1/10/07

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTICE OF PERMIT

In the Matter of an
Application for Permit by:

Mr. Randall R. LaBauve
Vice President of Environmental Services
Florida Power and Light Company (FPL)
700 Universe Boulevard
Juno Beach, Florida 33408

DEP File No. 0990646-001-AC
Permit No. PSD-FL-354
FPL West County Energy Center
Two 1,250 MW Combined Cycle Units
Palm Beach County

_____/

Enclosed is the Final Permit Number PSD-FL-354 (0990646-001-AC) to construct/install two nominal 1,250 MW combined cycle units and auxiliary equipment at the FPL West County Energy Center at 20505 State Road 80, Loxahatchee, in unincorporated Palm Beach County. This permit is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Legal Office; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the Department.

Executed in Tallahassee, Florida.

Trina L. Vielhauer, Chief
Bureau of Air Regulation

Adams, Patty

1/10/07 FINAL

From: Harvey, Mary
Sent: Friday, January 12, 2007 2:13 PM
To: Adams, Patty
Subject: FW: Receipt of Florida Power & Light - Facility Permit #0990646-001-AC-FINAL

Attachments: FLORIDA POWER & LIGHT - 0990646-001-AC - FINAL.zip

FLORIDA POWER & LIGHT - 099064...

-----Original Message-----
From: Brien_Culhane@nps.gov [mailto:Brien_Culhane@nps.gov]
Sent: Friday, January 12, 2007 1:50 PM
To: Harvey, Mary
Cc: Dan_Kimball@nps.gov; Keith_Whisenant@nps.gov; Robert_Johnson@nps.gov
Subject: Receipt of Florida Power & Light - Facility Permit #0990646-001-AC-FINAL

Dear Ms. Harvey,

I am writing to acknowledge the receipt of FDEP's final permit for construction of two 1,250 MW combined cycle units and auxiliary equipment at the Florida Power and Light West County Energy Center at 20505 State Road 80, Loxahatchee, in unincorporated Palm Beach County.

Thank you for forwarding these documents.

Sincerely,

Brien Culhane

Brien F. Culhane, AICP
Chief, Planning and Compliance
Everglades and Dry Tortugas National Parks
40001 State Road 9336
Homestead, Florida 33034
Office: 305-242-7717
Fax: 305-242-7711
----- Forwarded by Brien Culhane/EVER/NPS on 01/12/2007 01:44 PM -----

Linda Irey
01/11/2007 10:16 AM EST

To: Brien Culhane/EVER/NPS@NPS
cc:
Subject: Fw: Florida Power & Light - Facility Permit #0990646-001-AC-FINAL

Linda J. Irey
Superintendent Secretary
305-242-7710
FAX - 305-242-7711
e-mail: Linda_Irey@nps.gov
----- Forwarded by Linda Irey/EVER/NPS on 01/11/2007 10:16 AM -----

Michael Jester
01/11/2007 10:10

To: Linda Irey/EVER/NPS@NPS
cc: Dan Kimball/EVER/NPS@NPS, Keith

Whisenant/EVER/NPS@NPS, Sandie
AM EST

Beneway/EVER/NPS@NPS
Subject: Re: Fw: Florida Power & Light -
Facility Permit #0990646-001-AC-FINAL

(Document link: Linda Irey)

Linda:

This should be sent to Brien for referral to the appropriate office.
Mike
Michael Jester
Facility Manager
Everglades and Dry Tortugas National Parks Phone (305) 242-7771 FAX (305) 242-7775 E:Mail
Michael_Jester@nps.gov

Linda Irey
01/11/2007 09:36
AM EST

To: Dan Kimball/EVER/NPS@NPS, Keith Whisenant/EVER/NPS@NPS, Michael Jester/EVER/NPS@NPS, Sandie Beneway/EVER/NPS@NPS
cc:
Subject: Fw: Florida Power & Light - Facility Permit #0990646-001-AC-FINAL

Who should reply?

Linda J. Irey
Superintendent Secretary
305-242-7710
FAX - 305-242-7711
e-mail: Linda_Irey@nps.gov
----- Forwarded by Linda Irey/EVER/NPS on 01/11/2007 09:35 AM -----

"Harvey, Mary"
<Mary.Harvey@dep.state.fl.us>
01/10/2007 04:26
PM EST

To: <randall_labauve@fpl.com>, <Agreene@co.palm-beach.fl.us>, <dlodwick@royalpalm.com>, <twenham@ci.wellington.fl.us>, <EVER_Superintendent@nps.gov>, <worley.gregg@epa.gov>, <dee_morse@nps.gov>, "Oven, Hamilton" <Hamilton.Oven@dep.state.fl.us>, "Graziani, Darrel" <Darrel.Graziani@dep.state.fl.us>, <paul.darst@dca.fl.us>, <james_stormer@doh.state.fl.us>, <ken_kosky@golder.com>, <barbara_p_linkiewicz@fpl.com>, <atreyu@direcway.com>, <NanJ58@aol.com>, <daniellarson@earthlink.net>, <GremlinLtd@aol.com>
cc: "Heron, Teresa" <Teresa.Heron@dep.state.fl.us>, "Adams, Patty" <Patty.Adams@dep.state.fl.us>, "Linero, Alvaro" <Alvaro.Linero@dep.state.fl.us>, "Gibson, Victoria" <Victoria.Gibson@dep.state.fl.us>
Subject: Florida Power & Light - Facility Permit #0990646-001-AC-FINAL

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: http://www.adobe.com/products/acrobat/readstep.html.

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,
DEP, Bureau of Air Regulation

(See attached file: FLORIDA POWER & LIGHT - 0990646-001-AC - FINAL.zip)

Adams, Patty

From: Harvey, Mary
Sent: Thursday, January 11, 2007 9:53 AM
To: Adams, Patty
Subject: FW: Florida Power & Light - Facility Permit #0990646-001-AC-FINAL

-----Original Message-----
From: Dee_Morse@nps.gov [mailto:Dee_Morse@nps.gov]
Sent: Wednesday, January 10, 2007 6:44 PM
To: Harvey, Mary
Subject: Florida Power & Light - Facility Permit #0990646-001-AC-FINAL

Return Receipt

Your document:	Florida Power & Light - Facility Permit #0990646-001-AC-FINAL
was received by:	Dee Morse/DENVER/NPS
at:	01/10/2007 04:42:22 PM

Adams, Patty

From: Harvey, Mary
Sent: Thursday, January 11, 2007 1:55 PM
To: Adams, Patty; Heron, Teresa
Subject: FW: Florida Power & Light - Facility Permit #0990646-001-AC-FINAL

From: Jill Mausteller [mailto:jillb@ci.wellington.fl.us]
Sent: Thursday, January 11, 2007 11:47 AM
To: Harvey, Mary
Subject: RE: Florida Power & Light - Facility Permit #0990646-001-AC-FINAL

Received on behalf of Village of Wellington.

Jill Mausteller
Assistant to the Village Manager
"The thing always happens that you really beleive in; and the belief in a thing makes it happen."
-Frank Lloyd Wright

From: Harvey, Mary [mailto:Mary.Harvey@dep.state.fl.us]
Sent: Wednesday, January 10, 2007 4:27 PM
To: randall_labauve@fpl.com; Agreene@co.palm-beach.fl.us; dlodwick@royalpalm.com; Thomas Wenham; EVER_Superintendent@nps.gov; worley.gregg@epa.gov; dee_morse@nps.gov; Oven, Hamilton; Graziani, Darrel; paul.darst@dca.fl.us; james_stormer@doh.state.fl.us; ken_kosky@golder.com; barbara_p_linkiewicz@fpl.com; atreyu@direcway.com; NanJ58@aol.com; daniellarson@earthlink.net; GremlinLtd@aol.com
Cc: Heron, Teresa; Adams, Patty; Linero, Alvaro; Gibson, Victoria
Subject: Florida Power & Light - Facility Permit #0990646-001-AC-FINAL

Dear Sir/Madam:

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Thank you,

DEP, Bureau of Air Regulation

Adams, Patty

From: Harvey, Mary
Sent: Thursday, January 11, 2007 9:49 AM
To: Adams, Patty
Subject: FW: Florida Power & Light - Facility Permit #0990646-001-AC-FINAL

-----Original Message-----
From: Lois_Sivia@fpl.com [mailto:Lois_Sivia@fpl.com] On Behalf Of Randall_R_LaBauve@fpl.com
Sent: Thursday, January 11, 2007 9:18 AM
To: Harvey, Mary
Subject: Re: Florida Power & Light - Facility Permit #0990646-001-AC-FINAL

document received

Adams, Patty

From: Harvey, Mary

Sent: Wednesday, January 10, 2007 4:27 PM

To: 'randall_labauve@fpl.com'; 'Agreene@co.palm-beach.fl.us'; 'dlodwick@royalpalm.com'; 'twenham@ci.wellington.fl.us'; 'EVER_Superintendent@nps.gov'; 'worley.gregg@epa.gov'; 'dee_morse@nps.gov'; Oven, Hamilton; Graziani, Darrel; 'paul.darst@dca.fl.us'; 'james_stormer@doh.state.fl.us'; 'ken_kosky@golder.com'; 'barbara_p_linkiewicz@fpl.com'; 'atreyu@direcway.com'; 'NanJ58@aol.com'; 'daniellarson@earthlink.net'; 'GremlinLtd@aol.com'

Cc: Heron, Teresa; Adams, Patty; Linero, Alvaro; Gibson, Victoria

Subject: Florida Power & Light - Facility Permit #0990646-001-AC-FINAL

Attachments: FLORIDA POWER & LIGHT - 0990646-001-AC - FINAL.zip

Dear Sir/Madam:

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Thank you,

DEP, Bureau of Air Regulation

Adams, Patty

From: Harvey, Mary
Sent: Wednesday, January 10, 2007 4:43 PM
To: Adams, Patty
Subject: FW: Florida Power & Light - Facility Permit #0990646-001-AC-FINAL

From: James_Stormer@doh.state.fl.us [mailto:James_Stormer@doh.state.fl.us]
Sent: Wednesday, January 10, 2007 4:27 PM
To: Harvey, Mary
Subject: Read: Florida Power & Light - Facility Permit #0990646-001-AC-FINAL

Your message

To: James_Stormer@doh.state.fl.us
Subject:

was read on 1/10/2007 4:27 PM.

Adams, Patty

From: Harvey, Mary
Sent: Thursday, January 11, 2007 9:48 AM
To: Adams, Patty
Subject: FW: Florida Power & Light - Facility Permit #0990646-001-AC-FINAL

-----Original Message-----
From: Linda_Irey@nps.gov [mailto:Linda_Irey@nps.gov]
Sent: Thursday, January 11, 2007 9:35 AM
To: Harvey, Mary
Subject: Florida Power & Light - Facility Permit #0990646-001-AC-FINAL

Return Receipt

Your document:	Florida Power & Light - Facility Permit #0990646-001-AC-FINAL
was received by:	Linda Irey/EVER/NPS
at:	01/11/2007 09:35:03 AM EST

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blairstone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary - Designee

PERMITTEE:

Florida Power and Light Company (FPL)
700 Universe Boulevard
Juno Beach, Florida 33408

Authorized Representative:
Randall R. LaBauve, Vice President

FPL West County Energy Center
DEP File No. 0990646-001-AC
Permit No. PSD-FL-354
SIC No. 4911
Expires: December 31, 2011

PROJECT AND LOCATION

This permit authorizes the construction of two nominal 1,250 megawatt combined cycle units at the proposed Florida Power and Light Company (FPL) West County Energy Center.

The proposed project will be located at 20505 State Road 80, Loxahatchee, Florida 33470. This site encompasses 220 acres of which approximately 40 acres will be used for two combined cycle units.

UTM coordinates are Zone 17; 562.19 km E; 2953.04 km N.

STATEMENT OF BASIS

This PSD construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The project was processed in accordance with the requirements of Rule 62-212.400, F.A.C., the preconstruction review program for the Prevention of Significant Deterioration (PSD) of Air Quality. Pursuant to Chapter 62-17, F.A.C. and Chapter 403 Part II, F.S., the project is also subject to Electrical Power Plant Siting. The permittee is authorized to install the proposed equipment in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department.

CONTENTS

Section I. General Information
Section II. Administrative Requirements
Section III. Emissions Units Specific Conditions
Section IV. Appendices

Joseph Kahn, Director (Date) 1/10/2007
Division of Air Resource Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Final Permit (including the Final Permit) and all copies were sent electronically (with Received Receipt) or by certified mail* (Return Receipt Requested) before the close of business on 1/10/07 to the person(s) listed:

Randall R. LaBauve, FPL: randall_labauve@fpl.com
Chair, Palm Beach County BCC: Agreene@co.palm-beach.fl.us
Mayor, Village of Royal Palm Beach: dlodwick@royalpalm.com
Mayor, Village of Wellington: twenham@ci.wellington.fl.us
John Benjamin, Everglades National Park: EVER_Superintendent@nps.gov
Gregg Worley, U.S. EPA Region 4, Atlanta GA: worley.gregg@epa.gov
Dee Morse, National Park Service, Denver CO: dee_morse@nps.gov
Hamilton Owen, DEP Siting Office: hamilton.oven@dep.state.fl.us
Darrel Graziani, DEP SED: darrel.graziani@dep.state.fl.us
Paul Darst, Department of Community Affairs: paul.darst@dca.fl.us
Jim Stormer, Palm Beach County Public Health Unit: james_stormer@doh.state.fl.us
Ken Kosky, P.E., Golder: ken_kosky@golder.com
Barbara Linkiewicz, FPL: barbara_p_linkiewicz@fpl.com
Michael K. Christensen: atreyu@direcway.com
Nancy J. Gribble: NanJ58@aol.com
Alexandria Larson: daniellarson@earthlink.net
Patricia D. Curry: GremlinLtd@aol.com
Sharon Waite*

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Mary L Harvey 1/10/07
(Clerk) (Date)

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Ms. Sharon Waite
15058 75th Lane North
Loxahatchee, Florida 33470

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X R Waite ☐ Agent ☑ Addressee

B. Received by (Printed Name) Richard Waite | C. Date of Delivery 1/13

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from service label)* 7000 1670 0013 3110 0871

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

7000 1670 0013 3110 0871

U.S. Postal Service
CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

OFFICIAL USE

Postage	$
Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	

Postmark Here

Sharon Waite
15058 75th Lane North
Loxahatchee, Florida 33470

PS Form 3800, May 2000 See Reverse for Instructions

FACILITY DESCRIPTION

The FPL West County Energy Center will be a nominal 2,500 megawatt (MW) greenfield power plant. The initial phase is the construction of two nominal 1,250 MW gas-fired combined cycle units that will use ultralow sulfur (ULS) fuel oil as backup fuel. The two combined cycle units are designated as Unit 1 and Unit 2.

Each combined cycle unit will consist of: three nominal 250 megawatt Model 501G gas turbine-electrical generator sets with evaporative inlet cooling systems; three supplementary-fired heat recovery steam generators (HRSG's) with SCR reactors; one nominal 428 mmBtu/hour (LHV) gas-fired duct burner located within each of the three HRSG's; three 149 feet exhaust stacks; one 26 cell mechanical draft cooling tower; and a common nominal 500 MW steam-electrical generator.

Additional ancillary equipment will include: four emergency generators; two natural gas fired fuel heaters; two diesel fuel storage tanks; two auxiliary steam boilers; and other associated support equipment.

{Note: Throughout this permit, the electrical generating capacities represent nominal values for the given operating conditions.}

NEW EMISSIONS UNITS

This permit authorizes construction and installation of the following new emissions units.

ID	Emission Unit Description
001	Unit 1A – one nominal 250 MW gas turbine with supplementary-fired heat recovery steam generator
002	Unit 1B – one nominal 250 MW gas turbine with supplementary-fired heat recovery steam generator
003	Unit 1C – one nominal 250 MW gas turbine with supplementary-fired heat recovery steam generator
004	Unit 2A – one nominal 250 MW gas turbine with supplementary-fired heat recovery steam generator
005	Unit 2B – one nominal 250 MW gas turbine with supplementary-fired heat recovery steam generator
006	Unit 2C – one nominal 250 MW gas turbine with supplementary-fired heat recovery steam generator
007	Two nominal 6.3 million distillate fuel oil storage tanks*
008	Two 26 cell mechanical draft cooling towers
009	Two nominal 85,000 lb/hr (99.8 MMBtu/hr) auxiliary boilers
010	Two nominal 10 MMBtu/hr gas-fired process heaters
011	Four nominal 2,250 KW (~ 21 MMBtu/hr) emergency generators
012	One emergency diesel fire pump engine (< 300 hp) and 500 gallon fuel oil storage tank

* This capacity will allow approximately 108 hours of on-site oil storage

REGULATORY CLASSIFICATION

Title III: This facility will be major for hazardous air pollutants (HAPs).

Title IV: The facility will operate emissions units subject to the acid rain provisions of the Clean Air Act.

Title V: Because potential emissions of at least one regulated pollutant exceed 100 tons per year, the new facility is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C. Regulated pollutants include pollutants such as carbon monoxide (CO), nitrogen oxides (NO_X), particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), and volatile organic compounds (VOC).

PSD: The facility is located in an area designated as "attainment," "maintenance," or "unclassifiable" for each pollutant subject to a National Ambient Air Quality Standard. The facility is considered a "fossil fuel fired steam electric plant of more than 250 million BTU per hour of heat input", which is one of the 28 PSD source categories with the lower PSD applicability threshold of 100 tons per year. Potential emissions of at least one regulated pollutant exceed 100 tons per year. Therefore, the facility is classified as a PSD-major source of air pollution with respect to Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD) of Air Quality.

NSPS: This project is subject to applicable requirements of 40 CFR 60, NSPS-Subpart KKKK (Standards of Performance for Stationary Combustion Turbines for Which Construction is Commenced After February 18, 2005). This project is also subject to applicable requirements of 40 CFR 60, NSPS-Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units) and to 40 CFR 60, NSPS-Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (ICE).

NESHAPs: This project is subject to applicable requirements of 40 CFR 63, Subpart YYYY, National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Gas Turbines. This project is also subject to applicable requirements of 40 CFR 63, Subpart ZZZZ, National Emissions Standards for Reciprocating Internal Combustion Engines (RICE); and to 40 CFR 63, Subpart DDDDD National Emissions Standards for Industrial, Commercial, or Institutional Boilers and Process Heaters.

Siting: The facility is subject to Electrical Power Plant Siting in accordance with Chapter 62-17, F.A.C. and Chapter 403, Part II, F.S.

PERMITTING AUTHORITY

All documents related to applications for permits to construct, operate or modify an emissions unit shall be submitted to the Bureau of Air Regulation of the Florida Department of Environmental Protection (DEP) at 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400. Copies of all such documents shall also be submitted to the Compliance Authority.

COMPLIANCE AUTHORITY

All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Department of Environmental Regulation Southeast District office (DEP-SED), 400 North Congress Avenue, Suite 200, West Palm Beach, FL 33401.

APPENDICES

The following Appendices are attached as part of this permit.

Appendix A: Subparts A from NSPS 40 CFR 60 and NESHAP 40 CFR 63; Identification of General Provisions.

Appendix BD: Final BACT Determinations and Emissions Standards.

Appendix Dc: NSPS Requirements for Small Steam Generating Units, 40 CFR 60, Subpart Dc.

Appendix DDDDD: NESHAP Requirements for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD.

Appendix GC: General Conditions.

Appendix IIII: NSPS Requirements for Compression Ignition Internal Combustion Engines (ICE).

Appendix KKKK: NSPS Requirements for Gas Turbines, 40 CFR 60, Subpart KKKK.

Appendix SC: Standard Conditions.

Appendix XS: Semiannual NSPS Excess Emissions Report.

Appendix YYYY: NESHAP Requirements for Gas Turbines, 40 CFR 63, Subpart YYYY.

Appendix ZZZZ: NESHAP Requirements for Stationary Reciprocating Internal Combustion Engines, 40 CFR 63, Subpart ZZZZ.

RELEVANT DOCUMENTS

The documents listed below are not a part of this permit; however, they are specifically related to this permitting action and are on file with the Department.

- Permit application received on April 14, 2005;
- Department PSD Application Sufficiency comments dated June 13, 2005;
- Sufficiency Responses received August 12, 2005;
- Letter from FPL to DEP dated December 29, 2005 regarding equipment selection, capacities, etc.;
- Draft permit package issued on March 1, 2006;
- FPL's comments on the Draft Permit and TEPD received March 31, 2006;
- Public Meeting comments received at the Royal Palm Beach Cultural Center on April 19, 2006 and by e-mails, telephone and letters;
- The Final Order of the Siting Board approving Certification dated December 26, 2006; and
- Final Determination distributed concurrently with Final PSD Permit.

1. General Conditions: The permittee shall operate under the attached General Conditions listed in Appendix GC of this permit. General Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]

2. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.); Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.); and the Title 40, Parts 51, 52, 60, 63, 72, 73, and 75 of the Code of Federal Regulations (CFR), adopted by reference in Rule 62-204.800, F.A.C. The terms used in this permit have specific meanings as defined in the applicable chapters of the Florida Administrative Code. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
[Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]

3. Construction and Expiration: The permit expiration date includes sufficient time to complete construction, perform required testing, submit test reports, and submit an application for a Title V operation permit to the Department. Approval to construct shall become invalid for any of the following reasons: construction is not commenced within 18 months after issuance of this permit; construction is discontinued for a period of 18 months or more; or construction is not completed within a reasonable time. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified. In conjunction with an extension of the 18-month period to commence or continue construction (or to construct the project in phases), the Department may require the permittee to demonstrate the adequacy of any previous determination of Best Available Control Technology (BACT) for emissions units regulated by the project. For good cause, the permittee may request that this PSD air construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation at least sixty (60) days prior to the expiration of this permit. [Rules 62-4.070(4), 62-4.080, 62-210.300(1), and 62-212.400(6)(b), F.A.C.]

4. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

5. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Chapters 62-210 and 62-212, F.A.C.]

6. Application for Title IV Permit: At least 24 months before the date on which the new units begin serving an electrical generator greater than 25 MW, the permittee shall submit an application for a Title IV Acid Rain Permit to the Department's Bureau of Air Regulation in Tallahassee and a copy to the Region 4 Office of the U.S. Environmental Protection Agency in Atlanta, Georgia. [40 CFR 72]

7. Application for Title V Permit: The permittee shall submit an application, pursuant to Chapter 62-213, F.A.C, for a Title V air operation permit at least 90 days before the expiration of this permit, but no later than 180 days after commencing operation of the new units. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, a Compliance Assurance Monitoring Plan (as necessary), and such additional information as the Department may by law require.

A. COMBINED CYCLE UNITS 1 AND 2 – GAS TURBINES (EUs 001, 002, 003, 004, 005, and 006)

This section of the permit addresses the following emissions units.

Combined Cycle Units 1 and 2 and associated equipment

Description: Emissions units 001, 002, 003, 004, 005, and 006. Each emission unit consists of: a Model 501G combustion gas turbine-electrical generator set with automated gas turbine control, inlet air filtration system and evaporative cooling, a gas-fired heat recovery steam generator (HRSG) with duct burner, a HRSG stack, and associated support equipment. Each combined cycle unit is comprised of three of the described emission units. The project also includes two steam turbine-electrical generators, each of which serves a combined cycle unit.

Fuels: Each gas turbine fires natural gas as the primary fuel and ultra low sulfur distillate fuel oil as a restricted alternate fuel.

Generating Capacity: Each of the six gas turbine-electrical generator sets has a nominal generating capacity of 250 MW. Each of the two steam turbine-electrical generators has a nominal generating capacity of 500 MW. The total nominal generating capacity of each of the "3 on 1" combined cycle unit is approximately 1,250 MW. The total nominal generating capacity of the proposed project is 2,500 MW.

Controls: The efficient combustion of natural gas and restricted firing of ultra low sulfur distillate fuel oil minimizes the emissions of CO, PM/PM_{10}, SAM, SO_2 and VOC. Dry Low-NO_X (DLN) combustion technology for gas firing and water injection for oil firing reduce NOx emissions. A selective catalytic reduction (SCR) system further reduces NO_X emissions.

Stack Parameters: Each HRSG has a stack at least 149 feet tall with a nominal diameter of 22 feet. The Department may require the permittee to perform additional air dispersion modeling should the actual specified stack dimensions change. The following summarizes the exhaust characteristics without the duct burners:

Fuel	Heat Input Rate (LHV)	Compressor Inlet Temp.	Exhaust Temp., °F	Flow Rate ACFM
Gas	2,333 MMBtu/hour	59° F	195° F	1,330,197
Oil	2,117 MMBtu/hour	59° F	293° F	1,533,502

Continuous Monitors: Each stack is equipped with continuous emissions monitoring systems (CEMS) to measure and record CO and NO_X emissions as well as flue gas oxygen or carbon dioxide content.

APPLICABLE STANDARDS AND REGULATIONS

1. BACT Determinations: Determinations of the Best Available Control Technology (BACT) were made for carbon monoxide (CO), nitrogen oxides (NO_X), particulate matter (PM/PM_{10}), sulfuric acid mist (SAM), sulfur dioxide (SO_2) and volatile organic compounds (VOC).

   See Appendix BD of this permit for a summary of the final BACT determinations.
   [Rule 62-212.400(BACT), F.A.C.]

2. NSPS Requirements: The combustion turbines shall comply with all applicable requirements of 40 CFR 60, listed below, adopted by reference in Rule 62-204.800(7)(b), F.A.C. The Department determines that compliance with the BACT emissions performance requirements also assures compliance with the New Source Performance Standards given in 40 CFR 60, Subpart KKKK. Some separate reporting and monitoring may be required by the individual subparts.

   a *Subpart A, General Provisions*, including:

   - 40 CFR 60.7, Notification and Record Keeping
   - 40 CFR 60.8, Performance Tests

- 40 CFR 60.11, Compliance with Standards and Maintenance Requirements
- 40 CFR 60.12, Circumvention
- 40 CFR 60.13, Monitoring Requirements
- 40 CFR 60.19, General Notification and Reporting Requirements

b *Subpart KKKK, Standards of Performance for Stationary Gas Turbines*: These provisions include standards for combustion gas turbines and duct burners.

3. NESHAP Requirements: The combustion turbines are subject to 40 CFR 63, Subpart A, Identification of General Provisions and 40 CFR 63, Subpart YYYY, National Emissions Standard for Hazardous Air Pollutants for Stationary Combustion Gas Turbines. The project must comply with the Initial Notification requirements set forth in Sec. 63.6145 but need not comply with any other requirement of Subpart YYYY until EPA takes final action to require compliance and publishes a document in the Federal Register. (Reference: Appendix YYYY and Appendix A, NESHAP Subpart A of this permit).

EQUIPMENT AND CONTROL TECHNOLOGY

4. Gas Turbines: The permittee is authorized to install, tune, operate, and maintain six Model 501G gas turbine-electrical generator sets each with a nominal generating capacity of 250 MW. Each gas turbine shall include an automated gas turbine control system and have dual-fuel capability. Ancillary equipment includes an inlet air filtration system and an evaporative inlet air-cooling system. The gas turbines will utilize DLN combustors. [Application; Design]

5. HRSGs: The permittee is authorized to install, operate, and maintain six new heat recovery steam generators (HRSGs) with separate HRSG exhaust stacks. Each HRSG shall be designed to recover exhaust heat energy from one of the six gas turbines (1A to 1C and 2A to 2C) and deliver steam to one of the two steam turbine electrical generators. Each HRSG may be equipped with a gas-fired duct burner having a nominal heat input rate of 428 MMBtu per hour (LHV).

6. Gas Turbine/Supplementary-fired HRSG Emission Controls

a. *DLN Combustion*: The permittee shall operate and maintain the DLN system to control NO_X emissions from each gas turbine when firing natural gas. Prior to the initial emissions performance tests required for each gas turbine, the DLN combustors and automated gas turbine control system shall be tuned to achieve sufficiently low CO and NO_X values to meet the CO and NO_X limits with the additional SCR control technology described below. Thereafter, each system shall be maintained and tuned in accordance with the manufacturer's recommendations.

b. *Water Injection*: The permittee shall install, operate, and maintain a water injection system to reduce NO_X emissions from each gas turbine when firing distillate fuel oil. Prior to the initial emissions performance tests required for each gas turbine, the water injection system shall be tuned to achieve sufficiently low CO and NO_X values to meet the CO and NO_X limits with the additional SCR control technology described below. Thereafter, each system shall be maintained and tuned in accordance with the manufacturer's recommendations.

c. *Selective Catalytic Reduction (SCR) System*: The permittee shall install, tune, operate, and maintain an SCR system to control NO_X emissions from each gas turbine when firing either natural gas or distillate fuel oil. The SCR system consists of an ammonia (NH_3) injection grid, catalyst, ammonia storage, monitoring and control system, electrical, piping and other ancillary equipment. The SCR system shall be designed, constructed and operated to achieve the permitted levels for NO_X and NH_3 emissions.

d. *Oxidation Catalyst*: The permittee shall design and build the project to facilitate possible future installation of oxidation catalyst system to control CO emissions from each gas combustion

turbine/supplementary-fired heat recovery steam generator. The permittee may install the oxidation catalyst during project construction or, after notifying the Department, at a future date as described in Specific Condition 12.h.

e. *Ammonia Storage:* In accordance with 40 CFR 60.130, the storage of ammonia shall comply with all applicable requirements of the Chemical Accident Prevention Provisions in 40 CFR 68.

[Design; Rule 62-212.400(BACT), F.A.C.]

PERFORMANCE RESTRICTIONS

7. Permitted Capacity - Gas Turbines: The nominal heat input rate to each gas turbine is 2,333 MMBtu per hour when firing natural gas and 2,117 MMBtu per hour when firing distillate fuel oil (based on a compressor inlet air temperature of 59° F, the lower heating value (LHV) of each fuel, and 100% load). Heat input rates will vary depending upon gas turbine characteristics, ambient conditions, alternate methods of operation, and evaporative cooling. The permittee shall provide manufacturer's performance curves (or equations) that correct for site conditions to the Permitting and Compliance Authorities within 45 days of completing the initial compliance testing. Operating data may be adjusted for the appropriate site conditions in accordance with the performance curves and/or equations on file with the Department. [Rule 62-210.200(PTE), F.A.C.]

8. Permitted Capacity - HRSG Duct Burners: The total nominal heat input rate to the duct burners for each HRSG is 428 MMBtu per hour based on the lower heating value (LHV) of natural gas. Only natural gas shall be fired in the duct burners. [Rule 62-210.200(PTE), F.A.C.]

9. Authorized Fuels: The gas turbine shall fire natural gas as the primary fuel, which shall contain no more than 2.0 grains of sulfur per 100 standard cubic feet of natural gas. As a restricted alternate fuel, the gas turbine may fire ultra low sulfur distillate fuel oil containing no more than 0.0015% sulfur by weight. Each gas turbine shall fire no more than 500 hours of fuel oil, during any calendar year. [Rules 62-210.200(PTE) and 62-212.400 (BACT), F.A.C.]

10. Hours of Operation: Subject to the operational restrictions of this permit, the gas turbines may operate throughout the year (8760 hours per year). Restrictions on individual methods of operation are specified below.

11. Methods of Operation: Subject to the restrictions and requirements of this permit, the gas turbines may operate under the following methods of operation.

    a. *Combined Cycle Operation*: Each gas turbine/HRSG system may operate to produce direct, shaft-driven electrical power and steam-generated electrical power from the steam turbine-electrical generator as a three-on-one combined cycle unit subject to the restrictions of this permit. In accordance with the specifications of the SCR and HRSG manufacturers, the SCR system shall be on line and functioning properly during combined cycle operation or when the HRSG is producing steam.

    b. *Inlet Conditioning*: In accordance with the manufacturer's recommendations and appropriate ambient conditions, the evaporative cooling system may be operated to reduce the compressor inlet air temperature and provide additional direct, shaft-driven electrical power.

    c. *Duct Firing*: When firing natural gas, each HRSG system may fire natural gas in the duct burners to provide additional steam-generated electrical power. The total combined heat input rate to the duct burners (all six HRSGs) shall not exceed 7,395,840 MMBtu (LHV) during any consecutive 12 months.

[Application; Rules 62-210.200(PTE) and 62-212.400(BACT), F.A.C.]

A. COMBINED CYCLE UNITS 1 AND 2 – GAS TURBINES (EUs 001, 002, 003, 004, 005, and 006)

EMISSIONS STANDARDS

12. Emissions Standards: Emissions from each gas turbine shall not exceed the following standards.

Pollutant	Fuel	Method of Operation	Stack Test, 3-Run Average		CEMS Block Average
			ppmvd @ 15% O_2	lb/hr [g]	ppmvd @ 15% O_2
CO [a]	Oil	Combustion Turbine (CT)	8.0	42.0	8.0, 24-hr 6, 12-month [h]
	Gas	CT & Duct Burner (DB)	7.6	52.5	
		CT Normal	4.1	23.2	
NO_X [b]	Oil	CT	8.0	82.4	8.0, 24-hr
	Gas	CT & DB	2.0	24.2	2.0, 24-hr
		CT Normal	2.0	20.0	
PM/PM_{10} [c]	Oil/Gas	All Modes	2 gr S/100SCF of gas, 0.0015% sulfur fuel oil		
			Visible emissions shall not exceed 10% opacity for each 6-minute block average.		
SAM/SO_2 [d]	Oil/Gas	All Modes	2 gr S/100 SCF of gas, 0.0015% sulfur fuel oil		
VOC [e]	Oil	CT	6.0	19.6	NA
	Gas	CT & DB	1.5	5.4	
		CT Normal	1.2	4.1	
Ammonia [f]	Oil/Gas	CT, All Modes	5	NA	NA

a. Compliance with the continuous 24-hour CO standards shall be demonstrated based on data collected by the required CEMS. The initial and annual EPA Method 10 tests associated with the certification of the CEMS instruments shall also be used to demonstrate compliance with the individual standards for natural gas, fuel oil, and basic duct burner modes. The stacks test limits apply only at high load (90-100% of the combustion turbine capacity).

b. Compliance with the continuous NO_X standards shall be demonstrated based on data collected by the required CEMS. The initial and annual EPA Method 7E or Method 20 tests associated with demonstration of compliance with 40 CFR 60, Subpart KKKK or certification of the CEMS instruments shall also be used to demonstrate compliance with the individual standards for natural gas, fuel oil, and duct burner modes during the time of those tests. NO_X mass emission rates are defined as oxides of nitrogen expressed as NO_2.

c. The sulfur fuel specifications combined with the efficient combustion design and operation of each gas turbine represents (BACT) for PM/PM_{10} emissions. Compliance with the fuel specifications, CO standards, and visible emissions standards shall serve as indicators of good combustion. Compliance with the fuel specifications shall be demonstrated by keeping records of the fuel sulfur content. Compliance with the visible emissions standard shall be demonstrated by conducting tests in accordance with EPA Method 9.

d. The fuel sulfur specifications effectively limit the potential emissions of SAM and SO_2 from the gas turbines and represent BACT for these pollutants. Compliance with the fuel sulfur specifications shall be determined by the ASTM methods for determination of fuel sulfur as detailed in the permit.

e. Compliance with the VOC standards shall be demonstrated by conducting tests in accordance with EPA Method 25A. Optionally, EPA Method 18 may also be performed to deduct emissions of methane and ethane. The emission standards are based on VOC measured as methane. The limits apply only at high load (90-100% of the

combustion turbine capacity). Compliance with the CO CEMS based limits at lower loads shall be deemed as compliance with the VOC limit.

f. Compliance with the ammonia slip standard shall be demonstrated by conducting tests in accordance with EPA Method CTM-027.

g. The mass emission rate standards are based on a turbine inlet condition of 59° F and may be adjusted to actual test conditions in accordance with the performance curves and/or equations on file with the Department.

h. Rolling Average. Enforcement discretion may be exercised for up to 12 months with respect to the 6 ppmvd @15% O_2 limit for any combustion turbine/supplementary-fired heat recovery steam generator upon notification by the permittee of intent to install the oxidation catalyst. The permittee shall have 12 months to complete the oxidation catalyst installation. After completing the installation of the catalyst all prior partial or complete calendar months shall be excluded from the 12-month rolling average.

{"DB" means duct burning. "SCR" means selective catalytic reduction. "NA" means not applicable}.

[Rule 62-212.400(BACT), F.A.C.]

13. Duct Burners: The duct burners are also subject to the provisions of Subpart KKKK of the New Source Performance Standards in 40 CFR 60, which are summarized in Appendix KKKK.

{Permitting Note: The BACT limits applicable during duct firing are much more stringent than the standards of NSPS Subpart KKKK for duct burners. Therefore, compliance with the BACT limits insures compliance with the emission limitations in Subpart KKKK.} [40 CFR 60, Subpart KKKK]

EXCESS EMISSIONS

{Permitting Note: The following conditions apply only to the SIP-based emissions standards specified in Condition No. 12 of this section. Rule 62-210.700, F.A.C. (Excess Emissions) cannot vary or supersede any federal provision of the NSPS, or Acid Rain programs.}

14. Operating Procedures: The Best Available Control Technology (BACT) determinations established by this permit rely on "good operating practices" to reduce emissions. Therefore, all operators and supervisors shall be properly trained to operate and maintain the gas turbines, HRSGs, and pollution control systems in accordance with the guidelines and procedures established by each manufacturer. The training shall include good operating practices as well as methods of minimizing excess emissions.
[Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

15. Alternate Visible Emissions Standard: Visible emissions due to startups, shutdowns, and malfunctions shall not exceed 10% opacity except for up to ten, 6-minute averaging periods during a calendar day, which shall not exceed 20% opacity. [Rule 62-212.400(BACT), F.A.C.]

16. Definitions

a. *Startup* is defined as the commencement of operation of any emissions unit which has shut down or ceased operation for a period of time sufficient to cause temperature, pressure, chemical or pollution control device imbalances, which result in excess emissions.
[Rule 62-210.200(245), F.A.C.]

b. *Shutdown* is the cessation of the operation of an emissions unit for any purpose.
[Rule 62-210.200(230), F.A.C.]

c. *Malfunction* is defined as any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner. [Rule 62-210.200(159), F.A.C.]

17. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation or any other equipment or process failure that may reasonably be prevented during startup,

shutdown or malfunction shall be prohibited. All such preventable emissions shall be included in any compliance determinations based on CEMS data. [Rule 62-210.700(4), F.A.C.]

18. Excess Emissions Allowed: As specified in this condition, excess emissions resulting from startup, shutdown, oil-to-gas fuel switches and documented malfunctions are allowed provided that operators employ the best operational practices to minimize the amount and duration of emissions during such incidents. For each gas turbine/HRSG system, excess emissions resulting from startup, shutdown, or documented malfunctions shall not exceed two hours in any 24-hour period except for the specific cases listed below. A "documented malfunction" means a malfunction that is documented within one working day of detection by contacting the Compliance Authority by telephone, facsimile transmittal, or electronic mail.

    a. *Steam Turbine/HRSG System Cold Startup*: For cold startup of the steam turbine system, excess emissions from any gas turbine/HRSG system shall not exceed eight hours in any 24-hour period. A cold "startup of the steam turbine system" is defined as startup of the 3-on-1 combined cycle system following a shutdown of the steam turbine lasting at least 48 hours.

    {Permitting Note: During a cold startup of the steam turbine system, each gas turbine/HRSG system is sequentially brought on line at low load to gradually increase the temperature of the steam-electrical turbine and prevent thermal metal fatigue. Note that shutdowns and documented malfunctions are separately regulated in accordance with the requirements of this condition.}

    b. *Shutdown Combined Cycle Operation*: For shutdown of the combined cycle operation, excess emissions from any gas turbine/HRSG system shall not exceed three hours in any 24-hour period.

    c. *Gas Turbine/HRSG System Cold Startup*: For cold startup of a gas turbine/HRSG system, excess emissions shall not exceed four hours in any 24-hour period. "Cold startup of a gas turbine/HRSG system" is defined as a startup after the pressure in the high-pressure (HP) steam drum falls below 450 psig for at least a one-hour period.

    d. *Fuel Switching*: For fuel switching, excess emissions shall not exceed 2 hours in any 24-hour period.

19. Ammonia Injection: Ammonia injection shall begin as soon as operation of the gas turbine/HRSG system achieves the operating parameters specified by the manufacturer. As authorized by Rule 62-210.700(5), F.A.C., the above conditions allow excess emissions only for specifically defined periods of startup, shutdown, fuel switching, and documented malfunction of the gas turbines.
[Design; Rules 62-212.400(BACT) and 62-210.700, F.A.C.]

20. DLN Tuning: CEMS data collected during initial or other major DLN tuning sessions shall be excluded from the CEMS compliance demonstration provided the tuning session is performed in accordance with the manufacturer's specifications. A "major tuning session" would occur after completion of initial construction, a combustor change-out, a major repair or maintenance to a combustor, or other similar circumstances. Prior to performing any major tuning session, the permittee shall provide the Compliance Authority with an advance notice of at least 14 days that details the activity and proposed tuning schedule. The notice may be by telephone, facsimile transmittal, or electronic mail.
[Design; Rule 62-4.070(3), F.A.C.]

A. COMBINED CYCLE UNITS 1 AND 2 – GAS TURBINES (EUs 001, 002, 003, 004, 005, and 006)

EMISSIONS PERFORMANCE TESTING

21. Test Methods: Any required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
CTM-027	Procedure for Collection and Analysis of Ammonia in Stationary Source {Notes: This is an EPA conditional test method. The minimum detection limit shall be 1 ppm.}
7E	Determination of Nitrogen Oxide Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
10	Determination of Carbon Monoxide Emissions from Stationary Sources {Notes: The method shall be based on a continuous sampling train.}
18	Measurement of Gaseous Organic Compound Emissions by Gas Chromatography {Note: EPA Method 18 may be used (optional) concurrently with EPA Method 25A to deduct emissions of methane and ethane from the measured VOC emissions.}
20	Determination of Nitrogen Oxides, Sulfur Dioxide and Diluent Emissions from Stationary Gas Turbines
25A	Determination of Volatile Organic Concentrations

Method CTM-027 is published on EPA's Technology Transfer Network Web Site at www.epa.gov/ttn/emc/ctm.html
The other methods are described in Appendix A of 40 CFR 60, adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department.
[Rules 62-204.800, F.A.C.; 40 CFR 60, Appendix A]

22. Initial Compliance Determinations: Each gas turbine shall be stack tested to demonstrate initial compliance with the emission standards for CO, NO_X, VOC, visible emissions, and ammonia slip. The tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after the initial startup of each unit configuration. Each unit shall be tested when firing natural gas, when using the duct burners and when firing distillate fuel oil. Referenced method data collected during the required Relative Accuracy Test Audits (RATAs) may be used to demonstrate compliance with the initial CO and NO_X standards. With appropriate flow measurements (or fuel measurements and approved F-factors), CEMS data may be used to demonstrate compliance with the CO and NO_X mass rate emissions standards. CO and NO_X emissions recorded by the CEMS shall also be reported for each run during tests for visible emissions, VOC and ammonia slip. The Department may require the permittee to conduct additional tests after major replacement or major repair of any air pollution control equipment, such as the SCR catalyst, oxidation catalyst, DLN combustors, etc.
[Rule 62-297.310(7)(a)1, F.A.C. and 40 CFR 60.8]

23. Continuous Compliance: The permittee shall demonstrate continuous compliance with the 24-hour CO and NO_X emissions standards based on data collected by the certified CEMS. Within 45 days of conducting any RATA on a CEMS, the permittee shall submit a report to the Compliance Authority summarizing results of the RATA. Compliance with the CO emission standards also serves as an indicator of efficient fuel combustion and oxidation catalyst operation, which reduces emissions of particulate matter and volatile organic compounds. The Department also reserves the right to use data from the continuous monitoring record and from annual RATA tests to determine compliance with the short term CO and NO_X limits for each method of operation given in Condition 12 above. [Rule 62-212.400 (BACT), F.A.C.]

24. Annual Compliance Tests: During each federal fiscal year (October 1st to September 30th), each gas turbine shall be tested to demonstrate compliance with the emission standards for visible emissions. NO_X and CO emissions data collected during the required continuous monitor Relative Accuracy Test Audits (RATAs) may be used to demonstrate compliance with the CO and NO_x standards. Annual testing to determine the ammonia slip shall be conducted while firing the primary fuel. NO_X emissions recorded by the CEMS shall

be reported for each ammonia slip test run. CO emissions recorded by the CEMS shall be reported for the visible emissions observation period.

{Permitting Note: After initial compliance with the VOC standards is demonstrated, annual compliance tests for VOC emissions are not required. Compliance with the continuously monitored CO standards shall indicate efficient combustion and low VOC emissions. The Department retains the right to require VOC testing if CO limits are exceeded or for the reasons given in Appendix SC, Condition 17, Special Compliance Tests.}

[Rules 62-212.400 (BACT) and 62-297.310(7)(a)4, F.A.C.]

CONTINUOUS MONITORING REQUIREMENTS

25. CEM Systems: The permittee shall install, calibrate, maintain, and operate continuous emission monitoring systems (CEMS) to measure and record the emissions of CO and NO_X from the combined cycle gas turbine in a manner sufficient to demonstrate continuous compliance with the CEMS emission standards of this section. Each monitoring system shall be installed, calibrated, and properly functioning prior to the initial performance tests. Within one working day of discovering emissions in excess of a CO or NO_X standard (and subject to the specified averaging period), the permittee shall notify the Compliance Authority.

    a. *CO Monitors.* The CO monitors shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 4 or 4A. Quality assurance procedures shall conform to the requirements of 40 CFR 60, Appendix F, and the Data Assessment Report of Section 7 shall be made each calendar quarter, and reported semiannually to the Compliance Authority. The RATA tests required for the CO monitor shall be performed using EPA Method 10 in Appendix A of 40 CFR 60 and shall be based on a continuous sampling train. The CO monitor span values shall be set appropriately considering the allowable methods of operation and corresponding emission standards.

    b. *NO_X Monitors.* Each NO_X monitor shall be certified, operated, and maintained in accordance with the requirements of 40 CFR 75. Record keeping and reporting shall be conducted pursuant to Subparts F and G in 40 CFR 75. The RATA tests required for the NO_X monitor shall be performed using EPA Method 20 or 7E in Appendix A of 40 CFR 60.

    c. *Diluent Monitors.* The oxygen (O_2) or carbon dioxide (CO_2) content of the flue gas shall be monitored at the location where CO and NO_X are monitored to correct the measured emissions rates to 15% oxygen. If a CO_2 monitor is installed, the oxygen content of the flue gas shall be calculated using F-factors that are appropriate for the fuel fired. Each monitor shall comply with the performance and quality assurance requirements of 40 CFR 75.

26. CEM Data Requirements:

    a. *Data Collection*: Emissions shall be monitored and recorded at all times including startup, operation, shutdown, and malfunction except for continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments. The CEMS shall be designed and operated to sample, analyze, and record data evenly spaced over an hour. If the CEMS measures concentration on a wet basis, the CEM system shall include provisions to determine the moisture content of the exhaust gas and an algorithm to enable correction of the monitoring results to a dry basis (0% moisture). Alternatively, the owner or operator may develop through manual stack test measurements a curve of moisture contents in the exhaust gas versus load for each allowable fuel, and use these typical values in an algorithm to enable correction of the monitoring results to a dry basis (0% moisture). Final results of the CEMS shall be expressed as ppmvd corrected to 15% oxygen. The CEMS shall be used to demonstrate compliance with the CEMS emission standards for CO and NO_X as specified in this permit. For purposes of determining compliance with the CEMS emissions standards of this permit, missing (or

excluded) data shall not be substituted. Upon request by the Department, the CEMS emission rates shall be corrected to ISO conditions.

b. *Valid Hour*: Hourly average values shall begin at the top of each hour. Each hourly average value shall be computed using at least one data point in each fifteen-minute quadrant of an hour, where the unit combusted fuel during that quadrant of an hour. Notwithstanding this requirement, an hourly value shall be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant of an hour). If less than two such data points are available, the hourly average value is not valid. An hour in which any oil is fired is attributed towards compliance with the permit standards for oil firing. The permittee shall use all valid measurements or data points collected during an hour to calculate the hourly average values.

c. *24-hour Block Averages*: A 24-hour block shall begin at midnight of each operating day and shall be calculated from 24 consecutive hourly average emission rate values. If a unit operates less than 24 hours during the block, the 24-hour block average shall be the average of all available valid hourly average emission rate values for the 24-hour block. For purposes of determining compliance with the 24-hour CEMS standards, the missing data substitution methodology of 40 CFR Part 75, subpart D, shall not be utilized. Instead, the 24-hour block average shall be determined using the remaining hourly data in the 24-hour block. [Rule 62-212.400(BACT), F.A.C.]

{Permitting Note: There may be more than one 24-hour compliance demonstration required for CO and NO_X emissions depending on the use of alternate methods of operation}

d. *Data Exclusion:* Each CEMS shall monitor and record emissions during all operations including episodes of startup, shutdown, malfunction, fuel switches and DLN tuning. Some of the CEMS emissions data recorded during these episodes may be excluded from the corresponding CEMS compliance demonstration subject to the provisions of Condition Nos. 17 and 18 of this section. All periods of data excluded shall be consecutive for each such episode and only data obtained during the described episodes (startup, shutdown, malfunction, fuel switches, DLN tuning) may be used for the appropriate exclusion periods. The permittee shall minimize the duration of data excluded for such episodes to the extent practicable. Data recorded during such episodes shall not be excluded if the episode was caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure, which may reasonably be prevented. Best operational practices shall be used to minimize hourly emissions that occur during such episodes. Emissions of any quantity or duration that occur entirely or in part from poor maintenance, poor operation, or any other equipment or process failure, which may reasonably be prevented, shall be prohibited.

e. *Availability*: Monitor availability for the CEMS shall be 95% or greater in any calendar quarter. The quarterly excess emissions report shall be used to demonstrate monitor availability. In the event 95% availability is not achieved, the permittee shall provide the Department with a report identifying the problems in achieving 95% availability and a plan of corrective actions that will be taken to achieve 95% availability. The permittee shall implement the reported corrective actions within the next calendar quarter. Failure to take corrective actions or continued failure to achieve the minimum monitor availability shall be violations of this permit, except as otherwise authorized by the Department's Compliance Authority.

[Rule 62-297.520, F.A.C.; 40 CFR 60.7(a)(5) and 40 CFR 60.13; 40 CFR Part 51, Appendix P; 40 CFR 60, Appendix B - Performance Specifications; 40 CFR 60, Appendix F - Quality Assurance Procedures; and Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

27. Ammonia Monitoring Requirements: In accordance with the manufacturer's specifications, the permittee shall install, calibrate, operate and maintain an ammonia flow meter to measure and record the ammonia

injection rate to the SCR system by the time of the initial compliance tests. The permittee shall document and periodically update the general range of ammonia flow rates required to meet permitted emissions levels over the range of load conditions allowed by this permit by comparing NO_X emissions recorded by the CEM system with ammonia flow rates recorded using the ammonia flow meter. During NO_X monitor downtimes or malfunctions, the permittee shall operate at the ammonia flow rate and, as applicable for fuel oil firing, the water-to-fuel ratio, that are consistent with the documented flow rate for the combustion turbine load condition. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

RECORDS AND REPORTS

28. Monitoring of Capacity: The permittee shall monitor and record the operating rate of each gas turbine and HRSG duct burner system on a daily average basis, considering the number of hours of operation during each day (including the times of startup, shutdown and malfunction). Such monitoring shall be made using a monitoring component of the CEM system required above, or by monitoring daily rates of consumption and heat content of each allowable fuel in accordance with the provisions of 40 CFR 75 Appendix D. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

29. Monthly Operations Summary: By the fifth calendar day of each month, the permittee shall record the following for each fuel in a written or electronic log for each gas turbine for the previous month of operation: fuel consumption, hours of operation, hours of duct firing, and the updated 12-month rolling totals for each. Information recorded and stored as an electronic file shall be available for inspection and printing within at least three days of a request by the Department. The fuel consumption shall be monitored in accordance with the provisions of 40 CFR 75 Appendix D.
[Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

30. Fuel Sulfur Records: The permittee shall demonstrate compliance with the fuel sulfur limits specified in this permit by maintaining the following records of the sulfur contents.

    a. *Natural Gas Sulfur Limit*: Compliance with the fuel sulfur limit for natural gas shall be demonstrated by keeping reports obtained from the vendor indicating the average sulfur content of the natural gas being supplied from the pipeline for each month of operation. Methods for determining the sulfur content of the natural gas shall be ASTM methods D4084-82, D4468-85, D5504-01, D6228-98 and D6667-01, D3246-81 or more recent versions.

    b. *Distillate Fuel Oil Sulfur Limit*: Compliance with the distillate fuel oil sulfur limit shall be demonstrated by taking a sample, analyzing the sample for fuel sulfur, and reporting the results to each Compliance Authority before initial startup. Sampling the fuel oil sulfur content shall be conducted in accordance with ASTM D4057-88, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, and one of the following test methods for sulfur in petroleum products: ASTM methods D5453-00, D129-91, D1552-90, D2622-94, or D4294-90. More recent versions of these methods may be used. For each subsequent fuel delivery, the permittee shall maintain a permanent file of the certified fuel sulfur analysis from the fuel vendor. At the request of a Compliance Authority, the permittee shall perform additional sampling and analysis for the fuel sulfur content.

    The above methods shall be used to determine the fuel sulfur content in conjunction with the provisions of 40 CFR 75 Appendix D. [Rules 62-4.070(3) and 62-4.160(15), F.A.C.]

31. Emissions Performance Test Reports: A report indicating the results of any required emissions performance test shall be submitted to the Compliance Authority no later than 45 days after completion of the last test run. The test report shall provide sufficient detail on the tested emission unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in Rule 62-297.310(8)(c), F.A.C. and in Appendix SC of this permit. [Rule 62-297.310(8), F.A.C.].

A. COMBINED CYCLE UNITS 1 AND 2 – GAS TURBINES (EUs 001, 002, 003, 004, 005, and 006)

32. Excess Emissions Reporting:

    a. *Malfunction Notification:* If emissions in excess of a standard (subject to the specified averaging period) occur due to malfunction, the permittee shall notify the Compliance Authority within (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident.

    b. *SIP Quarterly Permit Limits Excess Emissions Report*: Within 30 days following the end of each calendar-quarter, the permittee shall submit a report to the Compliance Authority summarizing periods of CO and NOx emissions in excess of the BACT permit standards following the NSPS format in 40 CFR 60.7(c), Subpart A. Periods of startup, shutdown and malfunction, shall be monitored, recorded and reported as excess emissions when emission levels exceed the standards specified in this permit. In addition, the report shall summarize the CEMS systems monitor availability for the previous quarter.

    c. *NSPS Semi-Annual Excess Emissions Reports*: For purposes of reporting emissions in excess of NSPS Subpart KKKK, excess emissions from the gas turbine are defined as: a specified averaging period over which either the NO_X emissions are higher than the applicable emission limit in 60.4320; or the total sulfur content of the fuel being combusted in the affected facility exceeds the limit specified in 60.4330. Within thirty (30) days following each calendar semi-annual period, the permittee shall submit a report on any periods of excess emissions that occurred during the previous semi-annual period to the Compliance Authority.

    {Note: If there are no periods of excess emissions as defined in NSPS Subpart KKKK, a statement to that effect may be submitted with the SIP Quarterly Report to suffice for the NSPS Semi-Annual Report.}

    [Rules 62-4.130, 62-204.800, 62-210.700(6), F.A.C., and 40 CFR 60.7, and 60.4420]

33. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating hours and emissions from this facility. The permittee shall also keep records sufficient to determine the annual throughput of distillate fuel oil for the fuel oil storage tank for use in the Annual Operating Report. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.

B. DISTILLATE FUEL OIL STORAGE TANK (EU 007)

This section of the permit addresses the following emissions unit.

ID	Emission Unit Description
007	Two Nominal 6.3 million gallon distillate fuel oil storage tanks

NSPS APPLICABILITY

1. NSPS Subpart Kb Applicability: The distillate fuel oil tanks are not subject to Subpart Kb, which applies to any storage tank with a capacity greater than or equal to 10,300 gallons (40 cubic meters) that is used to store volatile organic liquids for which construction, reconstruction, or modification is commenced after July 23, 1984. Tanks with a capacity greater than or equal to 40,000 gallons (151 cubic meters) storing a liquid with a maximum true vapor pressure less than 3.5 kPa are exempt from the General Provisions (40 CFR 60, Subpart A) and from the provisions of NSPS Subpart Kb,. [40 CFR 60.110b(a) and (c); Rule 62-204.800(7)(b), F.A.C.]

   The listed emission units shall comply with 40 CFR 60, Subpart Kb only to the extent that the regulations apply to the emission unit and its operations.

EQUIPMENT SPECIFICATIONS

2. Equipment: The permittee is authorized to install, operate, and maintain two 6.3 million gallon distillate fuel oil storage tank designed to provide ultra low sulfur fuel oil to the gas turbines. [Applicant Request; Rule 62-210.200(PTE), F.A.C.]

EMISSIONS AND PERFORMANCE REQUIREMENTS

3. Hours of Operation: The hours of operation are not restricted (8760 hours per year). [Applicant Request; Rule 62-210.200(PTE), F.A.C.]

