cocoa area.
It would be harmful in many ways.

**COMMENT CARD
DEP PUBLIC MEETING
MARCH 3, 1999**

(please print)

NAME: Alice Brown

ADDRESS: 880 Sleeping Rock Drive
Cherry

COMMENTS:

I want a nice life Community. I oppose
the new plan and addition.
It is not environmentally safe. I have
already
all

**COMMENT CARD
DEP PUBLIC MEETING
MARCH 3, 1999**

(please print)

NAME: DOROTHY ANSTADT

ADDRESS: 202 River Heights Dr

COMMENTS:

There is NO excuse for ever
preliminary approval of a major project
w/o let letting everyone know ahead of
time. You should have learned from
the Medical Waste Incinerator to have a
plan that would have been under PSC
It is irreversible.

COMMENT CARD
DEP PUBLIC MEETING
MARCH 3, 1999

(please print)

NAME:

FLORENCE BROADBENT

ADDRESS:

410 WESTCHESTER DRIVE
COCOA, FL 32926

COMMENTS:

There was no publicity for this important meeting in the Today Paper on the day of the meeting. The large crowd along the sidewalk of feeling against the proposed Canal here in spite of your conflict with Mexico yesterday.