NOTIFICATION, REPORTING AND RECORDS

4. Oil Tank Records: The permittee shall keep readily accessible records showing the dimension of each storage vessel and an analysis showing the capacity of each storage tank. Records shall be retained for the life of the facility. The permittee shall also keep records sufficient to determine the annual throughput of distillate fuel oil for each storage tank for use in the Annual Operating Report. [Rule 62-4.070(3) F.A.C]

5. Fuel Oil Records: The permittee shall keep readily accessible records showing the maximum true vapor pressure of the stored liquid. The maximum true vapor pressure shall be less than 3.5 kPa. Compliance with this condition may be demonstrated by using the information from the respective MSDS for the ultra low sulfur fuel oil(s) stored in the tanks. [62-4.070(3) F.A.C.]

   {Permitting Note: An evaluation of several Material Safety Data Sheets (MSDS) by the Department and applicant demonstrated that the vapor pressure is much less than 3.5 kPa for ultralow sulfur fuel oil.}

C. COOLING TOWER (EU 008)

This section of the permit addresses the following new emissions unit.

ID	Emission Unit Description
008	Two 26-cell mechanical draft cooling towers

EQUIPMENT

1. Cooling Tower: The permittee is authorized to install two new 26-cell mechanical draft cooling towers with the following nominal design characteristics: a circulating water flow rate of 306,000 gpm; design hot/cold water temperatures of 105° F/87° F; a design air flow rate of 1,500,000 per cell; a liquid-to-gas air flow ratio of 1.045; and drift eliminators. The permittee shall submit the final design details within 60 days of selecting the vendor. [Application; Design]

EMISSIONS AND PERFORMANCE REQUIREMENTS

2. Drift Rate: Within 60 days of commencing operation, the permittee shall certify that the cooling tower was constructed to achieve the specified drift rate of no more than 0.0005 percent of the circulating water flow rate. [Rule 62-212.400(BACT), F.A.C.]

   {Permitting Note: This work practice standard is established as BACT for PM/PM_{10} emissions from the cooling tower. Based on this design criteria, potential emissions are expected to be less than 100 tons of PM per year and less than 5 tons of PM_{10} per year. Actual emissions are expected be lower than these rates.}.

This section of the permit addresses the following emissions units.

ID	Emission Unit Description
014	Two limited use gas-fueled auxiliary boilers (99.8 MMBTU/h and 85,000 lb/hr)
015	Two gas-fueled 10 MMBtu/hr process heaters

NESHAP APPLICABILITY

1. NESHAP Subpart DDDDD Applicability: These emissions units are subject to Subpart DDDDD, which applies to an industrial, commercial, or institutional boiler or process heater as defined in Sec. 63.7575 that is located at, or is part of, a major source of HAP as defined in Sec. 40 CFR 63.2.

   The listed emission units shall comply with 40 CFR 63, NESHAP Subpart DDDDD only to the extent that the regulations apply to the emission unit and its operations (e.g. limited use gas-fueled or small gas-fueled categories.

   [40 CFR 63, Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, or Institutional Boiler or Process Heater]

NSPS APPLICABILITY

2. NSPS Subpart Dc Applicability: Each 99.8 MMBTU/hr (85,000 lb/hr) auxiliary boiler is subject to all applicable requirements of 40 CFR 60, Subpart Dc which applies to Small Industrial, Commercial, or Institutional Boiler. Specifically, each emission unit shall comply with 40 CFR60.48c Reporting and Recordkeeping Requirements.

   [Rule 62-204.800(7)(b) and 40 CFR 60, NSPS-Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, attached as Appendix Dc].

EMISSIONS AND TESTING REQUIREMENTS

3. Auxiliary Boiler BACT Emissions Limits:

NO_X	CO	VOC, SO_2, PM/PM_{10}
0.05 lb/MMBtu	0.08 lb/MMBtu	2 gr S/100SCF natural gas spec and 10% Opacity

4. Auxiliary Boilers Testing Requirements: Each unit shall be stack tested to demonstrate initial compliance with the emission standards for CO, NO_X and visible emissions. The tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after the initial startup of each combined cycle unit.

   [Rule 62-297.310(7)(a)1, F.A.C. and 40 CFR 63.7]

   Test Methods: Any required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
7E	Determination of Nitrogen Oxide Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
10	Determination of Carbon Monoxide Emissions from Stationary Sources {Notes: The method shall be based on a continuous sampling train.}

5. Annual CO Performance Test for Auxiliary Boilers: Pursuant to 40 CFR 63.7515(e) permittee shall conduct an annual CO test according to Sec. 63.7520. Each annual performance test must be conducted between 10 and 12 months after the previous performance test.

   [40 CFR 63.7515 and Rule 62-204.800(11)(b)84. F.A.C.]

6. Natural Gas Fired Process Heaters BACT Emissions Limits:

NO_X	CO	VOC, SO_2, PM/PM_{10}
0.095 lb/MMBtu	0.08 lb/MMBtu	2 gr S/100SCF natural gas spec and 10% Opacity

7. Natural Gas Fired Process Heaters Testing Requirements: Each unit shall be stack tested to demonstrate initial compliance with the emission standards for CO, NO_X and visible emissions. The tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after the initial startup of each combined cycle unit. As an alternative, a Manufacturer certification of emissions characteristics of the purchased model that are at least as stringent as the BACT values can be used to fulfill this requirement.

   [Rule 62-297.310(7)(a)1, F.A.C. and 40 CFR 60.8]

   Test Methods: Any required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
7E	Determination of Nitrogen Oxide Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
10	Determination of Carbon Monoxide Emissions from Stationary Sources {Notes: The method shall be based on a continuous sampling train.}

EQUIPMENT SPECIFICATIONS

8. Equipment: The permittee is authorized to install, operate, and maintain two auxiliary boilers with a maximum design heat input of 99.8 MMBtu/hr (85,000 lb/hr) each to produce steam during start up of the CTs and two 10 MMBtu/hr process heaters for the purpose of heating the natural gas supply to the CTs. [Applicant Request; Rule 62-210.200(PTE), F.A.C.]

PERFORMANCE REQUIREMENTS

9. Hours of Operation: The hours of operation of each limited use gas-fueled auxiliary boiler shall not exceed 500 hours per year. The gas-fueled process heaters are allowed to operate continuously (8760 hours per year). [Applicant Request; Rule 62-210.200(PTE), F.A.C. and 40 CFR 63.7575]

NOTIFICATION, REPORTING AND RECORDS

10. Notification: Initial notification is required for the two limited use 99.8 MMBtu/hr gas-fueled auxiliary boilers. Initial notification is not required for the two small gas-fueled 10 MMBtu/hr process heaters. [40 CFR 63.9, 40 CFR 63.7506(c) and Rule 62-204.800(11)(b) F.A.C.]

11. Reporting: The permittee shall maintain records of the amount of natural gas used in the heaters and auxiliary boilers. These records shall be submitted to the Compliance Authority on an annual basis or upon request. [Rule 62-4.070(3] F.A.C.]

EMERGENCY GENERATOR (011)

This section of the permit addresses the following emissions unit.

ID	Emission Unit Description
011	Four nominal 2,250 Kw Liquid Fueled Emergency Generators – Reciprocating Internal Combustion Engines

NESHAPS APPLICABILITY

1. NESHAPS Subpart ZZZZ Applicability: These emergency generators are Liquid Fueled Reciprocating Internal Combustion Engines (RICE) and are subject to 40 CFR 63, Subpart ZZZZ. They shall comply with 40 CFR 63, NESHAP Subpart ZZZZ only to the extent that the regulations apply to the emissions unit and its operations.

   [40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) and Rule 62-204.800(11)(b)80, F.A.C.]

NSPS APPLICABILITY

2. NSPS Subpart IIII Applicability: These emergency generators are Stationary Compression Ignition Internal Combustion Engines (Stationary ICE) and are subject to 40 CFR 60, Subpart IIII. They shall comply with 40 CFR 60, Subpart IIII only to the extent that the regulations apply to the emission unit and its operations (e.g. non-road, emergency, displacement, capacity, model year selected).

   [40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines]

EQUIPMENT SPECIFICATIONS

3. Equipment: The permittee is authorized to install, operate, and maintain four 2,250 Kw emergency generators. [Applicant Request; Rule 62-210.200(PTE), F.A.C.]

EMISSIONS AND PERFORMANCE REQUIREMENTS

4. Hours of Operation and Fuel Specifications: The hours of operation shall not exceed 160 hours per year per each generator. The generators are allowed to burn 0.0015% sulfur fuel oil.
   [Applicant Request; Rule 62-210.200(PTE), F.A.C.]

5. Emergency Generators BACT Emissions Limits:

NO_X	CO	Hydrocarbons[1]	SO_2	PM/PM_{10}
6.9 gm/bhp-hr	8.5 gm/bhp-hr	1.0 gm/bhp-hr	0.0015% S F.O.	0.4 gm/bhp-hr

   Note 1. Hydrocarbons are surrogate for VOC.

   {The BACT limits are equal to the values corresponding to the Tier 1 values cited in the proposed rule 40 CFR 60, Subpart IIII}

6. Emergency Generators Testing Requirements: Each unit shall be stack tested to demonstrate initial compliance with the emission standards for CO, NO_X and visible emissions. The tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after the initial startup of each combined cycle unit. As an alternative, an EPA Certification of emissions characteristics of the purchased model that are at least as stringent as the BACT values and the use of ULS fuel oil can be used to fulfill this requirement.
   [Rule 62-297.310(7)(a)1, F.A.C.; 40 CFR 60.8 and 40 CFR 60.4211]

Test Methods: Any required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
7E	Determination of Nitrogen Oxide Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
10	Determination of Carbon Monoxide Emissions from Stationary Sources {Notes: The method shall be based on a continuous sampling train.}

NOTIFICATION, REPORTING AND RECORDS

7. Notifications: Initial notification are required pursuant to 40 CFR 60.7, 40 CFR 63.9, and 40 CFR 63.6590 (b) (i) for the four 2,250 Kw RICE units.

8. Reporting: The permittee shall maintain records of the amount of liquid fuel used. These records shall be submitted to the Compliance Authority on an annual basis or upon request. [Rule 62-4.070(3] F.A.C.].

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS

EMERGENCY FIRE PUMP (012)

This section of the permit addresses the following emissions unit.

ID	Emission Unit Description
012	One emergency diesel fire pump engine (< 300 hp) and 500 gallon fuel oil storage tank.

NSPS APPLICABILITY

1. NSPS Subpart IIII Applicability: The fire pump engine is an Emergency Stationary Compression Ignition Internal Combustion Engine (Stationary ICE) and is subject to 40 CFR 60, Subpart IIII. It shall comply with 40 CFR 60, Subpart IIII only to the extent that the regulations apply to the emissions unit and its operations (e.g. fire pumps, horsepower, model year selected).

   [40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.]

EQUIPMENT SPECIFICATIONS

2. Equipment: The permittee is authorized to install, operate, and maintain one diesel engine driven fire pump (< 300 hp) and an associated 500 gallon fuel oil storage tank.

EMISSIONS AND PERFORMANCE REQUIREMENTS

3. Hours of Operation: The fire pump may operate in response to emergency conditions and 80 non-emergency hours per year for maintenance testing.
   [Applicant Request; Rule 62-210.200 (PTE), F.A.C.]

4. Authorized Fuel: This unit shall fire low sulfur fuel oil (or superior fuel), which shall contain no more than 0.05% sulfur by weight. [Rules 62-210.200(PTE) and 62-212.400 (BACT), F.A.C.]

   Compliance with the distillate fuel oil sulfur limit shall be demonstrated by taking a sample, analyzing the sample for fuel sulfur, and reporting the results to each Compliance Authority before initial startup. Sampling the fuel oil sulfur content shall be conducted in accordance with ASTM D4057-88, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, and one of the following test methods for sulfur in petroleum products: ASTM methods D5453-00, D129-91, D1552-90, D2622-94, or D4294-90. More recent versions of these methods may be used. For each subsequent fuel delivery, the permittee shall maintain a permanent file of the certified fuel sulfur analysis from the fuel vendor. At the request of a Compliance Authority, the permittee shall perform additional sampling and analysis for the fuel sulfur content.

5. Fire Pump Engine BACT Emissions Limits:

The following limits apply based on the size category of the fire pump located at the facility.

Size (hp)	CO	NMHC+NO_X	PM
$175 \leq hp < 300$	2.6	7.8	0.40

Note 1. Non-Methane Hydrocarbons (NMHC) are surrogate for VOC.

{The BACT limits are equal to the values corresponding to the size class indicated above and cited in 40 CFR 60, Subpart IIII}

6. Fire Pump Engine Certification: Manufacturer certification shall be provided to the Department in lieu of actual testing. [Rule 62-212.400 (BACT), F.A.C. and 40 CFR 60.411]

SECTION IV. APPENDICES

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Appendix A	NSPS Subpart A and NESHAP Subpart A - Identification of General Provisions
Appendix BD	Final BACT Determinations and Emissions Standards
Appendix Dc	NSPS Subpart Dc Requirements for Small Industrial Commercial-Institutional Steam Generating Units
Appendix DDDDD	NESHAP Requirements for Industrial, Commercial, and Institutional Boilers and Process Heaters from 40 CFR 63, Subpart DDDDD
Appendix GC	General Conditions
Appendix IIII	NSPS Subpart IIII Requirements for Reciprocating Internal Combustion Engines (ICE)
Appendix KKKK	NSPS Subpart KKKK Requirements for Gas Turbines and Duct Burners
Appendix SC	Standard Conditions
Appendix XS	Semiannual NSPS Excess Emissions Report
Appendix YYYY	NESHAP Requirements for Gas Turbines from 40 CFR 63, Subpart YYYY
Appendix ZZZZ	NESHAP Requirements for Reciprocating Internal Combustion Engines from 40 CFR 63, Subpart ZZZZ

NSPS SUBPART A, IDENTIFICATION OF GENERAL PROVISIONS

The provisions of this Subpart may be provided in full upon request. Emissions units subject to a New Source Performance Standard of 40 CFR 60 are also subject to the applicable requirements of Subpart A, the General Provisions, including:

§ 60.1 Applicability.

§ 60.2 Definitions.

§ 60.3 Units and abbreviations.

§ 60.4 Address.

§ 60.5 Determination of construction or modification.

§ 60.6 Review of plans.

§ 60.7 Notification and Record Keeping.

§ 60.8 Performance Tests.

§ 60.9 Availability of information.

§ 60.10 State Authority.

§ 60.11 Compliance with Standards and Maintenance Requirements.

§ 60.12 Circumvention.

§ 60.13 Monitoring Requirements.

§ 60.14 Modification.

§ 60.15 Reconstruction.

§ 60.16 Priority List.

§ 60.17 Incorporations by Reference.

§ 60.18 General Control Device Requirements.

§ 60.19 General Notification and Reporting Requirements.

Individual subparts may exempt specific equipment or processes from some or all of these requirements. The general provisions may be provided in full upon request.

NESHAP - SUBPART A, IDENTIFICATION OF GENERAL PROVISIONS

The provisions of this Subpart may be provided in full upon request. Emissions units subject to a National Emission Standards for Hazardous Air Pollutants of 40 CFR 63 are also subject to the applicable requirements of Subpart A, the General Provisions, including:

§ 63.1 Applicability.

§ 63.2 Definitions.

§ 63.3 Units and abbreviations.

§ 63.4 Prohibited Activities and Circumvention.

§ 63.5 Preconstruction Review and Notification Requirements.

§ 63.6 Compliance with Standards and Maintenance Requirements.

§ 63.7 Performance Testing Requirements.

§ 63.8 Monitoring Requirements.

§ 63.9 Notification Requirements.

§ 63.10 Recordkeeping and Reporting Requirements.

§ 63.11 Control Device Requirements.

§ 63.12 State Authority and Delegations.

§ 63.13 Addresses of State Air Pollution Control Agencies and EPA Regional Offices.

§ 63.14 Incorporation by Reference.

§ 63.15 Availability of Information and Confidentiality.

Individual subparts may exempt specific equipment or processes from some or all of these requirements. The general provisions may be provided in full upon request.

Refer to the BACT proposal discussed in the initial Technical Evaluation for this project and to the Final Determination issued with the Final permit for the rationale regarding the following BACT determination.

Pollutant	Fuel	Method of Operation	Stack Test, 3-Run Average		CEMS Block Average
			ppmvd @ 15% O_2	lb/hr [g]	ppmvd @ 15% O_2
CO [a]	Oil	Combustion Turbine (CT)	8.0	42.0	8.0, 24-hr 6, 12-month [h]
	Gas	CT & Duct Burner (DB)	7.6	52.5	
		CT Normal	4.1	23.2	
NO_X [b]	Oil	CT	8.0	82.4	8.0, 24-hr
	Gas	CT & DB	2.0	24.2	2.0, 24-hr
		CT Normal	2.0	20.0	
PM/PM_{10} [c]	Oil/Gas	All Modes	2 gr S/100SCF of gas, 0.0015% sulfur fuel oil		
			Visible emissions shall not exceed 10% opacity for each 6-minute block average.		
SAM/SO_2 [d]	Oil/Gas	All Modes	2 gr S/100 SCF of gas, 0.0015% sulfur fuel oil		
VOC [e]	Oil	CT	6.0	19.6	NA
	Gas	CT & DB	1.5	5.4	
		CT Normal	1.2	4.1	
Ammonia [f]	Oil/Gas	CT, All Modes	5	NA	NA

a. Compliance with the continuous 24-hour CO standards shall be demonstrated based on data collected by the required CEMS. The initial and annual EPA Method 10 tests associated with the certification of the CEMS instruments shall also be used to demonstrate compliance with the individual standards for natural gas, fuel oil, and basic duct burner modes. The stacks test limits apply only at high load (90-100% of the combustion turbine capacity).

b. Compliance with the continuous NO_X standards shall be demonstrated based on data collected by the required CEMS. The initial and annual EPA Method 7E or Method 20 tests associated with demonstration of compliance with 40 CFR 60, Subpart GG or certification of the CEMS instruments shall also be used to demonstrate compliance with the individual standards for natural gas, fuel oil, and duct burner modes during the time of those tests. NO_X mass emission rates are defined as oxides of nitrogen expressed as NO_2.

c. The sulfur fuel specifications combined with the efficient combustion design and operation of each gas turbine represents (BACT) for PM/PM_{10} emissions. Compliance with the fuel specifications, CO standards, and visible emissions standards shall serve as indicators of good combustion. Compliance with the fuel specifications shall be demonstrated by keeping records of the fuel sulfur content. Compliance with the visible emissions standard shall be demonstrated by conducting tests in accordance with EPA Method 9.

d. The fuel sulfur specifications effectively limit the potential emissions of SAM and SO_2 from the gas turbines and represent BACT for these pollutants. Compliance with the fuel sulfur specifications shall be determined by the ASTM methods for determination of fuel sulfur as detailed in the draft permit.

e. Compliance with the VOC standards shall be demonstrated by conducting tests in accordance with EPA Method 25A. Optionally, EPA Method 18 may also be performed to deduct emissions of methane and ethane. The emission standards are based on VOC measured as methane. The limits apply only at high load (90-100% of the combustion turbine capacity). Compliance with the CO CEMS based limits at lower loads shall be deemed as compliance with the VOC limit.

f. Compliance with the ammonia slip standard shall be demonstrated by conducting tests in accordance with EPA Method CTM-027.

g. The mass emission rate standards are based on a turbine inlet condition of 59° F and may be adjusted to actual test conditions in accordance with the performance curves and/or equations on file with the Department.

h. Rolling Average. Enforcement discretion may be exercised for up to 12 months with respect to the 6 ppmvd @15% O_2 limit for any combustion turbine/supplementary-fired heat recovery steam generator upon notification by the permittee of intent to install oxidation catalyst. The permittee shall have 12 months to complete the oxidation catalyst installation. After completing the installation of the catalyst all prior partial or complete calendar months shall be excluded from the 12-month rolling average.

A 99.8 MMBTu/hr (85,000 lb/hr) auxiliary boilers will serve each combined cycle unit system to produce steam during start up of the CTs. They are regulated as Emissions Unit 009. The provisions of this Subpart may be provided in full upon request.

{Note: Only applicable definitions have been included.}

§ 60.40c Applicability and delegation of authority.

(a) Except as provided in paragraph (d) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million Btu per hour (Btu/hr)) or less, but greater than or equal to 2.9 MW (10 million Btu/hr).

(b) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, § 60.48c(a)(4) shall be retained by the Administrator and not transferred to a State.

(c) Steam generating units which meet the applicability requirements in paragraph (a) of this section are not subject to the sulfur dioxide (SO_2) or particulate matter (PM) emission limits, performance testing requirements, or monitoring requirements under this subpart (§ 60.42c, 60.43c, 60.44c, 60.45c, 60.46c, or 60.47c) during periods of combustion research, as defined in § 60.41c.

(d) Any temporary change to an existing steam generating unit for the purpose of conducting combustion research is not considered a modification under § 60.14.

§ 60.41c Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.

Annual capacity factor means the ratio between the actual heat input to a steam generating unit from an individual fuel or combination of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam ch a separate source (such as a stationary gas turbine, internal combustion engine, or kiln) provides exhaust gas to a steam generating unit.

Heat input means heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources (such as stationary gas turbines, internal combustion engines, and kilns).

Natural gas means (1) a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane, or (2) liquefied petroleum (LP) gas, as defined by the American Society for Testing and Materials in ASTM D1835-86, 87, 91, or 97, "Standard Specification for Liquefied Petroleum Gases" (incorporated by reference -- see § 60.17).

Steam generating unit means a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system. This term does not include process heaters as defined in this subpart.

§ 60.42c Standard for sulfur dioxide.

§ 60.43c Standard for particulate matter.

§ 60.44c Compliance and performance test methods and procedures for sulfur dioxide.

§ 60.45c Compliance and performance test methods and procedures for particulate matter.

§ 60.46c Emission monitoring for sulfur dioxide

§ 60.47c Emission monitoring for particulate matter.

§ 60.48c Reporting and recordkeeping requirements.

(a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by § 60.7 of this part. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

(3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

(4) Notification if an emerging technology will be used for controlling SO_2 emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of § 60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.

(g) The owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day.

(i) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.

(j) The reporting period for the reports required under this subpart is each six-month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.

GENERAL CONDITIONS

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

   a. Have access to and copy and records that must be kept under the conditions of the permit;
   b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
   c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

   Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

   a. A description of and cause of non-compliance; and

   b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

   The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida

Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

    a. Determination of Best Available Control Technology (X);
    b. Determination of Prevention of Significant Deterioration (X);
    c. Compliance with National Emission Standards for Hazardous Air Pollutants (X); and
    d. Compliance with New Source Performance Standards (X).

14. The permittee shall comply with the following:

    a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

    b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

    c. Records of monitoring information shall include:

        1) The date, exact place, and time of sampling or measurements;
        2) The person responsible for performing the sampling or measurements;
        3) The dates analyses were performed;
        4) The person responsible for performing the analyses;
        5) The analytical techniques or methods used; and
        6) The results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

The two combined cycle unit systems ("3-on-1") are regulated as Emissions Units 001, 002, 003, 004, 005, and 006. The gas turbines and the HRSG duct burners are part of these combined cycle unit systems. These emissions units shall comply with all applicable requirements of this Subpart.

NEW SOURCE PERFORMANCE STANDARDS (NSPS)

On July 6, 2006, EPA published the final NSPS Subpart KKKK (40 CFR 60) provisions for combustion turbines in the Federal Register. Although not yet adopted by Rule 62-204.800(8), F.A.C., the combustion turbine shall comply with the applicable federal requirements. The provisions of this Subpart may be provided in full upon request.

Source: Federal Register dated 7/6/06

Subpart KKKK--Standards of Performance for Stationary Combustion Turbines

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60.4300 What is the purpose of this subpart?

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60.4305 Does this subpart apply to my stationary combustion turbine?
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60.4320 What emission limits must I meet for nitrogen oxides (NOX)?
60.4325 What emission limits must I meet for NOX if my turbine burns both natural gas and distillate oil (or some other combination of fuels)?
60.4330 What emission limits must I meet for sulfur dioxide (SO2)?

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60.4333 What are my general requirements for complying with this subpart?

Monitoring
60.4335 How do I demonstrate compliance for NOX if I use water or steam injection?
60.4340 How do I demonstrate continuous compliance for NOX if I do not use water or steam injection?
60.4345 What are the requirements for the continuous emission monitoring system equipment, if I choose to use this option?
60.4350 How do I use data from the continuous emission monitoring equipment to identify excess emissions?
60.4355 How do I establish and document a proper parameter monitoring plan?
60.4360 How do I determine the total sulfur content of the turbine's combustion fuel?
60.4365 How can I be exempted from monitoring the total sulfur content of the fuel?
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60.4375 What reports must I submit?
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60.4390 What are my reporting requirements if I operate an emergency combustion turbine or a research and development turbine?
60.4395 When must I submit my reports?

Performance Tests

60.4400 How do I conduct the initial and subsequent performance tests, regarding NOX?
60.4405 How do I perform the initial performance test if I have chosen to install a NOX-diluent CEMS?
60.4410 How do I establish a valid parameter range if I have chosen to continuously monitor parameters?
60.4415 How do I conduct the initial and subsequent performance tests for sulfur?

Definitions

60.4420 What definitions apply to this subpart?

Table 1 to Subpart KKKK of Part 60-Nitrogen Oxide Emission Limits for New Stationary Combustion Turbines.

STANDARD CONDITIONS

Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities at this facility.

EMISSIONS AND CONTROLS

1. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]

2. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]

3. Excess Emissions Allowed: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]

4. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

5. Excess Emissions - Notification: In case of excess emissions resulting from malfunctions, the permitee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]

6. VOC or OS Emissions: No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]

7. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and62-210.200(203), F.A.C.]

8. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20 percent opacity. [Rule 62-296.320(4)(b)1, F.A.C.]

9. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

TESTING REQUIREMENTS

10. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]

11. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2), F.A.C.]

12. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]

13. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C.

    a. Required Sampling Time. Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes. The minimum observation period for a visible emissions compliance test shall be thirty (30) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur.

    b. Minimum Sample Volume. Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet.

    c. Calibration of Sampling Equipment. Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C.

    [Rule 62-297.310(4), F.A.C.]

14. Determination of Process Variables

    a. Required Equipment. The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

    b. Accuracy of Equipment. Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

    [Rule 62-297.310(5), F.A.C.]

15. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C.

16. Test Notification: The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator. [Rule 62-297.310(7)(a)9, F.A.C.]

17. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

18. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide

sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

1) The type, location, and designation of the emissions unit tested.
2) The facility at which the emissions unit is located.
3) The owner or operator of the emissions unit.
4) The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
5) The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
6) The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7) A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8) The date, starting time and duration of each sampling run.
9) The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10) The number of points sampled and configuration and location of the sampling plane.
11) For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
12) The type, manufacturer and configuration of the sampling equipment used.
13) Data related to the required calibration of the test equipment.
14) Data on the identification, processing and weights of all filters used.
15) Data on the types and amounts of any chemical solutions used.
16) Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
17) The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
18) All measured and calculated data required to be determined by each applicable test procedure for each run.
19) The detailed calculations for one run that relate the collected data to the calculated emission rate.
20) The applicable emission standard, and the resulting maximum allowable emission rate for the emissions unit, plus the test result in the same form and unit of measure.
21) A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

RECORDS AND REPORTS

19. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rules 62-4.160(14) and 62-213.440(1)(b)2, F.A.C.]

20. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.]

SEMIANNUAL NSPS EXCESS EMISSIONS REPORT

FIGURE 1. SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE

[Note: This form is referenced in 40 CFR 60.7, Subpart A-General Provisions]

Pollutant *(Circle One)*: SO_2 NO_X TRS H_2S CO Opacity

Reporting period dates: From _____ to _____

Company: _____

Emission Limitation: _____

Address: _____

Monitor Manufacturer: _____

Model No.: _____

Date of Latest CMS Certification or Audit: _____

Process Unit(s) Description: _____

Total source operating time in reporting period [1]: _____

Emission data summary [1]	**CMS performance summary** [1]
1. Duration of excess emissions in reporting period due to:	1. CMS downtime in reporting period due to:
a. Startup/shutdown ..... ____	a. Monitor equipment malfunctions ..... ____
b. Control equipment problems ..... ____	b. Non-Monitor equipment malfunctions ..... ____
c. Process problems ..... ____	c. Quality assurance calibration ..... ____
d. Other known causes ..... ____	d. Other known causes ..... ____
e. Unknown causes ..... ____	e. Unknown causes ..... ____
2. Total duration of excess emissions ..... ____	2. Total CMS Downtime ..... ____
3. Total duration of excess emissions x (100) / [Total source operating time] ..... ____ %[2]	3. [Total CMS Downtime] x (100) / [Total source operating time] ..... ____ %[2]

[1] For opacity, record all times in minutes. For gases, record all times in hours.

[2] For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in 40 CFR 60.7(c) shall be submitted.

Note: On a separate page, describe any changes since the last in CMS, process or controls.

I certify that the information contained in this report is true, accurate, and complete.

Name: _____

Signature: _____ *Date*: _____

Title: _____

SECTION IV. APPENDIX YYYY
NESHAP REQUIREMENTS FOR COMBUSTION TURBINES

The gas turbines are subject to the applicable requirements of this 40 CFR 63, Subpart YYYY. The provisions of this Subpart may be provided in full upon request. The gas turbines are regulated as Emissions Units 001, 002, 003, 004, 005, and 006.

Applicability of NESHAP Subpart YYYY

The West County Energy Center will be a major source of hazardous air pollutant emissions. As such, the proposed new combustion turbines are subject to NESHAP Subpart YYYY, which became final on March 5, 2004. According to the final rule, each unit is considered a "new lean premix gas-fired stationary combustion turbine". Therefore, each new combustion turbine is subject to an emissions standard for formaldehyde of no more than 91 parts per billion by volume, dry (ppbvd @ 15% O_2). Compliance must be demonstrated by initial and annual performance tests. In addition, acceptable operating parameters must be specified that show continuous compliance with the standard. These operating parameters must be continuously monitored that ensure continuous compliance.

Staying of the Rule

On August 18, 2004, EPA stayed the effectiveness of 40 CFR 63, Subpart YYYY for lean premix gas turbines such as those proposed for the West County Project. Following is the change in 40 CFR 63 that stays effectiveness:

§ 63.6095(d) Stay of standards for gas-fired subcategories.

If you start up a new or reconstructed stationary combustion turbine that is a lean premix gas-fired stationary combustion turbine or diffusion flame gas-fired stationary combustion turbine as defined by this subpart, you must comply with the Initial Notification requirements set forth in Sec. 63.6145 but need not comply with any other requirement of this subpart until EPA takes final action to require compliance and publishes a document in the Federal Register.

Requirements

The applicable requirements in Subpart YYYY are:

§ 63.6145 What notifications must I submit and when?

(a) You must submit all of the notifications in §§ 63.7(b) and (c), 63.8(e), 63.8(f)(4), and 63.9(b) and (h) that apply to you by the dates specified.

(b) As specified in § 63.9(b)(2), if you start up your new or reconstructed stationary combustion turbine before March 5, 2004, you must submit an Initial Notification not later than 120 calendar days after March 5, 2004.

(c) As specified in § 63.9(b), if you start up your new or reconstructed stationary combustion turbine on or after March 5, 2004, you must submit an Initial Notification not later than 120 calendar days after you become subject to this subpart.

(d) If you are required to submit an Initial Notification but are otherwise not affected by the emission limitation requirements of this subpart, in accordance with § 63.6090(b), your notification must include the information in § 63.9(b)(2)(i) through (v) and a statement that your new or reconstructed stationary combustion turbine has no additional emission limitation requirements and must explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary combustion turbine).

(e) If you are required to conduct an initial performance test, you must submit a notification of intent to conduct an initial performance test at least 60 calendar days before the initial performance test is scheduled to begin as required in § 63.7(b)(1).

(f) If you are required to comply with the emission limitation for formaldehyde, you must submit a Notification of Compliance Status according to § 63.9(h)(2)(ii). For each performance test required to demonstrate compliance with the emission limitation for formaldehyde, you must submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th calendar day following the completion of the performance test.

[Rules 62-4.070(3) and 62-204.800, F.A.C.; Subparts A and YYYY in 40 CFR 63]

The auxiliary boilers and process heaters are subject to the applicable requirements of this 40 CFR 63, Subpart DDDDD. The provisions of this Subpart may be provided in full upon request. These emissions units are regulated as Emissions Units 009 and 010.

Source: Federal Register Dated 9/12/04

What This Subpart Covers
63.7480 What is the purpose of this subpart?
63.7485 Am I subject to this subpart?
63.7490 What is the affected source of this subpart?
63.7491 Are any boilers or process heaters not subject to this subpart?
63.7495 When do I have to comply with this subpart?

Emission Limits and Work Practice Standards
63.7499 What are the subcategories of boilers and process heaters?
63.7500 What emission limits, work practice standards, and operating limits must I meet?

General Compliance Requirements
63.7505 What are my general requirements for complying with this subpart?
63.7506 Do any boilers or process heaters have limited requirements?
63.7507 What are the health-based compliance alternatives for the hydrogen chloride (HCl) and total selected metals (TSM) standards?

Testing, Fuel Analyses, and Initial Compliance Requirements
63.7510 What are my initial compliance requirements and by what date must I conduct them?
63.7515 When must I conduct subsequent performance tests or fuel analyses?
63.7520 What performance tests and procedures must I use?
63.7521 What fuel analyses and procedures must I use?
63.7522 Can I use emission averaging to comply with this subpart?
63.7525 What are my monitoring, installation, operation, and maintenance requirements?
63.7530 How do I demonstrate initial compliance with the emission limits and work practice standards?

Continuous Compliance Requirements
63.7535 How do I monitor and collect data to demonstrate continuous compliance?
63.7540 How do I demonstrate continuous compliance with the emission limits and work practice standards?
63.7541 How do I demonstrate continuous compliance under the emission averaging provision?

Notifications, Reports, and Records
63.7545 What notifications must I submit and when?
63.7550 What reports must I submit and when?
63.7555 What records must I keep?
63.7560 In what form and how long must I keep my records?

Other Requirements and Information
63.7565 What parts of the General Provisions apply to me?
63.7570 Who implements and enforces this subpart?
63.7575 What definitions apply to this subpart?

Tables to Subpart DDDDD of Part 63

Table 1 to Subpart DDDDD of Part 63--Emission Limits and Work Practice Standards

Table 2 to Subpart DDDDD of Part 63--Operating Limits for Boilers and Process Heaters With Particulate Matter Emission Limits

Table 3 to Subpart DDDDD of Part 63--Operating Limits for Boilers and Process Heaters With Mercury Emission Limits and Boilers and Process Heaters That Choose to Comply With the Alternative Total Selected Metals Emission Limits

Table 4 to Subpart DDDDD of Part 63--Operating Limits for Boilers and Process Heaters With Hydrogen Chloride Emission Limits

Table 5 to Subpart DDDDD of Part 63--Performance Testing Requirements

Table 6 to Subpart DDDDD of Part 63--Fuel Analysis Requirements

Table 7 to Subpart DDDDD of Part 63--Establishing Operating Limits

Table 8 to Subpart DDDDD of Part 63--Demonstrating Continuous Compliance

Table 9 to Subpart DDDDD of Part 63--Reporting Requirements

Table 10 to Subpart DDDDD of Part 63--Applicability of General Provisions to Subpart DDDDD (See Appendix B)

Appendices to Subpart DDDDD

Appendix A to Subpart DDDDD--Methodology and Criteria for Demonstrating Eligibility for the Health-Based Compliance Alternatives Specified for the Large Solid Fuel Subcategory

Appendix B to Subpart DDDDD--Applicability of General Provisions to Subpart DDDDD

The emergency generators are subject to the applicable requirements of this 40 CFR 63, Subpart ZZZZ. The provisions of this Subpart may be provided in full upon request. These emissions units are regulated as Emissions Unit 011.

Source: Federal Register dated 6/15/04; updated 4/20/06

What This Subpart Covers
63.6580 The purpose of subpart ZZZZ
63.6585 Subject to this subpart
63.6590 Parts of my plant does this subpart cover
63.6595 Compliance with this subpart

Emission Limitations
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63.6605 General requirements for complying with this subpart

Testing and Initial Compliance Requirements
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Tables to Subpart ZZZZ of Part 63
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Table 2a to Subpart ZZZZ of Part 63--Emission Limitations for New and Reconstructed Lean Burn and Compression Ignition Stationary RICE
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Table 3 to Subpart ZZZZ of Part 63--Subsequent Performance Tests

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Table 8 to Subpart ZZZZ of Part 63--Applicability of General Provisions to Subpart ZZZZ- See Appendix A to Subpart ZZZZ

Appendix A to Subpart ZZZZ of Part 63- Applicability of General Provisions to Subpart ZZZZ

The emergency fired pump and the emergency generators are subject to the applicable requirements of this 40 CFR 60, Subpart IIII. The provisions of this Subpart may be provided in full upon request. These emissions units are regulated as Emissions Units 011 and 012.

Source Federal Register Dated 7/11/06. Updated 7/19/06 - EFFECTIVE 9/11/06

Subpart IIII--Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

What This Subpart Covers

60.4200 Am I subject to this subpart?

Emission Standards for Manufacturers

60.4201 What emission standards must I meet for non-emergency engines if I am a stationary CI internal combustion engine manufacturer?
60.4202 What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?
60.4203 How long must my engines meet the emission standards if I am a stationary CI internal combustion engine manufacturer?

Emission Standards for Owners and Operators

60.4204 What emission standards must I meet for non-emergency engines if I am an owner or operator of a stationary CI internal combustion engine?
60.4205 What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?
60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?

Fuel Requirements for Owners and Operators

60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?

Other Requirements for Owners and Operators

60.4208 What is the deadline for importing and installing stationary CI ICE produced in the previous model year?
60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?

Compliance Requirements

60.4210 What are my compliance requirements if I am a stationary CI internal combustion engine manufacturer?
60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

Testing Requirements for Owners and Operators

60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?
60.4213 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of greater than or equal to 30 liters per cylinder?

Notification, Reports, and Records for Owners and Operators
60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?

Special Requirements
60.4215 What requirements must I meet for engines used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands?
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60.4217 What emission standards must I meet if I am an owner or operator of a stationary internal combustion engine using special fuels?

General Provisions
60.4218 What parts of the General Provisions apply to me?

Definitions
60.4219 What definitions apply to this subpart?

Tables to Subpart IIII of Part 60
Table 1 to Subpart IIII of Part 60--Emission Standards for Stationary Pre-2007 Model Year Engines with a displacement of < 10 liters per cylinder and 2007-2010 Model Year Engines >2,237 KW (3,000 HP) and with a displacement of < 10 liters per cylinder
Table 2 to Subpart IIII of Part 60--Emission Standards for 2008 Model Year and Later Emergency Stationary CI ICE < 37 KW (50 HP) and with a Displacement of < 10 liters per cylinder
Table 3 to Subpart IIII of Part 60--Certification Requirements for Stationary Fire Pump Engines
Table 4 to Subpart IIII of Part 60--Emission Standards for Stationary Fire Pump Engines
Table 5 to Subpart IIII of Part 60--Labeling and Recordkeeping Requirements for New Stationary Emergency Engines
Table 6 to Subpart IIII of Part 60--Optional 3-Mode Test Cycle for Stationary Fire Pump Engines
Table 7 to Subpart IIII of Part 60--Requirements for Performance Tests for Stationary CI ICE with a displacement of >=30 liters per cylinder
Table 8 to Subpart IIII of Part 60--Applicability of General Provisions to Subpart IIII

FINAL DETERMINATION

Air Construction (PSD) Permit
Florida Power and Light West County Energy Center

DEP File No. 0990646-001-AC (PSD-FL-354)

I. BACKGROUND

On March 1, 2006 the Department distributed a Public Notice package indicating its Intent to Issue an Air Construction Permit pursuant to the Rules for the Prevention of Significant Deterioration of Air Quality (PSD Permit) for the proposed Florida Power and Light Company (FPL) West County Energy Center. The project is to construct a nominal 2,500 megawatt (MW) gas-fueled power plant with limited use of backup ultralow sulfur fuel oil. The project location will be 20505 State Road 80, Loxahatchee, in unincorporated Palm Beach County.

The plant will consist of two nominal 1,250 MW combined cycle units (Units 1 and 2). Each combined cycle unit will be comprised of: three Mitsubishi 501G combustion turbine-electrical generators (CTGs); three duct-fired heat recovery steam generators (HRSGs) with exhaust stacks; a draft mechanical cooling tower; and a steam turbine-electrical generator. The project also includes two nominal 6.3 million gallon tanks for storage of backup ultralow sulfur fuel oil. Ancillary equipment includes auxiliary boilers for startup of the combined cycle units, emergency diesel generators and an emergency fire pump.

Air pollution control will include selective catalytic reduction (SCR) for the control of nitrogen oxides (NO_X) and efficient combustion of inherently low polluting fuels to control emissions of particulate matter (PM/PM_{10}), sulfur oxides (SO_2 and sulfuric acid mist), carbon monoxide (CO) and volatile organic compounds (VOC).

The Public Notice of Intent to Issue PSD Permit was published on March 9, 2006 in The Palm Beach Post. The Notice included: the project location and a project summary; a brief description of the Department's determination of Best Available Control Technology (BACT); emission estimates; and the conclusions of the air impacts. The Notice also included the instructions on: submittal of written comments; how to request a public meeting; how to petition for an administrative hearing; and how to view the public files at the Department offices in Tallahassee and West Palm Beach.

Additionally the Notice provided the Department's webpage that includes: the Notice; the Application; key correspondence; the Department's Technical Evaluation; the Draft Permit; and written comments received during the 30-day comment period. The described information is available at:

www.dep.state.fl.us/Air/permitting/construction/westcounty.htm

No requests for an administrative hearing were received and no significant comments about the Department's draft action were received from the U.S. EPA or the U.S. Fish and Wildlife Service. Written comments were received from five citizens during the 30-day comment period. Two of the individuals also requested that the Department conduct a public meeting about its draft action. In addition several comments were received from the applicant during the 30-day comment period.

The Department promptly scheduled a public meeting at the Village of Royal Palm Beach Community Center for April 19, 2006 from 6 to 8 p.m. Meeting Notices were sent by electronic mail (E-Mail) to the five citizens as well as by E-Mail or facsimile mail (Fax) to the municipalities of Royal Palm Beach and Wellington, Palm Beach County, the Indian Trails District and the Northern Palm Beach County Improvement District. The Meeting Notice was published on April 10 and on April 15, 2006 in The Palm Beach Post. The Notice can be viewed at:

www.dep.state.fl.us/Air/permitting/construction/westcounty/MeetingNotice.pdf

The meeting was also noticed on the Department's internet noticing website at:

http://tlhora6.dep.state.fl.us/onw/publications/7-PublicMeetingWest-4-7-06-INT.pdf

The public meeting was conducted as scheduled and included Department presentations and public comment opportunity. In addition, an informal open house preceded the official meeting to afford additional opportunity for one-on-one questions and answers. The Department's representatives and the moderator clarified that the purpose of the meeting was to take comments regarding the draft air permit and matters related to air pollution and not matters related to other media or zoning decisions. The comments were recorded on audio tape by the Department. Details regarding the public comment are given further below.

A Site Certification Hearing before David M. Maloney, Administrative Law Judge (ALJ), occurred on September 6, 2006 at the Wellington Community Center. The Draft PSD permit comprised part of the Siting Office Staff Report that was introduced into evidence at the hearing. It was not under dispute because no petitions were received pursuant to the Public Notice of Intent to Issue a PSD Permit.

The ALJ's Recommended Order, pre-filed testimony, applicant and Department Exhibits and Certification Hearing comments were filed with the Department Clerk on October 24, 2006. The matter was placed on the December 19, 2006 agenda for final action by the Governor and Cabinet sitting as the Siting Board. The Final Order approving Certification was clerked by the Department for distribution on December 26, 2006.

The Department is required to take final action on the PSD application and permit within 30 days after issuance of a Final Certification Order. This Final Determination recapitulates and responds to the comments related to the PSD Permit, the changes since the Notice of Intent to Issue PSD Permit was distributed on March 1, 2006 and the Department's Final action on the application.

II. EPA COMMENTS

EPA had no comments on the draft permit during the 30-day comment period.

During the application review period EPA provided assistance on the review of the cost-effectiveness of carbon monoxide (CO) control. The review concluded that reductions by installation of oxidation catalyst are cost-effective if such reductions are not achievable by the low emissions technology employed in the combustor design. The Department therefore set low CO emission limitations.

III. NATIONAL PARK SERVICE INPUT

No comments were received during the 30-day comment period from the National Park Service (NPS). NPS provided early guidance on the atmospheric dispersion modeling protocols that FPL used.

IV. WRITTEN PUBLIC COMMENTS RECEIVED PRIOR TO PUBLIC MEETING

The Department received comments from five citizens during the 30-day comment period. These are available on the previously mentioned webpage. They are summarized here in *italics* followed by the Department's responses in regular script. The Department's responses relate primarily to the air permit and air pollution aspects of the comments.

A. Written Comments of Mr. Michael K. Christensen

Mr. Michael K. Christensen is a resident of Jupiter, approximately ten miles away from the site. He provided comments on March 31, 2006 through the Department's public feedback webpage. His concerns are summarized below.

Mr. Christensen opened with the statement that "the technologies exist to decrease emissions and move forward in decreasing greenhouse gases, making our environment less acidic and toxic". He expressed his concerns about the size of the project and the potential disastrous impacts air emissions and large amounts of stored fuel oil could have on the environment.

Response. The Department's representative, Mr. Linero, acknowledged receipt of Mr. Christensen's comments by E-Mail on April 3, 2006 and offered to provide additional documentation to Mr. Christensen. In subsequent telephone conversations, he directed Mr. Christensen to the webpage containing the key documents for his review. Mr. Christensen's E-Mail continued with the following specific items:

1. *The Mitsubishi turbine was selected, unfortunately it had no record in this state, so it was explained, no data pertinent to real operating conditions. The State was to be "flexible" with one of the, if not the, largest power plant in our state. This is not the time to be "flexible". Let me remind you, Global Warming.*

   Response. It is correct that this model is not currently operating in Florida. However, the Department contacted the operators of the Mystic Station in Massachusetts and obtained continuous emission monitoring data from four Mitsubishi 501G combustion turbine-electrical generators (CTGs) that are controlled by selective catalytic reduction (SCR).

   The Department conducted an extensive web search and obtained numerous known papers published by Mitsubishi about their 501G. The Department contacted the Mitsubishi research facility in Takasago Japan and was provided through its Orlando office characteristic curves for NO_X and carbon monoxide (CO) emissions. The Department and FPL then jointly requested that Mitsubishi representatives come to Tallahassee and make a presentation regarding the capabilities of their product. The presentation was made by Mr. Ryoto Kanai on January 9, 2006.

   Mitsubishi subsequently submitted additional information regarding CO, volatile organic compounds (VOC) and test rig data on formaldehyde. Based on the foregoing, the Department had reasonable assurance of compliance with the Department's BACT determination and applicable regulations.

   The resulting plot on Page 12 of the Technical Evaluation and Preliminary Determination available on the webpage became the basis of the Department determination that emissions as low as 2 parts per million of nitrogen oxides (NO_X) by volume dry at 15 percent oxygen (ppmvd) are achievable for this model of turbine.

   The Department issued a Draft BACT determination with a limit of 2.0 ppmvd instead of FPL's proposal of 2.5 ppmvd. The Department determined that control to this level is cost-effective by SCR.

   The Department notes that it issued the Draft PSD Permit and a Draft BACT determination approximately one year after receipt of the application and not until all of its questions were researched and answered by FPL or the Department's own experts.

2. *No information on lbs/ppm was provided by manufacturer reflecting real world environment.*

   Response. This relates to emissions on a pound per hour (lb/hr) or ppmvd basis. The information was requested by the Department's air quality experts through the Siting Office in a Sufficiency Review memorandum dated July 13, 2005 and that is available on the project webpage. The information was ultimately obtained or inferred from the data and characteristic curves described above. It was considered prior to issuance of the Draft PSD Permit and Draft BACT determination.

3. *The more stringent air quality on this "New Major Source Polluter" must be maintained, we cannot, must not go backward. This Major New Pollution Source will be located within 1/4 mile of Arthur R. Marshall National Wildlife Refuge. The damage/disaster potential is great yet no external cost analysis was done.*

   Response. As part of the review to obtain the air permit, the Department must evaluate potential impacts on air quality in South Florida. This includes an evaluation of "Class I areas" such as Everglades National Park (ENP) that are held to a very high standard. Evaluations of other areas (including the ARM Loxahatchee Wildlife Refuge) called Class II areas are also conducted to be sure that the health-based ambient air quality standards are not in jeopardy.

   The details of the evaluation are given in pages 30-39 of the Technical Evaluation and Preliminary Determination available on the web page.

   In addition, the Department contacted the U.S. Fish and Wildlife (USFWS) office in Vero Beach to advise them of the project and requested that FPL visit them to do the same with respect to impacts on media other than air. FPL documented their contacts with USFWS prior to issuance of the Draft PSD Permit.

4. *The boiler question was never coherently answered. Why is the newer version more polluting? Why no investment in cleaning up the pollutants before they are thrust into the air at enormous cfm? No cost analysis reflecting external cost of FPL Major Source Pollutants.*

   Response. This relates to another question in the above mentioned Memorandum. The boilers are gas-fired auxiliary boilers that will be used to assist in the initial startup of the two combined cycle units. Thereafter they will used during cold startups following the very infrequent shutdowns of a steam turbine-electrical generator (STG). Such an event is expected to occur once every one to ten years. The auxiliary boilers also minimize the time during which the CTGs operate in lower load and greater emission modes.

   Each auxiliary boiler will be rated at less than 100 million Btu per hour of heat input. For reference each of the six duct burners is rated at more than 400 mmBtu/hr and each of the six continuously operating CTGs is rated at significantly more that 2000 mmBtu/hr.

   The Department reviewed similar auxiliary boiler BACT determinations for large combined cycle projects throughout the country and specified emission limits that are in line with the very low usage, low emissions and typical features of such boilers. The Department's Draft BACT determination for NO_X and CO from the auxiliary boilers is achievable and is significantly more stringent than the values initially proposed by FPL.

5. *The Air Modeling questions were never resolved, unless you count FPL asking us the public, and you, the regulator to be "Flexible". The statement by your investigators that the County of Palm Beach had serious concerns was never answered cognitively either.*

In the above mentioned Memorandum of June 13, 2005 the Department forwarded to the applicant Palm Beach County's (the County's) questions regarding ambient air quality impacts.

This item is discussed on Page 34 of the March 1, 2006 Technical Evaluation and Preliminary Determination available on the webpage. The County requested through the Department that the applicant provide an increment analysis for annual PM_{10}, SO_2 and NO_X to determine what percentage of the Class II Increment the project was going to consume. Basically Class II Increment describes the maximum allowable increases of pollutants in most areas that are in attainment with the NAAQS.

The Development Order permits the project to be built as long as the impacts are not expected to consume more than 50% of the Increment. This analysis was submitted by the applicant to the County and to the Department. Results indicate that the project impacts are below 50% of the Increment for PM_{10}, SO_2 and NO_X for all averaging times.

6. *It was noted "yes" had been checked, that the pollutants are synthetically limited. The pollutants subject to BACT are not synthetically limited. FPL was to correct and send correcting documentation, this wasn't done, in fact all boxes in resubmitted information are still checked "Yes".*

   Response. The applicant understood the term "synthetically limited" to mean that emissions are limited by some operational constraint such as the hours per year or fuel use. The use of ultra-low sulfur light oil in the CTGs was proposed to be limited to no more than 500 hours/year/CTG and the amount of duct firing is limited by the total amount of natural gas to be used. Therefore, since there were proposed operational limits, the applicant checked "yes" in the respective boxes in the application. The necessary information regarding the operational limitations and the proposed emission limits was included elsewhere in the form.

   A BACT determination was required for this project for every unit regardless of size and emissions because they were all part of a facility-wide evaluation performed in accordance with the established procedures under Rule 62-212.400, F.A.C., Prevention of Significant Deterioration. The BACT determination would be the same for this project whether the applicant did or did not check "yes".

7. *No information regarding SSM was re-submitted that I could find.*

   The comment relates to the same Department memorandum that states "On page 21 of the PSD application it is stated that the 24-hour block averages for NO_X & CO emissions, exclude startup, shutdown and malfunctions (SSM). The Department may consider a longer averaging period, e.g., 30-day rolling average within the BACT that addresses SSM. Please include such an average within the BACT evaluation".

   In its response to the question, FPL provided information to the Department regarding SSM in Sufficiency Response 5FDEP-2. The document is available on the webpage.

8. *Your investigators write about emission units not mentioned in the application, and reference a 4.2 gallon diesel storage facility. In FPL response the 4.2 is now 12.6 million gallons, 3 times the application size, with no supporting documentation on these facilities, 2-6.3 million gallon tanks! This alone should be grounds to stop this. There exists no Expedited permitting for New Major Source Polluters.*

   Response. The question is from the same Department memorandum that states "the (FPL) PSD report addresses emissions units not covered in the application, e.g., 4.2 million gallon

tanks, auxiliary boiler, process heater, emergency generators, etc. Please revise the application form to include these units".

FPL submitted application information on the forms for the additional units with the exception of the storage tanks. FPL's position regarding the storage tanks was that (regardless of size) they are unregulated and exempt from this air construction permit review because of the very low volatile organic compounds (VOC) emissions and vapor pressure expected from storage of ultralow sulfur fuel oil.

While it is true that the storage tanks have no applicable air pollution control requirements under the otherwise governing New Source Performance Standard (40 CFR 60, Subpart Kb), the Department included these emission units in the Draft PSD Permit as an integral part of the facility and included the low vapor pressure requirements and recordkeeping.

While the tanks are large, the annual throughput will be relatively low because use of the ultralow sulfur fuel oil is limited to 500 hours per CTG per year (out of 8,760 hours/CTG/year of operation).

9. *Major Hap source, FPL was asked to provide information on why they neglected to supply necessary documentation on this. They did not supply.*

   Response. Information on hazardous air pollutants (HAP) was provided to the Department in the applicant's response to the memorandum. The specific responses are FDEP-14 through FDEP-19 of the response document available on the Department's webpage for the project.

10. *Your investigators requested all documentation, communication with EPA, Federal Land manager, FWC, local governments, National Parks Service, EPA Region 4, they referenced the Endangered Species act. I saw none in FPL response. In fact they stated the site has no wildlife to be impacted. This site is practically adjacent to the Arthur Marshall National Wildlife Refuge.*

    Response. The applicant responded to the Department's June 13, 2005 memorandum request as item FDEP-20. It provided the status on this matter as of August 10, 2005. FPL subsequently provided an update by copy of a letter dated January 3, 2006 submitted to the responsible USFWS office in Vero Beach. The summary indicates they provided the USFWS with a copy of the ecology report from the Site Certification Application. The letter is at:

    www.dep.state.fl.us/Air/permitting/construction/westcounty/FPLLettertoFWS.pdf

    The Department listed some of the resources of the ARM Loxahatchee NWR in its Technical Evaluation on pages 38 and 39. A description of the Endangered Species Act was provided as well as the contacts made by the Department's air program and the known contacts made by the applicant.

    The issue of the SFWMD is beyond the scope of the PSD Permit review process and relates to other media.

In closing, I ask DEP to rescind or delay issuance of this Pollution Permit until the Departments' questions, and as important, the questions of all the residents that are affected are answered. I have tried to absorb the voluminous material FPL provided, it is too bad they didn't provide or bring any new technologies or "Cutting Edge" solutions to the table. I am counting on the DEP, that they stand by their motto "More Protection, Less Process" Protect us. The Department should be insulted also. We are supposed to be going forward. I say no!

The Department has determined that is has reasonable assurance that the project, as permitted, will comply with all air pollution rules and will not cause or significantly contribute to a violation of any ambient air quality standards or PSD increment.

B. Written Comments of Ms. Patricia Curry

Ms. Curry is a resident of The Acreage, north of Royal Palm Beach, who lives roughly five miles from the site. She provided written E-Mailed comments that were received by the Department on April 6, 2006. She subsequently inquired after the comment period by E-Mail dated April 21, 2006 what other agencies (Local, State or Federal) were then reviewing permits for the proposed project. She asked for a schedule for those reviews, comment period and administrative challenge period.

In Ms. Curry's April 6 comments she stated her concerns about the environment and objections to the construction of a power plant within her vicinity for the reasons summarized below:

1. *The area in question borders what is currently agricultural land and this area in particular is extremely important as it relates to the Comprehensive Everglades Restoration Act.*

   Development of this land should never occur, and the land should be restored to its natural state in order to help the Everglades, as well as to ensure the natural filtration of water into the aquifer.

   Response. The Department determined that many of Ms. Curry's comments are related to matters other than the Draft Air Construction (PSD) Permit. By email dated April 26, 2006 the Department responded to her concerns and referred her, as she requested in her April 21 inquiry, to the respective agencies for the non-air issues and applicable permitting requirements relating to her additional areas of interest (beyond the PSD Permit).

2. *The construction of the West County Energy Center is a threat to rural and agricultural areas because it will facilitate more growth in the area.*

   Response. The described concerns are outside the scope of the Department's air permit and relate to matters handled by the County Commission, the Public Service Commission or the Land Use Hearing described in the following section (Ms. Larson).

3. *The South Florida Water Management District recently purchased rock pits from Palm Beach Aggregates to serve as storage areas for excess water from Lake Okeechobee, and to "facilitate a new canal system". Ms. Curry expressed questions/concerns about these rock pits also being used by FPL for the new project.*

   Response. The described concerns are outside the scope of the Department's air permit and relate to matters handled by the South Florida Water Management District or one of the other agencies involved in the certification process.

4. *Ms. Curry expressed concerns about the possible affects of the blasting operations at nearby Palm Beach Aggregates on a "natural gas" power plant.*

   Response. The interaction of the plant with other activities is a design consideration that is addressed by standard engineering and safety standards. The issue has been forwarded to the applicant. The applicant states they have conducted a safety analysis and concluded an agreement with the operator of the mining operation regarding minimum setbacks and blasting levels in accordance with the County Development Order.

5. *Emissions from the proposed plant will affect not only the agricultural areas directly to the west of the project, but also the rural residential communities directly to the east, i.e. Loxahatchee, Loxahatchee Groves and the Acreage. Contrary to the Department reports, Wellington is not the closest community.*

   Response. The Department evaluated the proposed project and conducted a best available control technology (BACT) determination to minimize emissions. Mercury emissions from natural gas-fired power plants are minimal and well below the threshold level that would otherwise require a BACT determination.

   The Department also conducted air impact analyses as documented in the Technical Evaluation report available on the previously described project webpage. This evaluation is to determine the project's potential impacts on air quality. The Department determined this project as permitted will not cause or significantly contribute to violations of the health-based national ambient air quality standards or PSD increments.

   The Department acknowledges Wellington is not the closest community. The Department provided copies of its documents to the governing bodies of the nearest areas including Wellington, Royal Palm Beach and Palm Beach County (for the unincorporated areas including those named in the commenter's statement). The Public Notice of Intent to Issue PSD Permit was published in a newspaper of general circulation within the County, the mentioned municipalities and the communities in the unincorporated areas.

6. *I adopt, and incorporate herein, comments forwarded to you by another respondent, who is so much more knowledgeable than I, to-wit: (the paragraphs that follow in her written comments are not included as they are those of Mr. Christensen given in the previous section).*

   Response. The responses to the comments adopted by reference are given in the previous sets of responses to Mr. Christensen.

C. Written Comments of Ms. Alexandria Larson

Ms. Larson is a resident of the Loxahatchee area who lives within a mile of the site. She provided the following E-mail comments on March 30, 2006 through the Department's Public Feedback webpage. Ms. Larson stated:

I am writing in reference to the WCEC being built in Loxahatchee, Fla. I have several concerns:

1. *Why were the people of Loxahatchee not informed on this matter?*

   Response. This response is limited to the public notice aspects of the Air Construction (PSD) Permit. The public, including the commenters, was informed through publication of the Public Notice of Intent to Issue PSD Permit in a newspaper of general circulation as described earlier in this document. The Public Notice also described how to request a public meeting as subsequently requested by the commenter.

   Based on the response of several residents, the Department promptly scheduled a public meeting at the Village of Royal Palm Beach Community Center for April 19, 2006 from 6 to 8 p.m. Meeting Notices were sent by electronic mail (E-Mail) to the five citizens as well as by E-Mail or facsimile mail (Fax) to the municipalities of Royal Palm Beach and Wellington, Palm Beach County, the Indian Trails District and the Northern Palm Beach County Improvement District. The Meeting Notice was published on April 10 and on April 15, 2006 in The Palm Beach Post. The Notice can be viewed at:

www.dep.state.fl.us/Air/permitting/construction/westcounty/MeetingNotice.pdf

The meeting was also noticed on the Department's internet noticing website at:

http://tlhora6.dep.state.fl.us/onw/publications/7-PublicMeetingWest-4-7-06-INT.pdf

More than 100 people attended the Department's meeting and open house and 20 took the opportunity to speak.

2. *In your permit application it lists Wellington as the closest area this is incorrect. I personally live within a mile of this proposed plant you also have the residents of Foxtrail, Deer Run, White Fences and Indian Trail Improvement District. We are 40,000 residents that have been totally ignored. When a meeting was held it was in Wellington and posted in the sports section of the Palm Beach Post.*

   Response. The reference is to the application rather than the Department's documents. The Department provided copies of its documents to the governing bodies of the nearest areas. One of them (The Technical Evaluation) references the site with respect to proximity to the incorporated municipality of Wellington, but does not state that this is the closest area. The documents were provided to Wellington, Royal Palm Beach and Palm Beach County (for the unincorporated areas including those named in the above statement).

   The PSD Class II air modeling analyses performed by the Department apply to all Class II areas in the region. These include the incorporated and unincorporated parts of Palm Beach County and the nearest Counties. Separate PSD Class I air analyses were conducted only for the nearest Class I area (Everglades National Park) where the most stringent requirements apply.

   The mentioned meeting in Wellington relates to the Land Use Hearing discussed by the Department in response to the previous comment and where some of the commenters spoke. It does not relate to the Air Construction (PSD) Permit process or the April 19, 2006 public meeting for which notices were published as described above.

3. *When this was brought to my attention imagine my surprise when I read that you want to let FPL put 12.6 million gallons of diesel fuel on a sight where mining operations have a permit for blasting until 2032. We definitely have a problem here. (SIC)*

   Response. The tanks will store ultralow sulfur fuel oil that has very low vapor pressure and emission potential. While the interaction of the tanks with other activities is a design consideration and is outside the scope of the air construction permit, the issue has been forwarded to the applicant. The applicant states they have conducted a safety analysis and concluded an agreement with the operator of the mining operation regarding minimum setbacks and blasting levels in accordance with the County Development Order.

4. *Also the emissions alone are frightening 40 tons of SAM and the list of emissions is quite extensive. I frankly don't care what the guidelines are this is a lot of pollution in an area that these pollutants do not exist today.*

   Response. The PSD program and BACT procedures are to ensure proposed new projects implement best available controls and minimize emissions. In addition, air pollution modeling is performed to be sure that the health-based ambient air quality standards and increments are not jeopardized by a proposed project.

   In this case, emissions of sulfuric acid mist are limited by the Department's determination of best available control technology (BACT) and by the specification of inherently clean natural

gas as the main fuel and ultralow sulfur fuel oil (diesel) as the backup fuel. The other emissions are also limited by the Department's stringent BACT determination.

5. *I am amazed that you are even considering this plant when you haven't even addressed the plant FPL has in N. Palm Beach it is known to be the most polluted in the state. And please don't tell me the proposed plant in Loxahatchee will relieve this problem because I know this is to facilitate 660,000 new residents not take care of the existing ones.*

   Response. The Department reviewed the application in accordance with the applicable regulations. The Department's ambient air quality evaluations considered the existing air quality to which the other sources in the county (and surrounding counties) contribute. The Department determined that the proposed project will not cause or contribute to a violation of the air quality standards.

   In 2002 the Department successfully sponsored legislation to encourage air pollution control projects at "grandfathered" power plants and the Department has continued its efforts to encourage controls. Since 1999, sulfur dioxide (SO_2) emissions have been reduced by Statewide by approximately 300,000 tons per year (TPY) and nitrogen oxides (NO_X) emissions have been reduced by 40,000 TPY through a combination of enforcement, conversions to cleaner fuels, and implementation of the federal acid rain requirements. These emission decreases occurred at the same time the State's electrical power generation capabilities increased by approximately 30%.

   In your area, these projects include the recently completed and very clean Martin Power Plant Unit 8 in the Martin County to the north, use of more natural gas and less fuel oil at the Riviera Plant in the County and the installation of electrostatic precipitators to clean up particulate emissions at the Port Everglades Plant to the south.

6. *Also this FPL plant will be utilizing the Palm Beach Aggregates pits for cooling its turbines. This area was bought by South Florida Water Management District on Dec 8, 2004 under the premise that this was for the CERP project.*

   Response. The described concerns relate to matters handled by the South Florida Water Management District or one of the other agencies involved in the certification process.

7. *I'm not an engineer but astronomical emissions, 12.6 million gallons of diesel and blasting near a natural gas pipeline facility make a mix for disaster and this is one in the making its not a matter of if but when? The Valdez only had 11 million gallons and they are still cleaning up that mess.*

   Response. The plant's air emissions will be minimized by application of best available control technology including use of inherently clean natural gas and ultralow sulfur fuel oil.

   The above ground storage tanks will be constructed with secondary containment and will comply with all applicable local, state and federal standards which are designed to prevent spills or leaks.

   The tanks will store ultralow sulfur fuel oil that has very low vapor pressure and emission potential. While the interaction of the tanks with other activities is a design consideration and is outside the scope of the air construction permit, the issue has been forwarded to the applicant. The applicant states they have conducted a safety analysis and concluded an agreement with the operator of the mining operation regarding minimum setbacks and blasting levels in accordance with the County Development Order.

8. *I am appalled that you are even considering this permit I want DEP to guarantee in writing that my fears and predictions are unwarranted because I can guarantee that if there are not several dozen informed and very clear MEETINGS PRIOR TO APRIL 9th (since 30 days was your deadline) INFORMING THE PEOPLE OF LOXAHATCHEE AND THE ACREAGE OF ALL RISKS THAT YOUR PERMIT ARE EXPOSING US TO I WILL TAKE OUT FULL PAGE ADS AND FLY BANNERS THAT WILL INFORM THE PUBLIC and I doubt I'll be very delicate in this matter.*

   Response. The Department prepared the Draft Permit based on its BACT determination, ambient air modeling analyses, other applicable Federal, State and Local rules. The Department was provided with reasonable assurances that the project will comply with the rules and permit conditions. In addition at the request of the public/residents, the Department held an open house and a public meeting in the area on April 19, 2006. More than 100 people attended and 20 took the opportunity to speak.

9. *Over the last several years DEP has lowered the bar in the state of Florida in the guise of streamlining permits. This is unacceptable and can no longer happen somewhere you have to draw the line and start looking in the mirror knowing that big business doesn't care so you are the only line of defense for a public that is uninformed, and gullible until a disaster happens. (SIC)*

   Response. The Department issued the Draft PSD Permit approximately one year after receipt of an application and not until receiving or researching all of the necessary information needed to conduct its BACT determination, the PSD modeling review in order to develop proper conditions that will insure maintenance of the ambient air quality standards. Based on these reviews, the Department has reasonable assurance that the proposed project meets all of the Department's air regulations.

10. *I await your reply and I definitely want my comments included and answered. I await your reply and suggest those public hearings start and this permit is postponed until you have done do process. (SIC)*

    These responses constitute the requested reply as related to the Air Construction (PSD) permitting process. At the request of the public/residents, the Department held an open house and a public meeting in the area on April 19, 2006. More than 100 people attended and 20 took the opportunity to speak.

D. Written Comments of Ms. Sharon A. Waite

Ms. Waite is a resident of the Loxahatchee area who lives roughly five miles from the proposed site provided the following comments by letter dated March 30, 2006. Following is her letter with numeration added. Ms. Waite stated:

I am painfully aware of the FPL plant that is planned near me. It will have 12 stacks 140' high and spew out 40 tons of sulfuric acid mist, etc. This area is rural and we have septic tanks and wells. We don't even have gas stations here.

1. *What makes you think a 12.6 million gallon diesel stockpile in the ground will fly?*

   Response. FPL is proposing to construct two 6.3 million gallon above ground storage tanks for ultra-low sulfur light oil, which will be used on a limited basis as a backup fuel source. The above ground storage tanks will be constructed with secondary containment and will comply with all federal, state and local standards which are designed to prevent spills or leaks from being released to the environment.

2. *The Palm Beach Aggregates will be blasting until 2032 (permitted already).*

   Response. This issue was addressed in the previous set of responses to Ms. Curry.

3. *This is adjacent to the pits my tax money paid $212 M for (ASR wells). FPL is not going to be allowed to utilize them to cool turbines.*

   Response. This issue was also addressed in the previous set of responses to Ms. Curry.

4. *Why did Wellington and Royal Palm Beach receive letters about this and not the acreage residents? They aren't near this. It is planned right next to our community.*

   Response. The Department provided copies of its draft documents to the governing bodies of the nearest areas including the Villages of Wellington and Royal Palm Beach as well as Palm Beach County for the unincorporated areas including The Acreage). As stated previously, the Public Notice of Intent to Issue PSD Permit was published in a newspaper of general circulation within the County, the mentioned municipalities and the communities in the unincorporated areas including The Acreage. In addition the notice of the public meeting was posted on the Department's Internet Noticing Website.

5. *I'd say let's clean up Riviera Beach plant first. It's the dirtiest in the state.*

   Response. In 2002 the Department successfully sponsored legislation to encourage air pollution control projects at "grandfathered" power plants and the Department has continued its efforts to encourage controls. Since 1999, sulfur dioxide (SO_2) emissions have been reduced by Statewide by approximately 300,000 tons per year (TPY) and nitrogen oxides (NO_X) emissions have been reduced by 40,000 TPY through a combination of enforcement, conversions to cleaner fuels, and implementation of the federal acid rain requirements. These emission decreases occurred at the same time the State's electrical power generation capabilities increased by approximately 30%.

   To-date and in your area, these projects include the recently completed and very clean Martin Power Plant Unit 8 in the Martin County to the north, use of more natural gas and less fuel oil at the Riviera Plant in the County and the installation of electrostatic precipitators to clean up particulate emissions at the Port Everglades Plant to the south.

6. *I also call for a public hearing and this letter to be included in your final report.*

   Response. At the request of the public/residents, the Department held an open house and a public meeting in the area on April 19, 2006. More than 100 people attended and 20 took the opportunity to speak. Ms. Waite's letter (the above comments) and the Department's responses have been included in this Final Determination.

7. *As a sidebar, FPL will be tolerated to use the ASR wells as a place to inject their waste. I never want to see this project come to fruition for another 660,000 new units. Stop this project now!*

   Response. This issue (ASR wells) is within the purview of other (non-air) permitting processes.

E. Written Comments of Ms. Nancy Gribble

Ms. Gribble, a resident of Fox Trail, provided the following E-mail comments dated April 9, 2006.

There has been absolutely no presentation to our community regarding the proposed west county power plant, nor have our residents been solicited for comment regarding such. As a matter of fact, the record incorrectly states that the Village of Wellington is the closest affected community of residents.

Response. The Department's draft air permit documents did not state that the Village of Wellington is the closest affected community. The Department acknowledges that there are other communities closer to the project site than Wellington including Fox Trail, Deer Run, Loxahatchee Groves, etc. Ms. Gribble's comments continue as follows:

I attended the Administrative Hearing for the proposed west county power plant, which was also held in the Village of Wellington. Of particular concern, was the public statement that "no residential" community was in the near proximity of the proposed west county power plant. Having been involved in numerous zoning and land use issues affecting our community of Fox Trail over the past several years, I knew that statement was not only incorrect as it related to the community of Fox Trail, but that in fact, the Palm Beach County Board of County Commissioners had rezoned a 1200-acre portion of the Palm Beach Aggregates property late last year (2005), to allow the construction of 2000 homes. This PUD, which is now officially known as Highland Dunes by Lennar Corp. will be approximately one-quarter mile east of the proposed west county power plant site.

As a resident of Fox Trail, I have serious concerns with the following environmental issues:

1. *The site of the proposed west county power plant is surrounded by agricultural land that is used for farming and is a key land mass to EAA, a farming buffer to the Everglades.*

   Response. This issue is outside the scope of this PSD Permit.

2. *Directly to the south of the proposed west county power plant is the STA-1 East, which is also a key component to the Comprehensive Everglades Restoration Plan (CERP). Phosphorus and other pollutant run-off are filtered here before being sent to the C-51 canal, a major water channel for Palm Beach County.*

   Response. This issue is outside the scope of this PSD Permit.

3. *The SFWMD (South Florida Water Management District) recently purchased rock pits on the Palm Beach Aggregates site for water storage (price tag $212M) to facilitate the storage and filtering of "clean" water for the Loxahatchee River. It is my understanding that these water pits will be utilized by FPL for the west county plant in the operation of their turbine engines. Why are taxpayer funded pits ($212M) being used by a for profit entity (FPL)? What pollutants will be rechannelled from FPL back into the water supply?*

   Response. These issues are within the purview of other (non-air) permitting processes within the Site Certification process.

4. *Palm Beach Aggregates retains a mining permit through the year 2032. The daily blasting (once allowable by law, although they have been known to blast 2x a day - this can be verified by viewing their blasting data logs) could prove to be an environmental and health disaster in the making with the near-by natural gas line and the storage of diesel fuel that FPL is planning for this site (12.6M gallons).*

   Response. The interaction of the plant with other activities is a design consideration that is addressed by standard engineering and safety standards. The issue has been forwarded to the applicant. The applicant states they have conducted a safety analysis and concluded an

agreement with the operator of the mining operation regarding minimum setbacks and blasting levels in accordance with the County Development Order.

5. *The emission of mercury from the planned towers. Mercury emissions are of grave concern to the health of our residents and more specifically to the well-water quality that we presently enjoy.*

   Response. The Department evaluated the proposed project and conducted a best available control technology (BACT) determination to minimize emissions. Mercury emissions from natural gas-fired power plants are minimal and well below the threshold level that would otherwise require a BACT determination.

In closing I ask that the DEP rescind or delay its issuance of this permit until such time that a complete and specific review of residents' concerns and questions have been answered and verified with documentation from your department. Please do not rely on the information that has been provided by FPL. It is misleading at best, and their attempts to exclude those residents who will be directly impacted the most are shameful and intolerable.

Response. The Department issued the Draft PSD Permit approximately one year after receipt of an application and not until receiving or researching all of the necessary information needed to conduct its BACT determination, the PSD modeling review in order to develop proper conditions that will insure maintenance of the ambient air quality standards. Based on these reviews, the Department has reasonable assurance that the proposed project meets all of the Department's air regulations.

V. VERBAL COMMENTS RECEIVED AT THE PUBLIC MEETING

There were individuals that provided verbal comments at the April 19, 2006 public meeting. Copies of the taped proceedings are available for a nominal fee by contacting Ms. Teresa Heron at teresa.heron.dep.state.fl.us or by calling her at 850-488-0114.

The majority of the comments received at this meeting are duplicative of the written comments received and addressed in the previous section. Therefore, only newly identified issues related to the Air Construction (PSD) Permit are addressed herein.

A. Comments of Ms. Nancy Gribble

Ms. Gribble, a resident Loxahatchee in the community of Fox Trail. She perused three volumes of information on the Department's web site for the project. She expressed concern that although five pollutants were mentioned in the presentation, only three are monitored. She wondered what happens with those other two pollutants.

She expressed concern about frequent unstable atmospheric conditions in Florida, the use of 1948-1998 atmospheric data when more recent data are available.

Response. According to page 30 of the Department's Technical Evaluation, ambient monitoring is conducted in the County for SO_2, NO_2, PM_{10} and ozone. The overall level of monitoring in the County complies with and exceeds the requirements of the National Air Monitoring Station network and includes additional State and Local Air Monitoring Stations monitors. Additionally there are several Special Purpose Monitors including one for the measurement of very fine particulate ($PM_{2.5}$). Significant resources are dedicated to this important Department and local program function. The Department's Air Monitoring Report for 2004 is available at:

www.floridadep.com/Air/publications/techrpt/amr04.pdf

The facility will install sophisticated continuous (stack emission) emission monitoring systems (CEMS).

Meteorological data taken over a period of several years, e.g. five years, cover the full spectrum of meteorological events that influence dispersion of air pollution emissions. The older meteorological data can be used in conjunction with recent or future emission estimates to predict maximum ground level pollutant concentrations.

The 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 at Palm Beach International Airport. The 5-year period of meteorological data was from 1987 through 1991. This airport station was selected for use in the study because it is the closest primary weather station to the study area and is most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

The California Puff (CALPUFF) dispersion model was used to evaluate the pollutant emissions from the proposed project in the Class I ENP beyond 50 km from the proposed project. Meteorological MM4 and MM5 data used in this model was from 1990, 1992 and 1996. Meteorological surface data used were from Tampa, Daytona Beach, Vero Beach, Fort Myers, Key West, Miami, West Palm Beach and Orlando. Meteorological upper air data used were from Ruskin, Key West and West Palm Beach. Hourly precipitation data were obtained from 23 stations around the central and southern part of the state.

VI. WRITTEN PUBLIC COMMENTS RECEIVED AT THE PUBLIC MEETING

Written comments were received from three individuals at the close of the public meeting. These were either duplicative of the previously submitted and addressed written comments or were supportive of the project and do not require a response. Therefore these comments are not restated below. They are available as part of the public record upon request.

VII. WRITTEN COMMENTS RECEIVED FROM APPLICANT

A. Comments received during the 30-day comment period

The Department received comments from the applicant on March 30, 2006. The comments are available at: www.dep.state.fl.us/Air/permitting/construction/westcounty.htm

Some of the comments are requested corrections and changes in the Department's Technical Evaluation and Preliminary Determination (TEPD). The rest of the comments are specific requests for changes in the Draft PSD Permit. Any changes made acknowledged or are shown in strikeout (~~strikeout~~) and double underline (double underline) formats for deletions and additions respectively.

FPL requested the following changes regarding the Draft PSD Permit:

1. Page 1, Expiration Date:

   Comment.

   The Draft PSD permit has an expiration date of December 31, 2009. The commercial operation date of the West County Unit 2 is after the expiration date (June 2010). Consistent with historical DEP practice, and to allow for construction delays, the expiration date of the permit should be 18 months after commercial operation of the second unit, December 31, 2011.

Response.

The requested change was included in the revised Draft PSD Permit appended to the Siting Staff Report included as part of the record at the September 2006 Site Certification Hearing.

2. Page 2, Facility Description, second paragraph:

   Comment.

   We request that the language be updated to reflect a 26-cell cooling tower.

   Response.

   The requested change indicating 26-cell mechanical cooling towers instead of 24-cell mechanical cooling towers was included in the revised Draft PSD Permit.

3. Page 4, Relevant Documents:

   Comment.

   We request that "Letter from FPL to DEP dated December 29, 2005" with details on Mitsubishi 501G technology, including update to nominal megawatts and size of oil tanks be added to the list of Relevant Documents.

   Response.

   The letter has been added to the list of documents as requested.

4. Page 7, Equipment and Control Technology, Gas Turbines:

   Comment.

   We request the following clarification (to Condition No. 4) "4. Gas Turbines. The permittee is authorized to install, tune, operate, and maintain six Model 501G gas turbine-electrical generator sets each with a nominal generating capacity of 250 MW..."

   Response.

   The requested "nominal" designation in the cited permit condition is consistent with the description given at the beginning of the section that states "each of the six gas turbine-electrical generator sets has a nominal generating capacity of 250 MW". The change was included in the revised Draft PSD Permit.

5. Page 10, Emissions Standards, Footnote h:

   Comment.

   To clarify that if a CO catalyst is installed, the rolling average will be calculated from the installation of the catalyst forward, we propose the following:

   "h. Rolling Average. Enforcement discretion may be exercised for up to 12 months with respect to the 6 ppmvd @ 15% O_2 limit for any combustion turbine / supplementary-fired heat recovery steam generator upon notification by the permittee of intent to install oxidation catalyst. The permittee shall have 12 months to complete the oxidation catalyst installation. ~~From time of notification to~~ After completing the installation of the catalyst, all prior partial or complete calendar months shall be excluded from the 12 month rolling average."

Response.

The request was reviewed and not included in the revised Draft PSD Permit. No change will be made in the Final PSD Permit. The applicant may provide a further explanation of this request at a later date.

6. Page 17, NSPS Applicability.

Comment.

NSPS Kb is not applicable in its entirety because the fuel that is being used has a maximum true vapor pressure less than 3.5 kPa. FPL suggests that the reference to NSPS Kb be removed and the rest of the section be renumbered accordingly.

Response.

The Department considers it important to describe in the permit the reason why Subpart Kb does not apply to the large tanks and to provide compliance procedures to insure the tanks qualify for the exclusion criteria and comply with the Department's BACT determination. The condition was re-written as follows and included in the revised Draft Final Permit.

1. NSPS Subpart Kb Applicability: The distillate fuel oil tanks are not subject to Subpart Kb, which applies to any storage tank with a capacity greater than or equal to 10,300 gallons (40 cubic meters) that is used to store volatile organic liquids for which construction, reconstruction, or modification is commenced after July 23, 1984. Tanks with a capacity greater than or equal to 40,000 gallons (151 cubic meters) storing a liquid with a maximum true vapor pressure less than 3.5 kPa are exempt from the General Provisions (40 CFR 60, Subpart A) and from the provisions of NSPS Subpart Kb, except for the record keeping requirements specified below.
[40 CFR 60.110b(a) and (c); Rule 62-204.800(7)(b), F.A.C.]

   The listed emission units shall comply with 40 CFR 60, Subpart Kb only to the extent that the regulations apply to the emission unit and its operations.

No changes were required in Conditions 2, 3 and 4 of the affected section. The Department added the following compliance condition in the revised Draft Permit and is showing it in its final form below.

5. Fuel Oil Records: The permittee shall keep readily accessible records showing the maximum true vapor pressure of the stored liquid. The maximum true vapor pressure shall be less than 3.5 kPa. Compliance with this condition may be demonstrated by using the information from the respective MSDS for the ultra low sulfur fuel oil(s) stored in the tanks. [Rule 62-4.070(3) F.A.C.]

   {Permitting Note: An evaluation of several Material Safety Data Sheets (MSDS) by the Department and applicant demonstrated that the vapor pressure is much less than 3.5 kPa for ultralow sulfur fuel oil.}

7. Page 18, Equipment, Cooling Tower:

Comment.

We request that the language be updated to reflect a 26-cell cooling tower.

Response.

Same as FPL Comment No. 2. Change was made in revised Draft PSD Permit.

8. Page 18, Emissions and Performance Requirements:

   Comment.

   Correct typo.

   Response.

   Typos corrected in the revised Draft PSD Permit.

9. Page 21, Emission Unit Description:

   Comment.

   We request the following clarification:

   "011. Four nominal 2,250 Kw Liquid Fueled Emergency Generators – Reciprocating Internal Combustion Engines"

   Response.

   The change is acceptable and was included in the revised Draft PSD Permit.

10. All pages, footer:

    Comment.

    Correct typo:

    "FP&L West County Energy Center"

    Response.

    The changes were made in the revised Draft Permit.

B. Comments received from FPL after the 30-day comment period

The Department received additional comments by E-Mail from Ms. Marister Ruiz (a representative for the applicant) on December 8, 2006. They were examined to determine if they are minor in nature or substantial prior to final action. Following is the communication from FPL followed by the comments:

"Upon review of the Draft PSD Permit for West County Energy Center, we have identified a few items that should be included in the final version of the permit. I (Ms. Ruiz) have attached a copy of the draft permit including these items."

1. Cover page.

   Comment.

   Please change the project address to 20505 State Road 80, Loxahatchee, Florida. 33470.

   The proposed project will be located at 20505 State Road 80, Loxahatchee, Florida 33470 ~~4000 205th Street, North,~~ in unincorporated Palm Beach County. This site encompasses 220 acres of which approximately 40 acres will be used for two combined cycle units.

   Response.

   The change represents the final address assigned by Palm Beach County in its Final Site Order. The address identified in the application (4000 205th Street North) was based upon a continuation of the adjacent community's naming scheme for the northeast corner of this

site. The final address assigned by Palm Beach County correlates to the southern entrance to the site and will be included as requested in the Final PSD Permit.

2. Page 10.

   Comment.

   (FPL's comment is the same as VII.A.5 above regarding oxidation catalyst)

   Response.

   The Department's response is the same as given in VII.A.5.

3. Page 11.

   Comment.

   Please amend as listed below.

   1. Excess Emissions Allowed: As specified in this condition, excess emissions resulting from startup, shutdown, ~~oil-to-gas~~ fuel switches and documented malfunctions are allowed provided that operators employ the best operational practices to minimize the amount and duration of emissions during such incidents. For each gas turbine/HRSG system, excess emissions resulting from startup, shutdown, or documented malfunctions shall not exceed two hours in any 24-hour period except for the specific cases listed below. A "documented malfunction" means a malfunction that is documented within one working day of detection by contacting the Compliance Authority by telephone, facsimile transmittal, or electronic mail.

   Response.

   The Department recently approved similar changes for combined cycle units at other locations for other combustion turbine models. However the applicant submitted the request too late for consideration in this permitting process. The request may be submitted in the future and requires justification specific to the Mitsubishi Model 501G combustion turbine operating in combined cycle mode.

4. Page 23. Regarding Fire Pump

   Comment.

   Please amend as listed below.

   The fire pump will require weekly testing. We request the number of hours allowed for testing of this emergency system be increased to 80 hrs.

   1. Hours of Operation: The fire pump may operate in response to emergency conditions and ~~40~~ 80 non-emergency hours per year for maintenance testing. [Applicant Request; Rule 62-210.200 (PTE), F.A.C.]

   Response.

   The request is not timely. It can be included in the same future application as described in the previous comment.

5. Page BD-1 of Appendices.

   Comment.

   Please amend as listed below.

The table shows a limit of 6 ppmvd on a 12 month average for NO_X. This limit is not applicable to NO_X, it is applicable to CO. Please delete from the NO_X limits, (See Attachment Page BD-1).

Response.

The mentioned limit does not apply to NO_X. All other references to the CO and NO_X limits in the Draft PSD Permit, Technical Evaluation and the BACT determinations are consistent with FPL's observation. It is possible that a column or row border was truncated when the table was transferred to the mentioned Appendix BD. The referenced table in the Final PSD Permit will accurately delineate the limits in the mentioned table.

VIII. ADDITIONAL CHANGES INITIATED BY THE DEPARTMENT

The Department reviewed the status of several Federal standards that were at various stages of development when the Draft PSD Permit was distributed on March 1, 2006. The following changes or applicability clarifications have occurred in the Standards of Performance for New Stationary Sources (NSPS) at 40 CFR 60 and in the National Emission Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR 63. These do not affect the Department's BACT determination or affect the air quality impact analyses performed.

A. Finalization of 40 CFR 60, Subpart KKKK - Standards of Performance for Stationary Combustion Turbines for Which Construction is Commenced After February 18, 2005

Issue.

According to Section III, Specific Condition 2.d of the Draft PSD Permit:

d. *Subpart KKKK, Standards of Performance for Stationary Gas Turbines*: These provisions were published February 18, 2004 as a proposed new NSPS standard. The final rule will be applicable to Unit 001 through Unit 006 at the time of publication in the Federal Register. When the rule becomes final, Unit 001 through Unit 006 gas turbines may no longer be subject to NSPS Subparts Da and GG.

Action.

With the final promulgation of Subpart KKKK on July 6, 2006 the regulation is definitely applicable to the six combustion turbines and the six duct burners. Subparts Da and GG are no longer applicable to this project. The Department's BACT determination is significantly more stringent than any of the mentioned regulations and still applies. The Department will finalize the permit to show the applicable requirements of Subpart KKKK wherever mentioned and will delete all references to Subparts Da and GG.

B. Finalization of 40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (ICE)

Issue.

Subpart IIII is referenced in Section I of the Draft PSD Permit as follows:

Standards of Performance (NSPS) for Stationary Compression Ignition Internal Combustion Engines (ICE), 40 CFR 60, Subpart IIII; Proposed Rule (published July 11, 2005). This subpart will be eventually incorporated as Appendix IIII.

Action.

The final promulgation of Subpart IIII on July 11, 2006 is applicable to the four nominal 2,250 Kw Liquid Fueled Emergency Generators included as Section III, Emissions Unit No. 11.

There were no changes in the emission limits for the described emergency generators. The BACT limits were set equal to the Subpart IIII values and no changes are required in the permit except to remove references to the previous (proposed) status of the rule.

Similarly, the applicability of Subpart IIII will be finalized for the emergency fire pump diesel engine included in Section III, Emissions Unit 12. The final emissions limits are the same as those given in the proposed version of the rule. The BACT is not affected.

C. Clarification of non-applicability of 40 CFR 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Issue.

The Department included the applicability of Subpart ZZZZ to both the liquid fueled emergency generators described as Emissions Unit 11 and the emergency fire pump diesel engine included in Emissions Unit 12. Subpart ZZZZ continues to apply to Emissions Unit 11.

Action.

The applicant clarified that the capacity of the emergency fire pump diesel engine is approximately 265 hp. The rule does not apply to engines with a rating less than 500 hp. The emergency fire pump diesel engine will be in the range between 175 and 300 horsepower (hp). Therefore the NESHAP Subpart ZZZZ is not applicable to this engine. References to this rule will be removed for Emissions Unit 12. The BACT is not affected because the requirements of the corresponding NSPS (Subpart IIII) continue to apply to the emergency diesel fire pump and constitute the basis for the BACT determination.

IX. CONCLUSION

The final decision by the Department is to issue the permit with the changes noted.

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

FPL

April 25, 2006

Ms. Trina Vielhauer
Florida Department of Environmental Protection
Division of Air Resource Management
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Florida Power & Light Company
West County Energy Center
DEP File No. 0990646-001-AC (PSD-FL-354)
Response to Public Comments Provided to FDEP

Dear Ms. Vielhauer,

On April 21, Florida Power & Light Company (FPL) provided a document to FDEP responding to written public comments provided to FDEP regarding your Notice of Intent to Issue a PSD permit for FPL's West County Energy Center project. We discovered a minor error in response Al-5 and SW-6. We have corrected the response in the attached document. Please replace the document we provided on April 21 with the attached.

Please let me know if you have any questions. You can reach me at (561) 691-7518.

Sincerely,

Barbara P. Linkiewicz
Environmental Licensing Manager

cc: Al Linero, FDEP Air
Teresa Heron, FDEP Air
Debbie Nelson, FDEP Air
Steve Palmer, FDEP Siting Office
Scott Burns, SFWMD
James Golden, SFWMD
Tim Gray, DEP SED
Robert Weisman, Palm Beach County
Carrie Rechenmacher, Palm Beach County
Courtney Shippey, Palm Beach County

April 25, 2006

Letter from Michael K Christensen, 13759 159th Street N, Jupiter, FL 33478, 561-254-9690

Below are comments from Michael Christensen to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

MC-1 Comment:

"The Bureau has ignored its own investigators, Mr. Palmer and Mr. Sheplak. Many of the questions they asked went completely unanswered, were later answered in the same fashion, or the instructions were ignored completely."

MC-1 Response:

FDEP issued a series of questions ("sufficiency questions") to FPL in response to FPL's Site Certification Application (SCA). FPL provided timely and complete responses to all questions on August 11, 2005. FDEP reviewed FPL responses and on September 12, 2005 deemed the SCA to be "sufficient", meaning that the information provided was adequate for reviewers to analyze the impacts of the proposed project.

MC-2 Comment:

"The Mitsiubishi turbine was selected, unfortunately it had no record in this state, so it was explained, no data pertinent to real operating conditions. the State was to be "flexible" with one of the, if not the, largest power plant in our state. This is not the time to be 'flexible'."

MC-2 Response:

While there are no Mitsubishi G combustion turbines currently operating in Florida, there are 18 units installed both in the US and abroad with more than 330,000 hours of operation. The projected emissions from the WCEC are not only based on real operating conditions and testing but are also backed by very stringent manufacturer's guarantees. The size of each unit proposed for the WCEC is similar to the size and technology being constructed at FPL's Turkey Point Plant located in Miami-Dade, and two operating units located at FPL's Martin Plant located in Martin County and FPL's Manatee Plant located in Manatee County.

MC-3 Comment:

"No information on lbs/ppm was provided by manufacturer reflecting real world environment."

MC-3 Response:

On December 29, 2005, FPL provided FDEP with emissions information from the specific manufacturer of the combustion turbine selected for WCEC. This information was based on manufacturer data that included "real world" testing from the type of combustion turbines proposed for WCEC. Data were provided for both concentration (i.e., ppm) and mass emissions (lb/hr).

MC-4 Comment:

"The more stringent air quality on this 'New' Major Source Polluter must be maintained, we cannot, must not go backward. This Major New Pollution Source will be located within 1/4 mile of Arthur Marshall National Wildlife Refuge. The damage/ disaster potential is great yet no external cost analysis was done."

MC-4 Response:

The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) Increments that protect air quality from degradation.

MC-5 Comment:

"The boiler question was never coherently answered. Why is the newer version more polluting? Why no investment in cleaning up the pollutants before they are thrust into the air at enormous cfm? No cost analysis reflecting external cost of FPL Major Source Pollutants."

MC-5 Response:

The Air Construction Permit Application and Sufficiency Response 5FDEP-17 provided information on the auxiliary boilers. That response was deemed by FDEP to be sufficient.

The auxiliary boilers proposed for the WCEC will be used only for the startup of the power plant after extended outages and will use only natural gas. These boilers will be equipped with pollution preventing combustion systems to limit emissions below regulatory requirements. These controls will limit emissions to levels determined by FDEP to be Best Available Control Technology (BACT) for these boilers. Cost was discussed in FPL's Air Construction Permit Application, and both the FPL and FDEP analysis of BACT includes consideration of costs. Add-on controls were determined not to be necessary or cost effective for these intermittent use boilers.

MC-6 Comment:

"The Air Modeling questions were never resolved, Unless you count FPL asking Us the public, and you, the regulator to be "Flexible". The statement by your investigators that the County of Palm Beach had serious concerns was never answered cognitively either."

MC-6 Response:

The Air Construction Permit Application and Sufficiency Response 5FDEP-8 provided detailed information on the air quality impact analyses. That response was deemed by FDEP to be sufficient. The air modeling analysis provided to FDEP demonstrated that air quality impacts resulting from the operation of WCEC would comply with Ambient Air Quality Standards (AAQS) and Prevention of Significant Deterioration (PSD) Increments. Additionally, the air quality impacts were less than 50 percent of the available PSD Increments as required by Palm Beach County.

MC-7 Comment:

"It was noted 'yes' had been checked, that the pollutants are synthetically limited. The pollutants subect to BACT are not synthetically limited. FPL was to correct and send correcting documentation, this wasn't done, in fact all boxes in resubmitted information are still checked 'Yes'."

MC-7 Response:

The checking of the box "Yes" is correct. Sufficiency Response 5FDEP-10 provided the information related to the term "synthetically limited". In the FDEP application form this reflects whether emissions are limited by some operational constraint such as the hours per year or fuel use. The use of ultra-low sulfur light oil in the combustion turbines (CTs) was proposed to be limited to no more than 500 hours/year/CT and the amount of duct firing is limited by the total amount of natural gas to be used. Therefore, since there were proposed operational limits, the appropriate boxes in the application were checked. FPL's Sufficiency Response 5FDEP-10 was deemed by FDEP to be sufficient.

MC-8 Comment:

"No information regarding SSM was re-submitted that I could find."

MC-8 Response:

FPL provided information to FDEP regarding startup, shutdown and malfunction (SSM) in Sufficiency Response 5FDEP-2, and that response was deemed by FDEP to be sufficient.

MC-9 Comment:

"Your investigators write about emission units not mentioned in the application, and references a 4.2 gallon diesel storage facility. In FPL response the 4.2 is now 12.6 million gallons, 3 times the application size, with no supporting documentation on these facilities, 2-6.3 million gallon tanks! This alone should be grounds to stop this. There exists no Expedited permitting for New Major Source Polluters."

MC-9 Response:

FPL designs and constructs natural gas-fired power plants with a back-up fuel supply so that electric generation is not interrupted in the event of the loss of its primary fuel supply to the Site.

The Palm Beach County-approved Development Order and the included Site Plan identifies up to 12.6 million gallons of oil storage for the Site.

In the WCEC Air Construction Permit Application, FPL proposed the installation of 8.4 million gallons (two 4.2 million gallon above ground ultra-low sulfur light oil storage tanks) out of the total 12.6 million gallons in the Palm Beach County-approved Development Order. However, following the 2005 hurricane season and the resulting limited supply of natural gas to Florida, FPL determined that it would be prudent to install the entire 12.6 million gallons of ultra-low sulfur light oil storage. Accordingly, FPL updated our proposal to reflect installation of two 6.3 million gallon above ground oil storage tanks (12.6 gallons total).

The above ground storage tanks will be constructed with secondary containment and will comply with all applicable local, state and federal standards which are designed to prevent spills or leaks from being released to the environment.

MC-10 Comment:

"Major Hap source, FPL was asked to provide information on why they neglected to supply necessary documentation on this. They did not supply."

MC-10 Response:

Detailed information on hazardous air pollutants (HAP) was provided to FDEP in the Air Construction Permit Application. Additional information was provided in FPL's Sufficiency Responses 5FDEP-14, 5FDEP-15, 5FDEP-16, 5FDEP-17, 5FDEP-18 and 5FDEP-19 on specific regulatory requirements and their potential applicability to the WCEC. Those responses were deemed by FDEP to be sufficient.

MC-11 Comment:

"Your investigators requested all documentation, communication with EPA, Federal Land manager, FWC, local governments, National Parks Service, EPA Region 4, they referenced the Endangered Species act. I saw none in FPL response. In fact they stated the site has no wildlfe to be impacted. This site is practically adjacent to the Arthur Marshall National Wildlife Refuge. National. We have a duty to the Nation, and I say to the World to 'Protect' it."

MC-11 Response:

FPL's Sufficiency Response 5FDEP-20 provided the requested information to FDEP, and that response was deemed by FDEP to be sufficient. In addition, FPL met with the US Fish and Wildlife Service and provided a complete copy of the Site Certification Application.

All named agencies are involved in either the Site Certification Application and/or the Air Construction Permit Application review process and have not objected to the Project.

MC-12 Comment:

The site will be adjacent to SFWMD 'Pits' that SFWMD (taxpayers) purchased for 223 million dollars to store 48,000 acre feet of drinking water. This is an insult. Stop! Halt! Someone call a cop, there is a crime being committed here! Can anybody help?!

MC-12 Response:
This Project is designed to be in compliance with all applicable local, state and federal laws, rules and regulations as proposed.

The Site is adjacent to the SFWMD water storage pits which are part of the Development Order approved by Palm Beach County. The development of the power plant and the storage pits were planned concurrently by the previous landowner prior to the sale of the land to both FPL and the SFWMD. All parties have worked together to allow the development of each of the projects with no adverse effects to either.

Letter from Alexandria Larson, 16933 W Harlena Drive, Loxahatchee, FL 33470 561-791-0875

Below are comments from Alexandria Larson to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

AL-1 Comment:

"Why were the people of Loxahatchee not informed on this matter? In your permit application it lists Wellington as the closest area this is incorrect I personally live within a mile of this proposed plant you also have the residents of Foxtrail, Deer Run, White Fences and Indian Trail Improvement District we are 40,000 residents that have been totally ignored."

AL-1 Response:

Over the last year, FPL has conducted an extensive outreach program. Attachment 1 provides a summary of FPL's outreach efforts, including meetings/presentations with Deer Run, White Fences, Indian Trail Improvement District, and Loxahatchee Groves Landowners Association, and a planned meeting with Fox Trail (postponed from Fall 2005). Also included is a list of media coverage and public notices issued on this Project.

The Site is located in unincorporated Palm Beach County. The FDEP requires that the applicant provide certain information in the Site Certification Application, including "Nearest Incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.

AL-2 Comment:

"When a meeting was held it was in Wellington and posted in the sports section of the Palm Beach Post."

AL-2 Response:

The land use hearing for the WCEC Project was held in Wellington in accordance with the requirements of Section 403.508(1), Florida Statutes, which provides that the hearing shall be held "in the County of the proposed Site" and "as close as possible to the proposed Site."

FPL canvassed the area, including the Royal Palm Beach Cultural Center and various school auditoriums for meeting rooms. The Royal Palm Beach Cultural Center was under repair at the time of the hearing. Other than the selected Wellington Community Center, there was no available public facility that met the logistical requirements of the administrative hearing. The location was deemed to be within an acceptable distance from the Project Site.

The notice of the land use hearing for the Project was published in accordance with the requirements of Section 403.5115, Florida Statutes. Subsection (2) of that statute specifically provides that such notices shall be "published in a section of the newspaper other than the legal notices section." The Palm Beach Post made the decision about which section of the newspaper could fit the half page ad on the publication day.

AL-3 Comment:

"When this was brought to my attention image my surprise when I read that you want to let FPL put 12.6 million gallons of diesel fuel on a sight where mining operations have a permit for blasting until 2032.We definitely have a problem here."

AL-3 Response:

Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant, including the oil storage tanks, will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.

AL-4 Comment:

"Also the emissions alone are frightning 40 tons of SAM and the list of emissions is quite extensive. I frankly don't care what the guidelines are this is a lot of pollution in an area that these pollutants do not exist today."

AL-4 Response:

The emissions from any power plant facility must be expressed in tons/year for comparison to regulatory thresholds. FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment.

AL-5 Comment:

"I am amazed that you are even considering this plant when you haven't even addressed the plant FPL has in N.Palm Beach it is known to be the most polluted in the state. And please don't tell me the proposed plant in Loxahatchee will relieve this problem because I know this is to facilitate 660,000 new residents not take care of the existing ones."

AL-5 Response:

FPL has a legal obligation to meet the electric generation needs of customers in our service territory. This requires planning for the projected customer growth and increased usage of electricity by existing customers. In order to ensure there is an adequate supply of electricity, new generating plants must be built in time to meet the projected growth.

The WCEC is being proposed to meet our legal obligation based on the projected electricity needs of FPL's customers throughout the FPL service territory including Palm Beach County. As

described in the Site Certification Application, FPL uses an Integrated Resource and Planning (IRP) process to determine when new resources are needed, the magnitude of the resources needed, and the type of resources that should be added. The magnitude and timing of FPL's resource needs are established through a "reliability assessment". This assessment evaluates many factors including: demographic information such as population trends by county and housing characteristics, weather assessments from NOAA, economic conditions, the price of electricity, input from local economic development boards, and more. It is important to note that this evaluation is done for the entire FPL service territory, not for any one particular area. FPL's IRP process in 2004, 2005 and 2006 confirmed the need for additional power generation in 2009 and 2010 (the proposed operation dates for WCEC Units 1 and 2 respectively).

WCEC will be one of the most efficient and have one of the lowest emission rates of any fossil fuel fired power plant in Florida.

The Riviera Plant is an existing electric generating facility which is currently serving the electricity demands of FPL's customers. The Riviera Plant consists of steam electric generators which currently operate in accordance with applicable local, state and federal regulations. The air quality in the vicinity of the Riviera Plant and throughout Palm Beach County has been determined to be in full compliance with the Ambient Air Quality Standards (AAQS) established by EPA and FDEP to protect human health, welfare and environment. In addition, FPL voluntarily adopts operating practices that further reduce environmental impacts. For example,

- FPL has significantly reduced particulate matter, opacity, carbon monoxide, and nitrogen oxides emissions from the Riviera plant through the multi-million dollar installation of low nitrogen oxide (NOx) burners.
- FPL has a self-imposed opacity standard for visible emissions that is 50 percent lower than the permitted federal limit and is equivalent to what a brand new power plant would be required to meet.
- FPL has installed Continuous Emission Monitoring Systems (CEMS) that instantaneously monitor flue gas emissions and Continuous Opacity Monitoring Systems (COMS) that check visible emission standards to help ensure emissions compliance.

The result of these efforts has been impressive: since 1990, NOx emissions from the Riviera plant have decreased by more than 40 percent and represent only 7 percent of all NOx emissions in Palm Beach County (mobile sources, including automobiles, account for more than 90 percent).

AL-6 Comment:

"Also this FPL plant will be utilzing the Palm Beach Aggregates pits 1272 acres of water for cooling its turbines. This exact area was bought by South Florida Water Management District on Dec 8, 2004 at a cost to taxpayers of 212 million dollars the premise was that this was for the CERP project you know the Comprehensive Everglades Restoration Project."

AL-6 Response:

The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.

AL-7 Comment:

"I'm not an engineer but astronomical emissions, 12.6 million gallons of diesel and blasting near a natural gas pipeline facility make a mix for disaster and this is one in the making its not a matter of if but when? The Valdez only had 11 million gallons and they are still cleaning up that mess. I am appalled that you are even considering this permit"

AL-7 Response:

Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant, including the oil storage tanks and the natural gas pipeline, will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.

The above ground storage tanks will be constructed with secondary containment and will comply with all applicable local, state and federal standards which are designed to prevent spills or leaks from being released to the environment.

AL-8 Comment:

"I want DEP to guarantee in writing that my fears and predictions are unwarranted because I can guarantee that if there are not several dozen informed and very clear MEETINGS PRIOR TO APRIL 9th(since 30 days was your deadline) INFORMING THE PEOPLE OF LOXAHATCHEE AND THE ACREAGE OF ALL RISKS THAT YOUR PERMIT ARE EXPOSING US TO I WILL TAKE OUT FULL PAGE ADS AND FLY BANNERS THAT WILL INFORM THE PUBLIC and I doubt I'll be very delicate in this matter."

AL-8 Response:

As discussed in FPL response to AL-1 Comment, FPL conducts extensive public outreach programs for all FPL projects. Numerous presentations have been made in order to educate interested parties and to provide factual information on the Project.

AL-9 Comment:

"Over the last several years DEP has lowered the bar in the state of Florida in the guise of streamlining permits. This is unacceptible and can no longer happen somewhere you have to draw the line and start looking in the mirror knowing that big business doesn't care so you are the only line of defense for a public that is uninformed, and gullible until a disaster happens."

AL-9 Response:

FPL disagrees with this assertion. Our experience is the FDEP strongly enforces all rules and regulations governing the construction and operation of electric generating facilities regardless of any permit streamlining. In fact, the emission limits established for WCEC are among the most stringent required anywhere in Florida.

Letter from Sharon Waite, 15058 75th Lane, North, Loxahatchee, FL 33470

Below are comments from Sharon Waite to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

SW-1 Comment:

"It will have 12 stacks 140' high and spew out 40 tons of sulfuric acid mist, etc."

SW-1 Response:

The Palm Beach County-approved Development Order provides for 12 stacks. The current proposal is for the construction of 6 stacks with a maximum stack height of 150 feet.

FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment.

WCEC will be one of the most efficient and have one of the lowest emission rates of any fossil fuel fired power plant in Florida.

SW-2 Comment:

"What makes you think a 12.6 million gallon diesel stockpile in the ground will fly?"

SW-2 Response:

FPL is proposing to construct two 6.3 million gallon **above ground** storage tanks (not "in the ground") for ultra-low sulfur light oil, which will be used on a limited basis as a backup fuel source. The above ground storage tanks will be constructed with secondary containment and will comply with all federal, state and local standards which are designed to prevent spills or leaks from being released to the environment.

SW-3 Comment:

"The Palm Beach Aggregates will be blasting until 2032 (permitted already)."

SW-3 Response:

The power plant will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.

SW-4 Comment:

"This is adjacent to the pits my tax money paid $212 M for (ASR wells). FPL is not going to be allowed to utilize them to cool turbines."

SW-4 Response:

The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.

SW-5 Comment:

"Why did Wellington and Royal Palm Beach receive letters about this and not the acreage residents?"

SW-5 Response:

Over the last year, FPL has conducted an extensive outreach program, including presentations about WCEC to the Acreage Landowners Association on October 18, 2005 and to the Acreage Rotary Club on April 4, 2006.

FDEP must provide a copy of their Notice of Intent to Issue PSD Permit to the "Chief Executives of City or County Governments". Accordingly, FDEP copied the Chair of the Palm Beach County Commission, the Mayor of the Village of Wellington and the Mayor of the Village of Royal Palm Beach on their letter Notice of Intent to Issue PSD Permit for the WCEC Project. The Acreage is not a City or County and is located in unincorporated Palm Beach County.

SW-6 Comment:

"I'd say let's clean up Riviera Beach plant first. It's the dirtiest in the state."

SW-6 Response:

The Riviera Plant is an existing electric generating facility which is currently serving the electricity demands of FPL's customers and operating in accordance with all applicable local, state and federal regulations. The air quality in the vicinity of the Riviera Plant and throughout Palm Beach County has been determined to be in full compliance with the Ambient Air Quality Standards (AAQS) established by EPA and FDEP to protect human health, welfare and environment. In addition, FPL voluntarily adopts operating practices that further reduce environmental impacts. For example,

- FPL has significantly reduced particulate matter, opacity, carbon monoxide, and nitrogen oxides emissions from the Riviera plant through the multi-million dollar installation of low nitrogen oxide (NOx) burners.

- FPL has a self-imposed opacity standard for visible emissions that is 50 percent lower than the permitted federal limit and is equivalent to what a brand new power plant would be required to meet.
- FPL has installed Continuous Emission Monitoring Systems (CEMS) that instantaneously monitor flue gas emissions and Continuous Opacity Monitoring Systems (COMS) that check visible emission standards to help ensure emissions compliance.

The result of these efforts has been impressive: since 1990, NOx emissions from the Riviera plant have decreased by more than 40 percent and represent only 7 percent of all NOx emissions in Palm Beach County (mobile sources, including automobiles, account for more than 90 percent).

SW-7 Comment:

"As a sidebar, FPL will be tolerated to use the ASR wells as a place to inject their waste."

SW-7 Response:

The Project will utilize FDEP permitted underground injection control (UIC) wells for wastewater management, not Aquifer Storage and Recovery (ASR) wells.

UIC wells are commonly used throughout the region and involve injection of wastewater into a confined boulder zone.

Aquifer Storage and Recovery wells serve a very different purpose and are typically constructed to inject water into a different hydrogeological zone for later recovery and reuse.

SW-8 Comment:

"I never want to see this project come to fruition for another 660,000 units."

SW-8 Response:

FPL has a legal obligation to meet the electric generation needs of customers in our service territory. This requires planning for the projected customer growth and increased usage of electricity by existing customers. In order to ensure there is an adequate supply of electricity, new generating plants must be built in time to meet the projected growth.

The WCEC is being proposed to meet our legal obligation based on the projected electricity needs of FPL's customers throughout the FPL service territory including Palm Beach County. As described in the Site Certification Application, FPL uses an Integrated Resource and Planning (IRP) process to determine when new resources are needed, the magnitude of the resources needed, and the type of resources that should be added. The magnitude and timing of FPL's resource needs are established through a "reliability assessment". This assessment evaluates many factors including: demographic information such as population trends by county and housing characteristics, weather assessments from NOAA, economic conditions, the price of electricity, input from local economic development boards, and more. It is important to note that this evaluation is done for the entire FPL service territory, not for any one particular area. FPL's IRP

process in 2004, 2005 and 2006 confirmed the need for additional power generation in 2009 and 2010 (the proposed operation dates for WCEC Units 1 and 2 respectively).

Letter from Patricia D. Curry, 12390 59 Street North, The Acreage, FL 33411, GremlinLtd@aol.com

Below are comments from Patricia Curry to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

PC-1 Comment:

The area in question borders what is currently agricultural, primarily sugar farms. This area in particular is extremely important as it relates toward the Comprehensive Everglades Restoration Act.

It is no secret that the large growers in the area are desirous of retiring their farming land, seeking development rights in the stead of farming. Development on this land should never occur, and the land should be restored in the absence of farming to its natural and original state, as wetlands; this to aid the Everglades, as well as to ensure the natural filtration of water into the aquifer.

PC-1 Response:

On August 3, 2005, a public hearing was conducted regarding the WCEC's consistency and compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site. The notice of the land use hearing for the Project was published in accordance with the requirements of Section 403.5115, Florida Statutes.

On November 15, 2005, the Governor and Cabinet sitting as the Siting Board, issued a final order that the WCEC Project is consistent and in compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site.

PC-2 Comment:

Building a power plant that will service an additional 650,000 residences/businesses, in such a vital area, makes absolutely no sense at all, unless one is pursuing development of such an additional 650,000 new homes/business within the area. Currently, there is sufficient power supply for all who reside and/or work within the vicinity. In other words, building this new plant simply facilitates more growth, in an area where growth is currently prohibited, and should perpetually be prohibited.

With a County Commission that is so pro-growth, and anti-environment, as we have sitting now, who have approved land uses changes that are threatening rural areas and agricultural areas alike, this proposed power plant spells nothing but danger

PC-2 Response:

FPL has a legal obligation to meet the electric generation needs of customers in our service territory. This requires planning for the projected customer growth and increased usage of electricity by existing customers. In order to ensure there is an adequate supply of electricity, new generating plants must be built in time to meet the projected growth.

The WCEC is being proposed to meet our legal obligation based on the projected electricity needs of FPL's customers throughout the FPL service territory including Palm Beach County. As described in the Site Certification Application, FPL uses an Integrated Resource and Planning (IRP) process to determine when new resources are needed, the magnitude of the resources needed, and the type of resources that should be added. The magnitude and timing of FPL's resource needs are established through a "reliability assessment". This assessment evaluates many factors including: demographic information such as population trends by county and housing characteristics, weather assessments from NOAA, economic conditions, the price of electricity, input from local economic development boards, and more. It is important to note that this evaluation is done for the entire FPL service territory, not for any one particular area. FPL's IRP process in 2004, 2005 and 2006 confirmed the need for additional power generation in 2009 and 2010 (the proposed operation dates for WCEC Units 1 and 2 respectively).

PC-3 Comment:

The South Florida Water Management District recently acquired, at a price to taxpayers of several hundred million dollars, the rock pits created by mining operations at the Palm Beach Aggregates. The supposed purpose in purchasing these rock pits was to serve as additional water storage from excess water in Lake Okeechobee, and further to facilitate a new canal system that would feed into a "flow way" at the Mecca site, and then drop cleaner water into the C51 Canal feeding the Loxahatchee River.

The new proposed FPL power plant, finds that FPL will be utilizing the same rock pits???

PC-3 Response:

The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.

PC-4 Comment:

The mining operations continue at Palm Beach Aggregates, which includes blasting that shakes the earth sufficient that it can be felt miles away. How would this affect a "natural gas" power plant in direct proximity to the plant?

PC-4 Response:

Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.

PC-5 Comment:

Three huge towers that release pollutants into the air, including mercury, will most definitely affect not only the agricultural areas directly to the west of this proposed plant (poisoning our food, soil and water) but also the rural residential communities directly to the east of this proposed plant, i.e. Loxahatchee, Loxahatchee Groves and the Acreage. Contrary toward your reports, Wellington is not the closest community.

PC-5 Response:

WCEC will utilize the cleanest of all fossil fuels, primarily natural gas and ultra-low sulfur light oil as a backup fuel supply. These fuels contain virtually no mercury. In addition, an extensive air quality analysis was conducted, which determined that the air emission impacts would be much less than the applicable air standards that protect human health, welfare and the environment including vegetation and wildlife.

For clarification, the FDEP requires that the applicant provide certain information in the Site Certification Application, including "nearest incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.

Nancy J. Gribble, 1525 Gallop Drive, Loxahatchee, Florida 33470, (561) 596-4573, NanJ58@aol.com

Below are comments from Nancy Gribble to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

NG-1 Comment:

I am a resident of Fox Trail, a rural-tier community of unincorporated Palm Beach County that consists of 212 5-acre homesites, many of which are occupied by horses and agricultural uses. Fox Trail is located approximately 1.5 miles east of the proposed FPL West County Power Plant. There has been absolutley no presentation to our community regarding the proposed west county power plant, nor have our residents been solicitated for comment regarding such. As a matter of fact, the record incorrectly states that the Village of Wellington is the closest affected community of residents.

NG-1 Response:

Over the last year, FPL has met with various community leaders, homeowners associations, and private citizens to provide information and get feedback about this Project.

FPL has been in contact with Fox Trail Homeowner's Association (HOA) since the summer of 2005. FPL scheduled presentations to the Fox Trail Homeowners Association about WCEC for November 9, 2005 and January 11, 2006, but both were postponed at the request of the HOA. In March 2006, FPL rescheduled the presentation for the May 10, 2006 Fox Trail HOA meeting, and provided an insert for the Fox Trail newsletter.

In addition, on July 15, 2005, FPL contacted Ms. Gribble directly by voicemail as part of the outreach interview process, at the suggestion of the Fox Trail HOA. The interview was never arranged.

For clarification, the FDEP requires that the applicant provide certain information in the Site Certification Application, including "nearest incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.

NG-2 Comment:

Not withstanding the snub of our community, I attended the Administrative Hearing for the proposed west county power plant, which was also held in the Village of Wellington. At this hearing, misinformation abounded. Of particular concern, was the public statement that "no residential" community was in the near proximity of the proposed west county power plant. Having been involved in numerous zoning and land use issues affecting our community of Fox Trail over the past several years, I knew that statement was not only incorrect as it related to the community of Fox Trail, but that in fact, the Palm Beach County Board of County Commissioners had rezoned a 1200-acre portion of the Palm Beach Aggregates property late last year (2005), to allow the construction of 2000 homes. This PUD, which is now officially known as Highland Dunes by Lennar Corp. will be approximately one-quarter mile east of the proposed west county power plant site.

NG-2 Response:

Below is an excerpt from the Land Use Administrative hearing transcript on August 3, 2005. The information provided by expert witness Mr. Richard Zwolak, is both factual and accurate.

> "Q Mr. Zwolak, what's the distance to the nearest existing residential area?
>
> A There is a multiple acre per lot subdivision known as Deer Run that is located to the northeast of the project site. It is located east of canal L8 and to the north of additional mining activity shown on the aerial photograph on the very right side. The distance from the portion of the site where the infrastructure is planned, the northernmost infrastructure that Mr. Gnecco identified and the very southwest corner of this subdivision of Deer Run is approximately 0.7 miles.
>
> Q What is the distance to the nearest occupied residence?
>
> A The nearest occupied residence is located in the southwest corner of that subdivision. The distance from the site infrastructure to that residence is .75 miles, three-quarter mile."

Following the Land Use hearing, the Administrative Law Judge that presided over the hearing issued a Recommended Order. Governor Bush and the Cabinet approved that order on November 15, 2005 and issued a signed Final Order on November 17, 2005.

Since the time of the Land Use hearing, Palm Beach County granted final approval for development of a parcel of land which is located approximately one half mile (0.5) east of the proposed power plant Site, which is now known as Highland Dunes.

NG-3 Comment:

"You may wish to contact Kieran J. Kilday, Vice-President, Kilday & Assoicates at (tollfree) 800-755-4532 to verify Lennar's understanding and knowledge of the proposed west county power plant and the DEP permit. Mr. Kilday is the agent representing Lennar Corp. for the Highland Dunes project. Lennar must be held accountable to the future residents of Highland Dunes regarding the environmental impacts of the proposed west county power plant."

NG-3 Response:

FPL has conducted two meetings with representatives from Lennar Homes, Inc. and Kilday & Associates. Specifically, FPL met with Lennar's Vice President of Planning, Lennar's Land Development Manager, Lennar's Project Manager for the Highland Dunes project, and representatives from Kilday & Associates.

During these meetings, FPL provided a copy of the Site Certification Application and other documents associated with the Project, and reviewed the details of the Project to ensure that the WCEC could be considered in the design and planning for the Highland Dunes development.

In addition, Palm Beach County has imposed a requirement that Lennar Homes, Inc. provide written disclosure to any potential home buyer of the proposed WCEC.

NG-4 Comment:

"As a resident of Fox Trail, I have serious concerns with the following environmental issues: The site of the proposed west county power plant is surrounded by agricultural land that is used for farming and is a key land mass to EAA, a farming buffer to the Everglades."

NG-4 Response:

On August 3, 2005, a public hearing was conducted regarding the WCEC's consistency and compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site. The notice of the land use hearing for the Project was published in accordance with the requirements of Section 403.5115, Florida Statutes.

On November 15, 2005, the Governor and Cabinet sitting as the Siting Board, issued a final order that the WCEC Project is consistent and in compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site.

NG-5 Comment:

"Directly to the south of the proposed west county power plant is the STA-1 East, which is also a key component to the Comprehensive Everglades Restoration Plan (CERP). Phosphorus and other pollutant run-off are filtered here before being sent to the C-51 canal, a major water channel for Palm Beach County."

NG-5 Response:

There will be no offsite runoff of stormwater from the WCEC Site. All stormwater will be retained onsite. Therefore, the WCEC will have no adverse impact on the STA-1 East or CERP.

NG-6 Comment:

"The SFWMD (South Florida Water Management District) recently purchased rock pits on the Palm Beach Aggregates site for water storage (price tag $212M) to facilitate the storage and filitering of "clean" water for the Loxahatchee River. It is my understanding that these water pits will be utilized by FPL for the west county plant in the operation of their trubine engines. Why are taxpayer funded pits ($212M) being used by a for profit entitiy (FPL)? What pollunts will be rechannelled from FPL back into the water supply?"

NG-6 Response:

The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.

There will be no offsite runoff of stormwater from the WCEC Site. All stormwater will be retained onsite and will not be "rechanneled from FPL back into the water supply".

NG-7 Comment:

"Palm Beach Aggregates retains a mining permit throught the year 2032. The daily blasting (once allowable by law, although they have been known to blast 2x a day - this can be verified by viewing their blasting data logs) could prove to be an environmental and health disaster in the making with the near-by natural gas line and the storage of diesel fuel that FPL is planning for this site (12.6M gallons)."

NG-7 Response:

Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant will be designed to ensure the safe and reliable operations of the plant, including the oil storage tanks and natural gas pipeline concurrently with the mining operations.

NG-8 Comment:

"The emmission of mercury from the planned towers. Mercury emmisions are of grave concern to the health of our residents and more specifically to the well-water quality that we presently enjoy."

NG-8 Response:

WCEC will utilize the cleanest of all fossil fuels, primarily natural gas and ultra-low sulfur light oil used as backup. These fuels contain virtually no mercury, and therefore will have no adverse impact on the health of residents or well-water quality.

NG-9 Comment:

"In closing I ask that the DEP resind or delay its issuance of this permit until such time that a complete and specific review of residents' concerns and questions have been answered and verified with documentation from your department. Please do not rely on the information that has been provided by FPL. It is misleading at best, and their attempt to exclude those residents who will be directly impacted the most are shameful and intolerable."

NG-9 Response:

FPL has provided accurate information to FDEP and to area residents. Please refer to FPL's response NG-1 and Attachment 1 for a summary of our outreach efforts to date.

ATTACHMENT 1

Florida Power & Light Company
West County Energy Center
Community Outreach Program

At Florida Power & Light Company (FPL), we believe it is important to involve community neighbors and stakeholders in the development of projects designed to generate and deliver power to our customers. The goal of the West County Energy Center (WCEC) Outreach Program is to provide information to, collect input from and address the interests of the community regarding the power plant project.

The initial communications regarding a potential power plant at this site began in the early 2000's, prior to FPL's proposed project. The site received a power plant zoning designation from Palm Beach County following review and approval by Palm Beach County staff and commissioners in a series of public hearings in 2002 and 2004.

When FPL acquired the site and began designing the WCEC project, we initiated our community outreach program. We interviewed a cross section of community representatives to determine their interests in regard to the proposed project. These representatives included local homeowner association members, retirees, local government officials, and stakeholders in areas of finance, education, recreation, religion, health care organizations, business, public safety, and agriculture. The goal was to understand specific issues, concerns and questions that the community might have, and to address them by offering a presentation by FPL project team members for interested organizations.

Beginning in 2005, presentations have been made to numerous homeowners' associations, chambers of commerce and Rotary clubs. These presentations are offered on an ongoing basis throughout the development of the project. We also offer update articles about the project which have been published in several homeowners' associations' newsletters and a project brochure with FPL contact information, including a 1-800 number and a website address where interested individuals can ask to be added to our mailing list. We encourage our neighbors to let us know of their interests and to continue to follow the progress of the project.

The West County Energy Center project has been featured in several newspaper articles and public notices to provide information opportunities for the public. We have provided a list of presentations and articles and continue to seek opportunities to share project information.

Community outreach is an essential element of our project development. We will continue to engage the community throughout the process and welcome the opportunity to share information and obtain greater knowledge of community interests.

FPL.

West County Energy Center
Presentations to the Community

Presentation Date	Group
Oct 5, 2005	Indian Trail Improvement District
Oct 18, 2005	Acreage LOA
Nov 14, 2005	Palms West Chamber of Commerce
Nov 16, 2005	Belle Glade Chamber of Commerce
Nov 17, 2005	Loxahatchee Groves BOD/LOA
Nov 28, 2005	Tri-City League
Jan 10, 2006	JTJB Chamber Legislative Affairs Committee
Jan. 17, 2006	Deer Run - BOD/HOA (rescheduled from 11/15/05 & 12/09/05)
Feb 8, 2006	Hispanic Chamber of Commerce
March 1, 2006	Pahokee Chamber of Commerce
March 7, 2006	Belle Glade Rotary Club
March 16, 2006	Royal Palm Beach Rotary
March 23, 2006	Pahokee Rotary Club
March 28, 2006	White Fences - HOA
March 29, 2006	Wellington Chamber of Commerce
April 4, 2006	Acreage Rotary
April 11, 2006	Wellington Rotary
May 10, 2006	Fox Trail - HOA/BOD (rescheduled from 11/09/05 & 01/11/06)

BOD = Board of Directors
HOA = Homeowners Association
LOA = Land Owners Association

FPL.

West County Energy Center

Newspaper Articles, Press Releases, Public Notices & TV Coverage

Publish Date	Publication – Title
Jan. 30 2004	Royal Palm Beach Observer – FPL to Improve Substation
Mar. 5, 2004	Royal Palm Beach Observer – Power Plant OK for Limited Use of Fuel Oil
May 14, 2005	Sun-Sentinel – Florida utility plans to build generator project in Palm Beach County, Fla.
May 14, 2005	Palm Beach Post - FPL planning new Palm Beach County plant
May 14, 2005	Palm Beach Post – Public Notice of Filing Application for Site Certification for a power plant to be located in Palm Beach County, Florida: Florida Power & Light Company West County Energy Center
June 16, 2005	Palm Beach Post – Public Notice of Land Use and Zoning Hearing for a proposed power plant facility to be located in Palm Beach County, Florida: Florida Power & Light Company West County Energy Center
Aug. 3, 2005	Channel 12 covered the Land Use Hearing
Aug. 19, 2005	Palm Beach Post – FPL opens bidding for new plants in Palm Beach County
Sept. 29, 2005	Palm Beach Post – Florida Power & Light – Public Notice of Proposed West County Energy Center Class I Exploratory Well and Dual Zone Well
Nov. 18, 2005	The Observer – FPL Rep Sheds Light on Proposed Power Plant
Nov. 18-22, 2005	The Town-Crier – FPL Promotes Power Plant Plan at P.W. Chamber Luncheon
Dec. 9, 2005	Palm Beach Post – Florida Power & Light – Public Notice of Proposed West County Energy Center Class I Exploratory Well and Dual Zone Monitoring Well
Jan. 17, 2006	Channel 9 and Channel 12 covered Deer Run HOA/BOD meeting
Feb. 7, 2006	FPL Press Release – New Power Plant needed to meet customer growth and electricity demand; FPL's West County Energy Center project deemed most cost-effective option
Feb. 8, 2006	Palm Beach Post – FPL picks its building plan for plant
Feb. 8, 2006	Sarasota Herald Tribune – FPL proposes new power plant
Feb. 9, 2006	The Globe St.– FPL Picks 220-Acre Mining Site for $1B-Plus Energy Center
Mar. 9, 2006	Palm Beach Post – Florida Power & Light Company West County Energy Center Project Public Notice of Intent to Issue PSD Permit DEP File
Mar. 15, 2006	Palm Beach Post - FPL needs new plant
Mar. 29, 2006	Palm Beach Post – Panel votes to streamline rules for power plants
Mar. 31, 2006	The Town Crier – New Western Power Plant Needed Due to Growth in Palm Beach County
Apr. 3, 2006	FPL Press Release – FPL updates Florida PSC on future generation needs and system planning

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

FPL

April 21, 2006

Ms. Trina Vielhauer
Florida Department of Environmental Protection
Division of Air Resource Management
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Florida Power & Light Company
West County Energy Center
DEP File No. 0990646-001-AC (PSD-FL-354)
Response to Public Comments Provided to FDEP

Dear Ms. Vielhauer,

Thank you for your efforts to organize and host the public meeting on Wednesday, April 19, 2006. We appreciated the opportunity to hold an informational session prior to the public meeting to answer questions from the public.

Florida Power & Light Company (FPL) prepared the attached response to written comments provided to FDEP regarding your Notice of Intent to Issue a PSD permit for FPL's West County Energy Center project. We did not send the attached responses to you prior to the public meeting so that we could incorporate any additional concerns that might be raised at the public meeting. However, the points made at the public meeting were essentially the same as those raised in the letters submitted prior to the meeting.

We have offered our responses to each point raised in each letter. However, we do not plan to forward these responses directly to the individuals since their letters were not addressed to FPL.

Please let me know if you have any questions. You can reach me at (561) 691-7518.

Sincerely,

Barbara P. Linkiewicz
Environmental Licensing Manager

cc: Al Linero, FDEP Air
Teresa Heron, FDEP Air
Debbie Nelson, FDEP Air
Steve Palmer, FDEP Siting Office
Scott Burns, SFWMD
James Golden, SFWMD
Tim Gray, DEP SED
Robert Weisman, Palm Beach County
Carrie Rechenmacher, Palm Beach County
Courtney Shippey, Palm Beach County

April 21, 2006

Letter from Michael K Christensen, 13759 159th Street N, Jupiter, FL 33478, 561-254-9690

Below are comments from Michael Christensen to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

MC-1 Comment:

"The Bureau has ignored its own investigators, Mr. Palmer and Mr. Sheplak. Many of the questions they asked went completely unanswered, were later answered in the same fashion, or the instructions were ignored completely."

MC-1 Response:

FDEP issued a series of questions ("sufficiency questions") to FPL in response to FPL's Site Certification Application (SCA). FPL provided timely and complete responses to all questions on August 11, 2005. FDEP reviewed FPL responses and on September 12, 2005 deemed the SCA to be "sufficient", meaning that the information provided was adequate for reviewers to analyze the impacts of the proposed project.

MC-2 Comment:

"The Mitsiubishi turbine was selected, unfortunately it had no record in this state, so it was explained, no data pertinent to real operating conditions. the State was to be "flexible" with one of the, if not the, largest power plant in our state. This is not the time to be 'flexible'."

MC-2 Response:

While there are no Mitsubishi G combustion turbines currently operating in Florida, there are 18 units installed both in the US and abroad with more than 330,000 hours of operation. The projected emissions from the WCEC are not only based on real operating conditions and testing but are also backed by very stringent manufacturer's guarantees. The size of each unit proposed for the WCEC is similar to the size and technology being constructed at FPL's Turkey Point Plant located in Miami-Dade, and two operating units located at FPL's Martin Plant located in Martin County and FPL's Manatee Plant located in Manatee County.

MC-3 Comment:

"No information on lbs/ppm was provided by manufacturer reflecting real world environment."

MC-3 Response:

On December 29, 2005, FPL provided FDEP with emissions information from the specific manufacturer of the combustion turbine selected for WCEC. This information was based on manufacturer data that included "real world" testing from the type of combustion turbines proposed for WCEC. Data were provided for both concentration (i.e., ppm) and mass emissions (lb/hr).

MC-4 Comment:

"The more stringent air quality on this 'New' Major Source Polluter must be maintained, we cannot, must not go backward. This Major New Pollution Source will be located within 1/4 mile of Arthur Marshall National Wildlife Refuge. The damage/ disaster potential is great yet no external cost analysis was done."

MC-4 Response:

The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) Increments that protect air quality from degradation.

MC-5 Comment:

"The boiler question was never coherently answered. Why is the newer version more polluting? Why no investment in cleaning up the pollutants before they are thrust into the air at enormous cfm? No cost analysis reflecting external cost of FPL Major Source Pollutants."

MC-5 Response:

The Air Construction Permit Application and Sufficiency Response 5FDEP-17 provided information on the auxiliary boilers. That response was deemed by FDEP to be sufficient.

The auxiliary boilers proposed for the WCEC will be used only for the startup of the power plant after extended outages and will use only natural gas. These boilers will be equipped with pollution preventing combustion systems to limit emissions below regulatory requirements. These controls will limit emissions to levels determined by FDEP to be Best Available Control Technology (BACT) for these boilers. Cost was discussed in FPL's Air Construction Permit Application, and both the FPL and FDEP analysis of BACT includes consideration of costs. Add-on controls were determined not to be necessary or cost effective for these intermittent use boilers.

MC-6 Comment:

"The Air Modeling questions were never resolved, Unless you count FPL asking Us the public, and you, the regulator to be "Flexible". The statement by your investigators that the County of Palm Beach had serious concerns was never answered cognitively either."

MC-6 Response:

The Air Construction Permit Application and Sufficiency Response 5FDEP-8 provided detailed information on the air quality impact analyses. That response was deemed by FDEP to be sufficient. The air modeling analysis provided to FDEP demonstrated that air quality impacts resulting from the operation of WCEC would comply with Ambient Air Quality Standards (AAQS) and Prevention of Significant Deterioration (PSD) Increments. Additionally, the air quality impacts were less than 50 percent of the available PSD Increments as required by Palm Beach County.

MC-7 Comment:

"It was noted 'yes' had been checked, that the pollutants are synthetically limited. The pollutants subect to BACT are not synthetically limited. FPL was to correct and send correcting documentation, this wasn't done, in fact all boxes in resubmitted information are still checked 'Yes'."

MC-7 Response:

The checking of the box "Yes" is correct. Sufficiency Response 5FDEP-10 provided the information related to the term "synthetically limited". In the FDEP application form this reflects whether emissions are limited by some operational constraint such as the hours per year or fuel use. The use of ultra-low sulfur light oil in the combustion turbines (CTs) was proposed to be limited to no more than 500 hours/year/CT and the amount of duct firing is limited by the total amount of natural gas to be used. Therefore, since there were proposed operational limits, the appropriate boxes in the application were checked. FPL's Sufficiency Response 5FDEP-10 was deemed by FDEP to be sufficient.

MC-8 Comment:

"No information regarding SSM was re-submitted that I could find."

MC-8 Response:

FPL provided information to FDEP regarding startup, shutdown and malfunction (SSM) in Sufficiency Response 5FDEP-2, and that response was deemed by FDEP to be sufficient.

MC-9 Comment:

"Your investigators write about emission units not mentioned in the application, and references a 4.2 gallon diesel storage facility. In FPL response the 4.2 is now 12.6 million gallons, 3 times the application size, with no supporting documentation on these facilities, 2-6.3 million gallon tanks! This alone should be grounds to stop this. There exists no Expedited permitting for New Major Source Polluters."

MC-9 Response:

FPL designs and constructs natural gas-fired power plants with a back-up fuel supply so that electric generation is not interrupted in the event of the loss of its primary fuel supply to the Site.

The Palm Beach County-approved Development Order and the included Site Plan identifies up to 12.6 million gallons of oil storage for the Site.

In the WCEC Air Construction Permit Application, FPL proposed the installation of 8.4 million gallons (two 4.2 million gallon above ground ultra-low sulfur light oil storage tanks) out of the total 12.6 million gallons in the Palm Beach County-approved Development Order. However, following the 2005 hurricane season and the resulting limited supply of natural gas to Florida, FPL determined that it would be prudent to install the entire 12.6 million gallons of ultra-low sulfur light oil storage. Accordingly, FPL updated our proposal to reflect installation of two 6.3 million gallon above ground oil storage tanks (12.6 gallons total).

The above ground storage tanks will be constructed with secondary containment and will comply with all applicable local, state and federal standards which are designed to prevent spills or leaks from being released to the environment.

MC-10 Comment:

"Major Hap source, FPL was asked to provide information on why they neglected to supply necessary documentation on this. They did not supply."

MC-10 Response:

Detailed information on hazardous air pollutants (HAP) was provided to FDEP in the Air Construction Permit Application. Additional information was provided in FPL's Sufficiency Responses 5FDEP-14, 5FDEP-15, 5FDEP-16, 5FDEP-17, 5FDEP-18 and 5FDEP-19 on specific regulatory requirements and their potential applicability to the WCEC. Those responses were deemed by FDEP to be sufficient.

MC-11 Comment:

"Your investigators requested all documentation, communication with EPA, Federal Land manager, FWC, local governments, National Parks Service, EPA Region 4, they referenced the Endangered Species act. I saw none in FPL response. In fact they stated the site has no wildlfe to be impacted. This site is practically adjacent to the Arthur Marshall National Wildlife Refuge. National. We have a duty to the Nation, and I say to the World to 'Protect' it."

MC-11 Response:

FPL's Sufficiency Response 5FDEP-20 provided the requested information to FDEP, and that response was deemed by FDEP to be sufficient. In addition, FPL met with the US Fish and Wildlife Service and provided a complete copy of the Site Certification Application.

All named agencies are involved in either the Site Certification Application and/or the Air Construction Permit Application review process and have not objected to the Project.

MC-12 Comment:

The site will be adjacent to SFWMD 'Pits' that SFWMD (taxpayers) purchased for 223 million dollars to store 48,000 acre feet of drinking water. This is an insult. Stop! Halt! Someone call a cop, there is a crime being committed here! Can anybody help?!

MC-12 Response:
This Project is designed to be in compliance with all applicable local, state and federal laws, rules and regulations as proposed.

The Site is adjacent to the SFWMD water storage pits which are part of the Development Order approved by Palm Beach County. The development of the power plant and the storage pits were planned concurrently by the previous landowner prior to the sale of the land to both FPL and the SFWMD. All parties have worked together to allow the development of each of the projects with no adverse effects to either.

Letter from Alexandria Larson, 16933 W Harlena Drive, Loxahatchee, FL 33470 561-791-0875

Below are comments from Alexandria Larson to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

AL-1 Comment:

"Why were the people of Loxahatchee not informed on this matter? In your permit application it lists Wellington as the closest area this is incorrect I personally live within a mile of this proposed plant you also have the residents of Foxtrail, Deer Run, White Fences and Indian Trail Improvement District we are 40,000 residents that have been totally ignored."

AL-1 Response:

Over the last year, FPL has conducted an extensive outreach program. Attachment 1 provides a summary of FPL's outreach efforts, including meetings/presentations with Deer Run, White Fences, Indian Trail Improvement District, and Loxahatchee Groves Landowners Association, and a planned meeting with Fox Trail (postponed from Fall 2005). Also included is a list of media coverage and public notices issued on this Project.

The Site is located in unincorporated Palm Beach County. The FDEP requires that the applicant provide certain information in the Site Certification Application, including "Nearest Incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.

AL-2 Comment:

"When a meeting was held it was in Wellington and posted in the sports section of the Palm Beach Post."

AL-2 Response:

The land use hearing for the WCEC Project was held in Wellington in accordance with the requirements of Section 403.508(1), Florida Statutes, which provides that the hearing shall be held "in the County of the proposed Site" and "as close as possible to the proposed Site."

FPL canvassed the area, including the Royal Palm Beach Cultural Center and various school auditoriums for meeting rooms. The Royal Palm Beach Cultural Center was under repair at the time of the hearing. Other than the selected Wellington Community Center, there was no available public facility that met the logistical requirements of the administrative hearing. The location was deemed to be within an acceptable distance from the Project Site.

The notice of the land use hearing for the Project was published in accordance with the requirements of Section 403.5115, Florida Statutes. Subsection (2) of that statute specifically provides that such notices shall be "published in a section of the newspaper other than the legal notices section." The Palm Beach Post made the decision about which section of the newspaper could fit the half page ad on the publication day.

AL-3 Comment:

"When this was brought to my attention image my surprise when I read that you want to let FPL put 12.6 million gallons of diesel fuel on a sight where mining operations have a permit for blasting until 2032.We definitely have a problem here."

AL-3 Response:

Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant, including the oil storage tanks, will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.

AL-4 Comment:

"Also the emissions alone are frightning 40 tons of SAM and the list of emissions is quite extensive. I frankly don't care what the guidelines are this is a lot of pollution in an area that these pollutants do not exist today."

AL-4 Response:

The emissions from any power plant facility must be expressed in tons/year for comparison to regulatory thresholds. FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment.

AL-5 Comment:

"I am amazed that you are even considering this plant when you haven't even addressed the plant FPL has in N.Palm Beach it is known to be the most polluted in the state. And please don't tell me the proposed plant in Loxahatchee will relieve this problem because I know this is to facilitate 660,000 new residents not take care of the existing ones."

AL-5 Response:

FPL has a legal obligation to meet the electric generation needs of customers in our service territory. This requires planning for the projected customer growth and increased usage of electricity by existing customers. In order to ensure there is an adequate supply of electricity, new generating plants must be built in time to meet the projected growth.

The WCEC is being proposed to meet our legal obligation based on the projected electricity needs of FPL's customers throughout the FPL service territory including Palm Beach County. As

described in the Site Certification Application, FPL uses an Integrated Resource and Planning (IRP) process to determine when new resources are needed, the magnitude of the resources needed, and the type of resources that should be added. The magnitude and timing of FPL's resource needs are established through a "reliability assessment". This assessment evaluates many factors including: demographic information such as population trends by county and housing characteristics, weather assessments from NOAA, economic conditions, the price of electricity, input from local economic development boards, and more. It is important to note that this evaluation is done for the entire FPL service territory, not for any one particular area. FPL's IRP process in 2004, 2005 and 2006 confirmed the need for additional power generation in 2009 and 2010 (the proposed operation dates for WCEC Units 1 and 2 respectively).

WCEC will be one of the most efficient and have one of the lowest emission rates of any fossil fuel fired power plant in Florida.

The Riviera Plant is an existing electric generating facility which is currently serving the electricity demands of FPL's customers. The Riviera Plant consists of steam electric generators which currently operate in accordance with applicable local, state and federal regulations. The air quality in the vicinity of the Riviera Plant and throughout Palm Beach County has been determined to be in full compliance with the Ambient Air Quality Standards (AAQS) established by EPA and FDEP to protect human health, welfare and environment. In addition, FPL voluntarily adopts operating practices that further reduce environmental impacts. For example,

- FPL has significantly reduced particulate matter, opacity, carbon monoxide, and carbon dioxide emissions from the Riviera plant through the multi-million dollar installation of low nitrogen oxide (NOx) burners.
- FPL has a self-imposed opacity standard for visible emissions that is 50 percent lower than the permitted federal limit and is equivalent to what a brand new power plant would be required to meet.
- FPL has installed Continuous Emission Monitoring Systems (CEMS) that instantaneously monitor flue gas emissions and Continuous Opacity Monitoring Systems (COMS) that check visible emission standards to help ensure emissions compliance.

The result of these efforts has been impressive: since 1990, NOx emissions from the Riviera plant have decreased by more than 40 percent and represent only 7 percent of all NOx emissions in Palm Beach County (mobile sources, including automobiles, account for more than 90 percent).

AL-6 Comment:

"Also this FPL plant will be utilzing the Palm Beach Aggregates pits 1272 acres of water for cooling its turbines. This exact area was bought by South Florida Water Management District on Dec 8, 2004 at a cost to taxpayers of 212 million dollars the premise was that this was for the CERP project you know the Comprehensive Everglades Restoration Project."

AL-6 Response:

The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.

AL-7 Comment:

"I'm not an engineer but astronomical emissions,12.6 million gallons of diesel and blasting near a natural gas pipeline facility make a mix for disaster and this is one in the making its not a matter of if but when? The Valdez only had 11 million gallons and they are still cleaning up that mess. I am appalled that you are even considering this permit"

AL-7 Response:

Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant, including the oil storage tanks and the natural gas pipeline, will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.

The above ground storage tanks will be constructed with secondary containment and will comply with all applicable local, state and federal standards which are designed to prevent spills or leaks from being released to the environment.

AL-8 Comment:

"I want DEP to guarantee in writing that my fears and predictions are unwarranted because I can guarantee that if there are not several dozen informed and very clear MEETINGS PRIOR TO APRIL 9th(since 30 days was your deadline) INFORMING THE PEOPLE OF LOXAHATCHEE AND THE ACREAGE OF ALL RISKS THAT YOUR PERMIT ARE EXPOSING US TO I WILL TAKE OUT FULL PAGE ADS AND FLY BANNERS THAT WILL INFORM THE PUBLIC and I doubt I'll be very delicate in this matter."

AL-8 Response:

As discussed in FPL response to AL-1 Comment, FPL conducts extensive public outreach programs for all FPL projects. Numerous presentations have been made in order to educate interested parties and to provide factual information on the Project.

AL-9 Comment:

"Over the last several years DEP has lowered the bar in the state of Florida in the guise of streamlining permits. This is unacceptible and can no longer happen somewhere you have to draw the line and start looking in the mirror knowing that big business doesn't care so you are the only line of defense for a public that is uninformed, and gullible until a disaster happens."

AL-9 Response:

FPL disagrees with this assertion. Our experience is the FDEP strongly enforces all rules and regulations governing the construction and operation of electric generating facilities regardless of any permit streamlining. In fact, the emission limits established for WCEC are among the most stringent required anywhere in Florida.

Letter from Sharon Waite, 15058 75th Lane, North, Loxahatchee, FL 33470

Below are comments from Sharon Waite to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

SW-1 Comment:

"It will have 12 stacks 140' high and spew out 40 tons of sulfuric acid mist, etc."

SW-1 Response:

The Palm Beach County-approved Development Order provides for 12 stacks. The current proposal is for the construction of 6 stacks with a maximum stack height of 150 feet.

FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment.

WCEC will be one of the most efficient and have one of the lowest emission rates of any fossil fuel fired power plant in Florida.

SW-2 Comment:

"What makes you think a 12.6 million gallon diesel stockpile in the ground will fly?"

SW-2 Response:

FPL is proposing to construct two 6.3 million gallon **above ground** storage tanks (not "in the ground") for ultra-low sulfur light oil, which will be used on a limited basis as a backup fuel source. The above ground storage tanks will be constructed with secondary containment and will comply with all federal, state and local standards which are designed to prevent spills or leaks from being released to the environment.

SW-3 Comment:

"The Palm Beach Aggregates will be blasting until 2032 (permitted already)."

SW-3 Response:

The power plant will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.

SW-4 Comment:

"This is adjacent to the pits my tax money paid $212 M for (ASR wells). FPL is not going to be allowed to utilize them to cool turbines."

SW-4 Response:

The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.

SW-5 Comment:

"Why did Wellington and Royal Palm Beach receive letters about this and not the acreage residents?"

SW-5 Response:

Over the last year, FPL has conducted an extensive outreach program, including presentations about WCEC to the Acreage Landowners Association on October 18, 2005 and to the Acreage Rotary Club on April 4, 2006.

FDEP must provide a copy of their Notice of Intent to Issue PSD Permit to the "Chief Executives of City or County Governments". Accordingly, FDEP copied the Chair of the Palm Beach County Commission, the Mayor of the Village of Wellington and the Mayor of the Village of Royal Palm Beach on their letter Notice of Intent to Issue PSD Permit for the WCEC Project. The Acreage is not a City or County and is located in unincorporated Palm Beach County.

SW-6 Comment:

"I'd say let's clean up Riviera Beach plant first. It's the dirtiest in the state."

SW-6 Response:

The Riviera Plant is an existing electric generating facility which is currently serving the electricity demands of FPL's customers and operating in accordance with all applicable local, state and federal regulations. The air quality in the vicinity of the Riviera Plant and throughout Palm Beach County has been determined to be in full compliance with the Ambient Air Quality Standards (AAQS) established by EPA and FDEP to protect human health, welfare and environment. In addition, FPL voluntarily adopts operating practices that further reduce environmental impacts. For example,

- FPL has significantly reduced particulate matter, opacity, carbon monoxide, and carbon dioxide emissions from the Riviera plant through the multi-million dollar installation of low nitrogen oxide (NOx) burners.

- FPL has a self-imposed opacity standard for visible emissions that is 50 percent lower than the permitted federal limit and is equivalent to what a brand new power plant would be required to meet.
- FPL has installed Continuous Emission Monitoring Systems (CEMS) that instantaneously monitor flue gas emissions and Continuous Opacity Monitoring Systems (COMS) that check visible emission standards to help ensure emissions compliance.

The result of these efforts has been impressive: since 1990, NOx emissions from the Riviera plant have decreased by more than 40 percent and represent only 7 percent of all NOx emissions in Palm Beach County (mobile sources, including automobiles, account for more than 90 percent).

SW-7 Comment:

"As a sidebar, FPL will be tolerated to use the ASR wells as a place to inject their waste."

SW-7 Response:

The Project will utilize FDEP permitted underground injection control (UIC) wells for wastewater management, not Aquifer Storage and Recovery (ASR) wells.

UIC wells are commonly used throughout the region and involve injection of wastewater into a confined boulder zone.

Aquifer Storage and Recovery wells serve a very different purpose and are typically constructed to inject water into a different hydrogeological zone for later recovery and reuse.

SW-8 Comment:

"I never want to see this project come to fruition for another 660,000 units."

SW-8 Response:

FPL has a legal obligation to meet the electric generation needs of customers in our service territory. This requires planning for the projected customer growth and increased usage of electricity by existing customers. In order to ensure there is an adequate supply of electricity, new generating plants must be built in time to meet the projected growth.

The WCEC is being proposed to meet our legal obligation based on the projected electricity needs of FPL's customers throughout the FPL service territory including Palm Beach County. As described in the Site Certification Application, FPL uses an Integrated Resource and Planning (IRP) process to determine when new resources are needed, the magnitude of the resources needed, and the type of resources that should be added. The magnitude and timing of FPL's resource needs are established through a "reliability assessment". This assessment evaluates many factors including: demographic information such as population trends by county and housing characteristics, weather assessments from NOAA, economic conditions, the price of electricity, input from local economic development boards, and more. It is important to note that this evaluation is done for the entire FPL service territory, not for any one particular area. FPL's IRP

process in 2004, 2005 and 2006 confirmed the need for additional power generation in 2009 and 2010 (the proposed operation dates for WCEC Units 1 and 2 respectively).

Letter from Patricia D. Curry, 12390 59 Street North, The Acreage, FL 33411, GremlinLtd@aol.com

Below are comments from Patricia Curry to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

PC-1 Comment:

The area in question borders what is currently agricultural, primarily sugar farms. This area in particular is extremely important as it relates toward the Comprehensive Everglades Restoration Act.

It is no secret that the large growers in the area are desirous of retiring their farming land, seeking development rights in the stead of farming. Development on this land should never occur, and the land should be restored in the absence of farming to its natural and original state, as wetlands; this to aid the Everglades, as well as to ensure the natural filtration of water into the aquifer.

PC-1 Response:

On August 3, 2005, a public hearing was conducted regarding the WCEC's consistency and compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site. The notice of the land use hearing for the Project was published in accordance with the requirements of Section 403.5115, Florida Statutes.

On November 15, 2005, the Governor and Cabinet sitting as the Siting Board, issued a final order that the WCEC Project is consistent and in compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site.

PC-2 Comment:

Building a power plant that will service an additional 650,000 residences/businesses, in such a vital area, makes absolutely no sense at all, unless one is pursuing development of such an additional 650,000 new homes/business within the area. Currently, there is sufficient power supply for all who reside and/or work within the vicinity. In other words, building this new plant simply facilitates more growth, in an area where growth is currently prohibited, and should perpetually be prohibited.

With a County Commission that is so pro-growth, and anti-environment, as we have sitting now, who have approved land uses changes that are threatening rural areas and agricultural areas alike, this proposed power plant spells nothing but danger

PC-2 Response:

FPL has a legal obligation to meet the electric generation needs of customers in our service territory. This requires planning for the projected customer growth and increased usage of electricity by existing customers. In order to ensure there is an adequate supply of electricity, new generating plants must be built in time to meet the projected growth.

The WCEC is being proposed to meet our legal obligation based on the projected electricity needs of FPL's customers throughout the FPL service territory including Palm Beach County. As described in the Site Certification Application, FPL uses an Integrated Resource and Planning (IRP) process to determine when new resources are needed, the magnitude of the resources needed, and the type of resources that should be added. The magnitude and timing of FPL's resource needs are established through a "reliability assessment". This assessment evaluates many factors including: demographic information such as population trends by county and housing characteristics, weather assessments from NOAA, economic conditions, the price of electricity, input from local economic development boards, and more. It is important to note that this evaluation is done for the entire FPL service territory, not for any one particular area. FPL's IRP process in 2004, 2005 and 2006 confirmed the need for additional power generation in 2009 and 2010 (the proposed operation dates for WCEC Units 1 and 2 respectively).

PC-3 Comment:

The South Florida Water Management District recently acquired, at a price to taxpayers of several hundred million dollars, the rock pits created by mining operations at the Palm Beach Aggregates. The supposed purpose in purchasing these rock pits was to serve as additional water storage from excess water in Lake Okeechobee, and further to facilitate a new canal system that would feed into a "flow way" at the Mecca site, and then drop cleaner water into the C51 Canal feeding the Loxahatchee River.

The new proposed FPL power plant, finds that FPL will be utilizing the same rock pits???

PC-3 Response:

The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.

PC-4 Comment:

The mining operations continue at Palm Beach Aggregates, which includes blasting that shakes the earth sufficient that it can be felt miles away. How would this affect a "natural gas" power plant in direct proximity to the plant?

PC-4 Response:

Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.

PC-5 Comment:

Three huge towers that release pollutants into the air, including mercury, will most definitely affect not only the agricultural areas directly to the west of this proposed plant (poisoning our food, soil and water) but also the rural residential communities directly to the east of this proposed plant, i.e. Loxahatchee, Loxahatchee Groves and the Acreage. Contrary toward your reports, Wellington is not the closest community.

PC-5 Response:

WCEC will utilize the cleanest of all fossil fuels, primarily natural gas and ultra-low sulfur light oil as a backup fuel supply. These fuels contain virtually no mercury. In addition, an extensive air quality analysis was conducted, which determined that the air emission impacts would be much less than the applicable air standards that protect human health, welfare and the environment including vegetation and wildlife.

For clarification, the FDEP requires that the applicant provide certain information in the Site Certification Application, including "nearest incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.

Nancy J. Gribble, 1525 Gallop Drive, Loxahatchee, Florida 33470, (561) 596-4573, NanJ58@aol.com

Below are comments from Nancy Gribble to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

NG-1 Comment:

I am a resident of Fox Trail, a rural-tier community of unincorporated Palm Beach County that consists of 212 5-acre homesites, many of which are occupied by horses and agricultural uses. Fox Trail is located approximately 1.5 miles east of the proposed FPL West County Power Plant. There has been absolutley no presentation to our community regarding the proposed west county power plant, nor have our residents been solicitated for comment regarding such. As a matter of fact, the record incorrectly states that the Village of Wellington is the closest affected community of residents.

NG-1 Response:

Over the last year, FPL has met with various community leaders, homeowners associations, and private citizens to provide information and get feedback about this Project.

FPL has been in contact with Fox Trail Homeowner's Association (HOA) since the summer of 2005. FPL scheduled presentations to the Fox Trail Homeowners Association about WCEC for November 9, 2005 and January 11, 2006, but both were postponed at the request of the HOA. In March 2006, FPL rescheduled the presentation for the May 10, 2006 Fox Trail HOA meeting, and provided an insert for the Fox Trail newsletter.

In addition, on July 15, 2005, FPL contacted Ms. Gribble directly by voicemail as part of the outreach interview process, at the suggestion of the Fox Trail HOA. The interview was never arranged.

For clarification, the FDEP requires that the applicant provide certain information in the Site Certification Application, including "nearest incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.

NG-2 Comment:

Not withstanding the snub of our community, I attended the Administrative Hearing for the proposed west county power plant, which was also held in the Village of Wellington. At this hearing, misinformation abounded. Of particular concern, was the public statement that "no residential" community was in the near proximity of the proposed west county power plant. Having been involved in numerous zoning and land use issues affecting our community of Fox Trail over the past several years, I knew that statement was not only incorrect as it related to the community of Fox Trail, but that in fact, the Palm Beach County Board of County Commissioners had rezoned a 1200-acre portion of the Palm Beach Aggregates property late last year (2005), to allow the construction of 2000 homes. This PUD, which is now officially known as Highland Dunes by Lennar Corp. will be approximately one-quarter mile east of the proposed west county power plant site.

NG-2 Response:

Below is an excerpt from the Land Use Administrative hearing transcript on August 3, 2005. The information provided by expert witness Mr. Richard Zwolak, is both factual and accurate.

> "Q Mr. Zwolak, what's the distance to the nearest existing residential area?
>
> A There is a multiple acre per lot subdivision known as Deer Run that is located to the northeast of the project site. It is located east of canal L8 and to the north of additional mining activity shown on the aerial photograph on the very right side. The distance from the portion of the site where the infrastructure is planned, the northernmost infrastructure that Mr. Gnecco identified and the very southwest corner of this subdivision of Deer Run is approximately 0.7 miles.
>
> Q What is the distance to the nearest occupied residence?
>
> A The nearest occupied residence is located in the southwest corner of that subdivision. The distance from the site infrastructure to that residence is .75 miles, three-quarter mile."

Following the Land Use hearing, the Administrative Law Judge that presided over the hearing issued a Recommended Order. Governor Bush and the Cabinet approved that order on November 15, 2005 and issued a signed Final Order on November 17, 2005.

Since the time of the Land Use hearing, Palm Beach County granted final approval for development of a parcel of land which is located approximately one half mile (0.5) east of the proposed power plant Site, which is now known as Highland Dunes.

NG-3 Comment:

"You may wish to contact Kieran J. Kilday, Vice-President, Kilday & Assoicates at (tollfree) 800-755-4532 to verify Lennar's understanding and knowledge of the proposed west county power plant and the DEP permit. Mr. Kilday is the agent representing Lennar Corp. for the Highland Dunes project. Lennar must be held accountable to the future residents of Highland Dunes regarding the environmental impacts of the proposed west county power plant."

NG-3 Response:

FPL has conducted two meetings with representatives from Lennar Homes, Inc. and Kilday & Associates. Specifically, FPL met with Lennar's Vice President of Planning, Lennar's Land Development Manager, Lennar's Project Manager for the Highland Dunes project, and representatives from Kilday & Associates.

During these meetings, FPL provided a copy of the Site Certification Application and other documents associated with the Project, and reviewed the details of the Project to ensure that the WCEC could be considered in the design and planning for the Highland Dunes development.

In addition, Palm Beach County has imposed a requirement that Lennar Homes, Inc. provide written disclosure to any potential home buyer of the proposed WCEC.

NG-4 Comment:

"As a resident of Fox Trail, I have serious concerns with the following environmental issues: The site of the proposed west county power plant is surrounded by agricultural land that is used for farming and is a key land mass to EAA, a farming buffer to the Everglades."

NG-4 Response:

On August 3, 2005, a public hearing was conducted regarding the WCEC's consistency and compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site. The notice of the land use hearing for the Project was published in accordance with the requirements of Section 403.5115, Florida Statutes.

On November 15, 2005, the Governor and Cabinet sitting as the Siting Board, issued a final order that the WCEC Project is consistent and in compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site.

NG-5 Comment:

"Directly to the south of the proposed west county power plant is the STA-1 East, which is also a key component to the Comprehensive Everglades Restoration Plan (CERP). Phosphorus and other pollutant run-off are filtered here before being sent to the C-51 canal, a major water channel for Palm Beach County."

NG-5 Response:

There will be no offsite runoff of stormwater from the WCEC Site. All stormwater will be retained onsite. Therefore, the WCEC will have no adverse impact on the STA-1 East or CERP.

NG-6 Comment:

"The SFWMD (South Florida Water Management District) recently purchased rock pits on the Palm Beach Aggregates site for water storage (price tag $212M) to facilitate the storage and filitering of "clean" water for the Loxahatchee River. It is my understanding that these water pits will be utilized by FPL for the west county plant in the operation of their trubine engines. Why are taxpayer funded pits ($212M) being used by a for profit entitiy (FPL)? What pollunts will be rechannelled from FPL back into the water supply?"

NG-6 Response:

The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.

There will be no offsite runoff of stormwater from the WCEC Site. All stormwater will be retained onsite and will not be "rechanneled from FPL back into the water supply".

NG-7 Comment:

"Palm Beach Aggregates retains a mining permit throught the year 2032. The daily blasting (once allowable by law, although they have been known to blast 2x a day - this can be verified by viewing their blasting data logs) could prove to be an environmental and health disaster in the making with the near-by natural gas line and the storage of diesel fuel that FPL is planning for this site (12.6M gallons)."

NG-7 Response:

Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant will be designed to ensure the safe and reliable operations of the plant, including the oil storage tanks and natural gas pipeline concurrently with the mining operations.

NG-8 Comment:

"The emmission of mercury from the planned towers. Mercury emmisions are of grave concern to the health of our residents and more specifically to the well-water quality that we presently enjoy."

NG-8 Response:

WCEC will utilize the cleanest of all fossil fuels, primarily natural gas and ultra-low sulfur light oil used as backup. These fuels contain virtually no mercury, and therefore will have no adverse impact on the health of residents or well-water quality.

NG-9 Comment:

"In closing I ask that the DEP resind or delay its issuance of this permit until such time that a complete and specific review of residents' concerns and questions have been answered and verified with documentation from your department. Please do not rely on the information that has been provided by FPL. It is misleading at best, and their attempt to exclude those residents who will be directly impacted the most are shameful and intolerable."

NG-9 Response:

FPL has provided accurate information to FDEP and to area residents. Please refer to FPL's response NG-1 and Attachment 1 for a summary of our outreach efforts to date.

ATTACHMENT 1

Florida Power & Light Company
West County Energy Center
Community Outreach Program

At Florida Power & Light Company (FPL), we believe it is important to involve community neighbors and stakeholders in the development of projects designed to generate and deliver power to our customers. The goal of the West County Energy Center (WCEC) Outreach Program is to provide information to, collect input from and address the interests of the community regarding the power plant project.

The initial communications regarding a potential power plant at this site began in the early 2000's, prior to FPL's proposed project. The site received a power plant zoning designation from Palm Beach County following review and approval by Palm Beach County staff and commissioners in a series of public hearings in 2002 and 2004.

When FPL acquired the site and began designing the WCEC project, we initiated our community outreach program. We interviewed a cross section of community representatives to determine their interests in regard to the proposed project. These representatives included local homeowner association members, retirees, local government officials, and stakeholders in areas of finance, education, recreation, religion, health care organizations, business, public safety, and agriculture. The goal was to understand specific issues, concerns and questions that the community might have, and to address them by offering a presentation by FPL project team members for interested organizations.

Beginning in 2005, presentations have been made to numerous homeowners' associations, chambers of commerce and Rotary clubs. These presentations are offered on an ongoing basis throughout the development of the project. We also offer update articles about the project which have been published in several homeowners' associations' newsletters and a project brochure with FPL contact information, including a 1-800 number and a website address where interested individuals can ask to be added to our mailing list. We encourage our neighbors to let us know of their interests and to continue to follow the progress of the project.

The West County Energy Center project has been featured in several newspaper articles and public notices to provide information opportunities for the public. We have provided a list of presentations and articles and continue to seek opportunities to share project information.

Community outreach is an essential element of our project development. We will continue to engage the community throughout the process and welcome the opportunity to share information and obtain greater knowledge of community interests.

FPL.

West County Energy Center
Presentations to the Community

Presentation Date	Group
Oct 5, 2005	Indian Trail Improvement District
Oct 18, 2005	Acreage LOA
Nov 14, 2005	Palms West Chamber of Commerce
Nov 16, 2005	Belle Glade Chamber of Commerce
Nov 17, 2005	Loxahatchee Groves BOD/LOA
Nov 28, 2005	Tri-City League
Jan 10, 2006	JTJB Chamber Legislative Affairs Committee
Jan. 17, 2006	Deer Run - BOD/HOA (rescheduled from 11/15/05 & 12/09/05)
Feb 8, 2006	Hispanic Chamber of Commerce
March 1, 2006	Pahokee Chamber of Commerce
March 7, 2006	Belle Glade Rotary Club
March 16, 2006	Royal Palm Beach Rotary
March 23, 2006	Pahokee Rotary Club
March 28, 2006	White Fences - HOA
March 29, 2006	Wellington Chamber of Commerce
April 4, 2006	Acreage Rotary
April 11, 2006	Wellington Rotary
May 10, 2006	Fox Trail - HOA/BOD (rescheduled from 11/09/05 & 01/11/06)

BOD = Board of Directors
HOA = Homeowners Association
LOA = Land Owners Association

FPL.

West County Energy Center

Newspaper Articles, Press Releases, Public Notices & TV Coverage

Publish Date	Publication – Title
Jan. 30 2004	Royal Palm Beach Observer – FPL to Improve Substation
Mar. 5, 2004	Royal Palm Beach Observer – Power Plant OK for Limited Use of Fuel Oil
May 14, 2005	Sun-Sentinel – Florida utility plans to build generator project in Palm Beach County, Fla.
May 14, 2005	Palm Beach Post - FPL planning new Palm Beach County plant
May 14, 2005	Palm Beach Post – Public Notice of Filing Application for Site Certification for a power plant to be located in Palm Beach County, Florida: Florida Power & Light Company West County Energy Center
June 16, 2005	Palm Beach Post – Public Notice of Land Use and Zoning Hearing for a proposed power plant facility to be located in Palm Beach County, Florida: Florida Power & Light Company West County Energy Center
Aug. 3, 2005	Channel 12 covered the Land Use Hearing
Aug. 19, 2005	Palm Beach Post – FPL opens bidding for new plants in Palm Beach County
Sept. 29, 2005	Palm Beach Post – Florida Power & Light – Public Notice of Proposed West County Energy Center Class I Exploratory Well and Dual Zone Well
Nov. 18, 2005	The Observer – FPL Rep Sheds Light on Proposed Power Plant
Nov. 18-22, 2005	The Town-Crier – FPL Promotes Power Plant Plan at P.W. Chamber Luncheon
Dec. 9, 2005	Palm Beach Post – Florida Power & Light – Public Notice of Proposed West County Energy Center Class I Exploratory Well and Dual Zone Monitoring Well
Jan. 17, 2006	Channel 9 and Channel 12 covered Deer Run HOA/BOD meeting
Feb. 7, 2006	FPL Press Release – New Power Plant needed to meet customer growth and electricity demand; FPL's West County Energy Center project deemed most cost-effective option
Feb. 8, 2006	Palm Beach Post – FPL picks its building plan for plant
Feb. 8, 2006	Sarasota Herald Tribune – FPL proposes new power plant
Feb. 9, 2006	The Globe St.– FPL Picks 220-Acre Mining Site for $1B-Plus Energy Center
Mar. 9, 2006	Palm Beach Post – Florida Power & Light Company West County Energy Center Project Public Notice of Intent to Issue PSD Permit DEP File
Mar. 15, 2006	Palm Beach Post - FPL needs new plant
Mar. 29, 2006	Palm Beach Post – Panel votes to streamline rules for power plants
Mar. 31, 2006	The Town Crier – New Western Power Plant Needed Due to Growth in Palm Beach County
Apr. 3, 2006	FPL Press Release – FPL updates Florida PSC on future generation needs and system planning

April 21, 2006

Letter from Michael K Christensen, 13759 159th Street N, Jupiter, FL 33478, 561-254-9690

Below are comments from Michael Christensen to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

MC-1 Comment:

"The Bureau has ignored its own investigators, Mr. Palmer and Mr. Sheplak. Many of the questions they asked went completely unanswered, were later answered in the same fashion, or the instructions were ignored completely."

MC-1 Response:

FDEP issued a series of questions ("sufficiency questions") to FPL in response to FPL's Site Certification Application (SCA). FPL provided timely and complete responses to all questions on August 11, 2005. FDEP reviewed FPL responses and on September 12, 2005 deemed the SCA to be "sufficient", meaning that the information provided was adequate for reviewers to analyze the impacts of the proposed project.

MC-2 Comment:

"The Mitsiubishi turbine was selected, unfortunately it had no record in this state, so it was explained, no data pertinent to real operating conditions. the State was to be "flexible" with one of the, if not the, largest power plant in our state. This is not the time to be 'flexible'."

MC-2 Response:

While there are no Mitsubishi G combustion turbines currently operating in Florida, there are 18 units installed both in the US and abroad with more than 330,000 hours of operation. The projected emissions from the WCEC are not only based on real operating conditions and testing but are also backed by very stringent manufacturer's guarantees. The size of each unit proposed for the WCEC is similar to the size and technology being constructed at FPL's Turkey Point Plant located in Miami-Dade, and two operating units located at FPL's Martin Plant located in Martin County and FPL's Manatee Plant located in Manatee County.

MC-3 Comment:

"No information on lbs/ppm was provided by manufacturer reflecting real world environment."

MC-3 Response:

On December 29, 2005, FPL provided FDEP with emissions information from the specific manufacturer of the combustion turbine selected for WCEC. This information was based on manufacturer data that included "real world" testing from the type of combustion turbines proposed for WCEC. Data were provided for both concentration (i.e., ppm) and mass emissions (lb/hr).

MC-4 Comment:

"The more stringent air quality on this 'New' Major Source Polluter must be maintained, we cannot, must not go backward This Major New Pollution Source will be located within 1/4 mile of Arthur Marshall National Wildlife Refuge. The damage/ disaster potential is great yet no external cost analysis was done."

MC-4 Response:

The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) Increments that protect air quality from degradation.

MC-5 Comment:

"The boiler question was never coherently answered. Why is the newer version more polluting? Why no investment in cleaning up the pollutants before they are thrust into the air at enormous cfm? No cost analysis reflecting external cost of FPL Major Source Pollutants."

MC-5 Response:

The Air Construction Permit Application and Sufficiency Response 5FDEP-17 provided information on the auxiliary boilers. That response was deemed by FDEP to be sufficient.

The auxiliary boilers proposed for the WCEC will be used only for the startup of the power plant after extended outages and will use only natural gas. These boilers will be equipped with pollution preventing combustion systems to limit emissions below regulatory requirements. These controls will limit emissions to levels determined by FDEP to be Best Available Control Technology (BACT) for these boilers. Cost was discussed in FPL's Air Construction Permit Application, and both the FPL and FDEP analysis of BACT includes consideration of costs. Add-on controls were determined not to be necessary or cost effective for these intermittent use boilers.

MC-6 Comment:

"The Air Modeling questions were never resolved, Unless you count FPL asking Us the public, and you, the regulator to be "Flexible". The statement by your investigators that the County of Palm Beach had serious concerns was never answered cognitively either."

MC-6 Response:

The Air Construction Permit Application and Sufficiency Response 5FDEP-8 provided detailed information on the air quality impact analyses. That response was deemed by FDEP to be sufficient. The air modeling analysis provided to FDEP demonstrated that air quality impacts resulting from the operation of WCEC would comply with Ambient Air Quality Standards (AAQS) and Prevention of Significant Deterioration (PSD) Increments. Additionally, the air quality impacts were less than 50 percent of the available PSD Increments as required by Palm Beach County.

MC-7 Comment:

"It was noted 'yes' had been checked, that the pollutants are synthetically limited. The pollutants subect to BACT are not synthetically limited. FPL was to correct and send correcting documentation, this wasn't done, in fact all boxes in resubmitted information are still checked 'Yes'."

MC-7 Response:

The checking of the box "Yes" is correct. Sufficiency Response 5FDEP-10 provided the information related to the term "synthetically limited". In the FDEP application form this reflects whether emissions are limited by some operational constraint such as the hours per year or fuel use. The use of ultra-low sulfur light oil in the combustion turbines (CTs) was proposed to be limited to no more than 500 hours/year/CT and the amount of duct firing is limited by the total amount of natural gas to be used. Therefore, since there were proposed operational limits, the appropriate boxes in the application were checked. FPL's Sufficiency Response 5FDEP-10 was deemed by FDEP to be sufficient.

MC-8 Comment:

"No information regarding SSM was re-submitted that I could find."

MC-8 Response:

FPL provided information to FDEP regarding startup, shutdown and malfunction (SSM) in Sufficiency Response 5FDEP-2, and that response was deemed by FDEP to be sufficient.

MC-9 Comment:

"Your investigators write about emission units not mentioned in the application, and references a 4.2 gallon diesel storage facility. In FPL response the 4.2 is now 12.6 million gallons, 3 times the application size, with no supporting documentation on these facilities, 2-6.3 million gallon tanks! This alone should be grounds to stop this. There exists no Expedited permitting for New Major Source Polluters."

MC-9 Response:

FPL designs and constructs natural gas-fired power plants with a back-up fuel supply so that electric generation is not interrupted in the event of the loss of its primary fuel supply to the Site.

The Palm Beach County-approved Development Order and the included Site Plan identifies up to 12.6 million gallons of oil storage for the Site.

In the WCEC Air Construction Permit Application, FPL proposed the installation of 8.4 million gallons (two 4.2 million gallon above ground ultra-low sulfur light oil storage tanks) out of the total 12.6 million gallons in the Palm Beach County-approved Development Order. However, following the 2005 hurricane season and the resulting limited supply of natural gas to Florida, FPL determined that it would be prudent to install the entire 12.6 million gallons of ultra-low sulfur light oil storage. Accordingly, FPL updated our proposal to reflect installation of two 6.3 million gallon above ground oil storage tanks (12.6 gallons total).

The above ground storage tanks will be constructed with secondary containment and will comply with all applicable local, state and federal standards which are designed to prevent spills or leaks from being released to the environment.

MC-10 Comment.

"Major Hap source, FPL was asked to provide information on why they neglected to supply necessary documentation on this. They did not supply."

MC-10 Response:

Detailed information on hazardous air pollutants (HAP) was provided to FDEP in the Air Construction Permit Application. Additional information was provided in FPL's Sufficiency Responses 5FDEP-14, 5FDEP-15, 5FDEP-16, 5FDEP-17, 5FDEP-18 and 5FDEP-19 on specific regulatory requirements and their potential applicability to the WCEC. Those responses were deemed by FDEP to be sufficient.

MC-11 Comment:

"Your investigators requested all documentation, communication with EPA, Federal Land manager, FWC, local governments, National Parks Service, EPA Region 4, they referenced the Endangered Species act. I saw none in FPL response. In fact they stated the site has no wildlife to be impacted. This site is practically adjacent to the Arthur Marshall National Wildlife Refuge. National. We have a duty to the Nation, and I say to the World to 'Protect' it."

MC-11 Response:

FPL's Sufficiency Response 5FDEP-20 provided the requested information to FDEP, and that response was deemed by FDEP to be sufficient. In addition, FPL met with the US Fish and Wildlife Service and provided a complete copy of the Site Certification Application.

All named agencies are involved in either the Site Certification Application and/or the Air Construction Permit Application review process and have not objected to the Project.

MC-12 Comment:

The site will be adjacent to SFWMD 'Pits' that SFWMD (taxpayers) purchased for 223 million dollars to store 48,000 acre feet of drinking water. This is an insult. Stop! Halt! Someone call a cop, there is a crime being committed here! Can anybody help?!

MC-12 Response:
This Project is designed to be in compliance with all applicable local, state and federal laws, rules and regulations as proposed.

The Site is adjacent to the SFWMD water storage pits which are part of the Development Order approved by Palm Beach County. The development of the power plant and the storage pits were planned concurrently by the previous landowner prior to the sale of the land to both FPL and the SFWMD. All parties have worked together to allow the development of each of the projects with no adverse effects to either.

Letter from Alexandria Larson, 16933 W Harlena Drive, Loxahatchee, FL 33470 561-791-0875

Below are comments from Alexandria Larson to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

AL-1 Comment:

"Why were the people of Loxahatchee not informed on this matter? In your permit application it lists Wellington as the closest area this is incorrect I personally live within a mile of this proposed plant you also have the residents of Foxtrail, Deer Run, White Fences and Indian Trail Improvement District we are 40,000 residents that have been totally ignored."

AL-1 Response:

Over the last year, FPL has conducted an extensive outreach program. Attachment 1 provides a summary of FPL's outreach efforts, including meetings/presentations with Deer Run, White Fences, Indian Trail Improvement District, and Loxahatchee Groves Landowners Association, and a planned meeting with Fox Trail (postponed from Fall 2005). Also included is a list of media coverage and public notices issued on this Project.

The Site is located in unincorporated Palm Beach County. The FDEP requires that the applicant provide certain information in the Site Certification Application, including "Nearest Incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.

AL-2 Comment:

"When a meeting was held it was in Wellington and posted in the sports section of the Palm Beach Post."

AL-2 Response:

The land use hearing for the WCEC Project was held in Wellington in accordance with the requirements of Section 403.508(1), Florida Statutes, which provides that the hearing shall be held "in the County of the proposed Site" and "as close as possible to the proposed Site."

FPL canvassed the area, including the Royal Palm Beach Cultural Center and various school auditoriums for meeting rooms. The Royal Palm Beach Cultural Center was under repair at the time of the hearing. Other than the selected Wellington Community Center, there was no available public facility that met the logistical requirements of the administrative hearing. The location was deemed to be within an acceptable distance from the Project Site.

The notice of the land use hearing for the Project was published in accordance with the requirements of Section 403.5115, Florida Statutes. Subsection (2) of that statute specifically provides that such notices shall be "published in a section of the newspaper other than the legal notices section." The Palm Beach Post made the decision about which section of the newspaper could fit the half page ad on the publication day.

AL-3 Comment:

"When this was brought to my attention image my surprise when I read that you want to let FPL put 12.6 million gallons of diesel fuel on a sight where mining operations have a permit for blasting until 2032. We definitely have a problem here."

AL-3 Response:

Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant, including the oil storage tanks, will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.

AL-4 Comment:

"Also the emissions alone are frightning 40 tons of SAM and the list of emissions is quite extensive. I frankly don't care what the guidelines are this is a lot of pollution in an area that these pollutants do not exist today."

AL-4 Response:

The emissions from any power plant facility must be expressed in tons/year for comparison to regulatory thresholds. FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment.

AL-5 Comment:

"I am amazed that you are even considering this plant when you haven't even addressed the plant FPL has in N.Palm Beach it is known to be the most polluted in the state. And please don't tell me the proposed plant in Loxahatchee will relieve this problem because I know this is to facilitate 660,000 new residents not take care of the existing ones."

AL-5 Response:

FPL has a legal obligation to meet the electric generation needs of customers in our service territory. This requires planning for the projected customer growth and increased usage of electricity by existing customers. In order to ensure there is an adequate supply of electricity, new generating plants must be built in time to meet the projected growth.

The WCEC is being proposed to meet our legal obligation based on the projected electricity needs of FPL's customers throughout the FPL service territory including Palm Beach County. As

described in the Site Certification Application, FPL uses an Integrated Resource and Planning (IRP) process to determine when new resources are needed, the magnitude of the resources needed, and the type of resources that should be added. The magnitude and timing of FPL's resource needs are established through a "reliability assessment" This assessment evaluates many factors including: demographic information such as population trends by county and housing characteristics, weather assessments from NOAA, economic conditions, the price of electricity, input from local economic development boards, and more. It is important to note that this evaluation is done for the entire FPL service territory, not for any one particular area. FPL's IRP process in 2004, 2005 and 2006 confirmed the need for additional power generation in 2009 and 2010 (the proposed operation dates for WCEC Units 1 and 2 respectively).

WCEC will be one of the most efficient and have one of the lowest emission rates of any fossil fuel fired power plant in Florida.

The Riviera Plant is an existing electric generating facility which is currently serving the electricity demands of FPL's customers. The Riviera Plant consists of steam electric generators which currently operate in accordance with applicable local, state and federal regulations. The air quality in the vicinity of the Riviera Plant and throughout Palm Beach County has been determined to be in full compliance with the Ambient Air Quality Standards (AAQS) established by EPA and FDEP to protect human health, welfare and environment. In addition, FPL voluntarily adopts operating practices that further reduce environmental impacts. For example,

- FPL has significantly reduced particulate matter, opacity, carbon monoxide, and carbon dioxide emissions from the Riviera plant through the multi-million dollar installation of low nitrogen oxide (NOx) burners.
- FPL has a self-imposed opacity standard for visible emissions that is 50 percent lower than the permitted federal limit and is equivalent to what a brand new power plant would be required to meet.
- FPL has installed Continuous Emission Monitoring Systems (CEMS) that instantaneously monitor flue gas emissions and Continuous Opacity Monitoring Systems (COMS) that check visible emission standards to help ensure emissions compliance.

The result of these efforts has been impressive: since 1990, NOx emissions from the Riviera plant have decreased by more than 40 percent and represent only 7 percent of all NOx emissions in Palm Beach County (mobile sources, including automobiles, account for more than 90 percent).

AL-6 Comment.

"Also this FPL plant will be utilzing the Palm Beach Aggregates pits 1272 acres of water for cooling its turbines. This exact area was bought by South Florida Water Management District on Dec 8, 2004 at a cost to taxpayers of 212 million dollars the premise was that this was for the CERP project you know the Comprehensive Everglades Restoration Project."

AL-6 Response:

The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.

AL-7 Comment:

"I'm not an engineer but astronomical emissions, 12.6 million gallons of diesel and blasting near a natural gas pipeline facility make a mix for disaster and this is one in the making its not a matter of if but when? The Valdez only had 11 million gallons and they are still cleaning up that mess. I am appalled that you are even considering this permit"

AL-7 Response:

Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant, including the oil storage tanks and the natural gas pipeline, will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.

The above ground storage tanks will be constructed with secondary containment and will comply with all applicable local, state and federal standards which are designed to prevent spills or leaks from being released to the environment.

AL-8 Comment:

"I want DEP to guarantee in writing that my fears and predictions are unwarranted because I can guarantee that if there are not several dozen informed and very clear MEETINGS PRIOR TO APRIL 9th(since 30 days was your deadline) INFORMING THE PEOPLE OF LOXAHATCHEE AND THE ACREAGE OF ALL RISKS THAT YOUR PERMIT ARE EXPOSING US TO I WILL TAKE OUT FULL PAGE ADS AND FLY BANNERS THAT WILL INFORM THE PUBLIC and I doubt I'll be very delicate in this matter."

AL-8 Response:

As discussed in FPL response to AL-1 Comment, FPL conducts extensive public outreach programs for all FPL projects. Numerous presentations have been made in order to educate interested parties and to provide factual information on the Project.

AL-9 Comment:

"Over the last several years DEP has lowered the bar in the state of Florida in the guise of streamlining permits. This is unacceptible and can no longer happen somewhere you have to draw the line and start looking in the mirror knowing that big business doesn't care so you are the only line of defense for a public that is uninformed, and gullible until a disaster happens."

AL-9 Response:

FPL disagrees with this assertion. Our experience is the FDEP strongly enforces all rules and regulations governing the construction and operation of electric generating facilities regardless of any permit streamlining. In fact, the emission limits established for WCEC are among the most stringent required anywhere in Florida.

Letter from Sharon Waite, 15058 75th Lane, North, Loxahatchee, FL 33470

Below are comments from Sharon Waite to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

SW-1 Comment:

"It will have 12 stacks 140' high and spew out 40 tons of sulfuric acid mist, etc."

SW-1 Response:

The Palm Beach County-approved Development Order provides for 12 stacks. The current proposal is for the construction of 6 stacks with a maximum stack height of 150 feet.

FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment.

WCEC will be one of the most efficient and have one of the lowest emission rates of any fossil fuel fired power plant in Florida.

SW-2 Comment:

"What makes you think a 12 6 million gallon diesel stockpile in the ground will fly?"

SW-2 Response:

FPL is proposing to construct two 6.3 million gallon **above ground** storage tanks (not "in the ground") for ultra-low sulfur light oil, which will be used on a limited basis as a backup fuel source. The above ground storage tanks will be constructed with secondary containment and will comply with all federal, state and local standards which are designed to prevent spills or leaks from being released to the environment.

SW-3 Comment:

"The Palm Beach Aggregates will be blasting until 2032 (permitted already)."

SW-3 Response:

The power plant will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.

SW-4 Comment:

"This is adjacent to the pits my tax money paid $212 M for (ASR wells). FPL is not going to be allowed to utilize them to cool turbines."

SW-4 Response:

The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.

SW-5 Comment:

"Why did Wellington and Royal Palm Beach receive letters about this and not the acreage residents?"

SW-5 Response:

Over the last year, FPL has conducted an extensive outreach program, including presentations about WCEC to the Acreage Landowners Association on October 18, 2005 and to the Acreage Rotary Club on April 4, 2006.

FDEP must provide a copy of their Notice of Intent to Issue PSD Permit to the "Chief Executives of City or County Governments". Accordingly, FDEP copied the Chair of the Palm Beach County Commission, the Mayor of the Village of Wellington and the Mayor of the Village of Royal Palm Beach on their letter Notice of Intent to Issue PSD Permit for the WCEC Project. The Acreage is not a City or County and is located in unincorporated Palm Beach County.

SW-6 Comment:

"I'd say let's clean up Riviera Beach plant first. It's the dirtiest in the state."

SW-6 Response:

The Riviera Plant is an existing electric generating facility which is currently serving the electricity demands of FPL's customers and operating in accordance with all applicable local, state and federal regulations. The air quality in the vicinity of the Riviera Plant and throughout Palm Beach County has been determined to be in full compliance with the Ambient Air Quality Standards (AAQS) established by EPA and FDEP to protect human health, welfare and environment. In addition, FPL voluntarily adopts operating practices that further reduce environmental impacts. For example,

- FPL has significantly reduced particulate matter, opacity, carbon monoxide, and carbon dioxide emissions from the Riviera plant through the multi-million dollar installation of low nitrogen oxide (NOx) burners.

- FPL has a self-imposed opacity standard for visible emissions that is 50 percent lower than the permitted federal limit and is equivalent to what a brand new power plant would be required to meet.
- FPL has installed Continuous Emission Monitoring Systems (CEMS) that instantaneously monitor flue gas emissions and Continuous Opacity Monitoring Systems (COMS) that check visible emission standards to help ensure emissions compliance.

The result of these efforts has been impressive: since 1990, NOx emissions from the Riviera plant have decreased by more than 40 percent and represent only 7 percent of all NOx emissions in Palm Beach County (mobile sources, including automobiles, account for more than 90 percent).

SW-7 Comment.

"As a sidebar, FPL will be tolerated to use the ASR wells as a place to inject their waste."

SW-7 Response:

The Project will utilize FDEP permitted underground injection control (UIC) wells for wastewater management, not Aquifer Storage and Recovery (ASR) wells.

UIC wells are commonly used throughout the region and involve injection of wastewater into a confined boulder zone.

Aquifer Storage and Recovery wells serve a very different purpose and are typically constructed to inject water into a different hydrogeological zone for later recovery and reuse.

SW-8 Comment.

"I never want to see this project come to fruition for another 660,000 units."

SW-8 Response:

FPL has a legal obligation to meet the electric generation needs of customers in our service territory. This requires planning for the projected customer growth and increased usage of electricity by existing customers. In order to ensure there is an adequate supply of electricity, new generating plants must be built in time to meet the projected growth.

The WCEC is being proposed to meet our legal obligation based on the projected electricity needs of FPL's customers throughout the FPL service territory including Palm Beach County. As described in the Site Certification Application, FPL uses an Integrated Resource and Planning (IRP) process to determine when new resources are needed, the magnitude of the resources needed, and the type of resources that should be added. The magnitude and timing of FPL's resource needs are established through a "reliability assessment". This assessment evaluates many factors including: demographic information such as population trends by county and housing characteristics, weather assessments from NOAA, economic conditions, the price of electricity, input from local economic development boards, and more. It is important to note that this evaluation is done for the entire FPL service territory, not for any one particular area. FPL's IRP

process in 2004, 2005 and 2006 confirmed the need for additional power generation in 2009 and 2010 (the proposed operation dates for WCEC Units 1 and 2 respectively).

Letter from Patricia D. Curry, 12390 59 Street North, The Acreage, FL 33411, GremlinLtd@aol.com

Below are comments from Patricia Curry to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

PC-1 Comment:

The area in question borders what is currently agricultural, primarily sugar farms. This area in particular is extremely important as it relates toward the Comprehensive Everglades Restoration Act.

It is no secret that the large growers in the area are desirous of retiring their farming land, seeking development rights in the stead of farming. Development on this land should never occur, and the land should be restored in the absence of farming to its natural and original state, as wetlands, this to aid the Everglades, as well as to ensure the natural filtration of water into the aquifer.

PC-1 Response:

On August 3, 2005, a public hearing was conducted regarding the WCEC's consistency and compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site. The notice of the land use hearing for the Project was published in accordance with the requirements of Section 403.5115, Florida Statutes.

On November 15, 2005, the Governor and Cabinet sitting as the Siting Board, issued a final order that the WCEC Project is consistent and in compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site.

PC-2 Comment:

Building a power plant that will service an additional 650,000 residences/businesses, in such a vital area, makes absolutely no sense at all, unless one is pursuing development of such an additional 650,000 new homes/business within the area. Currently, there is sufficient power supply for all who reside and/or work within the vicinity. In other words, building this new plant simply facilitates more growth, in an area where growth is currently prohibited, and should perpetually be prohibited.

With a County Commission that is so pro-growth, and anti-environment, as we have sitting now, who have approved land uses changes that are threatening rural areas and agricultural areas alike, this proposed power plant spells nothing but danger

PC-2 Response:

FPL has a legal obligation to meet the electric generation needs of customers in our service territory. This requires planning for the projected customer growth and increased usage of electricity by existing customers. In order to ensure there is an adequate supply of electricity, new generating plants must be built in time to meet the projected growth.

The WCEC is being proposed to meet our legal obligation based on the projected electricity needs of FPL's customers throughout the FPL service territory including Palm Beach County. As described in the Site Certification Application, FPL uses an Integrated Resource and Planning (IRP) process to determine when new resources are needed, the magnitude of the resources needed, and the type of resources that should be added. The magnitude and timing of FPL's resource needs are established through a "reliability assessment". This assessment evaluates many factors including: demographic information such as population trends by county and housing characteristics, weather assessments from NOAA, economic conditions, the price of electricity, input from local economic development boards, and more. It is important to note that this evaluation is done for the entire FPL service territory, not for any one particular area. FPL's IRP process in 2004, 2005 and 2006 confirmed the need for additional power generation in 2009 and 2010 (the proposed operation dates for WCEC Units 1 and 2 respectively).

PC-3 Comment:

The South Florida Water Management District recently acquired, at a price to taxpayers of several hundred million dollars, the rock pits created by mining operations at the Palm Beach Aggregates. The supposed purpose in purchasing these rock pits was to serve as additional water storage from excess water in Lake Okeechobee, and further to facilitate a new canal system that would feed into a "flow way" at the Mecca site, and then drop cleaner water into the C51 Canal feeding the Loxahatchee River.

The new proposed FPL power plant, finds that FPL will be utilizing the same rock pits???

PC-3 Response:

The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.

PC-4 Comment:

The mining operations continue at Palm Beach Aggregates, which includes blasting that shakes the earth sufficient that it can be felt miles away How would this affect a "natural gas" power plant in direct proximity to the plant?

PC-4 Response:

Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.

PC-5 Comment:

Three huge towers that release pollutants into the air, including mercury, will most definitely affect not only the agricultural areas directly to the west of this proposed plant (poisoning our food, soil and water) but also the rural residential communities directly to the east of this proposed plant, i.e. Loxahatchee, Loxahatchee Groves and the Acreage Contrary toward your reports, Wellington is not the closest community.

PC-5 Response:

WCEC will utilize the cleanest of all fossil fuels, primarily natural gas and ultra-low sulfur light oil as a backup fuel supply. These fuels contain virtually no mercury. In addition, an extensive air quality analysis was conducted, which determined that the air emission impacts would be much less than the applicable air standards that protect human health, welfare and the environment including vegetation and wildlife.

For clarification, the FDEP requires that the applicant provide certain information in the Site Certification Application, including "nearest incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.

April 21, 2006

Nancy J. Gribble, 1525 Gallop Drive, Loxahatchee, Florida 33470, (561) 596-4573, NanJ58@aol.com

Below are comments from Nancy Gribble to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

NG-1 Comment.

I am a resident of Fox Trail, a rural-tier community of unincorporated Palm Beach County that consists of 212 5-acre homesites, many of which are occupied by horses and agricultural uses. Fox Trail is located approximately 1.5 miles east of the proposed FPL West County Power Plant. There has been absolutley no presentation to our community regarding the proposed west county power plant, nor have our residents been solicitated for comment regarding such. As a matter of fact, the record incorrectly states that the Village of Wellington is the closest affected community of residents.

NG-1 Response:

Over the last year, FPL has met with various community leaders, homeowners associations, and private citizens to provide information and get feedback about this Project.

FPL has been in contact with Fox Trail Homeowner's Association (HOA) since the summer of 2005. FPL scheduled presentations to the Fox Trail Homeowners Association about WCEC for November 9, 2005 and January 11, 2006, but both were postponed at the request of the HOA. In March 2006, FPL rescheduled the presentation for the May 10, 2006 Fox Trail HOA meeting, and provided an insert for the Fox Trail newsletter.

In addition, on July 15, 2005, FPL contacted Ms. Gribble directly by voicemail as part of the outreach interview process, at the suggestion of the Fox Trail HOA. The interview was never arranged.

For clarification, the FDEP requires that the applicant provide certain information in the Site Certification Application, including "nearest incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.

NG-2 Comment:

Not withstanding the snub of our community, I attended the Administrative Hearing for the proposed west county power plant, which was also held in the Village of Wellington. At this hearing, misinformation abounded. Of particular concern, was the public statement that "no residential" community was in the near proximity of the proposed west county power plant. Having been involved in numerous zoning and land use issues affecting our community of Fox Trail over the past several years, I knew that statement was not only incorrect as it related to the community of Fox Trail, but that in fact, the Palm Beach County Board of County Commissioners had rezoned a 1200-acre portion of the Palm Beach Aggregates property late last year (2005), to allow the construction of 2000 homes. This PUD, which is now officially known as Highland Dunes by Lennar Corp. will be approximately one-quarter mile east of the proposed west county power plant site.

NG-2 Response:

Below is an excerpt from the Land Use Administrative hearing transcript on August 3, 2005. The information provided by expert witness Mr. Richard Zwolak, is both factual and accurate.

> "Q Mr. Zwolak, what's the distance to the nearest existing residential area?
>
> A There is a multiple acre per lot subdivision known as Deer Run that is located to the northeast of the project site. It is located east of canal L8 and to the north of additional mining activity shown on the aerial photograph on the very right side. The distance from the portion of the site where the infrastructure is planned, the northernmost infrastructure that Mr. Gnecco identified and the very southwest corner of this subdivision of Deer Run is approximately 0.7 miles.
>
> Q What is the distance to the nearest occupied residence?
>
> A The nearest occupied residence is located in the southwest corner of that subdivision. The distance from the site infrastructure to that residence is .75 miles, three-quarter mile."

Following the Land Use hearing, the Administrative Law Judge that presided over the hearing issued a Recommended Order. Governor Bush and the Cabinet approved that order on November 15, 2005 and issued a signed Final Order on November 17, 2005.

Since the time of the Land Use hearing, Palm Beach County granted final approval for development of a parcel of land which is located approximately one half mile (0.5) east of the proposed power plant Site, which is now known as Highland Dunes.

NG-3 Comment:

"You may wish to contact Kieran J Kilday, Vice-President, Kilday & Assoicates at (tollfree) 800-755-4532 to verify Lennar's understanding and knowledge of the proposed west county power plant and the DEP permit. Mr. Kilday is the agent representing Lennar Corp. for the Highland Dunes project. Lennar must be held accountable to the future residents of Highland Dunes regarding the environmental impacts of the proposed west county power plant."

NG-3 Response:

FPL has conducted two meetings with representatives from Lennar Homes, Inc. and Kilday & Associates. Specifically, FPL met with Lennar's Vice President of Planning, Lennar's Land Development Manager, Lennar's Project Manager for the Highland Dunes project, and representatives from Kilday & Associates.

During these meetings, FPL provided a copy of the Site Certification Application and other documents associated with the Project, and reviewed the details of the Project to ensure that the WCEC could be considered in the design and planning for the Highland Dunes development.

In addition, Palm Beach County has imposed a requirement that Lennar Homes, Inc. provide written disclosure to any potential home buyer of the proposed WCEC.

NG-4 Comment:

"As a resident of Fox Trail, I have serious concerns with the following environmental issues. The site of the proposed west county power plant is surrounded by agricultural land that is used for farming and is a key land mass to EAA, a farming buffer to the Everglades "

NG-4 Response:

On August 3, 2005, a public hearing was conducted regarding the WCEC's consistency and compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site. The notice of the land use hearing for the Project was published in accordance with the requirements of Section 403.5115, Florida Statutes.

On November 15, 2005, the Governor and Cabinet sitting as the Siting Board, issued a final order that the WCEC Project is consistent and in compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site.

NG-5 Comment:

"Directly to the south of the proposed west county power plant is the STA-1 East, which is also a key component to the Comprehensive Everglades Restoration Plan (CERP). Phosphorus and other pollutant run-off are filtered here before being sent to the C-51 canal, a major water channel for Palm Beach County "

NG-5 Response:

There will be no offsite runoff of stormwater from the WCEC Site. All stormwater will be retained onsite. Therefore, the WCEC will have no adverse impact on the STA-1 East or CERP.

NG-6 Comment:

"The SFWMD (South Florida Water Management District) recently purchased rock pits on the Palm Beach Aggregates site for water storage (price tag $212M) to facilitate the storage and filitering of "clean" water for the Loxahatchee River. It is my understanding that these water pits will be utilized by FPL for the west county plant in the operation of their trubine engines. Why are taxpayer funded pits ($212M) being used by a for profit entitiy (FPL)? What pollunts will be rechannelled from FPL back into the water supply?"

NG-6 Response:

The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.

There will be no offsite runoff of stormwater from the WCEC Site. All stormwater will be retained onsite and will not be "rechanneled from FPL back into the water supply".

NG-7 Comment:

"Palm Beach Aggregates retains a mining permit throught the year 2032. The daily blasting (once allowable by law, although they have been known to blast 2x a day - this can be verified by viewing their blasting data logs) could prove to be an environmental and health disaster in the making with the near-by natural gas line and the storage of diesel fuel that FPL is planning for this site (12.6M gallons)."

NG-7 Response:

Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant will be designed to ensure the safe and reliable operations of the plant, including the oil storage tanks and natural gas pipeline concurrently with the mining operations.

NG-8 Comment.

"The emmission of mercury from the planned towers. Mercury emmisions are of grave concern to the health of our residents and more specifically to the well-water quality that we presently enjoy."

NG-8 Response:

WCEC will utilize the cleanest of all fossil fuels, primarily natural gas and ultra-low sulfur light oil used as backup. These fuels contain virtually no mercury, and therefore will have no adverse impact on the health of residents or well-water quality.

NG-9 Comment:

"In closing I ask that the DEP resind or delay its issuance of this permit until such time that a complete and specific review of residents' concerns and questions have been answered and verified with documentation from your department. Please do not rely on the information that has been provided by FPL. It is misleading at best, and their attempt to exclude those residents who will be directly impacted the most are shameful and intolerable."

NG-9 Response:

FPL has provided accurate information to FDEP and to area residents. Please refer to FPL's response NG-1 and Attachment 1 for a summary of our outreach efforts to date.

Public Meeting

Florida Department of Environmental Protection

Division of Air Resource Management

April 19, 2006

Open House: 5:00 p.m. – 6:00 p.m.

Public Meeting: 6:00 p.m. – 8:00 p.m.

Royal Palm Beach Cultural Center

Royal Palm Beach, Florida

Florida Power and Light Company

Construction of a New Power Plant

Opening remarks.....Session Moderator

Brief Overview of Project.....DEP Staff

Public Comment Period.....Public

Adjourn.....Session Moderator

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Florida Department of Environmental Protection/Division of Air Resource Management

Public Meeting

Florida Power and Light Company, West County Energy Center

Construction of a New Power Plant

Royal Palm Beach Cultural Center

Royal Palm Beach, Florida

Wednesday, April 19, 2006
Beginning at 6:00 p.m.

PLEASE PRINT

	NAME	AFFILIATION	MAILING ADDRESS	EMAIL ADDRESS	PHONE/FAX
1	TIMOTHY GRAY	FDEP	400 NO. CONGRESS AVE. STE 200, WEST PALM BCH, FL 33401	TIM.GRAY@dep.state.fl.us	(561) 681-6708
2	Jim Lindsay	FPL	700 Universe Blvd Juno Beach, Fl 33408	jim_lindsay@FPL.com	561 691 7032
3	Rachel Scott	FPL	PO Box 14000 Juno Beach FL 33408	rachel_scott@fpl.com	(561) 694-3682
4	JOAN SHEWMAKE		3764 B Rd Loxahatchee Groves 07417		792-2317
5	RANDY RAMOS	FPL	12180 57th Rd N WPB.		790-5059
6	Alex LARSON		16933 W Harlena Dr. Lox Fla 33470	SCRIPPSSUCKS@EARTHLINK.NET	791-0875
7	Sharon Waite		15058 75th Ln No Lox. FL 33470		561-791-0110

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Florida Department of Environmental Protection/Division of Air Resource Management

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	NAME	AFFILIATION	MAILING ADDRESS	EMAIL ADDRESS	PHONE/FAX
8	Patricia Curry	resident	12390 59 Street N. Acreage FL 33411	GremlinLtd@aol.com	561-793-8546
9	MICHAEL K Christensen	resident	13759 159TH ST N Jupiter 33478		561-24-9690
10	JOHN EARLEY	ME	PO BOX 31 LOX FL 33470	JOHNEARLEY22 AT BELLSOUTH.NET	793751
11	Bryan Fennell	FPL	508 Sweet Bay Jupiter, FL 33458	rbfennell@adelphia.net	561-762-5266
12	HOWARD Bauer	DRPOA	1982 Egret Lane Loxa. Fl 33470	NORCOURT1@AOL.com	561 792 1960
13	D. Evans	Fla. resident	Wellington, FL 33414		
14	Courtney Shippey	PBCHD	901 Evernia St WPB, FL 33401		

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	NAME	AFFILIATION	MAILING ADDRESS	EMAIL ADDRESS	PHONE/FAX
15	Elaine Pietrzak	live in Deer Run	2318-Palm Deer Dr.	EPConnect@Aol.com	561-333-2751 561-333-0806
16	Chester Pietrzak	live in Deer Run.	2318-Palm Deer Dr Lox. Loxahatchee	CJPConnect@Aol.com	561-333-7751 561-333-0806
17	John Koch	Sierra Club	4303 Burbridge Rd, WPB 33470 33406	banyanjohn@bellsouth.net	561 963-5577
18	Nancy Gribble	FoxTrail POA	1525 Gallop Drive Loxahatchee, FL 33470	nani58@aol.com	5617934573
19	Bill Mauser	FPL	6064 STRAWBERRY HLS CIR LAKE WORTH, FL 33463	BJMAUSER@AOL.COM	561-966-8314 954-581-3060
20	Dodie Stephens	DEP			561/681-6714
21	Jim Stormer	PBCHD			561/355-3136

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	NAME	AFFILIATION	MAILING ADDRESS	EMAIL ADDRESS	PHONE/FAX
22	Stan Warden	DEP/OGC		Stan.Warden@dep.state.fl.us	850.245.2242
23	Darrel Graziani	DEP/ARM		DarrelGraziani@dep.state.fl.us	561-681-6626
24	Maria D. Serrano	DEP/AIR/AAE		Maria.Serrano@DEP.State.Fl	681-6657
25	J P Sasser	City of Pahokee Mayor		SASSER4787@ADelphia.NET	
26	Ralph D Bair	Acreage Landowners Assoc.		RalphJeanetta@Bellsouth.com	793 6207
27	Allan Osier				798-5485
28	Edward Smith				333-2895

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	NAME	AFFILIATION	MAILING ADDRESS	EMAIL ADDRESS	PHONE/FAX
29	FRED GORDON			FREDFSPG@MSN.COM	
30	William Kellechar	IBEW	1080 SUMMERWOOD CR		
31	Leonard Wechsler	Tan Cwn		ldwechsler@aol.com	
32	Roy Hays	IBEW	11479 57TH RD N. RPB ACR.	Royhays@bellsouth.net	
33	Rick Blanchett		3130 SE INDIAN WELLS	—	
34	PAUL CALLAHAN		305 HAMMOCK PT N JUPITER		
35	Kathy LaMour		PO BOX 1290 Lokahatchee		

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	NAME	AFFILIATION	MAILING ADDRESS	EMAIL ADDRESS	PHONE/FAX
36	John Creasman				
37	Jim Wheelon	IBEW 728	2015 E 24 ~~St~~ Ft L FL 33316		
38	Bill Danison	IBEW	14576 73RD ST. N. LOX. FLA. 33470	—	—
39	Yvette Trelles	Hispanic Chamber			
40	Roce Simpson	IBEW	12311 SW 3 ~~St~~ Mt 33175		
41	Bill Riley	IBEW	1657 N.W. 17 Ave	Riley349@Bellsouth.Net	305 7250058
42	Richard Stagmaker	IBEW	792 Pal. Verde Ct Haverhill Fl 33417		561 8332461

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	NAME	AFFILIATION	MAILING ADDRESS	EMAIL ADDRESS	PHONE/FAX
43	Cecil G. Salazar	LU728	101 PRINCESS CT Royal Palm Bch FL		
44	Chelsie Muscarella		17254 31st Rd N Loxahatchee FL	none	
45	John Kenney	LU 349	1174 HERON AV MIAMI SPRINGS		
46	CLARO T LOPEZ	LU 349		305-694-9433	
47	E. TAVERAS	LU 349	251 N Melrose	786-266-0490	
48	Sean P. Marron	LU.728	9173 Green Meadows Way	561-776-1949	
49	Chad Simpson	LU-349	926 NW 3 Ave Homestead FL	305-286-2563	

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	NAME	AFFILIATION	MAILING ADDRESS	EMAIL ADDRESS	PHONE/FAX
50	Donna Muscarella	1	17254 31st Rd N, Loxahatchee, FL		
51	Peter Grimm		2761 Ocean Club Blvd #103 Hollywood FL 33019		
52	Shelly Yarrington	Guest	1080 [illegible] Circle Wellington FL		
53	Robert Parker	LU 349	14431 Mustang Tr S.W. Ranches		
54	Jose Bautista		6627 NW 173 Lane Miami FL 33015		305 281-8572
55	Corey Jones	LU 349	3230 Frow Ave Miami, FL 33133		
56	Sergio Mayor		2400 [illegible] Cr Wellington FL		

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	NAME	AFFILIATION	MAILING ADDRESS	EMAIL ADDRESS	PHONE/FAX
57	Barry-Hutchings	I.B.E.W.	1617 N.W. 17 Ave Miami, Fl	—	—
58	Loren Bamar	IBEW 728	2798 Hawthorne Dr Lk. Worth Fl. 33461		
59	Roy Studley	IBEW 728	16591 83 PLN LOXAHATCHEE	—	561 615 1132
60	KEITH RIVEIRA	IBEW 728	15096 78th PL N LOK. FL. 33470		
61	Sal Svolto	IBEW 349	910 WEST Ave Apt 924 Miami Beach, Fl 33139		
62	Jovanny Alvarez	I.BEW 349	800 east 14 st Hialeah FL 33010		
63	Yosbel Caraballo	IBEW 349	676 w 31 St Hialeah Fl 33012		

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	NAME	AFFILIATION	MAILING ADDRESS	EMAIL ADDRESS	PHONE/FAX
64	LOUIS D. KIPP JR	L.U. 349	18254 31 RD NORTH LOXAHATCHEE FL.		753-3153
65	William M. Ogletree		4600 Summit Blvd. # W.P.B. 33415		
66	ORLANDO T. RIOS	LU349	227 West 61ST HIALEAH 33012		305-827-9318
67	ROSARIO PUNZI	IBEW	4415 SW 102CT MIAMI 33165		305-551-9457
68	Andy Viera	IBEW	15128 NW 89 AV miami Lake 33018		
69	FRANK MENDOZA	IBEW 349	7815 west 29Ln apt. 20 Hialeah FL		
70	KEN FENNELL	IBEW LU 349	18921 SW 311 ST. HOMESTEAD, FL 33030		

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	NAME	AFFILIATION	MAILING ADDRESS	EMAIL ADDRESS	PHONE/FAX
71	ALejandro Ordoñez	IBEW	1215 S.W. 35 AVE Miami FL. 33135		786-413-5937
72	Luis Rodriguez	IBEW	4719 NW 7th St Miami	Rodriguezlucy@bellsouth.net	746-514-1065
73	Frank ALBURY	IBEW	1657 NW 17 AVE Miami		305 3251330
74	JOSE SABOCAL		11741 SW 122 CT. Miami FL. 33186		305-2793554
75	REMBERTO ROMERO	IBEW	1657 N.W. 17 AVE		305-298,4238
76	Robert Brumfield	IBEW	212 Curtiss Pkwy Miami Springs Fl.		(305-888-7920
77	Louis Bui	IBEW	14345 SW 134 PL		242-0914 (786)

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	NAME	AFFILIATION	MAILING ADDRESS	EMAIL ADDRESS	PHONE/FAX
78	Jesus R. Disdier	349 IBEW	2309 SW 19 Terr		305 232-4060
79	Edward Swackhammer	349 IBEW	4031 SW 112 CT Miami, Fl		305 228 3080
80	Ron Sutton	349 IBEW	3021 N.W. 151st Terr Mia		352-208-9[illegible]
81	Eric [illegible]	728 IBEW	1058 Big Torch St		309-72[illegible]
82	DAVID L. [illegible]	IBEW LU.349	1657 NW 17 Ave		305-325-1330
83	DALE STOODT	IBEW LU 349	1657 NW 17 AVE		305-325-1330
84	Samuel Smart, Jr	IBEW LU 349	1657 NW 17 Ave		954-[illegible]

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	NAME	AFFILIATION	MAILING ADDRESS	EMAIL ADDRESS	PHONE/FAX
85	Joseph D. DONATO	IBEW 728	157 SANDPIPER AVE RPB	—	561 793-9411
86	EDDIE VAZQUEZ	IBEW 728	17798 30TH LN. N LOXAHATCHEE		561-333-1904
87	CHARLES BANTEL	IBEW 728	P.O. Box 9402 RIVIERA BCH FL 33419		
88	WILLIAM NOTALINO	IBEW 728	18752 42 RD N LOXAHATCHEE		561-307-6643
89	ROBERT CORBIN	IBEW 728	11319 47TH. R.N ROYAL PALM BEACH		561-798-3352
90	[signature]		28		
91	Fritz G. Erie		2860 Buck Ridge Trail Loxahatchee	—	561-502-1263

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	NAME	AFFILIATION	MAILING ADDRESS	EMAIL ADDRESS	PHONE/FAX
92	ROSA DURANDO	/	10308 Heritage Fms		965 2420
93	BROOKE Vazquez	IBEW 728 wife	17798-30th LN.N. Loxahatchee		333-1904
94	LAWRENCE CORNING		2834 E Rd		
95	WILLIAM LOGAND	FPL			
96	Ron Albrecht	IBEW	16266 98th con. N		305 ~~[illegible]~~ 2960

34	Nancy J. Gribble	Written comments to PSD permit Notice of Intent to Issue	"As a resident of Fox Trail, I have serious concerns with the following environmental issues: The site of the proposed west county power plant is surrounded by agricultural land that is used for farming and is a key land mass to EAA, a farming buffer to the Everglades."	see Land Land use	On August 3, 2005, a public hearing was conducted regarding the WCEC's consistency and compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site. The notice of the land use hearing for the Project was published in accordance with the requirements of Section 403.5115, Florida Statutes. On November 15, 2005, the Governor and Cabinet sitting as the Siting Board, issued a final order that the WCEC Project is consistent and in compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site.
35	Nancy J. Gribble	Written comments to PSD permit Notice of Intent to Issue	"Directly to the south of the proposed west county power plant is the STA-1 East, which is also a key component to the Comprehensive Everglades Restoration Plan (CERP). Phosphorus and other pollutant run-off are filtered here before being sent to the C-51 canal, a major water channel for Palm Beach County."	Water	There will be no offsite runoff of stormwater from the WCEC Site. All stormwater will be retained onsite. Therefore, the WCEC will have no adverse impact on the STA-1 East or CERP.
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37	Nancy J. Gribble	Written comments to PSD permit Notice of Intent to Issue	"Palm Beach Aggregates retains a mining permit throught the year 2032. The daily blasting (once allowable by law, although they have been known to blast 2x a day - this can be verified by viewing their blasting data logs) could prove to be an environmental and health disaster in the making with the near-by natural gas line and the storage of diesel fuel that FPL is planning for this site (12.6M gallons)."	see General Blasting	Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant will be designed to ensure the safe and reliable operations of the plant, including the oil storage tanks and natural gas pipeline concurrently with the mining operations.
38	Nancy J. Gribble	Written comments to PSD permit Notice of Intent to Issue	"The emmission of mercury from the planned towers. Mercury emmisions are of grave concern to the health of our residents and more specifically to the well-water quality that we presently enjoy."	see Air Quality Air	WCEC will utilize the cleanest of all fossil fuels, primarily natural gas and ultra-low sulfur light oil used as backup. These fuels contain virtually no mercury, and therefore will have no adverse impact on the health of residents or well-water quality.
39	Alexandria Larson	Written comments to PSD permit Notice of Intent to Issue	"When this was brought to my attention image my surprise when I read that you want to let FPL put 12.6 million gallons of diesel fuel on a sight where mining operations have a permit for blasting until 2032.We definitely have a problem here."	see General Blasting	Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant, including the oil storage tanks, will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.

4	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	"The more stringent air quality on this 'New' Major Source Polluter must be maintained, we cannot, must not go backward. This Major New Pollution Source will be located within 1/4 mile of Arthur Marshall National Wildlife Refuge. The damage/ disaster potential is great yet no external cost analysis was done."	Section General Air	The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) Increments that protect air quality from degradation.
5	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	"The boiler question was never coherently answered. Why is the newer version more polluting? Why no investment in cleaning up the pollutants before they are thrust into the air at enormous cfm? No cost analysis reflecting external cost of FPL Major Source Pollutants."	Section Information on application	The Air Construction Permit Application and Sufficiency Response 5FDEP-17 provided information on the auxiliary boilers. That response was deemed by FDEP to be sufficient. The auxiliary boilers proposed for the WCEC will be used only for the startup of the power plant after extended outages and will use only natural gas. These boilers will be equipped with pollution preventing combustion systems to limit emissions below regulatory requirements. These controls will limit emissions to levels determined by FDEP to be Best Available Control Technology (BACT) for these boilers. Cost was discussed in FPL's Air Construction Permit Application, and both the FPL and FDEP analysis of BACT includes consideration of costs. Add-on controls were determined not to be necessary or cost effective for these intermittent use boilers.
5	Alexandria Larson	Written comments to PSD permit Notice of Intent to Issue	Detailed information on hazardous air pollutants (HAP) was provided to FDEP in the Air Construction Permit Application. Additional information was provided in FPL's Sufficiency Responses 5FDEP-14, 5FDEP-15, 5FDEP-16, 5FDEP-17, 5FDEP-18 and 5FDEP-19 on specific regulatory requirements and their potential applicability to the WCEC. Those responses were deemed by FDEP to be sufficient.	Section Health Air	The emissions from any power plant facility must be expressed in tons/year for comparison to regulatory thresholds. FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment.
6	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	"The Air Modeling questions were never resolved, Unless you count FPL asking Us the public, and you, the regulator to be "Flexible". The statement by your investigators that the County of Palm Beach had serious concerns was never answered cognitively either."	Section Air Quality & Information Air	The Air Construction Permit Application and Sufficiency Response 5FDEP-8 provided detailed information on the air quality impact analyses. That response was deemed by FDEP to be sufficient. The air modeling analysis provided to FDEP demonstrated that air quality impacts resulting from the operation of WCEC would comply with Ambient Air Quality Standards (AAQS) and Prevention of Significant Deterioration (PSD) Increments. Additionally, the air quality impacts were less than 50 percent of the available PSD Increments as required by Palm Beach County.
7	Alexandria Larson	Written comments to PSD permit Notice of Intent to Issue	"Also this FPL plant will be utilzing the Palm Beach Aggregates pits 1272 acres of water for cooling its turbines. This exact area was bought by South Florida Water Management District on Dec 8, 2004 at a cost to taxpayers of 212 million dollars the premise was that this was for the CERP project you know the Comprehensive Everglades Restoration Project."	Section General Water	The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.
8	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	"It was noted 'yes' had been checked, that the pollutants are synthetically limited. The pollutants subect to BACT are not synthetically limited. FPL was to correct and send correcting documentation, this wasn't done, in fact all boxes in resubmitted information are still checked 'Yes'."	Section Air Quality Air	The checking of the box "Yes" is correct. Sufficiency Response 5FDEP-10 provided the information related to the term "synthetically limited". In the FDEP application form this reflects whether emissions are limited by some operational constraint such as the hours per year or fuel use. The use of ultra-low sulfur light oil in the combustion turbines (CTs) was proposed to be limited to no more than 500 hours/year/CT and the amount of duct firing is limited by the total amount of natural gas to be used. Therefore, since there were proposed operational limits, the appropriate boxes in the application were checked. FPL's Sufficiency Response 5FDEP-10 was deemed by FDEP to be sufficient.
9	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	"No information regarding SSM was re-submitted that I could find."	Section Air Application	FPL provided information to FDEP regarding startup, shutdown and malfunction (SSM) in Sufficiency Response 5FDEP-2, and that response was deemed by FDEP to be sufficient.

10	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	"Your investigators write about emission units not mentioned in the application, and references a 4.2 gallon diesel storage facility. In FPL response the 4.2 is now 12.6 million gallons, 3 times the application size, with no supporting documentation on these facilities, 2-6.3 million gallon tanks! This alone should be grounds to stop this. There exists no Expedited permitting for New Major Source Polluters."	See General Diesel Storage tank/Oil Spills	FPL designs and constructs natural gas-fired power plants with a back-up fuel supply so that electric generation is not interrupted in the event of the loss of its primary fuel supply to the Site. The Palm Beach County-approved Development Order and the included Site Plan identifies up to 12.6 million gallons of oil storage for the Site. In the WCEC Air Construction Permit Application, FPL proposed the installation of 8.4 million gallons (two 4.2 million gallon above ground ultra-low sulfur light oil storage tanks) out of the total 12.6 million gallons in the Palm Beach County-approved Development Order. However, following the 2005 hurricane season and the resulting limited supply of natural gas to Florida, FPL determined that it would be prudent to install the entire 12.6 million gallons of ultra-low sulfur light oil storage. Accordingly, FPL updated our proposal to reflect installation of two 6.3 million gallon above ground oil storage tanks (12.6 gallons total). The above ground storage tanks will be constructed with secondary containment and will comply with all applicable local, state and federal standards which are designed to prevent spills or leaks from being released to the environment.
11	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	"Major Hap source, FPL was asked to provide information on why they neglected to supply necessary documentation on this. They did not supply."	See Information Air	Detailed information on hazardous air pollutants (HAP) was provided to FDEP in the Air Construction Permit Application. Additional information was provided in FPL's Sufficiency Responses 5FDEP-14, 5FDEP-15, 5FDEP-16, 5FDEP-17, 5FDEP-18 and 5FDEP-19 on specific regulatory requirements and their potential applicability to the WCEC. Those responses were deemed by FDEP to be sufficient.
12	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	"Your investigators requested all documentation, communication with EPA, Federal Land manager, FWC, local governments, National Parks Service, EPA Region 4, they referenced the Endangered Species act. I saw none in FPL response. In fact they stated the site has no wildlfe to be impacted. This site is practically adjacent to the Arthur Marshall National Wildlife Refuge. National. We have a duty to the Nation, and I say to the World to 'Protect' it."	See General Wildlife Refuges/ LNWR/Corbett/ Everglades	FPL's Sufficiency Response 5FDEP-20 provided the requested information to FDEP, and that response was deemed by FDEP to be sufficient. In addition, FPL met with the US Fish and Wildlife Service and provided a complete copy of the Site Certification Application. All named agencies are involved in either the Site Certification Application and/or the Air Construction Permit Application review process and have not objected to the
13	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	The site will be adjacent to SFWMD 'Pits' that SFWMD (taxpayers) purchased for 223 million dollars to store 48,000 acre feet of drinking water. This is an insult. Stop! Halt! Someone call a cop, there is a crime being committed here! Can anybody help?!	See General Water	This Project is designed to be in compliance with all applicable local, state and federal laws, rules and regulations as proposed. The Site is adjacent to the SFWMD water storage pits which are part of the Development Order approved by Palm Beach County. The development of the power plant and the storage pits were planned concurrently by the previous landowner prior to the sale of the land to both FPL and the SFWMD. All parties have worked together to allow the development of each of the projects with no adverse effects to either.
14	Alexandria Larson	Written comments to PSD permit Notice of Intent to Issue	"Why were the people of Loxahatchee not informed on this matter? In your permit application it lists Wellington as the closest area this is incorrect I personally live within a mile of this proposed plant you also have the residents of Foxtrail, Deer Run, White Fences and Indian Trail Improvement District we are 40,000 residents that have been totally ignored."	See General Public Participation/ Information availble	Over the last year, FPL has conducted an extensive outreach program. Attachment 1 provides a summary of FPL's outreach efforts, including meetings/presentations with Deer Run, White Fences, Indian Trail Improvement District, and Loxahatchee Groves Landowners Association, and a planned meeting with Fox Trail (postponed from Fall 2005). Also included is a list of media coverage and public notices issued on this Project. The Site is located in unincorporated Palm Beach County. The FDEP requires that the applicant provide certain information in the Site Certification Application, including "Nearest Incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.
15	Alexandria Larson	Written comments to PSD permit Notice of Intent to Issue	"I'm not an engineer but astronomical emissions,12.6 million gallons of diesel and blasting near a natural gas pipeline facility make a mix for disaster and this is one in the making its not a matter of if but when? The Valdez only had 11 million gallons and they are still cleaning up that mess. I am appalled that you are even considering this permit"	See general Blasting	Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant, including the oil storage tanks and the natural gas pipeline, will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations. The above ground storage tanks will be constructed with secondary containment and will comply with all applicable local, state and federal standards which are designed to prevent spills or leaks from being released to the environment.

16	Alexandria Larson	Written comments to PSD permit Notice of Intent to Issue	"I want DEP to guarantee in writing that my fears and predictions are unwarranted because I can guarantee that if there are not several dozen informed and very clear MEETINGS PRIOR TO APRIL 9th(since 30 days was your deadline) INFORMING THE PEOPLE OF LOXAHATCHEE AND THE ACREAGE OF ALL RISKS THAT YOUR PERMIT ARE EXPOSING US TO I WILL TAKE OUT FULL PAGE ADS AND FLY BANNERS THAT WILL INFORM THE PUBLIC and I doubt I'll be very delicate in this matter."	? Public Participation/ Information availble	As discussed in FPL response to AL-1 Comment, FPL conducts extensive public outreach programs for all FPL projects. Numerous presentations have been made in order to educate interested parties and to provide factual information on the Project.
17	Alexandria Larson	Written comments to PSD permit Notice of Intent to Issue	"Over the last several years DEP has lowered the bar in the state of Florida in the guise of streamlining permits. This is unacceptible and can no longer happen somewhere you have to draw the line and start looking in the mirror knowing that big business doesn't care so you are the only line of defense for a public that is uninformed, and gullible until a disaster happens."	See specific Other	FPL disagrees with this assertion. Our experience is the FDEP strongly enforces all rules and regulations governing the construction and operation of electric generating facilities regardless of any permit streamlining. In fact, the emission limits established for WCEC are among the most stringent required anywhere in Florida.
18	Sharon Waite	Written comments to PSD permit Notice of Intent to Issue	"It will have 12 stacks 140' high and spew out 40 tons of sulfuric acid mist, etc."	See air quality Air	The Palm Beach County-approved Development Order provides for 12 stacks. The current proposal is for the construction of 6 stacks with a maximum stack height of 150 feet. FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment. WCEC will be one of the most efficient and have one of the lowest emission rates of any fossil fuel fired power plant in Florida.
19	Sharon Waite	Written comments to PSD permit Notice of Intent to Issue	"What makes you think a 12.6 million gallon diesel stockpile in the ground will fly?"	See General Diesel Storage tank/Oil Spills	FPL is proposing to construct two 6.3 million gallon **above ground** storage tanks (not "in the ground") for ultra-low sulfur light oil, which will be used on a limited basis as a backup fuel source. The above ground storage tanks will be constructed with secondary containment and will comply with all federal, state and local standards which are designed to prevent spills or leaks from being released to the environment.
20	Sharon Waite	Written comments to PSD permit Notice of Intent to Issue	"The Palm Beach Aggregates will be blasting until 2032 (permitted already)."	See General Blasting	The power plant will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.
21	Sharon Waite	Written comments to PSD permit Notice of Intent to Issue	"This is adjacent to the pits my tax money paid $212 M for (ASR wells). FPL is not going to be allowed to utilize them to cool turbines."	See General Water	The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.
22	Sharon Waite	Written comments to PSD permit Notice of Intent to Issue	"Why did Wellington and Royal Palm Beach receive letters about this and not the acreage residents?"	See General Public Participation/ Information availble	Over the last year, FPL has conducted an extensive outreach program, including presentations about WCEC to the Acreage Landowners Association on October 18, 2005 and to the Acreage Rotary Club on April 4, 2006. FDEP must provide a copy of their Notice of Intent to Issue PSD Permit to the "Chief Executives of City or County Governments". Accordingly, FDEP copied the Chair of the Palm Beach County Commission, the Mayor of the Village of Wellington and the Mayor of the Village of Royal Palm Beach on their letter Notice of Intent to Issue PSD Permit for the WCEC Project. The Acreage is not a City or County and is located in unincorporated Palm Beach County.

23	Sharon Waite	Written comments to PSD permit Notice of Intent to Issue	"I'd say let's clean up Riviera Beach plant first. It's the dirtiest in the state."	See Air Quality Riviera plant	The Riviera Plant is an existing electric generating facility which is currently serving the electricity demands of FPL's customers and operating in accordance with all applicable local, state and federal regulations. The air quality in the vicinity of the Riviera Plant and throughout Palm Beach County has been determined to be in full compliance with the Ambient Air Quality Standards (AAQS) established by EPA and FDEP to protect human health, welfare and environment. In addition, FPL voluntarily adopts operating practices that further reduce environmental impacts. For example, • FPL has significantly reduced particulate matter, opacity, carbon monoxide, and nitrogen oxides emissions from the Riviera plant through the multi-million dollar installation of low nitrogen oxide (NOx) burners. • FPL has a self-imposed opacity standard for visible emissions that is 50 percent lower than the permitted federal limit and is equivalent to what a brand new power plant would be required to meet. • FPL has installed Continuous Emission Monitoring Systems (CEMS) that instantaneously monitor flue gas emissions and Continuous Opacity Monitoring Systems (COMS) that check visible emission standards to help ensure emissions compliance. The result of these efforts has been impressive: since 1990, NOx emissions from the Riviera plant have decreased by more than 40 percent and represent only 7 percent of all NOx emissions in Palm Beach County (mobile sources, including automobiles, account for more than 90 percent).
24	Sharon Waite	Written comments to PSD permit Notice of Intent to Issue	"As a sidebar, FPL will be tolerated to use the ASR wells as a place to inject their waste."	? Water	The Project will utilize FDEP permitted underground injection control (UIC) wells for wastewater management, not Aquifer Storage and Recovery (ASR) wells. UIC wells are commonly used throughout the region and involve injection of wastewater into a confined boulder zone. Aquifer Storage and Recovery wells serve a very different purpose and are typically constructed to inject water into a different hydrogeological zone for later recovery and reuse.
25	Sharon Waite	Written comments to PSD permit Notice of Intent to Issue	"I never want to see this project come to fruition for another 660,000 units."	See Air Quality Growth	FPL has a legal obligation to meet the electric generation needs of customers in our service territory. This requires planning for the projected customer growth and increased usage of electricity by existing customers. In order to ensure there is an adequate supply of electricity, new generating plants must be built in time to meet the projected growth. The WCEC is being proposed to meet our legal obligation based on the projected electricity needs of FPL's customers throughout the FPL service territory including Palm Beach County. As described in the Site Certification Application, FPL uses an Integrated Resource and Planning (IRP) process to determine when new resources are needed, the magnitude of the resources needed, and the type of resources that should be added. The magnitude and timing of FPL's resource needs are established through a "reliability assessment". This assessment evaluates many factors including: demographic information such as population trends by county and housing characteristics, weather assessments from NOAA, economic conditions, the price of electricity, input from local economic development boards, and more. It is important to note that this evaluation is done for the entire FPL service territory, not for any one particular area. FPL's IRP process in 2004
26	Patricia D. Curry	Written comments to PSD permit Notice of Intent to Issue	The area in question borders what is currently agricultural, primarily sugar farms. This area in particular is extremely important as it relates toward the Comprehensive Everglades Restoration Act It is no secret that the large growers in the area are desirous of retiring their farming land, seeking development rights in the stead of farming. Development on this land should never occur, and the land should be restored in the absence of farming to its natural and original state, as wetlands; this to aid the Everglades, as well as to ensure the natural filtration of water into the aquifer.	See General Growth	On August 3, 2005, a public hearing was conducted regarding the WCEC's consistency and compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site. The notice of the land use hearing for the Project was published in accordance with the requirements of Section 403.5115, Florida Statutes. On November 15, 2005, the Governor and Cabinet sitting as the Siting Board, issued a final order that the WCEC Project is consistent and in compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site.

27	Patricia D. Curry	Written comments to PSD permit Notice of Intent to Issue	Building a power plant that will service an additional 650,000 residences/businesses, in such a vital area, makes absolutely no sense at all, unless one is pursuing development of such an additional 650,000 new homes/business within the area. Currently, there is sufficient power supply for all who reside and/or work within the vicinity. In other words, building this new plant simply facilitates more growth, in an area where growth is currently prohibited, and should perpetually be prohibited With a County Commission that is so pro-growth, and anti-environment, as we have sitting now, who have approved land uses changes that are threatening rural areas and agricultural areas alike, this proposed power plant spells nothing but danger	See General Growth	FPL has a legal obligation to meet the electric generation needs of customers in our service territory. This requires planning for the projected customer growth and increased usage of electricity by existing customers. In order to ensure there is an adequate supply of electricity, new generating plants must be built in time to meet the projected growth. The WCEC is being proposed to meet our legal obligation based on the projected electricity needs of FPL's customers throughout the FPL service territory including Palm Beach County. As described in the Site Certifieation Application, FPL uses an Integrated Resource and Planning (IRP) process to determine when new resources are needed, the magnitude of the resources needed, and the type of resources that should be added. The magnitude and timing of FPL's resource needs are established through a "reliability assessment". This assessment evaluates many factors including: demographic information such as population trends by county and housing characteristics, weather assessments from NOAA, economic conditions, the price of electricity, input from local economic development boards, and more. It is important to note that this evaluation is done for the entire FPL service territory, not for any one particular area. FPL's IRP process in 2004
28	Patricia D. Curry	Written comments to PSD permit Notice of Intent to Issue	The South Florida Water Management District reeently acquired, at a price to taxpayers of several hundred million dollars, the rock pits created by mining operations at the Palm Beach Aggregates. The supposed purpose in purehasing these rock pits was to serve as additional water storage from excess water in Lake Okeechobee, and further to facilitate a new canal system that would feed into a "flow way" at the Mecca site, and then drop cleaner water into the C51 Canal feeding the Loxahatchee River. The new proposed FPL power plant, finds that FPL will be utilizing the same rock pits???	See General Water	The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.
29	Patricia D. Curry	Written comments to PSD permit Notice of Intent to Issue	The mining operations continue at Palm Beach Aggregates, which includes blasting that shakes the earth sufficient that it can be felt miles away. How would this affect a "natural gas" power plant in direct proximity to the plant?	See General Blasting	Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.
30	Patricia D. Curry	Written comments to PSD permit Notice of Intent to Issue	Three huge towers that release pollutants into the air, including mercury, will most definitely affect not only the agricultural areas directly to the west of this proposed plant (poisoning our food, soil and water) but also the rural residential communities directly to the east of this proposed plant, i.e. Loxahatchee, Loxahatchee Groves and the Acreage. Contrary toward your reports, Wellington is not the closest community.	See Air Quality Air	WCEC will utilize the cleanest of all fossil fuels, primarily natural gas and ultra-low sulfur light oil as a backup fuel supply. These fuels contain virtually no mercury. In addition, an extensive air quality analysis was conducted, which determined that the air emission impacts would be much less than the applicable air standards that protect human health, welfare and the environment including vegetation and wildlife. For clarification, the FDEP requires that the applicant provide certain information in the Site Certification Application, including "nearest incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.

31	Nancy J. Gribble	Written comments to PSD permit Notice of Intent to Issue	I am a resident of Fox Trail, a rural-tier community of unincorporated Palm Beach County that consists of 212 5-acre homesites, many of which are occupied by horses and agricultural uses. Fox Trail is located approximately 1.5 miles east of the proposed FPL West County Power Plant. There has been absolutley no presentation to our community regarding the proposed west county power plant, nor have our residents been solicitated for comment regarding such. As a matter of fact, the record incorrectly states that the Village of Wellington is the closest affected community of residents.	Public Participation/ Information availble	Over the last year, FPL has met with various community leaders, homeowners associations, and private citizens to provide information and get feedback about this Project. FPL has been in contact with Fox Trail Homeowner's Association (HOA) since the summer of 2005. FPL scheduled presentations to the Fox Trail Homeowners Association about WCEC for November 9, 2005 and January 11, 2006, but both were postponed at the request of the HOA. In March 2006, FPL rescheduled the presentation for the May 10, 2006 Fox Trail HOA meeting, and provided an insert for the Fox Trail newsletter. In addition, on July 15, 2005, FPL contacted Ms. Gribble directly by voicemail as part of the outreach interview process, at the suggestion of the Fox Trail HOA. The interview was never arranged. For clarification, the FDEP requires that the applicant provide certain information in the Site Certification Application, including "nearest incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.
32	Nancy J. Gribble	Written comments to PSD permit Notice of Intent to Issue	Not withstanding the snub of our community, I attended the Administrative Hearing for the proposed west county power plant, which was also held in the Village of Wellington. At this hearing, misinformation abounded. Of particular concern, was the public statement that "no residential" community was in the near proximity of the proposed west county power plant. Having been involved in numerous zoning and land use issues affecting our community of Fox Trail over the past several years, I knew that statement was not only incorrect as it related to the community of Fox Trail, but that in fact, the Palm Beach County Board of County Commissioners had rezoned a 1200-acre portion of the Palm Beach Aggregates property late last year (2005), to allow the construction of 2000 homes. This PUD, which is now officially known as Highland Dunes by Lennar Corp. will be approximately one-quarter mile east of the proposed west county power plant site.	see Land Land use	Below is an excerpt from the Land Use Administrative hearing transcript on August 3, 2005. The information provided by expert witness Mr. Richard Zwolak, is both factual and accurate. "Q Mr. Zwolak, what's the distance to the nearest existing residential area? A There is a multiple acre per lot subdivision known as Deer Run that is located to the northeast of the project site. It is located east of canal L8 and to the north of additional mining activity shown on the aerial photograph on the very right side. The distance from the portion of the site where the infrastructure is planned, the northernmost infrastructure that Mr. Gnecco identified and the very southwest corner of this subdivision of Deer Run is approximately 0.7 miles. Q What is the distance to the nearest occupied residence? A The nearest occupied residence is located in the southwest corner of that subdivision. The distance from the site infrastructure to that residence is .75 miles, three-quarter mile." Following the Land Use hearing, the Administrative Law Judge that presided over the hearing issued a Recommended Order. Governor Bush and the Cabinet approved that order on November 15, 2005 and issued a signed Final Order on November 17, 2005. Since the time of the Land Use hearing, Palm Beach County granted final approval for development of a parcel of land which is located approximately one half mi
33	Nancy J. Gribble	Written comments to PSD permit Notice of Intent to Issue	"You may wish to contact Kieran J. Kilday, Vice-President, Kilday & Assoicates at (tollfree) 800-755-4532 to verify Lennar's understanding and knowledge of the proposed west county power plant and the DEP permit. Mr. Kilday is the agent representing Lennar Corp. for the Highland Dunes project. Lennar must be held accountable to the future residents of Highland Dunes regarding the environmental impacts of the proposed west county power plant."	Growth	FPL has conducted two meetings with representatives from Lennar Homes, Inc. and Kilday & Associates. Specifically, FPL met with Lennar's Vice President of Planning, Lennar's Land Development Manager, Lennar's Project Manager for the Highland Dunes project, and representatives from Kilday & Associates During these meetings, FPL provided a copy of the Site Certification Application and other documents associated with the Project, and reviewed the details of the Project to ensure that the WCEC could be considered in the design and planning for the Highland Dunes development. In addition, Palm Beach County has imposed a requirement that Lennar Homes, Inc. provide written disclosure to any potential home buyer of the proposed WCEC.

40	Nancy J. Gribble	Written comments to PSD permit Notice of Intent to Issue	"In closing I ask that the DEP resind or delay its issuance of this permit until such time that a complete and specific review of residents' concerns and questions have been answered and verified with documentation from your department. Please do not rely on the information that has been provided by FPL. It is misleading at best, and their attempt to exclude those residents who will be directly impacted the most are shameful and intolerable."	Public Participation/ Information availble Information on Application	FPL has provided accurate information to FDEP and to area residents. Please refer to FPL's response NG-1 and Attachment 1 for a summary of our outreach efforts to date.
41	Sharon Waite	FDEP PSD Public Meeting	This project is not quite as innocent as portrayed. 40 tons of sulfuric acid/yr, 220 tons of particulate matter/yr. This is not insignificant, this is dangerous. The sugar mills are temporary, this will be permanent.	Health Air	The emissions from any power plant facility must be expressed in tons/year for comparison to regulatory thresholds. FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment.
42	Alexandria Larson	FDEP PSD Public Meeting	Glad Loxahatchee is on the map. Nowhere on the information does it say the plant is in Loxahatchee. The hearing was advertised in the Sports section, this time in the orbituaries. Originally it it was going to be a 300MW plant, this will be the largest plant in the state.	Section General Public Participation/ Information availble	Over the last year, FPL has conducted an extensive outreach program. Attachment 1 provides a summary of FPL's outreach efforts, including meetings/presentations with Deer Run, White Fences, Indian Trail Improvement District, and Loxahatchee Groves Landowners Association, and a planned meeting with Fox Trail (postponed from Fall 2005). Also included is a list of media coverage and public notices issued on this Project. The Site is located in unincorporated Palm Beach County. The FDEP requires that the applicant provide certain information in the Site Certification Application, including "Nearest Incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.
43	Alexandria Larson	FDEP PSD Public Meeting	LNWR is 0.5 miles away from the plant, the Corbett is close as well.	Section General Wildlife Refuges/ LNWR/Corbett/ Everglades	The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) Increments that protect air quality from degradation.
44	Alexandria Larson	FDEP PSD Public Meeting	When I called Tallahassee I was told the area was zoned agricultural.	Land use	Section
45	Patricia Curry	FDEP PSD Public Meeting	In application it states it will be 100 km from a Class I (Everglades), not right what about the proximity to LNWR and Corbett?	Section General Wildlife Refuges/ LNWR/Corbett/ Everglades	The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) Increments that protect air quality from degradation.
46	Patricia Curry	FDEP PSD Public Meeting	The comparison to Riviera Plant is not good, many people over there complain.	Riviera plant	Section air Quality
47	Patricia Curry	FDEP PSD Public Meeting	The plant will add additional pollution to my area. Currently we only have the sugar cane pollution.	Section Air Quality	The emissions from any power plant facility must be expressed in tons/year for comparison to regulatory thresholds. FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment.
48	John Earley	FDEP PSD Public Meeting	Gas lines are high pressure. My house is 3-4 miles away and I have cracks in my house due to blasting. Will have 12.6 million gallon diesel tank next to the blasting. Potential for explosion	Blasting	Section General

49	John Earley	FDEP PSD Public Meeting	When costs of gas goes up, diesel will be used instead of gas	Air	Section General The PSD permit limits the use of ultra low sulfur distillate fuel to no more than 500 hours during any calendar year.
50	John Earley	FDEP PSD Public Meeting	Increased traffic to the area because of site	Growth	Section General
51	John Earley	FDEP PSD Public Meeting	Property value concern Worried about noise of trucks and generators and visual impacts of stacks Situation of the public versus FPL and the politicians Suggests moving the plant 10 miles west	Other	Section general
52	John Earley	FDEP PSD Public Meeting	Project close to Wildlife preserves	Wildlife Refuges/ LNWR/Corbett/ Everglades	The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) Increments that protect air quality from degradation. Section : general
53	John Earley	FDEP PSD Public Meeting	Will the pits be used for cooling?	Water	?
54	John Koch	FDEP PSD Public Meeting	If build WCEC, FPL should close Riviera Beach plant Contact people next to Riviera plant to learn about air pollution	Riviera plant	Section : Air Quality
55	John Koch		Blasting concerns. How will the equipment function when the ground is shaking.	Blasting	Land use section
56	John Koch	FDEP PSD Public Meeting	Is the plant really needed? Wants wind and solar.	Other	Section : General
57	Nancy Gribble	FDEP PSD Public Meeting	In discussion stated 5 pollutants but only 3 monitors, what happened to the either 2 pollutants/	Air	Section : Air Quality
58	Nancy Gribble	FDEP PSD Public Meeting	In FDEP Web site states, during daytime and hot weather conditions, the atmosphere can disperse pollutants in a very short period.	Air	Section : Air Quality
59	Nancy Gribble	FDEP PSD Public Meeting	Used old meteorological data 1948-1998 for air quality standards. Why not use more recent data.	Air	Air Quality Section
60	Nancy Gribble	FDEP PSD Public Meeting	Predominate land use out to 5 mile radius listed as mining and agriculture. I live within 1 mile of the site.	Land use	Section : Land use
61	Nancy Gribble	FDEP PSD Public Meeting	No where in the application does it mention Highland Dunes PUD, 2,,00 homes and a school. Within walking distance from site. This is a rural residential neighborhood.	Land use	Section : Land use

62	Joan Shewmake	FDEP PSD Public Meeting	Federal administration has relaxed air regulations Will affect asthma and emphysema of herself and husband ,can breathe now but not later	Section Health Air	The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) Increments that protect air quality from degradation.
63	Joan Shewmake	FDEP PSD Public Meeting	Wrong plant in wrong place at wrong time Plant will destroy environmentally sensitive area – doesn't belong	Section General Wildlife Refuges/ LNWR/Corbett/ Everglades	The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) Increments that protect air quality from degradation.
64	Rosa Durando	FDEP PSD Public Meeting	We are not building state of the art plant People think EPA is strict, but it is not Don't need a new plant Current Administration has relaxed standards	Section General Air Health	The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) Increments that protect air quality from degradation.
65	Rosa Durando	FDEP PSD Public Meeting	Riviera plant one of the dirtiest in US	Riviera plant	
66	Rosa Durando	FDEP PSD Public Meeting	Will impact Lox Wildlife Refuge	Section General Wildlife Refuges/ LNWR/Corbett/ Everglades	The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) Increments that protect air quality from degradation.
67	Rosa Durando	FDEP PSD Public Meeting	Water supply will become polluted through discharge into the pits – not being addressed Water is the real issue out here – this is not a clean plant Increased building will cause problems with water	Water Section General	
68	Rosa Durando	FDEP PSD Public Meeting	Mercury pollution will be worse in fish Health	Air	WCEC will utilize the cleanest of all fossil fuels, primarily natural gas and ultra-low sulfur light oil used as backup. These fuels contain virtually no mercury, and therefore will have no adverse impact on the health of residents or well-water quality.
69	Rosa Durando	FDEP PSD Public Meeting	Wants a lake belt in this area not more development as it is AG land	Land use	
70	Rosa Durando	FDEP PSD Public Meeting	Old 500 kV line should have been sufficient to supply power	Other	
71	Rosa Durando	FDEP PSD Public Meeting	SO2 & NOx emission problems	Air Quality Air	The emissions from any power plant facility must be expressed in tons/year for comparison to regulatory thresholds. FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment.
72	Mike Christiansen	FDEP PSD Public Meeting	SCR not state of the art	Air	
73	Mike Christiansen	FDEP PSD Public Meeting	Must think about the future for our children	Other Air Quality Health	

74	Mike Christiansen	FDEP PSD Public Meeting	Concerned about spills from large diesel storage tanks – more storage than Exxon Valdez spill Concerned about impact of a spill on the wildlife refuge	Diesel Storage tank/Oil Spills	Section General
75	Mike Christiansen	FDEP PSD Public Meeting	One single pollutant may not be the problem (air emissions may be OK), but the cumulative effects of the entire plant are problem	section Air Quality	The emissions from any power plant facility must be expressed in tons/year for comparison to regulatory thresholds. FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment.

Written Comment Form

Public Meeting – April 19, 2006
Florida Power & Light -- West County Energy Center
Project No. 0990646-001-AC – Construction of a New Power Plant

Name: WILLIAM DANISON

Address: 14576 73RD ST. N.

Phone Number: (561) 333-8618

Email:

I have the following comments with regard to the proposed draft permit determination for the above referenced project:

I AGREE WITH BUILDING THE FPL POWER PLANT. NOT ONLY WILL IT CREATE NEW JOBS, IT HELP ENSURE POWER FOR YEARS TO COME. WITH THE HOUSING EXPANSION MOVING WEST WE WILL SURELY NEED IT. I'M SURE THAT FPL MUST MEET ANY GOVERNMENTAL STANDARDS FOR EMISSIONS. I ONLY HOPE IT CAN BE COMPLETED BEFORE NEXT HURRICANE SEASON.

Written Comment Form

Public Meeting – April 19, 2006
Florida Power & Light -- West County Energy Center
Project No. 0990646-001-AC – Construction of a New Power Plant

Name: MICHAEL K CHRISTENSEN

Address: 13759 159TH ST N

Phone Number: 561-254-9690

Email:

I have the following comments with regard to the proposed draft permit determination for the above referenced project:

Thank You for this opportunity to share my concerns

1. BLASTING on AGGREGATES Till 2032
2) 2200 tons of HAP EACH year and Possible to go UP. NONE CURRENTLY
3) 12.6 million GALLONS of fuel on site No description OF TANKS Possible to go UP
4) site is within a stone's THROW of 2 wildlife refuges 130,000 acres total 1 State refuge 1 federal refuge
5) FPL IS a leader in power generation they should Set the lead in removing pollutants From the product they sell instead of JUST throwing it into the air.
6) DATA FPL submitted shows NOx could be reduced by 632 tons FROM 847 tons to 101 tons
7) SELECTIVE CATALYTIC REDUCTION is NOT "STATE OF ART"
8) MEETING Seemed to get "STACKED" With electricians WHO all SPOKE AT end. ALL SPOKE IN FAVOR AND ACTED LIKE THEY SPOKE WITH AUTHORITY.

Written Comment Form

Public Meeting – April 19, 2006
Florida Power & Light -- West County Energy Center
Project No. 0990646-001-AC – Construction of a New Power Plant

Name: Ralph B. Bair
Address: 16280 E. Edinburgh Pl
Phone Number: 561-793-6203
Email: Ralphjeanetta@Bellsouth.net.

I have the following comments with regard to the proposed draft permit determination for the above referenced project:

I would like to submit this info. to prove that F.P.L. has tried to get there message out

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ALA Selects New Board Of Directors

Don Brown 21.OCT 05

The Acreage Landowners' Association met Tuesday night to elect a board of directors and to hear a presentation by Florida Power & Light officials about plans to build a large power plant in western Loxahatchee off Southern Blvd. near 20-Mile Bend.

Chosen for the 2005-06 ALA board were Ralph Bair, Ron and Cheryl Wagner, Rita Wall, Michelle Damone, Winston Crosbie and Fred Gordon. The officers will be selected at next month's meeting.

Members also heard a presentation by FPL Regional Manager Rod Macon about the new power plant, construction of which is planned to begin in 2007. Macon said the plant, actually two units on 220 acres currently owned by Palm Beach Aggregates, will be known as the West County Energy Center and will improve power reliability in the western communities.

The ALA also discussed the Citrus Grove trick-or-treating event scheduled for Monday, Oct. 31. The annual Halloween event attracts thousands of Acreage youngsters and their parents along the designated Citrus Grove Blvd. from Seminole Pratt Whitney Blvd. east to Coconut Blvd., a distance of about four miles.

The neighborhood event is in its fourth year, and the ALA is donating about $1,300 for law enforcement supervision.

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28.OCT.05 FPL: It Will Take Weeks To Restore All Power Service

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News

FPL – Putting new technology and natural gas to work for the community

Today, Florida communities are continuing to attract new residents and businesses and find increasing uses for electricity. Last year 100,000 new customers signed up for FPL service. At the same time, no power generating facilities have been built in Palm Beach County since the 1960s. The single FPL generating facility in the county produces enough electricity to serve approximately 115,000 homes and businesses. That's why we are proposing to build by 2009 and 2010, two new, state-of-the-art natural gas-fired generators in western Palm Beach County. The two new units would be capable of serving 460,000 homes and businesses.

The proposed FPL West County energy center property consists of a 220-acre parcel of land, located on property that is zoned for power plant development, west of Seminole Pratt-Whitney Road and north of Southern Boulevard (SR 80). The site is near existing natural gas pipelines for fuel and adjacent to existing transmission power lines used to deliver electricity to customers.

During construction, approximately $170 million will go to the local economy in payroll and another $30 to $50 million in purchases of materials and equipment. There would be job opportunities for hundreds of skilled workers during construction and 40 to 50 eventual full-time jobs.

FPL is committed to building its plants in an environmentally responsible manner that minimizes impacts on Florida's air, land and water. The two new units would be among the cleanest, most environmentally-advanced generating units in the state.

Throughout the approvals process, we also plan to maintain an open and ongoing dialogue with our neighbors. For more information, please visit our project Web site at www.FPL.com/westcounty. To contact one of our outreach team members or schedule a presentation for your club, church or civic association, please contact us at 1-800-581-3990.

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FPL: New Power Plant West Of Loxahatchee Is Essential For Growth

FPL's Rod Macon shows designs for the proposed power plant to Indian Trail officials Wednesday.

Leonard Wechsler 07.OCT.05

Florida Power & Light is charged up about its plans to build a new power-generating station in western Palm Beach County. FPL Regional Manager Rod Macon gave members of the Indian Trail Improvement District Board of Supervisors a presentation on the project on Wednesday.

Macon said the station, called the West County Energy Center, will be built near FPL's existing Corbett Substation at 20-Mile Bend on the north side of State Road 80 (Southern Blvd.) and will consist of two gas-fired turbine generators.

A huge increase in demand for electricity makes the project necessary, Macon said, noting that FPL's service area contained 2.7 million families in 1986 and about 4.3 million today. "We're adding 100,000 new customers every year," he said. "We're also using about 28 percent more electricity now per person than we were 20 years ago."

Macon noted that the site is already zoned for a power plant. Since the land was previously used a mine, development will not include disturbing natural vegetation. It is near natural gas pipelines and existing transmission lines, and is adjacent to the L-10 Canal, which will supply water to cool the generators.

The site will provide increased tax revenues as well as approximately 50 permanent full-time jobs with a peak of close to 1,000 workers during construction, Macon said.

The energy center calls for two state-of-the-art natural-gas-fired, combined-cycle units. The two new 1,100-megawatt units are projected to provide enough electricity to meet the needs of 460,000 homes and businesses.

Macon said that combined-cycle gas technology is very efficient. Natural gas turns a turbine, which connects to a generator. The heat produced as a by-product produces steam that spins another generator. Macon said FPL will use state-of-the-art technical and environmental controls.

"Most people will not even be aware the plants exist," Macon said. "The stacks will not be more than 50 feet high, half the height of the ones in Riviera Beach."

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This week's poll

Should Wellington ban smoking in the village's outdoor parks?

Yes! It's a health hazard.
Yes. It sets a bad example for kids.
No! Leave the poor smokers alone.
No. Government doesn't belong intruding.

vote

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FPL Promotes Power Plant Plan At P.W. Chamber Luncheon

Carol Porter 18 NOV 05

A new Florida Power & Light power plant at 20-Mile Bend is a necessity given the tremendous growth in Palm Beach County power usage, FPL's External Affairs Manager Don Kiselewski told members of the Palms West Chamber of Commerce Monday.

Dennis Kiselewski of FPL accepts a plaque from Chamber President Dorian Zimmer, marketing director of the Mall at Wellington Green.

Speaking at the chamber's monthly business luncheon at the Wellington Community Center, Kiselewski said FPL plans two units on a 220-acres site at 20-Mile Bend that will generate 2,200 megawatts of electricity, providing power to 460,000 residential and commercial customers. The site at 20-Mile Bend is already zoned for power plant use, he said, and the facility will be built near existing gas pipelines that will feed the facility, making the construction of new lines unnecessary.

While FPL's existing Riviera Beach facility has 300-foot stacks, Kiselewski said the new facility at 20-Mile Bend would have 130-foot stacks. The new facility will also be screened from view by a 40-foot berm. Also unlike the plant at Riviera Beach, the new facility will generate power cleanly using natural gas instead of coal, he said.

FPL must also undergo a lengthy approval process with various agencies including, the Environmental Protection Agency, the South Florida Water Management District, Palm Beach County and ultimately the governor, Kiselewski said. FPL started the approval process in April and expects to wrap it up in March 2007. Construction of the plant is scheduled to begin in June 2007, with completion of the first phase two years later, and of the second phase in June 2010.

Kiselewski called the new plant's construction a "no-brainer" in light of the increase in energy demand due in large part to growth in the western communities. Kiselewski said that the FPL customer base is growing at a rate of 100,000 new customers per year. Also, he said, the increasing size of homes presents more of a challenge for FPL, as they contain more rooms, appliances, computers, televisions and other "necessities."

"We see another new business every day," Kiselewski said. "These new customers are not all transplants. Some of them are people like me who grew up here. In addition to the new customers we are receiving, growth and usage has increased over the last 20 years."

Kiselewski encouraged residents to contact FPL about their issues of

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Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Telephone: (850) 488-0114 FAX: (850) 922-6979

Colleen M. Castille
Secretary

April 5, 2006

Mr. Steve Petrone
The Village of Royal Palm Beach
1050 Royal Palm Beach Boulevard
Royal Palm Beach, Florida 33411

Re: Request to use Cultural Center
Public Meeting, April 19, 2006
Florida Department of Environmental Protection

Dear Mr. Petrone:

Per our discussion yesterday, we request permission for the Florida Department of Environmental Protection/Bureau of Air Regulation to use The Village of Royal Palm Beach Cultural Center on April 19, 2006 to conduct a public meeting. The purpose of the meeting is to receive comments on the Department's Notice of Intent to Issue an Air Construction/PSD Permit (No. 0990646-001-AC) to Florida Power & Light Company (FPL), for the construction of a new power plant located at 4000, 205th Street North in unincorporated Palm Beach County.

We plan to hold an informal "Open House" from 5:00 p.m. to 6 p.m. and then to conduct the Public Meeting from 6:00 p.m. to 8:00 p.m. We will provide you with the agenda very shortly.

Someone from our Palm Beach Office or from the Palm Beach Local Air Program will contact you regarding a visit to the facility, so we can determine what equipment and assistance we need to bring. If you have any questions, please call Teresa Heron at 850-921-9529 or call me at 850-921-9523.

Sincerely,

A.A. Linero, Program Administrator
Bureau of Air Regulation
New Source Review Section

AAL/al

cc: Trina Vielhauer, Chief Bureau of Air Regulation
Darrel Graziani, Air Administrator, DEP Southeast District
Jim Stormer, Air Administrator, Palm Beach County PHU

NOTICE OF PUBLIC MEETING

DEPARTMENT OF ENVIRONMENTAL PROTECTION

WEST COUNTY ENERGY CENTER DRAFT AIR CONSTRUCTION/PSD PERMIT

The Department of Environmental Protection, Division of Air Resource Management, announces a public meeting to which all persons are invited:

DATE AND TIME: Wednesday, April 19, 2006. Open House: 5 P.M to 6 P.M

Public Meeting: 6:00 P.M. to 8:00 P.M.

PLACE: Royal Palm Beach Cultural Center at 151 Civic Center Way, Royal Palm Beach, FL 33411.

PURPOSE: The purpose of the meeting is to receive comments on the Department's Notice of Intent to issue an air construction/PSD permit (No. 0990646-001-AC) to Florida Power & Light Company (FPL), for the construction of a new power plant located at 4000, 205th Street North in unincorporated Palm Beach County. The project is subject to preconstruction review for the Prevention of Significant Deterioration (PSD) of Air Quality pursuant to Rule 62-212.400, F.A.C.

The Department distributed an "Intent to Issue Permit" package on March 1, 2006. The applicant published the "Public Notice of Intent to Issue" in The Palm Beach Post on March 9, 2006. No petitions for administrative hearings or extensions of time to petition for an administrative hearing were filed. This public meeting was requested pursuant to the procedures described in the "Public Notice" and is being held to accept comments on the proposed draft permit. Oral and written comments may be submitted at the meeting. All statements will become part of the Department's public record for this project.

The Department's "Intent to Issue", "Draft Permit", and "Technical Evaluation and Preliminary Determination" can be viewed at:

www.dep.state.fl.us/Air/permitting/construction/westcounty.htm

A complete project file is available at the following physical address for the Division of Air Resource Management: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Division's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. For questions related to this meeting, please contact Teresa Heron at 850/921-9529. Pursuant to the Americans with Disabilities Act, any person requiring special accommodations to participate in this meeting is asked to advise the agency at least 48 hours before the meeting by calling Ms. Scearce at (850) 921-9551, or by calling (800) 955-8771 (TDD) or (800) 955-8770 (Voice).

Heron, Teresa

From: Vielhauer, Trina
Sent: Friday, April 21, 2006 8:03 AM
To: Linero, Alvaro; Heron, Teresa
Subject: West County

One individual from the public meeting wanted us to email her the various permits the West County project had to obtain [at the state level]. I told her we could do that. Can you guys email her a list or a page from their siting application that lists this stuff? It would be fine to include the siting schedule too.

It is GremlinLtd@aol.com

Heron, Teresa

From: Vielhauer, Trina
Sent: Friday, April 21, 2006 8:58 AM
To: Linero, Alvaro; Heron, Teresa
Subject: FW: FW: West County Energy Center

Can't remember if I forwarded this or not.
-----Original Message-----
From: Forney.Kathleen@epamail.epa.gov [mailto:Forney.Kathleen@epamail.epa.gov]
Sent: Thursday, April 20, 2006 11:04 AM
To: Vielhauer, Trina
Cc: Forney.Kathleen@epamail.epa.gov
Subject: Re: FW: West County Energy Center

Hey Trina,

I left a message with John from FWS. I am going to talk to him about the informal consultation process. I understand from his response to your email that he doesn't consider what they have done to satisfy the ESA process, but he did make the statement at the end of the email that he felt like the project was not going to cause significant harm. I will let you know what EPA's plan is after I talk with him.

Thanks
Katy

Katy R. Forney
Air Permits Section
EPA - Region 4
61 Forsyth St., SW
Atlanta, GA 30024

Phone: 404-562-9130
Fax: 404-562-9019

To be included in mail list for this project

Heron, Teresa

From: Vielhauer, Trina
Sent: Friday, April 21, 2006 8:11 AM
To: Linero, Alvaro; Heron, Teresa
Subject: west county

Another individual has asked to be on the email list for this project:

Chet@wesellflroidaproperties.com

[Yes, his card says "flROida", it may well be "flORida", so I'd try both].

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

March 30, 2005

A.A. Linero, P.E.
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Mail Station #5505
Tallahassee, FL 32399-2400

Re: Florida Power & Light Company
West County Energy Center Project
DEP File No. 0990646-001-AC (PSD-FL-354)

Dear Mr. Linero:

Florida Power & Light Company (FPL) is in receipt of the Draft Prevention of Significant Deterioration (PSD) Permit and Technical Evaluation and Preliminary Determination (TEPD) for the West County Energy Center, issued by the Department on March 1, 2006. In accordance with the Department's Notice of Intent to Issue a PSD permit, this letter and attachments convey requested corrections and clarifications in the Draft PSD and the TEPD. Specifically, attached to this letter are two documents, Attachment 1 & 2, with proposed edits to the Draft PSD and TEPD that we would like you to consider.

Thank you for the time and care you have taken in your review of the West County Energy Center Project. Please call if you have any questions. You can reach me at (561) 691-7518.

Sincerely,

Barbara P. Linkiewicz
Environmental Licensing Manager

cc: Steven Palmer, DEP Siting Office
Ken Kosky, Golder Associates

ATTACHMENT 1

West County Energy Center
PSD Draft Air Permit, issued March 1, 2006
Florida Power & Light Company – Comments

March 30, 2006

1. **Page 1, Expiration Date:** The Draft PSD permit has an expiration date of December 31, 2009. The commercial operation date of the West County Unit 2 is after the expiration date (June 2010). Consistent with historical DEP practice, and to allow for construction delays, the expiration date of the permit should be 18 months after commercial operation of the second unit, December 31, 2011

2. **Page 2, Facility Description, second paragraph:** We request that the language be updated to reflect a 26-cell cooling tower as follows:

   "Each combined cycle unit will consist of: three nominal 250 megawatt Model 510G gas-turbine-electrical generator sets with evaporative inlet cooling systems; three supplementary-fired heat recovery steam generators (HRSG's) with SCR reactors; one nominal 428 mmBtu/hour (LHV) gas-fired duct burner located within each of the three HRSG's; three 149 feet-exhaust stacks; one ~~24~~ 26-cell mechanical draft cooling tower; and a common nominal 500 megawatt steam-electrical generator."

3. **Page 4, Relevant Documents:** We request that "Letter from FPL to DEP dated December 29, 2005" with details on Mitsubishi 501G technology, including update to nominal megawatts and size of oil tanks be added to the list of Relevant Documents.

4. **Page 7, Equipment and Control Technology, Gas Turbines:** We request the following clarification:

   "4. Gas Turbines. The permittee is authorized to install, tune, operate, and maintain six Model 501G gas turbine-electrical generator sets each with a nominal generating capacity of 250 MW..."

5. **Page 10, Emissions Standards, Footnote h:** To clarify that if a CO catalyst in installed, the rolling average will be calculated from the installation of the catalyst forward, we propose the following:

   "h. Rolling Average. Enforcement discretion may be exercised for up to 12 months with respect to the 6 ppmvd @ 15% O2 limit for any combustion turbine / supplementary-fired heat recovery steam generator upon notification by the permittee of intent to install oxidation catalyst. The permittee shall have 12 months to complete the oxidation catalyst installation. ~~From time of notification to~~ After completing the installation of the catalyst, all prior partial or complete calendar months shall be excluded from the 12 month rolling average."

6. **Page 17, NSPS Applicability**. NSPS Kb is not applicable in its entirety because the fuel that is being used has a maximum true vapor pressure less than 3.5 kPa. FPL suggests that the reference to NSPS Kb be removed and the rest of the section be renumbered accordingly.

"~~NSPS APPLICABILITY~~

~~1. NSPS Subpart Kb Applicability: The distillate fuel oil tanks are subject to Subpart Kb, which applies to any storage tank with a capacity greater than or equal to 10,300 gallons (40 cubic meters) that is used to store volatile organic liquids for which construction, reconstruction, or modification is commenced after July 23, 1984. Tanks with a capacity greater than or equal to 40,000 gallons (151 cubic meters) storing a liquid with a maximum true vapor pressure less than 3.5 kPa are exempt from the General Provisions (40 CFR 60, Subpart A) and from the provisions of NSPS Subpart Kb, except for the record keeping requirements specified below. [40 CFR 60.110b(a) and (c); Rule 62-204.800(7)(b), F.A.C.]~~

EQUIPMENT SPECIFICATIONS

~~2.~~ 1. Equipment: The permittee is authorized...

EMISSIONS AND PERFORMANCE REQURIEMENTS

~~3.~~ 2. Hours of Operation...

NOTIFICATION, REPORTING AND RECORDS

~~4.~~ 3. Oil Tank Records: The permittee shall keep readily accessible records showing the dimension of each storage vessel and an analysis showing the capacity of each storage tank Records shall be retained for the life of the facility. The permittee shall also keep records sufficient to determine the annual throughput of distillate fuel oil for each storage tank for use in the Annual Operating Report.
~~[Rule 62-204.800(7)(b)16, F.A.C., 40 CFR 60.116b(a) and (b)]~~"

7. **Page 18, Equipment, Cooling Tower:** We request that the language be updated to reflect a 26-cell cooling tower as follows:

"1. Cooling Tower. The permittee is authorized to install two new ~~24~~ 26-cell mechanical draft cooling towers with the following nominal design characteristics:...

8. **Page 18, Emissions and Performance Requirements:** Correct typo:

"2. Drift Rate. Within 60 days of commencing operation, the permittee shall ~~submit~~ certify that the cooling tower was constructed to achieve the specified drift rate of no more than 0.0005 percent of the circulating water flow rate."

9. **Page 21, Emission Unit Description:** We request the following clarification:

"011. Four nominal 2,250 Kw Liquid Fueled Emergency Generators – Reciprocating Internal Combustion Engines"

10. **All pages, footer:** Correct typo:

"FP&L West County Energy Center"

ATTACHMENT 2

West County Energy Center
Technical Evaluation and Preliminary Determination, issued March 1, 2006
Florida Power & Light Company – Comments

March 30, 2006

1. **Page 2, Figure 1**: SW St. Lucie should be removed from this Figure, as it is no longer a proposed FPL project.

2. **Page 3, Project Description, first paragraph**: For accuracy and consistency with the Draft PSD permit, please make the corrections indicated below:

   "The applicant proposes to construct two "three-on-one" combined cycle units (Units 1 and 2). Each combined cycle unit will consist of: three nominal 250 megawatt (MW) "G" Class gas-turbine-electrical generator sets (~~probably~~ Mitsubishi Heavy Industries Model 501G) with evaporative inlet cooling systems; three supplementary-fired heat recovery steam generators (HRSG's) with SCR reactors and gas-fired duct burners (nominal 428 mmBtu/hour LHV); three 149 feet-exhaust stacks; one ~~22~~ 26-cell mechanical draft cooling tower; and a common nominal 500 MW steam-electrical generator."

3. **Page 4, Stack Parameters:** For accuracy and consistency with the Draft PSD permit, please make the correction indicated below:

   "Stack Parameters: Each heat recovery steam generator has a combined cycle stack (HRSG stack) that is at least 149 feet tall with a nominal diameter of ~~23~~ 22 feet.

4. **Page 5, Inlet Conditioning:** We request clarification of the description as follows:

   "Inlet Conditioning: Evaporative cooling is a system that allows for the injection of fine water droplets into the gas turbine compressor inlet air or inlet air is drawn through a wetted media, which reduces the gas temperature through evaporative cooling..."

5. **Page 6, Table 1, Applicant's Initial Estimated Annual Emissions for both Combined Cycle Units:** For accuracy and consistency with the PSD application and the published notice, please make the correction indicated below.

Pollutant	Project Emissions TPY	PSD Significant Emission Rate, TPY	PSD Review Required?
CO	968	100	Yes
Pb	0.050	0.6	No
NO_x	841	40	Yes
PM/PM_{10}	~~511/211~~ 611/420	25/15	Yes
SO_2	407	40	Yes
SAM	41	7	Yes
VOC	176	40	Yes

6. **Page 7, Title 40, Description:** Delete reference to Part 76, as it only applies to coal-fired units.

7. **Page 14, first paragraph:** Update 2,200 MW to 2,500 MW for consistency with permit and selected technology:

   "Estimates provided by FPL for the proposed ~~2,200~~ 2,500 MW project also indicate a large cost difference between the two technologies..."

8. **Page 14, Table 3:** There is a question mark after "DB" in the NOx Limit and Fuel column for the Wolf Hollow, TX project.

9. **Page 16, Table 6:** There is a question mark next to "NH_3" in the "PM-lb/mmBTU or lb/hr NH_3 – ppmvd @ 15% 0_2" column for the West County project.

10. **Page 18, Section 4.3 Sulfur Dioxide (SO_2) and Sulfuric Acid Mist (SAM) BACT Determination, paragraph 4:** For accuracy and consistency with the PSD application, please make the correction indicated below:

    "FPL estimated ~~206~~ 203.5 tons per year of SO_2 and 20 tons per year of sulfuric acid mist (SAM) per combined cycle unit. This equates to ~~412~~ 407 and 40 TPY for SO2 and SAM respectively from the two combined cycle units...."

11. **Page 19, Cooling Tower PM Emissions:** For accuracy and consistency with the PSD application and Draft PSD permit, please make the corrections indicated below:

    "The applicant's preliminary design includes a ~~22~~ 26 or 24-cell mechanical draft cooling tower for each combined cycle unit with the following specifications...

    "The Department determines the draft BACT to be a design drift rate of no more than 0.0005% of the circulating water flow rate. At this level, maximum potential PM and PM_{10} emissions from the cooling tower are expected to be on the order of ~~134~~ 201.2 and 10 TPY respectively from the two cooling towers."

12. **Page 20, Table 7, Draft BACT Determination, Footnote h:** To clarify that if a CO catalyst is installed, the rolling average will be calculated from the installation of the catalyst forward, we propose the following:

    "h. Rolling Average Enforcement discretion may be exercised for up to 12 months with respect to the 6 ppmvd @ 15% O2 limit for any combustion turbine / supplementary-fired heat recovery steam generator upon notification by the permittee of intent to install oxidation catalyst. The permittee shall have 12 months to complete the oxidation catalyst installation. ~~From time of notification to~~ After completing the installation of the catalyst, all prior partial or complete calendar months shall be excluded from the 12 month rolling average."

13. **Page 22, National Emission Standards for Hazardous Air Pollutants Applicable to Gas Turbines, third paragraph:** FPL will meet the limit as it applies when the rule is finalized. However, we provide the following clarification because FPL did not specifically propose to meet a particular standard in our application:

    "~~FPL proposes to meet the limit proposed in YYYY of 91 ppbvd.~~ The Department believes the formaldehyde emission limit will be met given the proposed BACT CO limits of 8.0 and 6 ppmvd @ 15% O_2 for daily and annual operation respectively...."

14. **Page 23, second paragraph:** We request the following clarifications:

"The ~~limits proposed~~ manufacturer's emissions data provided by FPL ~~for~~ in the West County Energy Center PSD Application are included for comparison. NSPS and NESHAP requirements that are possibly applicable to the auxiliary boilers are also included. Subpart Db requirements, which apply to boilers that are 100 MMBtu/hr or greater are included in the table below because the FPL project appears to specify a nominal 100 MMBtu/hr boiler. The 99.8 MMBtu/hr specification set by FPL must relate to a physical capacity rather than a permit condition."

15. **Page 26, 6th bullet:** We request the following clarification:

For shutdown, up to three hours in any 24-hour period of excess emissions are allowed

16. **Page 27, first paragraph:** FPL does not intend to install a damper. For accuracy and consistency with the Draft PSD permit, please remove reference to a permit requirement for installation of a damper.

"While NOx emissions during warm and cold startups are greater than during full load stead-state operation, such startups are infrequent. Also it is noted that such startups would be preceded by shutdowns of at least 24 or 48 hours. Therefore, the startup emissions would not cause annual emissions greater than the potential emissions under continuous operation. ~~The draft permit will also require the installation of a damper to reduce heat loss during combined cycle shutdowns to minimize the number of combined cycle cold startups.~~"

17. **Page 27, second paragraph:** We request that language be clarified as proposed below to reflect that FPL will not install a separate dump condenser, but may operate in bypass mode and dump steam to the main condenser:

"Combined Cycle Operations ~~with Dump Condenser~~: If the steam-electrical turbine generator was off line for some reason, it is possible that the gas turbine / HRSG systems would operate without producing any steam generated power. Instead, steam would be delivered ~~to a dump~~ via a steam generator bypass to the condenser. ~~Operation with a dump condenser must still meet the standards established for combined cycle operation with ammonia injection.~~

18. **Page 27, Table 12, Major Sources of NO_x in Palm Palm Beach County (2004):** Update tons per year to be consistent with the PSD permit application.

Specifically, in the row for FPL's West County Energy Center, "856" should be "841".

19. **Page 28, Table 13, Largest Sources of SO_2 in Palm Palm Beach County (2004):** Update tons per year to be consistent with the PSD permit application.

Specifically, in the row for FPL's West County Energy Center, "411" should be "407".

20. **Page 28, Table 14, Largest Sources of PM in Palm Palm Beach County (2004):** Update tons per year to be consistent with the PSD permit application.

Specifically, in the row for FPL's West County Energy Center, "652" should be "611".

21. **Page 28, Table 15, Largest Sources of CO in Palm Palm Beach County (2004):** Update tons per year to be consistent with the PSD permit application.

    Specifically, in the row for FPL's West County Energy Center, "2020" should be "968".

    FPL also notes that the 2004 Annual Operating Report for the Riviera Power Plant was 431 tons of CO, which suggests that it should be included in Table 15.

22. **Page 35, Table 22, PSD Class I Increment Analysis – ENP**: Correct the Allowable Increment from 5 ug/m^3 to 8 ug/m^3.

23. **Page 35, Ozone, Second Paragraph:** Update tons per year to be consistent with the PSD permit application.

    "... The West County Energy Center will add ~~856~~ 841 TPY of NOx and 176 TPY of VOC..."

24. **Page 36, First Paragraph:** Update tons per year to be consistent with the PSD permit application.

    "To conclusively prove whether or not the ~~856~~ 841 TPY of NOx and 176 tons of VOC will not cause or contribute to a violation, a very sophisticated and expensive model would need to be run for the entire region. "

Héron, Teresa

From: Marister_Ruiz@fpl.com
Sent: Wednesday, December 06, 2006 5:18 PM
To: Heron, Teresa
Cc: Linero, Alvaro; Barbara_P_Linkiewicz@fpl.com
Subject: West County Energy Center- PSD

Attachments: WCEC_PSD_Public_Comments.xls; Response to Public Comments.doc; WCEC Air Permit_Response to Public Comment_Updated_Submittal Letter_04-26-06.pdf; PublicComment_FactualResponse_FINAL.pdf; WCEC_DraftPSDpermit&TEPD_FPL comments_FINAL LTR_03-30-06_wbccs.pdf; Routing_List.pdf


WCEC_PSD_Public_Comments.xls (...


Response to Public Comments.do...


WCEC Air rmit_Response to Pu


PublicComment_FactualResponse_...


WCEC_DraftPSDpermit&TEPD_FPL c...


Routing_List.pdf (58 KB)

Teresa,

As per our discussion yesterday attached please find the following documents:

Proposed responses to public comments received during and subsequent to the 4/19/06 Draft PSD Permit public meeting - this document was developed based on a review of the audio tape and notes from the meeting, as well as responses previously submitted to the written comments (attached). What I did was I took all the comments and assigned them a category based on the type of issue, see the attached excel spreadsheet. Using the filter I sorted the data based on category. The attached Word document includes responses to concerns that fall in the following categories: Air, Impacts to Loxahatchee National Wildlife Refuge, Corbett or Everglades, public participation or information available, and the permitting process. Comments pertaining to other categories such as blasting, growth, etc, and that are not part of the PSD permit or air regulations were addressed by stating that these are not issues pertinent to the Air permit and these types of comments such be submitted during the Site Certification process. Please note, there are 4 Air issues, which still need to be answered, see item 16-19 in red text.

(See attached file: WCEC_PSD_Public_Comments.xls)(See attached file: Response to Public Comments.doc)(See attached file: WCEC Air Permit_Response to Public Comment_Updated_Submittal Letter_04-26-06.pdf) (See attached file: PublicComment_FactualResponse_FINAL.pdf)

2. FPL had submitted comments to the Draft Permit and the Technical Evaluation as shown in the attachment. All of the comments for the air permit were included in the most current revision except comment #5. None of the comments were included in the Technical Evaluation. Please let me know if you need additional information on these items.

(See attached file: WCEC_DraftPSDpermit&TEPD_FPL comments_FINAL LTR_03-30-06_wbccs.pdf)

3. We believe the permit should be routed to the same parties as shown in the draft permit, except replace Steven Palmer with Hamilton Oven, see attached list. (See attached file: Routing_List.pdf)

I still need to check on updates to the Rules from March 2006 and get the estimated size of the fire pump. I will call you tomorrow morning to discuss further.

Marister Ruiz
Phone (561) 691-7067
Cell (561) 376-5549

Response to Public Comments received during and subsequent to the Draft PSD Public Meeting on 4/19/06 for FPL West County Energy Center

In some cases the comments have been aggregated based on subject matter.

1) "The Bureau has ignored its own investigators, Mr. Palmer and Mr. Sheplak. Many of the questions they asked went completely unanswered, were later answered in the same fashion, or the instructions were ignored completely." Page 3

FDEP issued a series of questions ("sufficiency questions") to FPL in response to FPL's Site Certification Application (SCA). FPL provided timely and complete responses to all questions on August 11, 2005. FDEP reviewed FPL responses and on September 12, 2005 deemed the SCA to be "sufficient", meaning that the information provided was adequate for reviewers to analyze the impacts of the proposed project.

2) "No information on lbs/ppm was provided by manufacturer reflecting real world environment." Page 3

On December 29, 2005, FPL provided FDEP with emissions information from the specific manufacturer of the combustion turbine selected for WCEC. This information was based on manufacturer data that included "real world" testing from the type of combustion turbines proposed for WCEC. Data were provided for both concentration (i.e., ppm) and mass emissions (lb/hr).

3) Air Quality and Impacts to the Arthur R. Marshall Loxahatchee National Wildlife Refuge Page

a) "The more stringent air quality on this 'New' Major Source Polluter must be maintained, we cannot, must not go backward. This Major New Pollution Source will be located within 1/4 mile of Arthur Marshall National Wildlife Refuge. The damage/ disaster potential is great yet no external cost analysis was done."
b) We are not building state of the art plant. People think EPA is strict, but it is not. Don't need a new plant. Current Administration has relaxed standards
c) The plant will add additional pollution to my area. Currently we only have the sugar cane pollution.
d) LNWR is 0.5 miles away from the plant, the Corbett is close as well.
e) In application it states it will be 100 km from a Class I (Everglades), not right what about the proximity to LNWR and Corbett?
f) Project close to Wildlife preserves
g) Wrong plant in wrong place at wrong time
Plant will destroy environmentally sensitive area – doesn't belong
h) Will impact Lox Wildlife Refuge

The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge.

The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) Increments that protect air quality from degradation.

4) "Your investigators requested all documentation, communication with EPA, Federal Land manager, FWC, local governments, National Parks Service, EPA Region 4, they referenced the Endangered Species act. I saw none in FPL response. In fact they stated the site has no wildlife to be impacted. This site is practically adjacent to the Arthur Marshall National Wildlife Refuge. National. We have a duty to the Nation, and I say to the World to 'Protect' it."

Page 3

FPL's Sufficiency Response 5FDEP-20 provided the requested information to FDEP, and that response was deemed by FDEP to be sufficient. In addition, FPL met with the US Fish and Wildlife Service and provided a complete copy of the Site Certification Application. All named agencies are involved in either the Site Certification Application and/or the Air Construction Permit Application review process and have not objected to the

5) "The boiler question was never coherently answered. Why is the newer version more polluting? Why no investment in cleaning up the pollutants before they are thrust into the air at enormous cfm? No cost analysis reflecting external cost of FPL Major Source Pollutants."

Page 3

The Air Construction Permit Application and Sufficiency Response 5FDEP-17 provided information on the auxiliary boilers. That response was deemed by FDEP to be sufficient. The auxiliary boilers proposed for the WCEC will be used only for the startup of the power plant after extended outages and will use only natural gas. These boilers will be equipped with pollution preventing combustion systems to limit emissions below regulatory requirements. These controls will limit emissions to levels determined by FDEP to be Best Available Control Technology (BACT) for these boilers. Cost was discussed in FPL's Air Construction Permit Application, and both the FPL and FDEP analysis of BACT includes consideration of costs. Add-on controls were determined not to be necessary or cost effective for these intermittent use boilers.

6) "The Air Modeling questions were never resolved, Unless you count FPL asking Us the public, and you, the regulator to be "Flexible". The statement by your investigators that the County of Palm Beach had serious concerns was never answered cognitively either."

Page 3

The Air Construction Permit Application and Sufficiency Response 5FDEP-8 provided detailed information on the air quality impact analyses. That response was deemed by FDEP to be sufficient. The air modeling analysis provided to FDEP demonstrated that air quality impacts resulting from the operation of WCEC would comply with Ambient Air Quality Standards (AAQS) and Prevention of Significant Deterioration (PSD) Increments. Additionally, the air quality impacts were less than 50 percent of the available PSD Increments as required by Palm Beach County.

60.42(c)

Part 3

7) "It was noted 'yes' had been checked, that the pollutants are synthetically limited. The pollutants subject to BACT are not synthetically limited. FPL was to correct and send correcting documentation, this wasn't done, in fact all boxes in resubmitted information are still checked 'Yes'."

The checking of the box "Yes" is correct. Sufficiency Response 5FDEP-10 provided the information related to the term "synthetically limited". In the FDEP application form this reflects whether emissions are limited by some operational constraint such as the hours per year or fuel use. The use of ultra-low sulfur light oil in the combustion turbines (CTs) was proposed to be limited to no more than 500 hours/year/CT and the amount of duct firing is limited by the total amount of natural gas to be used. Therefore, since there were proposed operational limits, the appropriate boxes in the application were checked. FPL's Sufficiency Response 5FDEP-10 was deemed by FDEP to be sufficient.

8) "No information regarding SSM was re-submitted that I could find."

FPL provided information to FDEP regarding startup, shutdown and malfunction (SSM) in Sufficiency Response 5FDEP-2, and that response was deemed by FDEP to be sufficient.

Part 2

9) "Major Hap source, FPL was asked to provide information on why they neglected to supply necessary documentation on this. They did not supply."

Detailed information on hazardous air pollutants (HAP) was provided to FDEP in the Air Construction Permit Application. Additional information was provided in FPL's Sufficiency Responses 5FDEP-14, 5FDEP-15, 5FDEP-16, 5FDEP-17, 5FDEP-18 and 5FDEP-19 on specific regulatory requirements and their potential applicability to the WCEC. Those responses were deemed by FDEP to be sufficient.

Part 1

10) "It will have 12 stacks 140' high and spew out 40 tons of sulfuric acid mist, etc."

The Palm Beach County-approved Development Order provides for 12 stacks. The current proposal is for the construction of 6 stacks with a maximum stack height of 150 feet. FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment.

11) Three huge towers that release pollutants into the air, including mercury, will most definitely affect not only the agricultural areas directly to the west of this proposed plant (poisoning our food, soil and water) but also the rural residential communities directly to the east of this proposed plant, i.e. Loxahatchee, Loxahatchee Groves and the Acreage. Contrary toward your reports, Wellington is not the closest community.

WCEC will utilize the cleanest of all fossil fuels, primarily natural gas and ultra-low sulfur light oil as a backup fuel supply. These fuels contain virtually no mercury. In addition, an extensive air quality analysis was conducted, which determined that the air emission impacts would be much less than the applicable air standards that protect human health, welfare and the environment including vegetation and wildlife.

For clarification, the FDEP requires that the applicant provide certain information in the Site Certification Application, including "nearest incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.

12) Mercury

a)"The emission of mercury from the planned towers. Mercury emissions are of grave concern to the health of our residents and more specifically to the well-water quality that we presently enjoy."

b) Mercury pollution will be worse in fish

WCEC will utilize the cleanest of all fossil fuels, primarily natural gas and ultra-low sulfur light oil used as backup. These fuels contain virtually no mercury, and therefore will have no adverse impact on the health of residents or well-water quality.

13) Emissions

a)This project is not quite as innocent as portrayed. 40 tons of sulfuric acid/yr, 220 tons of particulate matter/yr. This is not insignificant, this is dangerous. The sugar mills are temporary, this will be permanent.

c) Federal administration has relaxed air regulations. Will affect asthma and emphysema of herself and husband,can breathe now but not later

d) One single pollutant may not be the problem (air emissions may be OK), but the cumulative effects of the entire plant are problem

e) SO2 & NOx emission problems

The emissions from any power plant facility must be expressed in tons/year for comparison to regulatory thresholds. FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment.

14) When costs of gas goes up, diesel will be used instead of gas.

The PSD permit limits the use of ultra low sulfur distillate fuel to no more than 500 hours during any calendar year.

15) "The Mitsiubishi turbine was selected, unfortunately it had no record in this state, so it was explained, no data pertinent to real operating conditions. the State was to be "flexible" with one of the, if not the, largest power plant in our state. This is not the time to be 'flexible'."

While there are no Mitsubishi G combustion turbines currently operating in Florida, there are 18 units installed both in the US and abroad with more than 330,000 hours of operation. The projected emissions from the WCEC are not only based on real operating conditions and testing but are also backed by very stringent manufacturer's guarantees. The size of each unit proposed for the WCEC is similar to the size and technology being constructed at FPL's Turkey Point Plant located in Miami-Dade, and two operating units located at FPL's Martin Plant located in Martin County and FPL's Manatee Plant located in Manatee County.

16) In discussion stated 5 pollutants but only 3 monitors, what happened to the either 2 pollutants

17) In FDEP Web site states, during daytime and hot weather conditions, the atmosphere can disperse pollutants in a very short period.

18) Used old meteorological data 1948-1998 for air quality standards. Why not use more recent data.

19) SCR not state of the art

20) "The Bureau has ignored its own investigators, Mr. Palmer and Mr. Sheplak. Many of the questions they asked went completely unanswered, were later answered in the same fashion, or the instructions were ignored completely."

FDEP issued a series of questions ("sufficiency questions") to FPL in response to FPL's Site Certification Application (SCA). FPL provided timely and complete responses to all questions on August 11, 2005. FDEP reviewed FPL responses and on September 12, 2005 deemed the SCA to be "sufficient", meaning that the information provided was adequate for reviewers to analyze the impacts of the proposed project.

21) There were several comments concerning the availability of information and public participation in the process.

Beginning in 2005 and continuing in 2006, FPL conducted an extensive outreach program, including presentations about WCEC. FPL met with various community leaders, homeowners associations, and private citizens to provide information and get feedback about this Project. In addition there have been news releases, newspaper articles, public notices and TV coverage on the project. The public notices required for the PSD permit have been met.

22) Several comments pertaining to concerns about blasting, fuel oil spills, resulting growth in the area due to the power plant, zoning, water issues, and others were received.
These concerns can be regulatory addressed in the Site Certification Application process, and are not part of the of the PSD permit.

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

March 30, 2005

A.A. Linero, P.E.
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Mail Station #5505
Tallahassee, FL 32399-2400

Re: Florida Power & Light Company
West County Energy Center Project
DEP File No. 0990646-001-AC (PSD-FL-354)

Dear Mr. Linero:

Florida Power & Light Company (FPL) is in receipt of the Draft Prevention of Significant Deterioration (PSD) Permit and Technical Evaluation and Preliminary Determination (TEPD) for the West County Energy Center, issued by the Department on March 1, 2006. In accordance with the Department's Notice of Intent to Issue a PSD permit, this letter and attachments convey requested corrections and clarifications in the Draft PSD and the TEPD. Specifically, attached to this letter are two documents, Attachment 1 & 2, with proposed edits to the Draft PSD and TEPD that we would like you to consider.

Thank you for the time and care you have taken in your review of the West County Energy Center Project. Please call if you have any questions. You can reach me at (561) 691-7518.

Sincerely,

Barbara P. Linkiewicz
Environmental Licensing Manager

cc: Steven Palmer, DEP Siting Office
Ken Kosky, Golder Associates

bcc: Potsy Scoville, FPL (CPM/JB)
Collie Powell, FPL (CPM/JB)
John Gnecco, FPL (CPM/JB)
R Bryan Fennel, FPL (GPA/JB)
Peter Cunningham, Hopping Green & Sams

ATTACHMENT 1

West County Energy Center
PSD Draft Air Permit, issued March 1, 2006
Florida Power & Light Company – Comments

March 30, 2006

1. **Page 1, Expiration Date:** The Draft PSD permit has an expiration date of December 31, 2009 The commercial operation date of the West County Unit 2 is after the expiration date (June 2010). Consistent with historical DEP practice, and to allow for construction delays, the expiration date of the permit should be 18 months after commercial operation of the second unit, December 31, 2011.

2. **Page 2, Facility Description, second paragraph:** We request that the language be updated to reflect a 26-cell cooling tower as follows:

   "Each combined cycle unit will consist of: three nominal 250 megawatt Model 510G gas-turbine-electrical generator sets with evaporative inlet cooling systems; three supplementary-fired heat recovery steam generators (HRSG's) with SCR reactors; one nominal 428 mmBtu/hour (LHV) gas-fired duct burner located within each of the three HRSG's; three 149 feet-exhaust stacks; one ~~24~~ 26-cell mechanical draft cooling tower; and a common nominal 500 megawatt steam-electrical generator."

3. **Page 4, Relevant Documents:** We request that "Letter from FPL to DEP dated December 29, 2005" with details on Mitsubishi 501G technology, including update to nominal megawatts and size of oil tanks be added to the list of Relevant Documents.

4. **Page 7, Equipment and Control Technology, Gas Turbines:** We request the following clarification:

   "4. Gas Turbines. The permittee is authorized to install, tune, operate, and maintain six Model 501G gas turbine-electrical generator sets each with a nominal generating capacity of 250 MW..."

5. **Page 10, Emissions Standards, Footnote h:** To clarify that if a CO catalyst in installed, the rolling average will be calculated from the installation of the catalyst forward, we propose the following:

   "h. Rolling Average. Enforcement discretion may be exercised for up to 12 months with respect to the 6 ppmvd @ 15% O2 limit for any combustion turbine / supplementary-fired heat recovery steam generator upon notification by the permittee of intent to install oxidation catalyst. The permittee shall have 12 months to complete the oxidation catalyst installation. ~~From time of notification to~~ After completing the installation of the catalyst, all prior partial or complete calendar months shall be excluded from the 12 month rolling average."

not done

6. **Page 17, NSPS Applicability**. NSPS Kb is not applicable in its entirety because the fuel that is being used has a maximum true vapor pressure less than 3.5 kPa. FPL suggests that the reference to NSPS Kb be removed and the rest of the section be renumbered accordingly.

~~"NSPS APPLICABILITY~~

~~1. NSPS Subpart Kb Applicability: The distillate fuel oil tanks are subject to Subpart Kb, which applies to any storage tank with a capacity greater than or equal to 10,300 gallons (40 cubic meters) that is used to store volatile organic liquids for which construction, reconstruction, or modification is commenced after July 23, 1984. Tanks with a capacity greater than or equal to 40,000 gallons (151 cubic meters) storing a liquid with a maximum true vapor pressure less than 3.5 kPa are exempt from the General Provisions (40 CFR 60, Subpart A) and from the provisions of NSPS Subpart Kb, except for the record keeping requirements specified below. [40 CFR 60.110b(a) and (c); Rule 62-204.800(7)(b), F.A.C.]~~

EQUIPMENT SPECIFICATIONS

~~2.~~ 1. Equipment: The permittee is authorized…

EMISSIONS AND PERFORMANCE REQURIEMENTS

~~3.~~ 2. Hours of Operation…

NOTIFICATION, REPORTING AND RECORDS

~~4.~~ 3. Oil Tank Records: The permittee shall keep readily accessible records showing the dimension of each storage vessel and an analysis showing the capacity of each storage tank. Records shall be retained for the life of the facility. The permittee shall also keep records sufficient to determine the annual throughput of distillate fuel oil for each storage tank for use in the Annual Operating Report
~~[Rule 62-204.800(7)(b)16, F.A.C., 40 CFR 60.116b(a) and (b)]~~"

7. **Page 18, Equipment, Cooling Tower:** We request that the language be updated to reflect a 26-cell cooling tower as follows:

"1. Cooling Tower. The permittee is authorized to install two new ~~24~~ 26-cell mechanical draft cooling towers with the following nominal design characteristics:…

8. **Page 18, Emissions and Performance Requirements:** Correct typo:

"2. Drift Rate. Within 60 days of commencing operation, the permittee shall ~~submit~~ certify that the cooling tower was constructed to achieve the specified drift rate of no more than 0.0005 percent of the circulating water flow rate."

9. **Page 21, Emission Unit Description:** We request the following clarification:

"011. Four nominal 2,250 Kw Liquid Fueled Emergency Generators – Reciprocating Internal Combustion Engines"

10. **All pages, footer:** Correct typo:

"FP&L West County Energy Center"

ATTACHMENT 2

West County Energy Center
Technical Evaluation and Preliminary Determination, issued March 1, 2006
Florida Power & Light Company – Comments

March 30, 2006

1. **Page 2, Figure 1**: SW St. Lucie should be removed from this Figure, as it is no longer a proposed FPL project.

2. **Page 3, Project Description, first paragraph**: For accuracy and consistency with the Draft PSD permit, please make the corrections indicated below:

   "The applicant proposes to construct two "three-on-one" combined cycle units (Units 1 and 2). Each combined cycle unit will consist of: three nominal 250 megawatt (MW) "G" Class gas-turbine-electrical generator sets (~~probably~~ Mitsubishi Heavy Industries Model 501G) with evaporative inlet cooling systems; three supplementary-fired heat recovery steam generators (HRSG's) with SCR reactors and gas-fired duct burners (nominal 428 mmBtu/hour LHV); three 149 feet-exhaust stacks; one ~~22~~ 26-cell mechanical draft cooling tower; and a common nominal 500 MW steam-electrical generator."

3. **Page 4, Stack Parameters:** For accuracy and consistency with the Draft PSD permit, please make the correction indicated below:

   "Stack Parameters: Each heat recovery steam generator has a combined cycle stack (HRSG stack) that is at least 149 feet tall with a nominal diameter of ~~23~~ 22 feet.

4. **Page 5, Inlet Conditioning:** We request clarification of the description as follows:

   "Inlet Conditioning: Evaporative cooling is a system that allows for the injection of fine water droplets into the gas turbine compressor inlet air or inlet air is drawn through a wetted media, which reduces the gas temperature through evaporative cooling..."

5. **Page 6, Table 1, Applicant's Initial Estimated Annual Emissions for both Combined Cycle Units:** For accuracy and consistency with the PSD application and the published notice, please make the correction indicated below.

Pollutant	Project Emissions TPY	PSD Significant Emission Rate, TPY	PSD Review Required?
CO	968	100	Yes
Pb	0.050	0.6	No
NO_x	841	40	Yes
PM/PM_{10}	~~511/211~~ 611/420	25/15	Yes
SO_2	407	40	Yes
SAM	41	7	Yes
VOC	176	40	Yes

6. **Page 7, Title 40, Description:** Delete reference to Part 76, as it only applies to coal-fired units.

7. **Page 14, first paragraph:** Update 2,200 MW to 2,500 MW for consistency with permit and selected technology:

   "Estimates provided by FPL for the proposed ~~2,200~~ 2,500 MW project also indicate a large cost difference between the two technologies..."

8. **Page 14, Table 3:** There is a question mark after "DB" in the NOx Limit and Fuel column for the Wolf Hollow, TX project.

9. **Page 16, Table 6:** There is a question mark next to "NH_3" in the "PM-lb/mmBTU or lb/hr NH_3 – ppmvd @ 15% 0_2" column for the West County project.

10. **Page 18, Section 4.3 Sulfur Dioxide (SO_2) and Sulfuric Acid Mist (SAM) BACT Determination, paragraph 4:** For accuracy and consistency with the PSD application, please make the correction indicated below:

    "FPL estimated ~~206~~ 203.5 tons per year of SO_2 and 20 tons per year of sulfuric acid mist (SAM) per combined cycle unit. This equates to ~~412~~ 407 and 40 TPY for SO2 and SAM respectively from the two combined cycle units..."

11. **Page 19, Cooling Tower PM Emissions:** For accuracy and consistency with the PSD application and Draft PSD permit, please make the corrections indicated below:

    "The applicant's preliminary design includes a ~~22~~ 26 or 24-cell mechanical draft cooling tower for each combined cycle unit with the following specifications...

    "The Department determines the draft BACT to be a design drift rate of no more than 0 0005% of the circulating water flow rate At this level, maximum potential PM and PM_{10} emissions from the cooling tower are expected to be on the order of ~~134~~ 201.2 and 10 TPY respectively from the two cooling towers."

12. **Page 20, Table 7, Draft BACT Determination, Footnote h:** To clarify that if a CO catalyst is installed, the rolling average will be calculated from the installation of the catalyst forward, we propose the following:

    "h. Rolling Average. Enforcement discretion may be exercised for up to 12 months with respect to the 6 ppmvd @ 15% O2 limit for any combustion turbine / supplementary-fired heat recovery steam generator upon notification by the permittee of intent to install oxidation catalyst. The permittee shall have 12 months to complete the oxidation catalyst installation. ~~From time of notification to~~ After completing the installation of the catalyst, all prior partial or complete calendar months shall be excluded from the 12 month rolling average."

13. **Page 22, National Emission Standards for Hazardous Air Pollutants Applicable to Gas Turbines, third paragraph:** FPL will meet the limit as it applies when the rule is finalized. However, we provide the following clarification because FPL did not specifically propose to meet a particular standard in our application:

    "~~FPL proposes to meet the limit proposed in YYYY of 91 ppbvd.~~ The Department believes the formaldehyde emission limit will be met given the proposed BACT CO limits of 8.0 and 6 ppmvd @ 15% O_2 for daily and annual operation respectively..."

14. **Page 23, second paragraph:** We request the following clarifications:

"The ~~limits proposed~~ manufacturer's emissions data provided by FPL ~~for~~ in the West County Energy Center PSD Application are included for comparison. NSPS and NESHAP requirements that are possibly applicable to the auxiliary boilers are also included. Subpart Db requirements, which apply to boilers that are 100 MMBtu/hr or greater are included in the table below because the FPL project appears to specify a nominal 100 MMBtu/hr boiler. The 99.8 MMBtu/hr specification set by FPL must relate to a physical capacity rather than a permit condition."

15. **Page 26, 6th bullet:** We request the following clarification:

For shutdown, up to three hours in any 24-hour period of excess emissions are allowed.

16. **Page 27, first paragraph:** FPL does not intend to install a damper. For accuracy and consistency with the Draft PSD permit, please remove reference to a permit requirement for installation of a damper.

"While NOx emissions during warm and cold startups are greater than during full load stead-state operation, such startups are infrequent. Also it is noted that such startups would be preceded by shutdowns of at least 24 or 48 hours. Therefore, the startup emissions would not cause annual emissions greater than the potential emissions under continuous operation. ~~The draft permit will also require the installation of a damper to reduce heat loss during combined cycle shutdowns to minimize the number of combined cycle cold startups.~~"

17. **Page 27, second paragraph:** We request that language be clarified as proposed below to reflect that FPL will not install a separate dump condenser, but may operate in bypass mode and dump steam to the main condenser:

"Combined Cycle Operations ~~with Dump Condenser~~: If the steam-electrical turbine generator was off line for some reason, it is possible that the gas turbine / HRSG systems would operate without producing any steam generated power. Instead, steam would be delivered ~~to a dump~~ via a steam generator bypass to the condenser. ~~Operation with a dump condenser must still meet the standards established for combined cycle operation with ammonia injection.~~

18. **Page 27, Table 12, Major Sources of NO_x in Palm Palm Beach County (2004):** Update tons per year to be consistent with the PSD permit application.

Specifically, in the row for FPL's West County Energy Center, "856" should be "841".

19. **Page 28, Table 13, Largest Sources of SO_2 in Palm Palm Beach County (2004):** Update tons per year to be consistent with the PSD permit application.

Specifically, in the row for FPL's West County Energy Center, "411" should be "407".

20. **Page 28, Table 14, Largest Sources of PM in Palm Palm Beach County (2004):** Update tons per year to be consistent with the PSD permit application.

Specifically, in the row for FPL's West County Energy Center, "652" should be "611".

21. **Page 28, Table 15, Largest Sources of CO in Palm Palm Beach County (2004):** Update tons per year to be consistent with the PSD permit application.

    Specifically, in the row for FPL's West County Energy Center, "2020" should be "968".

    FPL also notes that the 2004 Annual Operating Report for the Riviera Power Plant was 431 tons of CO, which suggests that it should be included in Table 15.

22. **Page 35, Table 22, PSD Class I Increment Analysis – ENP**: Correct the Allowable Increment from 5 ug/m^3 to 8 ug/m^3.

23. **Page 35, Ozone, Second Paragraph:** Update tons per year to be consistent with the PSD permit application.

    "...The West County Energy Center will add ~~856~~ 841 TPY of NOx and 176 TPY of VOC..."

24. **Page 36, First Paragraph:** Update tons per year to be consistent with the PSD permit application.

    "To conclusively prove whether or not the ~~856~~ 841 TPY of NOx and 176 tons of VOC will not cause or contribute to a violation, a very sophisticated and expensive model would need to be run for the entire region "

rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida

Trina L. Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Intent to Issue Air Construction Permit (including the Public Notice, Technical Evaluation and Preliminary Determination, and the DRAFT permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 3/1/06 to the persons listed:

Randall R. La Bauve, FPL *
Chair, Palm Beach County BCC
Mayor, Village of Royal Palm Beach
Mayor, Village of Wellington
John Benjamin, Everglades National Park
Gregg Worley, U.S. EPA Region 4, Atlanta GA
John Bunyak, National Park Service, Denver CO

Hamilton Oven
~~Steven L. Palmer~~, DEP Siting Office
Darrel Graziani, DEP SED
Paul Darst, Department of Community Affairs
Jim Stormer, Palm Beach County Public Health Unit
Ken Kosky, P.E., Golder
Barbara Linkiewicz, FPL

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

(Clerk) 3/1/06 (Date)

Heron, Teresa

From: Linero, Alvaro
Sent: Monday, April 24, 2006 9:40 AM
To: Heron, Teresa
Subject: FW: DEP Meeting Stacked...

From: GremlinLtd@aol.com [mailto:GremlinLtd@aol.com]
Sent: Sunday, April 23, 2006 11:14 PM
To: Linero, Alvaro; DanielLarson@earthlink.net; atreyu@direcway.com
Subject: DEP Meeting Stacked...

From my quite "Republican" oriented local newspaper (I am an unabashed redneck liberal), this is what was featured...

Residents: Keep Power Plant Away From Us

Leonard Wechsler 21.APR.06

The Florida Department of Environmental Protection's meeting Wednesday with community residents to discuss concern over pollution from Florida Power & Light's proposed new power plant at 20-Mile Bend bogged down in controversy when a local resident who opposes the plant pointed out that a large group of men, all of whom spoke in support of building the project, had been bused to the meeting.

"Since all the remarks, both for and against the project, will be recorded and tabulated, Florida Power & Light could use the remarks of the outsiders to show support for the project," Fox Trail resident John Earley told the *Town-Crier*. "Just about everyone who lives out here is against the project. They're trying to stack the deck."

Many local residents became furious, charging that FPL is deliberately trying to prevent their community from presenting its view.

The meeting, held at the Royal Palm Beach Cultural Center, began with a presentation from Trina Vielhauer of the Florida Department of Environmental Protection and Debbie Nelson of the Palm Beach County Department of Environmental Resource Management describing the licensing process and the models used to demonstrate that the new plant, fired by natural gas, would not significantly damage the atmosphere. Both said they were certain the new plant would meet all pollution requirements. Vielhauer noted that Florida is one of only three states east of the Mississippi River in full compliance with Federal Air Standards and that the new plant would be the most efficient plant in the state.

Moderator Robert Minning called J.P. Sasser, the mayor of Pahokee, as the first speaker from the audience. Sasser said that since his community is surrounded by thousands of acres of cane fields that have sugar mills, he would not be bothered by the tiny bit of

pollution that came from the plant. "We are looking to make sure that some of our residents will be qualified for jobs there," he said.

However, he was followed by a series of local residents, all of whom expressed both concern and alarm at the plant. Acreage resident Sharon Waite charged the plant was not as innocent as the speakers had suggested, and that tons of sulfur dioxide would be released into the atmosphere.

Acreage activist Alex Larson pointed out that Loxahatchee Groves and The Acreage are not even listed on maps given out by FPL, giving the impression that no one lives closer to the proposed plant than people in Royal Palm Beach.

"The plant is very close to the Corbett Wildlife Center, pristine land," she said. "The plan by FPL says that mining and agriculture businesses are the main occupants of neighboring land. Well, we're not cattle."

Earley told the audience they could thank County Commissioner Tony Masilotti for "stabbing us in the back again." He charged that FPL is putting in tanks for 12.6 million gallons of diesel fuel so that it could use that fuel, a far dirtier source of energy, if the price of natural gas rises too high. He also questioned the effect of blasting activity taking place as part of Palm Beach Aggregates' mining operations nearby.

"Our houses shake now when there is blasting going on. How will huge natural gas lines coexist with explosions?" he asked. "Why not move the whole plant ten miles further west? If the people in the Glades are so happy with the plant, let them have it."

Acreage resident Patricia Curry noted that there was a lot of "class-one land out here that can easily be polluted. This is very close to the Everglades and a lot of natural refuges."

A Palm Beach county resident living further east, John Koch, said that while environmental officials were saying the new plant would be as clean if not cleaner than Riviera Beach's plant, they should ask people in that area what they think about their power plant.

Joan Shumate of Loxahatchee Groves said the plant is in the wrong place at the wrong time. She is concerned that she and her husband, both of whom have asthma, would find it difficult to breathe.

Environmental activist Rosa Durando said that the new plant would be one of the dirtiest places in the county and that it would ruin the Loxahatchee National Wildlife Refuge as well as pollute water in Palm Beach Aggregates' pits

"The plant you are building is not state-of-the-art," she charged. "You are getting it built because you have money to get lobbyists to back off."

Durando said that the power might not be needed because the whole environment in the western areas could not support the proposed increase in population. "There is not enough concurrency for Callery-Judge and other developments," she said. "It is not a lead-pipe cinch they will get these developments done."

Edward Smith, who did not identify his place of residence but said he was an electrician, said

he knew there is a tremendous demand for electricity and that the new plant would be very clean. "The modern scrubbers are very high standard," he said. "If you want to visit, they will allow. We built four powerhouses, and all of them are state-of-the-art."

A series of similar people, who did not identify their place of residence but claimed expertise with electricity, followed Smith. At that point, Earley and Waite told the Town-Crier that these men had been bused in.

A quick check of the parking lot turned up a large bus. The drivers said they did not know who had chartered it, but said they had driven the bus, filled with blue-collar workers, from downtown Miami.

Waite was furious. "They'll count each of these men who speak as being for the project," she told the *Town-Crier*, "and say there were more people here for the project than against it. There should be an investigation!"

http://thecrier.com/default.asp?sourceid=&smenu=1&twindow=&mad=&sdetail=5639&wpage=1&skeyword=&sidate=&ccat=&

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

April 21, 2006

Ms. Trina Vielhauer
Florida Department of Environmental Protection
Division of Air Resource Management
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Florida Power & Light Company
West County Energy Center
DEP File No. 0990646-001-AC (PSD-FL-354)
Response to Public Comments Provided to FDEP

Dear Ms. Vielhauer,

Thank you for your efforts to organize and host the public meeting on Wednesday, April 19, 2006. We appreciated the opportunity to hold an informational session prior to the public meeting to answer questions from the public.

Florida Power & Light Company (FPL) prepared the attached response to written comments provided to FDEP regarding your Notice of Intent to Issue a PSD permit for FPL's West County Energy Center project. We did not send the attached responses to you prior to the public meeting so that we could incorporate any additional concerns that might be raised at the public meeting. However, the points made at the public meeting were essentially the same as those raised in the letters submitted prior to the meeting.

We have offered our responses to each point raised in each letter. However, we do not plan to forward these responses directly to the individuals since their letters were not addressed to FPL.

Please let me know if you have any questions. You can reach me at (561) 691-7518.

Sincerely,

Barbara P. Linkiewicz
Environmental Licensing Manager

cc: Al Linero, FDEP Air
Teresa Heron, FDEP Air
Debbie Nelson, FDEP Air
Steve Palmer, FDEP Siting Office
Scott Burns, SFWMD
James Golden, SFWMD
Tim Gray, DEP SED
Robert Weisman, Palm Beach County
Carrie Rechenmacher, Palm Beach County
Courtney Shippey, Palm Beach County

April 21, 2006

Letter from Michael K Christensen, 13759 159th Street N, Jupiter, FL 33478, 561-254-9690

Below are comments from Michael Christensen to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

MC-1 Comment.

"The Bureau has ignored its own investigators, Mr. Palmer and Mr. Sheplak. Many of the questions they asked went completely unanswered, were later answered in the same fashion, or the instructions were ignored completely."

MC-1 Response:

FDEP issued a series of questions ("sufficiency questions") to FPL in response to FPL's Site Certification Application (SCA). FPL provided timely and complete responses to all questions on August 11, 2005. FDEP reviewed FPL responses and on September 12, 2005 deemed the SCA to be "sufficient", meaning that the information provided was adequate for reviewers to analyze the impacts of the proposed project.

MC-2 Comment.

"The Mitsiubishi turbine was selected, unfortunately it had no record in this state, so it was explained, no data pertinent to real operating conditions the State was to be "flexible" with one of the, if not the, largest power plant in our state. This is not the time to be 'flexible'."

MC-2 Response:

While there are no Mitsubishi G combustion turbines currently operating in Florida, there are 18 units installed both in the US and abroad with more than 330,000 hours of operation. The projected emissions from the WCEC are not only based on real operating conditions and testing but are also backed by very stringent manufacturer's guarantees. The size of each unit proposed for the WCEC is similar to the size and technology being constructed at FPL's Turkey Point Plant located in Miami-Dade, and two operating units located at FPL's Martin Plant located in Martin County and FPL's Manatee Plant located in Manatee County.

MC-3 Comment:

"No information on lbs/ppm was provided by manufacturer reflecting real world environment."

MC-3 Response:

On December 29, 2005, FPL provided FDEP with emissions information from the specific manufacturer of the combustion turbine selected for WCEC. This information was based on manufacturer data that included "real world" testing from the type of combustion turbines proposed for WCEC. Data were provided for both concentration (i.e., ppm) and mass emissions (lb/hr).

MC-4 Comment:

"The more stringent air quality on this 'New' Major Source Polluter must be maintained, we cannot, must not go backward. This Major New Pollution Source will be located within 1/4 mile of Arthur Marshall National Wildlife Refuge. The damage/ disaster potential is great yet no external cost analysis was done."

MC-4 Response:

The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) Increments that protect air quality from degradation.

MC-5 Comment:

"The boiler question was never coherently answered. Why is the newer version more polluting? Why no investment in cleaning up the pollutants before they are thrust into the air at enormous cfm? No cost analysis reflecting external cost of FPL Major Source Pollutants "

MC-5 Response:

The Air Construction Permit Application and Sufficiency Response 5FDEP-17 provided information on the auxiliary boilers. That response was deemed by FDEP to be sufficient.

The auxiliary boilers proposed for the WCEC will be used only for the startup of the power plant after extended outages and will use only natural gas. These boilers will be equipped with pollution preventing combustion systems to limit emissions below regulatory requirements. These controls will limit emissions to levels determined by FDEP to be Best Available Control Technology (BACT) for these boilers. Cost was discussed in FPL's Air Construction Permit Application, and both the FPL and FDEP analysis of BACT includes consideration of costs. Add-on controls were determined not to be necessary or cost effective for these intermittent use boilers.

MC-6 Comment:

"The Air Modeling questions were never resolved, Unless you count FPL asking Us the public, and you, the regulator to be "Flexible". The statement by your investigators that the County of Palm Beach had serious concerns was never answered cognitively either."

MC-6 Response:

The Air Construction Permit Application and Sufficiency Response 5FDEP-8 provided detailed information on the air quality impact analyses. That response was deemed by FDEP to be sufficient. The air modeling analysis provided to FDEP demonstrated that air quality impacts resulting from the operation of WCEC would comply with Ambient Air Quality Standards (AAQS) and Prevention of Significant Deterioration (PSD) Increments. Additionally, the air quality impacts were less than 50 percent of the available PSD Increments as required by Palm Beach County.

MC-7 Comment:

"It was noted 'yes' had been checked, that the pollutants are synthetically limited. The pollutants subect to BACI are not synthetically limited. FPL was to correct and send correcting documentation, this wasn't done, in fact all boxes in resubmitted information are still checked 'Yes'."

MC-7 Response:

The checking of the box "Yes" is correct. Sufficiency Response 5FDEP-10 provided the information related to the term "synthetically limited". In the FDEP application form this reflects whether emissions are limited by some operational constraint such as the hours per year or fuel use. The use of ultra-low sulfur light oil in the combustion turbines (CTs) was proposed to be limited to no more than 500 hours/year/CT and the amount of duct firing is limited by the total amount of natural gas to be used. Therefore, since there were proposed operational limits, the appropriate boxes in the application were checked. FPL's Sufficiency Response 5FDEP-10 was deemed by FDEP to be sufficient.

MC-8 Comment:

"No information regarding SSM was re-submitted that I could find."

MC-8 Response:

FPL provided information to FDEP regarding startup, shutdown and malfunction (SSM) in Sufficiency Response 5FDEP-2, and that response was deemed by FDEP to be sufficient.

MC-9 Comment:

"Your investigators write about emission units not mentioned in the application, and references a 4.2 gallon diesel storage facility. In FPL response the 4.2 is now 12.6 million gallons, 3 times the application size, with no supporting documentation on these facilities, 2-6.3 million gallon tanks! This alone should be grounds to stop this. There exists no Expedited permitting for New Major Source Polluters."

MC-9 Response:

FPL designs and constructs natural gas-fired power plants with a back-up fuel supply so that electric generation is not interrupted in the event of the loss of its primary fuel supply to the Site.

The Palm Beach County-approved Development Order and the included Site Plan identifies up to 12.6 million gallons of oil storage for the Site.

In the WCEC Air Construction Permit Application, FPL proposed the installation of 8.4 million gallons (two 4.2 million gallon above ground ultra-low sulfur light oil storage tanks) out of the total 12.6 million gallons in the Palm Beach County-approved Development Order. However, following the 2005 hurricane season and the resulting limited supply of natural gas to Florida, FPL determined that it would be prudent to install the entire 12.6 million gallons of ultra-low sulfur light oil storage. Accordingly, FPL updated our proposal to reflect installation of two 6.3 million gallon above ground oil storage tanks (12.6 gallons total).

The above ground storage tanks will be constructed with secondary containment and will comply with all applicable local, state and federal standards which are designed to prevent spills or leaks from being released to the environment.

MC-10 Comment:

"Major Hap source, FPL was asked to provide information on why they neglected to supply necessary documentation on this. They did not supply."

MC-10 Response:

Detailed information on hazardous air pollutants (HAP) was provided to FDEP in the Air Construction Permit Application. Additional information was provided in FPL's Sufficiency Responses 5FDEP-14, 5FDEP-15, 5FDEP-16, 5FDEP-17, 5FDEP-18 and 5FDEP-19 on specific regulatory requirements and their potential applicability to the WCEC. Those responses were deemed by FDEP to be sufficient.

MC-11 Comment:

"Your investigators requested all documentation, communication with EPA, Federal Land manager, FWC, local governments, National Parks Service, EPA Region 4, they referenced the Endangered Species act. I saw none in FPL response. In fact they stated the site has no wildlife to be impacted This site is practically adjacent to the Arthur Marshall National Wildlife Refuge National. We have a duty to the Nation, and I say to the World to 'Protect' it "

MC-11 Response:

FPL's Sufficiency Response 5FDEP-20 provided the requested information to FDEP, and that response was deemed by FDEP to be sufficient. In addition, FPL met with the US Fish and Wildlife Service and provided a complete copy of the Site Certification Application.

All named agencies are involved in either the Site Certification Application and/or the Air Construction Permit Application review process and have not objected to the Project.

MC-12 Comment:

The site will be adjacent to SFWMD 'Pits' that SFWMD (taxpayers) purchased for 223 million dollars to store 48,000 acre feet of drinking water. This is an insult. Stop! Halt! Someone call a cop, there is a crime being committed here! Can anybody help?!

MC-12 Response:
This Project is designed to be in compliance with all applicable local, state and federal laws, rules and regulations as proposed.

The Site is adjacent to the SFWMD water storage pits which are part of the Development Order approved by Palm Beach County. The development of the power plant and the storage pits were planned concurrently by the previous landowner prior to the sale of the land to both FPL and the SFWMD. All parties have worked together to allow the development of each of the projects with no adverse effects to either.

Letter from Alexandria Larson, 16933 W Harlena Drive, Loxahatchee, FL 33470 561-791-0875

Below are comments from Alexandria Larson to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

AL-1 Comment:

"Why were the people of Loxahatchee not informed on this matter? In your permit application it lists Wellington as the closest area this is incorrect I personally live within a mile of this proposed plant you also have the residents of Foxtrail, Deer Run, White Fences and Indian Trail Improvement District we are 40,000 residents that have been totally ignored."

AL-1 Response:

Over the last year, FPL has conducted an extensive outreach program. Attachment 1 provides a summary of FPL's outreach efforts, including meetings/presentations with Deer Run, White Fences, Indian Trail Improvement District, and Loxahatchee Groves Landowners Association, and a planned meeting with Fox Trail (postponed from Fall 2005). Also included is a list of media coverage and public notices issued on this Project.

The Site is located in unincorporated Palm Beach County. The FDEP requires that the applicant provide certain information in the Site Certification Application, including "Nearest Incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.

AL-2 Comment:

"When a meeting was held it was in Wellington and posted in the sports section of the Palm Beach Post "

AL-2 Response:

The land use hearing for the WCEC Project was held in Wellington in accordance with the requirements of Section 403.508(1), Florida Statutes, which provides that the hearing shall be held "in the County of the proposed Site" and "as close as possible to the proposed Site."

FPL canvassed the area, including the Royal Palm Beach Cultural Center and various school auditoriums for meeting rooms. The Royal Palm Beach Cultural Center was under repair at the time of the hearing. Other than the selected Wellington Community Center, there was no available public facility that met the logistical requirements of the administrative hearing. The location was deemed to be within an acceptable distance from the Project Site.

The notice of the land use hearing for the Project was published in accordance with the requirements of Section 403.5115, Florida Statutes. Subsection (2) of that statute specifically provides that such notices shall be "published in a section of the newspaper other than the legal notices section." The Palm Beach Post made the decision about which section of the newspaper could fit the half page ad on the publication day.

AL-3 Comment:

"When this was brought to my attention image my surprise when I read that you want to let FPL put 12.6 million gallons of diesel fuel on a sight where mining operations have a permit for blasting until 2032. We definitely have a problem here."

AL-3 Response:

Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant, including the oil storage tanks, will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.

AL-4 Comment:

"Also the emissions alone are frightning 40 tons of SAM and the list of emissions is quite extensive I frankly don't care what the guidelines are this is a lot of pollution in an area that these pollutants do not exist today."

AL-4 Response:

The emissions from any power plant facility must be expressed in tons/year for comparison to regulatory thresholds. FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment.

AL-5 Comment:

"I am amazed that you are even considering this plant when you haven't even addressed the plant FPL has in N Palm Beach it is known to be the most polluted in the state. And please don't tell me the proposed plant in Loxahatchee will relieve this problem because I know this is to facilitate 660,000 new residents not take care of the existing ones."

AL-5 Response:

FPL has a legal obligation to meet the electric generation needs of customers in our service territory. This requires planning for the projected customer growth and increased usage of electricity by existing customers. In order to ensure there is an adequate supply of electricity, new generating plants must be built in time to meet the projected growth.

The WCEC is being proposed to meet our legal obligation based on the projected electricity needs of FPL's customers throughout the FPL service territory including Palm Beach County As

described in the Site Certification Application, FPL uses an Integrated Resource and Planning (IRP) process to determine when new resources are needed, the magnitude of the resources needed, and the type of resources that should be added. The magnitude and timing of FPL's resource needs are established through a "reliability assessment". This assessment evaluates many factors including: demographic information such as population trends by county and housing characteristics, weather assessments from NOAA, economic conditions, the price of electricity, input from local economic development boards, and more. It is important to note that this evaluation is done for the entire FPL service territory, not for any one particular area. FPL's IRP process in 2004, 2005 and 2006 confirmed the need for additional power generation in 2009 and 2010 (the proposed operation dates for WCEC Units 1 and 2 respectively).

WCEC will be one of the most efficient and have one of the lowest emission rates of any fossil fuel fired power plant in Florida.

The Riviera Plant is an existing electric generating facility which is currently serving the electricity demands of FPL's customers. The Riviera Plant consists of steam electric generators which currently operate in accordance with applicable local, state and federal regulations. The air quality in the vicinity of the Riviera Plant and throughout Palm Beach County has been determined to be in full compliance with the Ambient Air Quality Standards (AAQS) established by EPA and FDEP to protect human health, welfare and environment. In addition, FPL voluntarily adopts operating practices that further reduce environmental impacts. For example,

- FPL has significantly reduced particulate matter, opacity, carbon monoxide, and carbon dioxide emissions from the Riviera plant through the multi-million dollar installation of low nitrogen oxide (NOx) burners.
- FPL has a self-imposed opacity standard for visible emissions that is 50 percent lower than the permitted federal limit and is equivalent to what a brand new power plant would be required to meet.
- FPL has installed Continuous Emission Monitoring Systems (CEMS) that instantaneously monitor flue gas emissions and Continuous Opacity Monitoring Systems (COMS) that check visible emission standards to help ensure emissions compliance.

The result of these efforts has been impressive: since 1990, NOx emissions from the Riviera plant have decreased by more than 40 percent and represent only 7 percent of all NOx emissions in Palm Beach County (mobile sources, including automobiles, account for more than 90 percent).

AL-6 Comment:

"Also this FPL plant will be utilzing the Palm Beach Aggregates pits 1272 acres of water for cooling its turbines. This exact area was bought by South Florida Water Management District on Dec 8, 2004 at a cost to taxpayers of 212 million dollars the premise was that this was for the CERP project you know the Comprehensive Everglades Restoration Project."

AL-6 Response:

The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.

AL-7 Comment:

"I'm not an engineer but astronomical emissions,12.6 million gallons of diesel and blasting near a natural gas pipeline facility make a mix for disaster and this is one in the making its not a matter of if but when? The Valdez only had 11 million gallons and they are still cleaning up that mess. I am appalled that you are even considering this permit"

AL-7 Response:

Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant, including the oil storage tanks and the natural gas pipeline, will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.

The above ground storage tanks will be constructed with secondary containment and will comply with all applicable local, state and federal standards which are designed to prevent spills or leaks from being released to the environment.

AL-8 Comment:

"I want DEP to guarantee in writing that my fears and predictions are unwarranted because I can guarantee that if there are not several dozen informed and very clear MEETINGS PRIOR TO APRIL 9th(since 30 days was your deadline) INFORMING THE PEOPLE OF LOXAHATCHEE AND THE ACREAGE OF ALL RISKS THAT YOUR PERMIT ARE EXPOSING US TO I WILL TAKE OUT FULL PAGE ADS AND FLY BANNERS THAT WILL INFORM THE PUBLIC and I doubt I'll be very delicate in this matter."

AL-8 Response:

As discussed in FPL response to AL-1 Comment, FPL conducts extensive public outreach programs for all FPL projects. Numerous presentations have been made in order to educate interested parties and to provide factual information on the Project.

AL-9 Comment:

"Over the last several years DEP has lowered the bar in the state of Florida in the guise of streamlining permits This is unacceptible and can no longer happen somewhere you have to draw the line and start looking in the mirror knowing that big business doesn't care so you are the only line of defense for a public that is uninformed, and gullible until a disaster happens."

AL-9 Response:

FPL disagrees with this assertion. Our experience is the FDEP strongly enforces all rules and regulations governing the construction and operation of electric generating facilities regardless of any permit streamlining. In fact, the emission limits established for WCEC are among the most stringent required anywhere in Florida.

Letter from Sharon Waite, 15058 75th Lane, North, Loxahatchee, FL 33470

Below are comments from Sharon Waite to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

SW-1 Comment:

"It will have 12 stacks 140' high and spew out 40 tons of sulfuric acid mist, etc."

SW-1 Response:

The Palm Beach County-approved Development Order provides for 12 stacks. The current proposal is for the construction of 6 stacks with a maximum stack height of 150 feet.

FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment.

WCEC will be one of the most efficient and have one of the lowest emission rates of any fossil fuel fired power plant in Florida.

SW-2 Comment:

"What makes you think a 12.6 million gallon diesel stockpile in the ground will fly?"

SW-2 Response:

FPL is proposing to construct two 6.3 million gallon **above ground** storage tanks (not "in the ground") for ultra-low sulfur light oil, which will be used on a limited basis as a backup fuel source. The above ground storage tanks will be constructed with secondary containment and will comply with all federal, state and local standards which are designed to prevent spills or leaks from being released to the environment.

SW-3 Comment:

"The Palm Beach Aggregates will be blasting until 2032 (permitted already)."

SW-3 Response:

The power plant will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.

SW-4 Comment:

"This is adjacent to the pits my tax money paid $212 M for (ASR wells). FPL is not going to be allowed to utilize them to cool turbines."

SW-4 Response:

The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.

SW-5 Comment.

"Why did Wellington and Royal Palm Beach receive letters about this and not the acreage residents?"

SW-5 Response:

Over the last year, FPL has conducted an extensive outreach program, including presentations about WCEC to the Acreage Landowners Association on October 18, 2005 and to the Acreage Rotary Club on April 4, 2006.

FDEP must provide a copy of their Notice of Intent to Issue PSD Permit to the "Chief Executives of City or County Governments". Accordingly, FDEP copied the Chair of the Palm Beach County Commission, the Mayor of the Village of Wellington and the Mayor of the Village of Royal Palm Beach on their letter Notice of Intent to Issue PSD Permit for the WCEC Project. The Acreage is not a City or County and is located in unincorporated Palm Beach County.

SW-6 Comment:

"I'd say let's clean up Riviera Beach plant first. It's the dirtiest in the state."

SW-6 Response:

The Riviera Plant is an existing electric generating facility which is currently serving the electricity demands of FPL's customers and operating in accordance with all applicable local, state and federal regulations. The air quality in the vicinity of the Riviera Plant and throughout Palm Beach County has been determined to be in full compliance with the Ambient Air Quality Standards (AAQS) established by EPA and FDEP to protect human health, welfare and environment. In addition, FPL voluntarily adopts operating practices that further reduce environmental impacts. For example,

- FPL has significantly reduced particulate matter, opacity, carbon monoxide, and carbon dioxide emissions from the Riviera plant through the multi-million dollar installation of low nitrogen oxide (NOx) burners.

- FPL has a self-imposed opacity standard for visible emissions that is 50 percent lower than the permitted federal limit and is equivalent to what a brand new power plant would be required to meet.
- FPL has installed Continuous Emission Monitoring Systems (CEMS) that instantaneously monitor flue gas emissions and Continuous Opacity Monitoring Systems (COMS) that check visible emission standards to help ensure emissions compliance.

The result of these efforts has been impressive: since 1990, NOx emissions from the Riviera plant have decreased by more than 40 percent and represent only 7 percent of all NOx emissions in Palm Beach County (mobile sources, including automobiles, account for more than 90 percent).

SW-7 Comment:

"As a sidebar, FPL will be tolerated to use the ASR wells as a place to inject their waste."

SW-7 Response:

The Project will utilize FDEP permitted underground injection control (UIC) wells for wastewater management, not Aquifer Storage and Recovery (ASR) wells.

UIC wells are commonly used throughout the region and involve injection of wastewater into a confined boulder zone.

Aquifer Storage and Recovery wells serve a very different purpose and are typically constructed to inject water into a different hydrogeological zone for later recovery and reuse.

SW-8 Comment:

"I never want to see this project come to fruition for another 660,000 units."

SW-8 Response:

FPL has a legal obligation to meet the electric generation needs of customers in our service territory. This requires planning for the projected customer growth and increased usage of electricity by existing customers. In order to ensure there is an adequate supply of electricity, new generating plants must be built in time to meet the projected growth.

The WCEC is being proposed to meet our legal obligation based on the projected electricity needs of FPL's customers throughout the FPL service territory including Palm Beach County. As described in the Site Certification Application, FPL uses an Integrated Resource and Planning (IRP) process to determine when new resources are needed, the magnitude of the resources needed, and the type of resources that should be added. The magnitude and timing of FPL's resource needs are established through a "reliability assessment". This assessment evaluates many factors including: demographic information such as population trends by county and housing characteristics, weather assessments from NOAA, economic conditions, the price of electricity, input from local economic development boards, and more. It is important to note that this evaluation is done for the entire FPL service territory, not for any one particular area. FPL's IRP

process in 2004, 2005 and 2006 confirmed the need for additional power generation in 2009 and 2010 (the proposed operation dates for WCEC Units 1 and 2 respectively).

Letter from Patricia D. Curry, 12390 59 Street North, The Acreage, FL 33411, GremlinLtd@aol.com

Below are comments from Patricia Curry to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

PC-1 Comment:

The area in question borders what is currently agricultural, primarily sugar farms. This area in particular is extremely important as it relates toward the Comprehensive Everglades Restoration Act

It is no secret that the large growers in the area are desirous of retiring their farming land, seeking development rights in the stead of farming. Development on this land should never occur, and the land should be restored in the absence of farming to its natural and original state, as wetlands; this to aid the Everglades, as well as to ensure the natural filtration of water into the aquifer.

PC-1 Response:

On August 3, 2005, a public hearing was conducted regarding the WCEC's consistency and compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site. The notice of the land use hearing for the Project was published in accordance with the requirements of Section 403.5115, Florida Statutes.

On November 15, 2005, the Governor and Cabinet sitting as the Siting Board, issued a final order that the WCEC Project is consistent and in compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site.

PC-2 Comment:

Building a power plant that will service an additional 650,000 residences/businesses, in such a vital area, makes absolutely no sense at all, unless one is pursuing development of such an additional 650,000 new homes/business within the area. Currently, there is sufficient power supply for all who reside and/or work within the vicinity. In other words, building this new plant simply facilitates more growth, in an area where growth is currently prohibited, and should perpetually be prohibited.

With a County Commission that is so pro-growth, and anti-environment, as we have sitting now, who have approved land uses changes that are threatening rural areas and agricultural areas alike, this proposed power plant spells nothing but danger

PC-2 Response:

FPL has a legal obligation to meet the electric generation needs of customers in our service territory. This requires planning for the projected customer growth and increased usage of electricity by existing customers. In order to ensure there is an adequate supply of electricity, new generating plants must be built in time to meet the projected growth.

The WCEC is being proposed to meet our legal obligation based on the projected electricity needs of FPL's customers throughout the FPL service territory including Palm Beach County. As described in the Site Certification Application, FPL uses an Integrated Resource and Planning (IRP) process to determine when new resources are needed, the magnitude of the resources needed, and the type of resources that should be added. The magnitude and timing of FPL's resource needs are established through a "reliability assessment". This assessment evaluates many factors including: demographic information such as population trends by county and housing characteristics, weather assessments from NOAA, economic conditions, the price of electricity, input from local economic development boards, and more. It is important to note that this evaluation is done for the entire FPL service territory, not for any one particular area. FPL's IRP process in 2004, 2005 and 2006 confirmed the need for additional power generation in 2009 and 2010 (the proposed operation dates for WCEC Units 1 and 2 respectively).

PC-3 Comment.

The South Florida Water Management District recently acquired, at a price to taxpayers of several hundred million dollars, the rock pits created by mining operations at the Palm Beach Aggregates The supposed purpose in purchasing these rock pits was to serve as additional water storage from excess water in Lake Okeechobee, and further to facilitate a new canal system that would feed into a "flow way" at the Mecca site, and then drop cleaner water into the C51 Canal feeding the Loxahatchee River.

The new proposed FPL power plant, finds that FPL will be utilizing the same rock pits???

PC-3 Response:

The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.

PC-4 Comment:

The mining operations continue at Palm Beach Aggregates, which includes blasting that shakes the earth sufficient that it can be felt miles away How would this affect a "natural gas" power plant in direct proximity to the plant?

PC-4 Response:

Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.

PC-5 Comment:

Three huge towers that release pollutants into the air, including mercury, will most definitely affect not only the agricultural areas directly to the west of this proposed plant (poisoning our food, soil and water) but also the rural residential communities directly to the east of this proposed plant, i.e Loxahatchee, Loxahatchee Groves and the Acreage. Contrary toward your reports, Wellington is not the closest community

PC-5 Response:

WCEC will utilize the cleanest of all fossil fuels, primarily natural gas and ultra-low sulfur light oil as a backup fuel supply. These fuels contain virtually no mercury. In addition, an extensive air quality analysis was conducted, which determined that the air emission impacts would be much less than the applicable air standards that protect human health, welfare and the environment including vegetation and wildlife.

For clarification, the FDEP requires that the applicant provide certain information in the Site Certification Application, including "nearest incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.

April 21, 2006

Nancy J. Gribble, 1525 Gallop Drive, Loxahatchee, Florida 33470, (561) 596-4573, NanJ58@aol.com

Below are comments from Nancy Gribble to FDEP Bureau of Air Regulation regarding the Florida Power & Light Company's (FPL's) proposed West County Energy Center (WCEC). FPL has provided responses to those comments. While these comments were provided to FDEP in response to FDEP's Notice of Intent to Issue PSD permit, many of them are not related to that permit.

NG-1 Comment:

I am a resident of Fox Trail, a rural-tier community of unincorporated Palm Beach County that consists of 212 5-acre homesites, many of which are occupied by horses and agricultural uses. Fox Trail is located approximately 1.5 miles east of the proposed FPL West County Power Plant. There has been absolutley no presentation to our community regarding the proposed west county power plant, nor have our residents been solicitated for comment regarding such. As a matter of fact, the record incorrectly states that the Village of Wellington is the closest affected community of residents.

NG-1 Response:

Over the last year, FPL has met with various community leaders, homeowners associations, and private citizens to provide information and get feedback about this Project.

FPL has been in contact with Fox Trail Homeowner's Association (HOA) since the summer of 2005. FPL scheduled presentations to the Fox Trail Homeowners Association about WCEC for November 9, 2005 and January 11, 2006, but both were postponed at the request of the HOA. In March 2006, FPL rescheduled the presentation for the May 10, 2006 Fox Trail HOA meeting, and provided an insert for the Fox Trail newsletter.

In addition, on July 15, 2005, FPL contacted Ms. Gribble directly by voicemail as part of the outreach interview process, at the suggestion of the Fox Trail HOA. The interview was never arranged.

For clarification, the FDEP requires that the applicant provide certain information in the Site Certification Application, including "nearest incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.

NG-2 Comment:

Not withstanding the snub of our community, I attended the Administrative Hearing for the proposed west county power plant, which was also held in the Village of Wellington. At this hearing, misinformation abounded. Of particular concern, was the public statement that "no residential" community was in the near proximity of the proposed west county power plant. Having been involved in numerous zoning and land use issues affecting our community of Fox Trail over the past several years, I knew that statement was not only incorrect as it related to the community of Fox Trail, but that in fact, the Palm Beach County Board of County Commissioners had rezoned a 1200-acre portion of the Palm Beach Aggregates property late last year (2005), to allow the construction of 2000 homes. This PUD, which is now officially known as Highland Dunes by Lennar Corp. will be approximately one-quarter mile east of the proposed west county power plant site.

NG-2 Response:

Below is an excerpt from the Land Use Administrative hearing transcript on August 3, 2005. The information provided by expert witness Mr. Richard Zwolak, is both factual and accurate.

> "Q Mr. Zwolak, what's the distance to the nearest existing residential area?
>
> A There is a multiple acre per lot subdivision known as Deer Run that is located to the northeast of the project site It is located east of canal L8 and to the north of additional mining activity shown on the aerial photograph on the very right side. The distance from the portion of the site where the infrastructure is planned, the northernmost infrastructure that Mr. Gnecco identified and the very southwest corner of this subdivision of Deer Run is approximately 0.7 miles.
>
> Q What is the distance to the nearest occupied residence?
>
> A The nearest occupied residence is located in the southwest corner of that subdivision. The distance from the site infrastructure to that residence is .75 miles, three-quarter mile."

Following the Land Use hearing, the Administrative Law Judge that presided over the hearing issued a Recommended Order. Governor Bush and the Cabinet approved that order on November 15, 2005 and issued a signed Final Order on November 17, 2005.

Since the time of the Land Use hearing, Palm Beach County granted final approval for development of a parcel of land which is located approximately one half mile (0.5) east of the proposed power plant Site, which is now known as Highland Dunes.

NG-3 Comment:

"You may wish to contact Kieran J. Kilday, Vice-President, Kilday & Assoicates at (tollfree) 800-755-4532 to verify Lennar's understanding and knowledge of the proposed west county power plant and the DEP permit. Mr. Kilday is the agent representing Lennar Corp. for the Highland Dunes project. Lennar must be held accountable to the future residents of Highland Dunes regarding the environmental impacts of the proposed west county power plant."

NG-3 Response:

FPL has conducted two meetings with representatives from Lennar Homes, Inc. and Kilday & Associates. Specifically, FPL met with Lennar's Vice President of Planning, Lennar's Land Development Manager, Lennar's Project Manager for the Highland Dunes project, and representatives from Kilday & Associates.

During these meetings, FPL provided a copy of the Site Certification Application and other documents associated with the Project, and reviewed the details of the Project to ensure that the WCEC could be considered in the design and planning for the Highland Dunes development.

In addition, Palm Beach County has imposed a requirement that Lennar Homes, Inc. provide written disclosure to any potential home buyer of the proposed WCEC.

NG-4 Comment:

"As a resident of Fox Trail, I have serious concerns with the following environmental issues The site of the proposed west county power plant is surrounded by agricultural land that is used for farming and is a key land mass to EAA, a farming buffer to the Everglades."

NG-4 Response:

On August 3, 2005, a public hearing was conducted regarding the WCEC's consistency and compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site. The notice of the land use hearing for the Project was published in accordance with the requirements of Section 403.5115, Florida Statutes.

On November 15, 2005, the Governor and Cabinet sitting as the Siting Board, issued a final order that the WCEC Project is consistent and in compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site.

NG-5 Comment:

"Directly to the south of the proposed west county power plant is the STA-1 East, which is also a key component to the Comprehensive Everglades Restoration Plan (CERP). Phosphorus and other pollutant run-off are filtered here before being sent to the C-51 canal, a major water channel for Palm Beach County."

NG-5 Response:

There will be no offsite runoff of stormwater from the WCEC Site. All stormwater will be retained onsite. Therefore, the WCEC will have no adverse impact on the STA-1 East or CERP.

NG-6 Comment:

"The SFWMD (South Florida Water Management District) recently purchased rock pits on the Palm Beach Aggregates site for water storage (price tag $212M) to facilitate the storage and filitering of "clean" water for the Loxahatchee River. It is my understanding that these water pits will be utilized by FPL for the west county plant in the operation of their trubine engines. Why are taxpayer funded pits ($212M) being used by a for profit entitiy (FPL)? What pollunts will be rechannelled from FPL back into the water supply?"

NG-6 Response:

The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.

There will be no offsite runoff of stormwater from the WCEC Site. All stormwater will be retained onsite and will not be "rechanneled from FPL back into the water supply".

NG-7 Comment:

"Palm Beach Aggregates retains a mining permit throught the year 2032. The daily blasting (once allowable by law, although they have been known to blast 2x a day - this can be verified by viewing their blasting data logs) could prove to be an environmental and health disaster in the making with the near-by natural gas line and the storage of diesel fuel that FPL is planning for this site (12.6M gallons)."

NG-7 Response:

Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant will be designed to ensure the safe and reliable operations of the plant, including the oil storage tanks and natural gas pipeline concurrently with the mining operations.

NG-8 Comment:

"The emmission of mercury from the planned towers. Mercury emmisions are of grave concern to the health of our residents and more specifically to the well-water quality that we presently enjoy."

NG-8 Response:

WCEC will utilize the cleanest of all fossil fuels, primarily natural gas and ultra-low sulfur light oil used as backup. These fuels contain virtually no mercury, and therefore will have no adverse impact on the health of residents or well-water quality.

NG-9 Comment:

"In closing I ask that the DEP resind or delay its issuance of this permit until such time that a complete and specific review of residents' concerns and questions have been answered and verified with documentation from your department. Please do not rely on the information that has been provided by FPL. It is misleading at best, and their attempt to exclude those residents who will be directly impacted the most are shameful and intolerable."

NG-9 Response:

FPL has provided accurate information to FDEP and to area residents. Please refer to FPL's response NG-1 and Attachment 1 for a summary of our outreach efforts to date.

ATTACHMENT 1

FPL

Florida Power & Light Company
West County Energy Center
Community Outreach Program

At Florida Power & Light Company (FPL), we believe it is important to involve community neighbors and stakeholders in the development of projects designed to generate and deliver power to our customers. The goal of the West County Energy Center (WCEC) Outreach Program is to provide information to, collect input from and address the interests of the community regarding the power plant project.

The initial communications regarding a potential power plant at this site began in the early 2000's, prior to FPL's proposed project. The site received a power plant zoning designation from Palm Beach County following review and approval by Palm Beach County staff and commissioners in a series of public hearings in 2002 and 2004.

When FPL acquired the site and began designing the WCEC project, we initiated our community outreach program. We interviewed a cross section of community representatives to determine their interests in regard to the proposed project. These representatives included local homeowner association members, retirees, local government officials, and stakeholders in areas of finance, education, recreation, religion, health care organizations, business, public safety, and agriculture. The goal was to understand specific issues, concerns and questions that the community might have, and to address them by offering a presentation by FPL project team members for interested organizations.

Beginning in 2005, presentations have been made to numerous homeowners' associations, chambers of commerce and Rotary clubs. These presentations are offered on an ongoing basis throughout the development of the project. We also offer update articles about the project which have been published in several homeowners' associations' newsletters and a project brochure with FPL contact information, including a 1-800 number and a website address where interested individuals can ask to be added to our mailing list. We encourage our neighbors to let us know of their interests and to continue to follow the progress of the project.

The West County Energy Center project has been featured in several newspaper articles and public notices to provide information opportunities for the public. We have provided a list of presentations and articles and continue to seek opportunities to share project information.

Community outreach is an essential element of our project development. We will continue to engage the community throughout the process and welcome the opportunity to share information and obtain greater knowledge of community interests.

FPL

West County Energy Center
Presentations to the Community

Presentation Date	Group
Oct 5, 2005	Indian Trail Improvement District
Oct 18, 2005	Acreage LOA
Nov 14, 2005	Palms West Chamber of Commerce
Nov 16, 2005	Belle Glade Chamber of Commerce
Nov 17, 2005	Loxahatchee Groves BOD/LOA
Nov 28, 2005	Tri-City League
Jan 10, 2006	JTJB Chamber Legislative Affairs Committee
Jan. 17, 2006	Deer Run - BOD/HOA (rescheduled from 11/15/05 & 12/09/05)
Feb 8, 2006	Hispanic Chamber of Commerce
March 1, 2006	Pahokee Chamber of Commerce
March 7, 2006	Belle Glade Rotary Club
March 16, 2006	Royal Palm Beach Rotary
March 23, 2006	Pahokee Rotary Club
March 28, 2006	White Fences - HOA
March 29, 2006	Wellington Chamber of Commerce
April 4, 2006	Acreage Rotary
April 11, 2006	Wellington Rotary
May 10, 2006	Fox Trail - HOA/BOD (rescheduled from 11/09/05 & 01/11/06)

BOD = Board of Directors
HOA = Homeowners Association
LOA = Land Owners Association

FPL

West County Energy Center

Newspaper Articles, Press Releases, Public Notices & TV Coverage

Publish Date	Publication – Title
Jan. 30 2004	Royal Palm Beach Observer – FPL to Improve Substation
Mar. 5, 2004	Royal Palm Beach Observer – Power Plant OK for Limited Use of Fuel Oil
May 14, 2005	Sun-Sentinel – Florida utility plans to build generator project in Palm Beach County, Fla.
May 14, 2005	Palm Beach Post - FPL planning new Palm Beach County plant
May 14, 2005	Palm Beach Post – Public Notice of Filing Application for Site Certification for a power plant to be located in Palm Beach County, Florida: Florida Power & Light Company West County Energy Center
June 16, 2005	Palm Beach Post – Public Notice of Land Use and Zoning Hearing for a proposed power plant facility to be located in Palm Beach County, Florida: Florida Power & Light Company West County Energy Center
Aug. 3, 2005	Channel 12 covered the Land Use Hearing
Aug. 19, 2005	Palm Beach Post – FPL opens bidding for new plants in Palm Beach County
Sept. 29, 2005	Palm Beach Post – Florida Power & Light – Public Notice of Proposed West County Energy Center Class I Exploratory Well and Dual Zone Well
Nov. 18, 2005	The Observer – FPL Rep Sheds Light on Proposed Power Plant
Nov. 18-22, 2005	The Town-Crier – FPL Promotes Power Plant Plan at P.W. Chamber Luncheon
Dec. 9, 2005	Palm Beach Post – Florida Power & Light – Public Notice of Proposed West County Energy Center Class I Exploratory Well and Dual Zone Monitoring Well
Jan. 17, 2006	Channel 9 and Channel 12 covered Deer Run HOA/BOD meeting
Feb. 7, 2006	FPL Press Release – New Power Plant needed to meet customer growth and electricity demand; FPL's West County Energy Center project deemed most cost-effective option
Feb. 8, 2006	Palm Beach Post – FPL picks its building plan for plant
Feb. 8, 2006	Sarasota Herald Tribune – FPL proposes new power plant
Feb. 9, 2006	The Globe St.– FPL Picks 220-Acre Mining Site for $1B-Plus Energy Center
Mar. 9, 2006	Palm Beach Post – Florida Power & Light Company West County Energy Center Project Public Notice of Intent to Issue PSD Permit DEP File
Mar. 15, 2006	Palm Beach Post - FPL needs new plant
Mar. 29, 2006	Palm Beach Post – Panel votes to streamline rules for power plants
Mar. 31, 2006	The Town Crier – New Western Power Plant Needed Due to Growth in Palm Beach County
Apr. 3, 2006	FPL Press Release – FPL updates Florida PSC on future generation needs and system planning

required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.
[40 CFR 64.7(c)]

8. Response to excursions or exceedances.

a. Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions, if allowed by this permit). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

b. Determination of whether the owner or operator has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.

[40 CFR 64.7(d)(1) & (2)]

Comment: Please include the defmition of Excursion in this document

Also, please clarify if a monitor malfunction (downtime) is considered to be an excursion.

9. Documentation of need for improved monitoring. If the owner or operator identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the Title V permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.
[40 CFR 64.7(e)]

40 CFR 64.8 Quality Improvement Plan (QIP) Requirements.

10. Based on the results of a determination made under **CAM Condition 8.b.,** above, the permitting authority may require the owner or operator to develop and implement a QIP. Consistent with **CAM Condition 4.**, an accumulation of exceedances or excursions exceeding 5 percent duration of a pollutant-specific emissions unit's operating time for a reporting period, may require the implementation of a QIP. The threshold may be set at a higher or lower percent or may rely on other criteria for purposes of indicating whether a pollutant-specific emissions unit is being maintained and operated in a manner consistent with good air pollution control practices.
[40 CFR 64.8(a)]

Comment: The CAM plan for Flouride, &HCl has the QIP threshold as 6 excursions in a 6 month reporting period. Is this consistent with this 5% for a reporting period? Is the "reporting period" defined in rule 6 months?

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
Telephone: (850) 488-0114 FAX: (850) 922-6979

Colleen M. Castille
Secretary

April 5, 2006

Mr. Steve Petrone
The Village of Royal Palm Beach
1050 Royal Palm Beach Boulevard
Royal Palm Beach, Florida 33411

Re: Request to use Cultural Center
Public Meeting, April 19, 2006
Florida Department of Environmental Protection

Dear Mr. Petrone:

Per our discussion yesterday, we request permission for the Florida Department of Environmental Protection/Bureau of Air Regulation to use The Village of Royal Palm Beach Cultural Center on April 19, 2006 to conduct a public meeting. The purpose of the meeting is to receive comments on the Department's Notice of Intent to Issue an Air Construction/PSD Permit (No. 0990646-001-AC) to Florida Power & Light Company (FPL), for the construction of a new power plant located at 4000, 205th Street North in unincorporated Palm Beach County.

We plan to hold an informal "Open House" from 5:00 p.m. to 6 p.m. and then to conduct the Public Meeting from 6:00 p.m. to 8:00 p.m. We will provide you with the agenda very shortly.

Someone from our Palm Beach Office or from the Palm Beach Local Air Program will contact you regarding a visit to the facility, so we can determine what equipment and assistance we need to bring. If you have any questions, please call Teresa Heron at 850-921-9529 or call me at 850-921-9523.

Sincerely,

A.A. Linero, Program Administrator
Bureau of Air Regulation
New Source Review Section

AAL/al

cc: Trina Vielhauer, Chief Bureau Air Regulation
Darrel Graziani, Air Administrator, DEP Southeast District
Jim Stormer, Air Administrator Palm Beach County PHU

FINAL BACT DETERMINATIONS AND EMISSIONS STANDARDS

Refer to the BACT proposal discussed in the initial Technical Evaluation for this project and to the Final Determination issued with the Final permit for the rationale regarding the following BACT determination.

Pollutant	Fuel	Method of Operation	Stack Test, 3-Run Average		CEMS Block Average
			ppmvd @ 15% O_2	lb/hr [g]	ppmvd @ 15% O_2
CO [a]	Oil	Combustion Turbine (CT)	8.0	42.0	8.0, 24-hr 6, 12-month [h]
	Gas	CT & Duct Burner (DB)	7.6	52.5	
		CT Normal	4.1	23.2	
NO_X [b]	Oil	CT	8.0	82.4	8.0, 24-hr
	Gas	CT & DB	2.0	24.2	2.0, 24-hr
		CT Normal	2.0	20.0	
PM/PM_{10} [c]	Oil/Gas	All Modes	2 gr S/100SCF of gas, 0.0015% sulfur fuel oil		
			Visible emissions shall not exceed 10% opacity for each 6-minute block average.		
SAM/SO_2 [d]	Oil/Gas	All Modes	2 gr S/100 SCF of gas, 0.0015% sulfur fuel oil		
VOC [e]	Oil	CT	6.0	19.6	NA
	Gas	CT & DB	1.5	5.4	
		CT Normal	1.2	4.1	
Ammonia [f]	Oil/Gas	CT, All Modes	5	NA	NA

a. Compliance with the continuous 24-hour CO standards shall be demonstrated based on data collected by the required CEMS. The initial and annual EPA Method 10 tests associated with the certification of the CEMS instruments shall also be used to demonstrate compliance with the individual standards for natural gas, fuel oil, and basic duct burner modes. The stacks test limits apply only at high load (90-100% of the combustion turbine capacity).

b. Compliance with the continuous NO_X standards shall be demonstrated based on data collected by the required CEMS. The initial and annual EPA Method 7E or Method 20 tests associated with demonstration of compliance with 40 CFR 60, Subpart GG or certification of the CEMS instruments shall also be used to demonstrate compliance with the individual standards for natural gas, fuel oil, and duct burner modes during the time of those tests. NO_X mass emission rates are defined as oxides of nitrogen expressed as NO_2.

c. The sulfur fuel specifications combined with the efficient combustion design and operation of each gas turbine represents (BACT) for PM/PM_{10} emissions. Compliance with the fuel specifications, CO standards, and visible emissions standards shall serve as indicators of good combustion. Compliance with the fuel specifications shall be demonstrated by keeping records of the fuel sulfur content. Compliance with the visible emissions standard shall be demonstrated by conducting tests in accordance with EPA Method 9.

d. The fuel sulfur specifications effectively limit the potential emissions of SAM and SO_2 from the gas turbines and represent BACT for these pollutants. Compliance with the fuel sulfur specifications shall be determined by the ASTM methods for determination of fuel sulfur as detailed in the draft permit.

e. Compliance with the VOC standards shall be demonstrated by conducting tests in accordance with EPA Method 25A. Optionally, EPA Method 18 may also be performed to deduct emissions of methane and ethane. The emission standards are based on VOC measured as methane. The limits apply only at high load (90-100% of the combustion turbine capacity). Compliance with the CO CEMS based limits at lower loads shall be deemed as compliance with the VOC limit.

f. Compliance with the ammonia slip standard shall be demonstrated by conducting tests in accordance with EPA Method CTM-027.

g. The mass emission rate standards are based on a turbine inlet condition of 59° F and may be adjusted to actual test conditions in accordance with the performance curves and/or equations on file with the Department.

h. Rolling Average. Enforcement discretion may be exercised for up to 12 months with respect to the 6 ppmvd @15% O_2 limit-for any combustion turbine/supplementary-fired heat recovery steam generator upon notification by the permittee of intent to install oxidation catalyst. The permittee shall have 12 months to complete the oxidation catalyst installation. From time of notification to installation of the catalyst all partial or complete calendar months shall be excluded from the 12-month rolling average.

Heron, Teresa

From: Marister_Ruiz@fpl.com
Sent: Friday, December 08, 2006 12:21 PM
To: Heron, Teresa
Cc: Linero, Alvaro; Barbara_P_Linkiewicz@fpl.com; John_Hampp@fpl.com
Subject: West County Energy Center - PSD permit

Attachments: REVISEDAugustDRAFTPERMIT3- With MR Changes.doc; Page BD-1.pdf; 12-6-06 Change to DDDDD.pdf


REVISEDAugustDRAFTPERMIT3- Wit...


Page BD-1.pdf (119 KB)


12-6-06 Change to DDDDD.pdf (2...

Teresa,

Upon review of the Draft PSD Permit for West County Energy Center, we have identified a few items that should be included in the final version of the permit. I have attached a copy of the draft permit including these items.

In addition, I have also attached the changes to Subpart DDDDD from 12/6/06.

1. Cover page - Please change the project address to 20505 State Road 80, Loxahatchee, Florida. 33470.

> The proposed project will be located at 20505 State Road 80, Loxahatchee, Florida 33470 4000 205th Street, North, in unincorporated Palm Beach County. This site encompasses 220 acres of which approximately 40 acres will be used for two combined cycle units.

done

2. Page 10 - For clarification, we request the language for footnote h read as follows:

> "h. Rolling Average. Enforcement discretion may be exercised for up to 12 months with respect to the 6 ppmvd @ 15% O2 limit for any combustion turbine / supplementary-fired heat recovery steam generator upon notification by the permittee of intent to install oxidation catalyst. The permittee shall have 12 months to complete the oxidation catalyst installation. From time of notification to After completing the installation of the catalyst, all prior partial or complete calendar months shall be excluded from the 12 month rolling average."

done?

3. Page 11- Please amend as listed below.

> 1. Excess Emissions Allowed: As specified in this condition, excess emissions resulting from startup, shutdown, oil-to-gas fuel switches and documented malfunctions are allowed provided that operators employ the best operational practices to minimize the amount and duration of emissions during such incidents. For each gas turbine/HRSG system, excess emissions resulting from startup, shutdown, or documented malfunctions shall not exceed two hours in any 24-hour period except for the specific cases listed below. A "documented malfunction" means a malfunction that is documented within one working day of detection by contacting the Compliance Authority by telephone, facsimile transmittal, or electronic mail.

done

4. Page 23 - The fire pump will require weekly testing. We request the number of hours allowed for testing of this emergency system be increased to 80 hrs.

done

1. Hours of Operation: The fire pump may operate in response to emergency conditions and 40 80 non-emergency hours per year for maintenance testing. [Applicant Request; Rule 62-210.200 (PTE), F.A.C.

5. Page BD-1 - The table shows a limit of 6 PPMVD on a 12 month ave for NOx. This limit is not applicable to NOx, it is applicable to CO. Please delete from the NOx limits, (See Attachment Page BD-1). dont. It was ok in permit

(See attached file: REVISEDAugustDRAFTPERMIT3- With MR Changes.doc)(See attached file: Page BD-1.pdf)(See attached file: 12-6-06 Change to DDDDD.pdf)

Please let me know if you have any questions or need additional information and thank you very much for your help on this matter.

Marister Ruiz
Phone (561) 691-7067
Cell (561) 376-5549

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

April 25, 2006

Ms. Trina Vielhauer
Florida Department of Environmental Protection
Division of Air Resource Management
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Florida Power & Light Company
West County Energy Center
DEP File No. 0990646-001-AC (PSD-FL-354)
Response to Public Comments Provided to FDEP

Dear Ms. Vielhauer,

On April 21, Florida Power & Light Company (FPL) provided a document to FDEP responding to written public comments provided to FDEP regarding your Notice of Intent to Issue a PSD permit for FPL's West County Energy Center project. We discovered a minor error in response Al-5 and SW-6 We have corrected the response in the attached document. Please replace the document we provided on April 21 with the attached.

Please let me know if you have any questions. You can reach me at (561) 691-7518.

Sincerely,

Barbara P. Linkiewicz
Environmental Licensing Manager

cc: Al Linero, FDEP Air
Teresa Heron, FDEP Air
Debbie Nelson, FDEP Air
Steve Palmer, FDEP Siting Office
Scott Burns, SFWMD
James Golden, SFWMD
Tim Gray, DEP SED
Robert Weisman, Palm Beach County
Carrie Rechenmacher, Palm Beach County
Courtney Shippey, Palm Beach County

Bcc: Potsy Scoville, FPL
Rachel Scott, FPL
John Gnecco, FPL
Harris Rosen, FPL
Rachel Godino, FPL
Peter Cunningham, Hopping Green & Sams
Ken Kosky, Golder Associates

Speaker List

Public Meeting – April 19, 2006
Florida Power & Light West County Energy Center
Project No. 0990646-001-AC – Construction of a New Power Plant

1. #2 Alex LARSON #1 Sharron Waite
2. #3 Patricia D. Curry
3. JOHN EARLEY
4. John Koch
5. Nancy Gribble
6. Joan Shawmake
7. Ralph D. Baile
8. Edward Smith
9. Fred Gordon
10. William Kellaka
11. Yvette Trelles
12. William Collins
13. David Kipp
14. Orlando Rios
15. Rosa Durando
16. Charles Banta
17. JANIXX PARISI
18. Fritz G. Erie
19.
20.
21.
22.
23. Who is tracking:
24. U.I.C. If they need.
25. NPDES
26. Need Determination
27. 519-0119 99
28.
29.
30.
31.
32.

TRANSMISSION VERIFICATION REPORT

TIME : 04/10/2006 09:11
NAME : DIVISION OF AIR
FAX : 8509219533
TEL : 8504880114
SER.# : BROG2J567933

DATE,TIME	04/10 08:05
FAX NO./NAME	615616247839
DURATION	00:00:36
PAGE(S)	02
RESULT	OK
MODE	STANDARD ECM

monday
April 10

Monday April 10

Heron, Teresa

From: Linero, Alvaro
Sent: Sunday, April 09, 2006 10:00 PM
To: Heron, Teresa
Subject: Notice of meeting

Teresa: Fax Notice on W.County to the person indicated below:

A resident near the project site asked that I send notices directly to the two Improvement Districts because they are responsible for the inhabited areas closest to the proposed site.

Mr. O'Neal Bardin, Jr.

EXECUTIVE DIRECTOR
Northern Palm Beach County Improvement District
357 Hiatt Dr.
Palm Beach Gardens
FL 33418

Fax: 561-624-7839

Post-it® Fax Note 7671	Date 4/10/05	# of pages ▶ 2
To Mr O'Neal Bardin	From Teresa Heron	
Co./Dept. Northern P. Beach CID	Co. Dpt of Env. Protection	
Phone #	Phone # 850/921-9529	
Fax # 561-624-7839	Fax # 850/921-9533	

Official Notice of the Florida Department of Environ
Authorized Under Section 120.551, F.S.
Publication Date-April 7, 2006

NOTICE OF PUBLIC MEETING

The Department of Environmental Protection, Division of Air Resource Management, announces a public meeting to which all persons are invited:

DATE AND TIME: Wednesday, April 19, 2006. Open House: 5 P.M to 6 P.M

Public Meeting: 6:00 P.M. to 8:00 P.M.

PLACE: Royal Palm Beach Cultural Center at 151 Civic Center Way, Royal Palm Beach, FL 33411.

PURPOSE: The purpose of the meeting is to receive comments on the Department's Notice of Intent to issue an air construction/PSD permit (No. 0990646-001-AC) to Florida Power & Light Company (FPL), for the construction of a new power plant located at 4000, 205th Street North in unincorporated Palm Beach County. The project is subject to preconstruction review for the Prevention of Significant Deterioration (PSD) of Air Quality pursuant to Rule 62-212.400, F.A.C.

The Department distributed an "Intent to Issue Permit" package on March 1, 2006. The applicant published the "Public Notice of Intent to Issue" in The Palm Beach Post on March 9, 2006. No petitions for administrative hearings or extensions of time to petition for an administrative hearing were filed. This public meeting was requested pursuant to the procedures described in the "Public Notice" and is being held to accept comments on the proposed draft permit. Oral and written comments may be submitted at the meeting. All statements will become part of the Department's public record for this project.

The Department's "Intent to Issue", "Draft Permit", and "Technical Evaluation and Preliminary Determination" can be viewed at "http://www.dep.state.fl.us/Air/permitting/

construction/westcounty.htm" project. A complete project file is available at the following physical address for the Division of Air Resource Management: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Division's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. For questions related to this meeting, please contact Teresa Heron at 850/921-9529.

Pursuant to the Americans with Disabilities Act, any person requiring special accommodations to participate in this meeting is asked to advise the agency at least 48 hours before the meeting by calling Ms. Scearce at (850) 921-9551, or by calling (800) 955-8771 (TDD) or (800) 955-8770 (Voice).

No.	Commenting Party	Communication Method	Comment	Comment Type	Response
1	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	"The Bureau has ignored its own investigators, Mr. Palmer and Mr. Sheplak. Many of the questions they asked went completely unanswered, were later answered in the same fashion, or the instructions were ignored completely."	Section: Specific Permitting process	FDEP issued a series of questions ("sufficiency questions") to FPL in response to FPL's Site Certification Application (SCA). FPL provided timely and complete responses to all questions on August 11, 2005. FDEP reviewed FPL responses and on September 12, 2005 deemed the SCA to be "sufficient", meaning that the information provided was adequate for reviewers to analyze the impacts of the proposed project.
2	Alexandria Larson	Written comments to PSD permit Notice of Intent to Issue	"When a meeting was held it was in Wellington and posted in the sports section of the Palm Beach Post."	Section: General Public Participation/ Information availble	The land use hearing for the WCEC Project was held in Wellington in accordance with the requirements of Section 403.508(1), Florida Statutes, which provides that the hearing shall be held "in the County of the proposed Site" and "as close as possible to the proposed Site." FPL canvassed the area, including the Royal Palm Beach Cultural Center and various school auditoriums for meeting rooms. The Royal Palm Beach Cultural Center was under repair at the time of the hearing. Other than the selected Wellington Community Center, there was no available public facility that met the logistical requirements of the administrative hearing. The location was deemed to be within an acceptable distance from the Project Site. The notice of the land use hearing for the Project was published in accordance with the requirements of Section 403.5115, Florida Statutes. Subsection (2) of that statute specifically provides that such notices shall be "published in a section of the newspaper other than the legal notices section." The Palm Beach Post made the decision about which section of the newspaper could fit the half page ad on the publication day.
3	Alexandria Larson	Written comments to PSD permit Notice of Intent to Issue	"I am amazed that you are even considering this plant when you haven't even addressed the plant FPL has in N.Palm Beach it is known to be the most polluted in the state. And please don't tell me the proposed plant in Loxahatchee will relieve this problem because I know this is to facilitate 660,000 new residents not take care of the existing ones."	Section Air Quality Riviera plant	FPL has a legal obligation to meet the electric generation needs of customers in our service territory. This requires planning for the projected customer growth and increased usage of electricity by existing customers. In order to ensure there is an adequate supply of electricity, new generating plants must be built in time to meet the projected growth. The WCEC is being proposed to meet our legal obligation based on the projected electricity needs of FPL's customers throughout the FPL service territory including Palm Beach County. As described in the Site Certification Application, FPL uses an Integrated Resource and Planning (IRP) process to determine when new resources are needed, the magnitude of the resources needed, and the type of resources that should be added. The magnitude and timing of FPL's resource needs are established through a "reliability assessment". This assessment evaluates many factors including: demographic information such as population trends by county and housing characteristics, weather assessments from NOAA, economic conditions, the price of electricity, input from local economic development boards, and more. It is important to note that this evaluation is done for the entire FPL service territory, not for any one particular area. FPL's IRP process in 2004 WCEC will be one of the most efficient and have one of the lowest emission rates of any fossil fuel fired power plant in Florida The Riviera Plant is an existing electric generating facility which is currently serving the electricity demands of FPL's customers. The Riviera Plant consists of ste • FPL has significantly reduced particulate matter, opacity, carbon monoxide, and nitrogen oxides emissions from the Riviera plant through the multi-million dolla • FPL has a self-imposed opacity standard for visible emissions that is 50 percent lower than the permitted federal limit and is equivalent to what a brand new pow • FPL has installed Continuous Emission Monitoring Systems (CEMS) that instantaneously monitor flue gas emissions and Continuous Opacity Monitoring Systen The result of these efforts has been impressive: since 1990, NOx emissions from the Riviera plant have decreased by more than 40 percent and represent only 7 pe
4	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	"The Mitsiubishi turbine was selected, unfortunately it had no record in this state, so it was explained, no data pertinent to real operating conditions. the State was to be "flexible" with one of the, if not the, largest power plant in our state. This is not the time to be 'flexible'."	Section Air General	While there are no Mitsubishi G combustion turbines currently operating in Florida, there are 18 units installed both in the US and abroad with more than 330,000 hours of operation. The projected emissions from the WCEC are not only based on real operating conditions and testing but are also backed by very stringent manufacturer's guarantees. The size of each unit proposed for the WCEC is similar to the size and technology being constructed at FPL's Turkey Point Plant located in Miami-Dade, and two operating units located at FPL's Martin Plant located in Martin County and FPL's Manatee Plant located in Manatee County.
5	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	"No information on lbs/ppm was provided by manufacturer reflecting real world environment."	Section Air Quality	On December 29, 2005, FPL provided FDEP with emissions information from the specific manufacturer of the combustion turbine selected for WCEC. This information was based on manufacturer data that included "real world" testing from the type of combustion turbines proposed for WCEC. Data were provided for both concentration (i.e., ppm) and mass emissions (lb/hr).

4	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	"The more stringent air quality on this 'New' Major Source Polluter must be maintained, we cannot, must not go backward. This Major New Pollution Source will be located within 1/4 mile of Arthur Marshall National Wildlife Refuge. The damage/ disaster potential is great yet no external cost analysis was done."	Section 6 General	The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Mereover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) increments that protect air quality from degradation.
5	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	"The boiler question was never coherently answered. Why is the newer version more polluting? Why no investment in cleaning up the pollutants before they are thrust into the air at enormous cfm? No cost analysis reflecting external cost of FPL Major Source Pollutants."	Section 1 Information on Application	The Air Construction Permit Application and Sufficiency Response 5FDEP-17 provided information on the auxiliary boilers. That response was deemed by FDEP to be sufficient. The auxiliary boilers proposed for the WCEC will be used only for the startup of the power plant after extended outages and will use only natural gas. These boilers will be equipped with pollution preventing combustion systems to limit emissions below regulatory requirements. These controls will limit emissions to levels determined by FDEP to be Best Available Control Technology (BACT) for these boilers. Cost was discussed in FPL's Air Construction Permit Application, and both the FPL and FDEP analysis of BACT includes consideration of costs. Add-on controls were determined not to be necessary or cost effective for these intermittent use boilers.
5	Alexandria Larson	Written comments to PSD permit Notice of Intent to Issue	Detailed information on hazardous air pollutants (HAP) was provided to FDEP in the Air Construction Permit Application. Additional information was provided in FPL's Sufficiency Responses 5FDEP-14, 5FDEP-15, 5FDEP-16, 5FDEP-17, 5FDEP-18 and 5FDEP-19 on specific regulatory requirements and their potential applicability to the WCEC. Those responses were deemed by FDEP to be sufficient.	Section 1 Air	The emissions from any power plant facility must be expressed in tons/year for comparison to regulatory thresholds. FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment.
6	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	"The Air Modeling questions were never resolved, Unless you count FPL asking Us the public, and you, the regulator to be "Flexible". The statement by your investigators that the County of Palm Beach had serious concerns was never answered cognitively either."	Section 1 Air Quality & Information	The Air Construction Permit Application and Sufficiency Response 5FDEP-8 provided detailed information on the air quality impact analyses. That response was deemed by FDEP to be sufficient. The air modeling analysis provided to FDEP demonstrated that air quality impacts resulting from the operation of WCEC would comply with Ambient Air Quality Standards (AAQS) and Prevention of Significant Deterioration (PSD) increments. Additionally, the air quality impacts were less than 50 percent of the available PSD increments as required by Palm Beach County.
7	Alexandria Larson	Written comments to PSD permit Notice of Intent to Issue	"Also this FPL plant will be utilzing the Palm Beach Aggregates pits 1272 acres of water for cooling its turbines. This exact area was bought by South Florida Water Management District on Dec 8, 2004 at a cost to taxpayers of 212 million dollars the premise was that this was for the CERP project you know the Comprehensive Everglades Restoration Project."	Section 1 General Water	The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.
8	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	"It was noted 'yes' had been checked, that the pollutants are synthetically limited. The pollutants subect to BACT are not synthetically limited. FPL was to correct and send correcting documentation, this wasn't done, in fact all boxes in resubmitted information are still checked 'Yes'."	Section 1 Air Quality & Air	The checking of the box "Yes" is correct. Sufficiency Response 5FDEP-10 provided the information related to the term "synthetically limited". In the FDEP application form this reflects whether emissions are limited by some operational constraint such as the hours per year or fuel use. The use of ultra-low sulfur light oil in the combustion turbines (CTs) was proposed to be limited to no more than 500 hours/year/CT and the amount of duct firing is limited by the total amount of natural gas to be used. Therefore, since there were proposed operational limits, the appropriate boxes in the application were checked. FPL's Sufficiency Response 5FDEP-10 was deemed by FDEP to be sufficient.
9	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	"No information regarding SSM was re-submitted that I could find."	Section 1 Air Application	FPL provided information to FDEP regarding startup, shutdown and malfunction (SSM) in Sufficiency Response 5FDEP-2, and that response was deemed by FDEP to be sufficient.

10	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	"Your investigators write about emission units not mentioned in the application, and references a 4.2 gallon diesel storage facility. In FPL response the 4.2 is now 12.6 million gallons, 3 times the application size, with no supporting documentation on these facilities, 2-6.3 million gallon tanks! This alone should be grounds to stop this. There exists no Expedited permitting for New Major Source Polluters."	Section General Diesel Storage tank/Oil Spills	FPL designs and constructs natural gas-fired power plants with a back-up fuel supply so that electric generation is not interrupted in the event of the loss of its primary fuel supply to the Site. The Palm Beach County-approved Development Order and the included Site Plan identifies up to 12.6 million gallons of oil storage for the Site. In the WCEC Air Construction Permit Application, FPL proposed the installation of 8.4 million gallons (two 4.2 million gallon above ground ultra-low sulfur light oil storage tanks) out of the total 12.6 million gallons in the Palm Beach County-approved Development Order. However, following the 2005 hurricane season and the resulting limited supply of natural gas to Florida, FPL determined that it would be prudent to install the entire 12.6 million gallons of ultra-low sulfur light oil storage. Accordingly, FPL updated our proposal to reflect installation of two 6.3 million gallon above ground oil storage tanks (12.6 gallons total). The above ground storage tanks will be constructed with secondary containment and will comply with all applicable local, state and federal standards which ere designed to prevent spills or leaks from being released to the environment.
11	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	"Major Hap source, FPL was asked to provide information on why they neglected to supply necessary documentation on this. They did not supply."	See Information Air	Detailed information on hazardous air pollutants (HAP) was provided to FDEP in the Air Construction Permit Application. Additional information was provided in FPL's Sufficiency Responses 5FDEP-14, 5FDEP-15, 5FDEP-16, 5FDEP-17, 5FDEP-18 and 5FDEP-19 on specific regulatory requirements and their potential applicability to the WCEC. Those responses were deemed by FDEP to be sufficient.
12	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	"Your investigators requested all documentation, communication with EPA, Federal Land manager, FWC, local governments, National Parks Service, EPA Region 4, they referenced the Endangered Species act. I saw none in FPL response. In fact they stated the site has no wildlife to be impacted. This site is practicalty adjacent to the Arthur Marshall National Wildlife Refuge. National. We have a duty to the Nation, and I say to tha World to 'Protect' it."	See General Wildlife Refuges/ LNWR/Corbett/ Everglades	FPL's Sufficiency Response 5FDEP-20 provided the requested information to FDEP, and that response was deemed by FDEP to be sufficient. In addition, FPL met with the US Fish and Wildlife Service and provided a complete copy of the Site Certification Application. All named agencies are involved in either the Site Certification Application and/or the Air Construction Permit Application review process and have not objected to the
13	Michael K Christensen	Written comments to PSD permit Notice of Intent to Issue	The site will be adjacent to SFWMD 'Pits' that SFWMD (taxpayers) purchased for 223 million dollars to store 48,000 acre feet of drinking water. This is an insult. Stop! Halt! Someone call a cop, there is a crime being committed here! Can anybody help?!	See General Water	This Project is designed to be in compliance with all applicable local, state and federal laws, rules and regulations as proposed. The Site is adjacent to the SFWMD water storage pits which are part of the Development Order approved by Palm Beach County. The development of the power plant and the storage pits were planned concurrently by the previous landowner prior to the sale of the land to both FPL and the SFWMD. All parties have worked together to allow the development of each of the projects with no adverse effects to either.
14	Alexandria Larson	Written comments to PSD permit Notice of Intent to Issue	"Why were the people of Loxahatchee not informed on this matter? In your permit application it lists Wellington as the closest area this is incorrect I personally live within a mile of this proposed plant you also have the residents of Foxtrail, Deer Run, White Fences and Indian Trail Improvement District we are 40,000 residents that have been totally ignored."	See General Public Participation/ Information availble	Over the last year, FPL has conducted an extensive outreach program. Attachment I provides a summary of FPL's outreach efforts, including meetings/presentations with Deer Run, White Fences, Indian Trail Improvement District, and Loxahatchee Groves Landowners Association, and a planned meeting with Fox Trail (postponed from Fall 2005). Also included is a list of media coverage and public notices issued on this Project. The Site is located in unincorporated Palm Beach County. The FDEP requires that the applicant provide certain information in the Site Certification Application, including "Nearest Incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.
15	Alexandria Larson	Written comments to PSD permit Notice of Intent to Issue	"I'm not an engineer but astronomical emissions,12.6 million gallons of diesel and blasting near a natural gas pipeline facility make a mix for disaster and this is one in the making its not a matter of if but when? The Valdez only had 11 million gallons and they are still cleaning up that mess. I am appalled that you are even considering this permit"	See general Blasting	Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant, including the oil storage tanks and the natural gas pipeline, will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations. The above ground storage tanks will be constructed with secondary containment and will comply with all applicable local, state and federal standards which are designed to prevent spills or leaks from being released to the environment.

16	Alexandria Larson	Written comments to PSD permit Notice of Intent to Issue	"I want DEP to guarantee in writing that my fears and predictions are unwarranted because I can guarantee that if there are not several dozen informed and very clear MEETINGS PRIOR TO APRIL 9th(since 30 days was your deadline) INFORMING THE PEOPLE OF LOXAHATCHEE AND THE ACREAGE OF ALL RISKS THAT YOUR PERMIT ARE EXPOSING US TO I WILL TAKE OUT FULL PAGE ADS AND FLY BANNERS THAT WILL INFORM THE PUBLIC and I doubt I'll be very delicate in this matter."	? Public Participation/ Information availble	As discussed in FPL response to AL-1 Comment, FPL conducts extensive public outreach programs for all FPL projects. Numerous presentations have been made in order to educate interested parties and to provide factual information on the Project.
17	Alexandria Larson	Written comments to PSD permit Notice of Intent to Issue	"Over the last several years DEP has lowered the bar in the state of Florida in the guise of streamlining permits. This is unacceptible and can no longer happen somewhere you have to draw the line and start looking in the mirror knowing that big business doesn't care so you are the only line of defense for a public that is uninformed, and gullible until a disaster happens."	See specific Other	FPL disagrees with this assertion. Our experience is the FDEP strongly enforces all rules and regulations governing the construction and operation of electric generating facilities regardless of any permit streamlining. In fact, the emission limits established for WCEC are among the most stringent required anywhere in Florida.
18	Sharon Waite	Written comments to PSD permit Notice of Intent to Issue	"It will have 12 stacks 140' high and spew out 40 tons of sulfuric acid mist, etc."	See air quality Air	The Palm Beach County-approved Development Order provides for 12 stacks. The current proposal is for the construction of 6 stacks with a maximum stack height of 150 feet. FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment. WCEC will be one of the most efficient and have one of the lowest emission rates of any fossil fuel fired power plant in Florida.
19	Sharon Waite	Written comments to PSD permit Notice of Intent to Issue	"What makes you think a 12.6 million gallon diesel stockpile in the ground will fly?"	See General Diesel Storage tank/Oil Spills	FPL is proposing to construct two 6.3 million gallon **above ground** storage tanks (not "in the ground") for ultra-low sulfur light oil, which will be used on a limited basis as a backup fuel source. The above ground storage tanks will be constructed with secondary containment and will comply with all federal, state and local standards which are designed to prevent spills or leaks from being released to the environment.
20	Sharon Waite	Written comments to PSD permit Notice of Intent to Issue	"The Palm Beach Aggregates will be blasting until 2032 (permitted already)."	See General Blasting	The power plant will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.
21	Sharon Waite	Written comments to PSD permit Notice of Intent to Issue	"This is adjacent to the pits my tax money paid $212 M for (ASR wells). FPL is not going to be allowed to utilize them to cool turbines."	See General Water	The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.
22	Sharon Waite	Written comments to PSD permit Notice of Intent to Issue	"Why did Wellington and Royal Palm Beach receive letters about this and not the acreage residents?"	See General Public Participation/ Information availble	Over the last year, FPL has conducted an extensive outreach program, including presentations about WCEC to the Acreage Landowners Association on October 18, 2005 and to the Acreage Rotary Club on April 4, 2006. FDEP must provide a copy of their Notice of Intent to Issue PSD Permit to the "Chief Executives of City or County Governments". Accordingly, FDEP copied the Chair of the Palm Beach County Commission, the Mayor of the Village of Wellington and the Mayor of the Village of Royal Palm Beach on their letter Notice of Intent to Issue PSD Permit for the WCEC Project. The Acreage is not a City or County and is located in unincorporated Palm Beach County.

23	*Sharon Waite*	Written comments to PSD permit Notice of Intent to Issue	"I'd say let's clean up Riviera Beach plant first. It's the dirtiest in the state."	See Air Quality *Riviera plant*	The Riviera Plant is an existing electric generating facility which is currently serving the electricity demands of FPL's customers and operating in accordance with all applicable local, state and federal regulations. The air quality in the vicinity of the Riviera Plant and throughout Palm Beach County has been determined to be in full compliance with the Ambient Air Quality Standards (AAQS) established by EPA and FDEP to protect human health, welfare and environment. In addition, FPL voluntarily adopts operating practices that further reduce environmental impacts. For example, • FPL has significantly reduced particulate matter, opacity, carbon monoxide, and nitrogen oxides emissions from the Riviera plant through the multi-million dollar installation of low nitrogen oxide (NOx) burners. • FPL has *a self-imposed opacity standard for visible emissions that is 50 percent lower than the permitted federal limit* and is equivalent to what a brand new power plant would be required to meet. • FPL has installed Continuous Emission Monitoring Systems (CEMS) that instantaneously monitor flue gas emissions and Continuous Opacity Monitoring Systems (COMS) that check visible emission standards to help ensure emissions compliance. The result of these efforts has been impressive: since 1990, NOx emissions from the Riviera plant have decreased by more than 40 percent and represent only 7 percent of all NOx emissions in Palm Beach County (mobile sources, including automobiles, account for more than 90 percent).
24	Sharon Waite	Written comments to PSD permit Notice of Intent to Issue	"As a sidebar, FPL will be tolerated to use the ASR wells as a place to inject their waste."	? Water	The Project will utilize FDEP permitted underground injection control (UIC) wells for wastewater management, not Aquifer Storage and Recovery (ASR) wells. UIC wells are commonly used throughout the region and involve injection of wastewater into a confined boulder zone. Aquifer Storage and Recovery wells serve a very different purpose and are typically constructed to inject water into a different hydrogeological zone for later recovery and reuse.
25	Sharon Waite	Written comments to PSD permit Notice of Intent to Issue	"I never want to see this project come to fruition for another 660,000 units."	See Air Quality Growth	FPL has a legal obligation to meet the electric generation needs of customers in our service territory. This requires planning for the projected customer growth and increased usage of electricity by existing customers. In order to ensure there is an adequate supply of electricity, new generating plants must be built in time to meet the projected growth. The WCEC is being proposed to meet our legal obligation based on the projected electricity needs of FPL's customers throughout the FPL service territory including Palm Beach County. As described in the Site Certification Application, FPL uses an Integrated Resource and Planning (IRP) process to determine when new resources are needed, the magnitude of the resources needed, and the type of resources that should be added. The magnitude and timing of FPL's resource needs are established through a "reliability assessment". This assessment evaluates many factors including: demographic information such as population trends by county and housing characteristics, weather assessments from NOAA, economic conditions, the price of electricity, input from local economic development boards, and more. It is important to note that this evaluation is done for the entire FPL service territory, not for any one particular area. FPL's IRP process in 2004
26	Patricia D. Curry	Written comments to PSD permit Notice of Intent to Issue	The area in question borders what is currently agricultural, primarily sugar farms. This area in particular is extremely important as it relates toward the Comprehensive Everglades Restoration Act It is no secret that the large growers in the area are desirous of retiring their farming land, seeking development rights in the stead of farming. Development on this land should never occur, and the land should be restored in the absence of farming to its *natural and original state, as wetlands; this to aid the Everglades*, as well as to ensure the natural filtration of water into the aquifer.	See General Growth	On August 3, 2005, a public hearing was conducted regarding the WCEC's consistency and compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site. The notice of the land use hearing for the Project was published in accordance with the requirements of Section 403.5115, Florida Statutes. On November 15, 2005, the Governor and Cabinet sitting as the Siting Board, issued a final order that the WCEC Project is consistent and in compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site.

27	Patricia D. Curry	Written comments to PSD permit Notice of Intent to Issue	Building a power plant that will service an additional 650,000 residences/businesses, in such a vital area, makes absolutely no *sense at all, unless one is pursuing development of such an* additional 650,000 new homes/business within the area. Currently, there is sufficient power supply for all who reside and/or work within the vicinity. In other words, building this new plant simply facilitates more growth, in an area where growth is currently prohibited, and should perpetually be prohibited With a County Commission that is so pro-growth, and anti-environment, as we have sitting now, who have approved land uses changes that are threatening rural areas and agricultural areas alike, this proposed power plant spells nothing but danger	See General Growth	*FPL has a legal obligation to meet the electric generation needs of customers in our service territory. This requires* planning for the projected customer growth and increased usage of electricity by existing customers. In order to ensure there is an adequate supply of electricity, new generating plants must be built in time to meet the projected growth. The WCEC is being proposed to meet our legal obligation based on the projected electricity needs of FPL's customers throughout the FPL service territory including Palm Beach County. As described in the Site Certification Application, FPL uses an Integrated Resource and Planning (IRP) process to determine when new resources are needed, the magnitude of the resources needed, and the type of resources that should be added. The magnitude and timing of FPL's resource needs are established through a "reliability assessment". This assessment evaluates many factors including: demographic information such as population trends by county and housing characteristics, weather assessments from NOAA, economic conditions, the price of electricity, input from local economic development boards, and more. It is important to note that this evaluation is done for the entire FPL service territory, not for any one particular area. FPL's IRP process in 2004
28	Patricia D. Curry	Written comments to PSD permit Notice of Intent to Issue	The South Florida Water Management District recently acquired, at a price to taxpayers of several hundred million dollars, the rock pits created by mining operations at the Palm Beach Aggregates. The supposed purpose in purchasing these rock pits was to serve as additional water storage from excess water in Lake Okeechobee, and further to facilitate a new canal system that would feed into a "flow way" at the Mecca site, and then drop cleaner water into the C51 Canal feeding the Loxahatchee River. The new proposed FPL power plant, finds that FPL will be utilizing the same rock pits???	See General Water	The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions.
29	Patricia D. Curry	Written comments to PSD permit Notice of Intent to Issue	The mining operations continue at Palm Beach Aggregates, which includes blasting that shakes the earth sufficient that it can be felt miles away. How would this affect a "natural gas" power plant in direct proximity to the plant?	See General Blasting	Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.
30	Patricia D. Curry	Written comments to PSD permit Notice of Intent to Issue	Three huge towers that release pollutants into the air, including mercury, will most definitely affect not only the agricultural areas directly to the west of this proposed plant (poisoning our food, soil and water) but also the rural residential communities directly to the east of this proposed plant, i.e. Loxahatchee, Loxahatchee Groves and the Acreage. Contrary toward your reports, Wellington is not the closest community.	See Air Quality Air	WCEC will utilize the cleanest of all fossil fuels, primarily natural gas and ultra-low sulfur light oil as a backup fuel supply. These fuels contain virtually no mercury. In addition, an extensive air quality analysis was conducted, which determined that the air emission impacts would be much less than the applicable air standards that protect human health, welfare and the environment including vegetation and wildlife. For clarification, the FDEP requires that the applicant provide certain information in the Site Certification Application, including "nearest incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.

31	Nancy J. Gribble	Written comments to PSD permit Notice of Intent to Issue	I am a resident of Fox Trail, a rural-tier community of unincorporated Palm Beach County that consists of 212 5-acre homesites, many of which are occupied by horses and agricultural uses. Fox Trail is located approximately 1.5 miles east of the proposed FPL West County Power Plant. There has been absolutley no presentation to our community regarding the proposed west county power plant, nor have our residents been solicitated for comment regarding such. As a maner of fact, the record incorrectly states that the Village of Wellington is the closest affected community of residents.	Public Participation/ Information availble	Over the last year, FPL has met with various community leaders, homeowners associations, and private citizens to provide information and get feedback about this Project. FPL has been in contact with Fox Trail Homeowner's Association (HOA) since the summer of 2005. FPL scheduled presentations to the Fox Trail Homeowners Association about WCEC for November 9, 2005 and January 11, 2006, but both were postponed at the request of the HOA. In Mareh 2006, FPL rescheduled the presentation for the May 10, 2006 Fox Trail HOA meeting, and provided an insert for the Fox Trail newsletter. In addition, on July 15, 2005, FPL contacted Ms. Gribble directly by voicemail as part of the outreach interview process, at the suggestion of the Fox Trail HOA. The interview was never arranged. For clarification, the FDEP requires that the applicant provide certain information in the Site Certification Applicadon, including "nearest incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.
32	Nancy J. Gribble	Written comments to PSD permit Notice of Intent to Issue	Not withstanding the snub of our community, I attended the Administrative Hearing for the proposed west county power plant, which was also held in the Village of Wellington. At this hearing, misinformation abounded. Of particular concern, was the public statement that "no residential" community was in the near proximity of the proposed west county power plant. Having been involved in numerous zoning and land use issues affecting our community of Fox Trail over the past several years, I knew that statement was not only incorrect as it related to the community of Fox Trail, but that in fact, the Palm Beach County Board of County Commissioners had rezoned a 1200-acre portion of the Palm Beach Aggregates property late last year (2005), to allow the construction of 2000 homes. This PUD, which is now officially known as Highland Dunes by Lennar Corp. will be approximately one-quarter mile east of the proposed west county power plant site.	Land use	Below is an excerpt from the Land Use Administrative hearing transcript on August 3, 2005. The information provided by expert witness Mr. Richard Zwolak, is both factual and accurate. "Q Mr. Zwolak, what's the distance to the nearest existing residential area? A There is a multiple acre per lot subdivision known as Deer Run that is located to the northeast of the project site. It is located east of canal L8 and to the north of additional mining activity shown on the aerial photograph on the very right side. The distance from the portion of the site where the infrastructure is planned, the northernmost infrastructure that Mr. Gnecco identified and the very southwest corner of this subdivision of Deer Run is approximately 0.7 miles. Q What is the distance to the nearest occupied residence? A The nearest occupied residence is located in the southwest corner of that subdivision. The distance from the site infrastructure to that residence is .75 miles, three-quarter mile." Following the Land Use hearing, the Administrative Law Judge that presided over the hearing issued a Recommended Order. Governor Bush and the Cabinet approved that order on November 15, 2005 and issued a signed Final Order on November 17, 2005. Since the time of the Land Use hearing, Palm Beach County granted final approval for development of a parcel of land which is located approximately one half mi
33	Nancy J. Gribble	Written comments to PSD permit Notice of Intent to Issue	"You may wish to contact Kieran J. Kilday, Vice-President, Kilday & Associates at (tollfree) 800-755-4532 to verify Lennar's understanding and knowledge of the proposed west county power plant and the DEP permit. Mr. Kilday is the agent representing Lennar Corp. for the Highland Dunes project. Lennar must be held accountable to the future residents of Highland Dunes regarding the environmental impacts of the proposed west county power plant."	Growth	FPL has conducted two meetings with representatives from Lennar Homes, Inc. and Kilday & Associates. Specifically, FPL met with Lennar's Vice President of Planning, Lennar's Land Development Manager, Lennar's Project Manager for the Highland Dunes project, and representatives from Kilday & Associates During these meetings, FPL provided a copy of the Site Certification Application and other documents associated with the Project, and reviewed the details of the Project to ensure that the WCEC could be considered in the design and planning for the Highland Dunes development. In addition, Palm Beach County has imposed a requirement that Lennar Homes, Inc. provide written disclosure to any potential home buyer of the proposed WCEC.

34	Nancy J. Gribble	Written comments to PSD permit Notice of Intent to Issue	"As a resident of Fox Trail, I have serious concerns with the following environmental issues: The site of the proposed west county power plant is surrounded by agricultural land that is used for farming and is a key land mass to EAA, a farming buffer to the Everglades."	see land Land use	On August 3, 2005, a public hearing was conducted regarding the WCEC's consistency and compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site. The notice of the land use hearing for the Project was published in accordance with the requirements of Section 403.5115, Florida Statutes. On November 15, 2005, the Governor and Cabinet acting as the Siting Board, issued a final order that the WCEC Project is consistent and in compliance with existing land use plans and zoning ordinances and site-specific zoning approvals of Palm Beach County as they apply to the Site.
35	Nancy J. Gribble	Written comments to PSD permit Notice of Intent to Issue	"Directly to the south of the proposed west county power plant is the STA-1 East, which is also a key component to the Comprehensive Everglades Restoration Plan (CERP). Phosphorus and other pollutant run-off are filtered here before being sent to the C-51 canal, a major water channel for Palm Beach County."	Water	There will be no offsite runoff of stormwater from the WCEC Site. All stormwater will be retained onsite. Therefore, the WCEC will have no adverse impact on the STA-1 East or CERP.
36	Nancy J. Gribble	Written comments to PSD permit Notice of Intent to Issue	"The SFWMD (South Florida Water Management District) recently purchased rock pits on the Palm Beach Aggregates site for water storage (price tag $21M) to facilitate the storage and filtering of "clean" water for the Loxahatchee River. It is my understanding that these water pits will be utilized by FPL for the west county plant in the operation of their turbine engines. Why are taxpayer funded pits ($21M) being used by a for profit entity (FPL)? What pollutnts will be rechannelled from FPL back into the water supply?"	see general Water	The Project will use a combination of excess stormwater from the L10/12 canal and/or Floridan aquifer wells as directed by SFWMD. If requested by the SFWMD, the Project will also consider the use of alternative water supplies such as reclaimed water or other excess stormwater sources if it becomes available under specific conditions. There will be no offsite runoff of stormwater from the WCEC Site. All stormwater will be retained onsite and will not be "rechanneled from FPL back into the water supply".
37	Nancy J. Gribble	Written comments to PSD permit Notice of Intent to Issue	"Palm Beach Aggregates retains a mining permit throught the year 2032. The daily blasting (once allowable by law, although they have been known to blast 2x a day - this can be verified by viewing their blasting data logs) could prove to be an environmental and health disaster in the making with the near-by natural gas line and the storage of diesel fuel that FPL is planning for this site (12.6M gallons)."	see general Blasting	Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant will be designed to ensure the safe and reliable operations of the plant, including the oil storage tanks and natural gas pipeline concurrently with the mining operations.
38	Nancy J. Gribble	Written comments to PSD permit Notice of Intent to Issue	"The emmission of mercury from the planned towers. Mercury emmisions are of grave concern to the health of our residents and more specifically to the well-water quality that we presently enjoy."	see Air Quality	WCEC will utilize the cleanest of all fossil fuels, primarily natural gas and ultra-low sulfur light oil used as backup. These fuels contain virtually no mercury, and therefore will have no adverse impact on the health of residents or well-water quality.
39	Alexandria Larson	Written comments to PSD permit Notice of Intent to Issue	"When this was brought to my attention image my surprise when I read that you want to let FPL put 12.6 million gallons of diesel fuel on a sight where mining operations have a permit for blasting until 2032.We definitely have a problem here."	see General Blasting	Prior to the purchase of the subject property, FPL conducted a detailed evaluation of the potential impacts of the on-going mining-related blasting on our proposed power plant. As part of FPL's land purchase, an agreement was developed with the seller (mining operator) that protects the power plant from any adverse impacts from the blasting operations. This agreement requires minimum setbacks imposed by FPL and maximum blasting levels consistent with the existing Palm Beach County-approved Development Order. The power plant, including the oil storage tanks, will be designed to ensure the safe and reliable operations of the plant concurrently with the mining operations.

40	Nancy J. Gribble	Written comments to PSD permit Notice of Intent to Issue	"In closing I ask that the DEP resind or delay its issuance of this permit until such time that a complete and specific review of residents' concerns and questions have been answered and verified with documentation from your department. Please do not rely on the information that has been provided by FPL. It is misleading at best, and their attempt to exclude those residents who will be directly impacted the most are shameful and intolerable."	Public Participation/ Information availble	FPL has provided accurate information to FDEP and to area residents. Pleasa refer to FPL's response NG-1 and Attachment 1 for a summary of our outreach efforts to date.
41	Sharon Waite	FDEP PSD Public Meeting	This project is not quite as innocent as portrayed. 40 tons of sulfuric acid/yr, 220 tons of particulate matter/yr. This is not insignificant, this is dangerous. The sugar mills are temporary, this will be permanent.	Health	The emissions from any power plant facility must be expressed in tons/year for comparison to regulatory thresholds. FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment.
42	Alexandria Larson	FDEP PSD Public Meeting	Glad Loxahatchee is on the map. Nowhere on the information does it say the plant is in Loxahatchee. The hearing was advertised in the Sports section, this time in the orbituaries. Originally it it was going to be a 300MW plant, this will be the largest plant in the state.	Public Participation/ Information availble	Over the last year, FPL has conducted an extensive outreach program. Attachment 1 provides a summary of FPL's outreach efforts, including meetings/presentations with Deer Run, White Fences, Indian Trail Improvement District, and Loxahatchee Groves Landowners Association, and a planned meeting with Fox Trail (postponed from Fall 2005). Also included is a list of media coverage and public notices issued on this Project. The Site is located in unincorporated Palm Beach County. The FDEP requires that the applicant provide certain information in the Site Certification Application, including "Nearest Incorporated City". FPL's application correctly states that Wellington is the nearest incorporated city.
43	Alexandria Larson	FDEP PSD Public Meeting	LNWR is 0.5 miles away from the plant, the Corbett is close as well.	Wildlife Refuges/ LNWR/Corbett/ Everglades	The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) increments that protect air quality from degradation.
44	Alexandria Larson	FDEP PSD Public Meeting	When I called Tallahassee I was told the area was zoned agricultural.	Land use	Section
45	Patricia Curry	FDEP PSD Public Meeting	In epplication it states it will be 100 km from a Class I (Everglades), not right what about the proximity to LNWR and Corbett?	Wildlife Refuges/ LNWR/Corbett/ Everglades	The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) increments that protect air quality from degradation.
46	Patricia Curry	FDEP PSD Public Meeting	The comparison to Riviera Plant is not good, many people over there complain.	Riviera plant	Section Air Quality
47	Patricia Curry	FDEP PSD Public Meeting	The plant will add additional pollution to my area. Currently we only have the sugar cane pollution.	Section Air Quality	The emissions from any power plant facility must be expressed in tons/year for comparison to regulatory thresholds. FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment.
48	John Earley	FDEP PSD Public Meeting	Gas lines are high pressure. My house is 3-4 miles away and I have cracks in my house due to blasting. Will have 12.6 million gallon diesel tank next to the blasting. Potential for explosion	Blasting	Section General

49	John Earley	FDEP PSD Public Meeting	When costs of gas goes up, diesel will be used instead of gas	Air	Section General The PSD permit limits the use of ultra low sulfur distillate fuel to no more than 500 hours during any calendar year.
50	John Earley	FDEP PSD Public Meeting	Increased traffic to the area because of site	Growth	Section General
51	John Earley	FDEP PSD Public Meeting	Property value concern Worried about noise of trucks and generators and visual impacts of stacks Situation of the public versus FPL and the politicians Suggests moving the plant 10 miles west	Other	Section general
52	John Earley	FDEP PSD Public Meeting	Project close to Wildlife preserves	Wildlife Refuges/ LNWR/Corbett/ Everglades	The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) Increments that protect air quality from degradation. Section: general
53	John Earley	FDEP PSD Public Meeting	Will the pits be used for cooling?	Water	?
54	John Koch	FDEP PSD Public Meeting	If build WCEC, FPL should close Riviera Beach plant Contact people next to Riviera plant to learn about air pollution	Riviera plant	Section: Air Quality
55	John Koch		Blasting concerns. How will the equipment function when the ground is shaking.	Blasting	Land use section
56	John Koch	FDEP PSD Public Meeting	Is the plant really needed? Wants wind and solar.	Other	Section: General
57	Nancy Gribble	FDEP PSD Public Meeting	In discussion stated 5 pollutants but only 3 monitors, what happened to the either 2 pollutants/	Air	Section: Air Quality
58	Nancy Gribble	FDEP PSD Public Meeting	In FDEP Web site states, during daytime and hot weather conditions, the atmosphere can disperse pollutanls in a very short period.	Air	Section: Air Quality
59	Nancy Gribble	FDEP PSD Public Meeting	Used old meteorological data 1948-1998 for air quality standards. Why not use more recent data.	Air	Air Quality Section
60	Nancy Gribble	FDEP PSD Public Meeting	Predominate land use out to 5 mile radius listed as mining and agriculture. I live within 1 mile of the site.	Land use	Section: Land use
61	Nancy Gribble	FDEP PSD Public Meeting	No where in the application does it mention Highland Dunes PUD, 2,,00 homes and a school. Within walking distance from site. This is a rural residential neighborhood.	Land use	Section: Land use

62	Joan Shewmake	FDEP PSD Public Meeting	Federal administration has relaxed air regulations Will affect asthma and emphysema of herself and husband ,can breathe now but not later	Air	The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) increments that protect air quality from degradation.
63	Joan Shewmake	FDEP PSD Public Meeting	Wrong plant in wrong place at wrong time Plant will destroy environmentally sensitive area – doesn't belong	Wildlife Refuges/ LNWR/Corbett/ Everglades	The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) increments that protect air quality from degradation.
64	Rosa Durando	FDEP PSD Public Meeting	We are not building state of the art plant People think EPA is strict, but it is not Don't need a new plant Current Administration has relaxed standards		The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) increments that protect air quality from degradation.
65	Rosa Durando	FDEP PSD Public Meeting	Riviera plant one of the dirtiest in US	Riviera plant	
66	Rosa Durando	FDEP PSD Public Meeting	Will impact Lox Wildlife Refuge	Wildlife Refuges/ LNWR/Corbett/ Everglades	The Site Certification Application, which included the Air Construction Permit Application, evaluated the air quality impacts of WCEC and the effects on soils, vegetation and wildlife in the vicinity of the Site including the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The air quality impacts were provided in Sections 6.0 and 7.0 of the Air Construction Permit Application. The results demonstrated that the air quality impacts from the WCEC would be much less than the EPA/FDEP established Ambient Air Quality Standards that protect human health, welfare and the environment including vegetation and wildlife. Moreover, the air quality impacts of the WCEC are much less than the EPA/FDEP established Prevention of Significant Deterioration (PSD) increments that protect air quality from degradation.
67	Rosa Durando	FDEP PSD Public Meeting	Water supply will become polluted through discharge into the pits – not being addressed Water is the real issue out here – this is not a clean plant Increased building will cause problems with water	Water	
68	Rosa Durando	FDEP PSD Public Meeting	Mercury pollution will be worse in fish	Air	WCEC will utilize the cleanest of all fossil fuels, primarily natural gas and ultra-low sulfur light oil used as backup. These fuels contain virtually no mercury, and therefore will have no adverse impact on the health of residents or well-water quality.
69	Rosa Durando	FDEP PSD Public Meeting	Wants a lake belt in this area not more development as it is AG land	Land use	
70	Rosa Durando	FDEP PSD Public Meeting	Old 500 kV line should have been sufficient to supply power	Other	
71	Rosa Durando	FDEP PSD Public Meeting	SO2 & NOx emission problems	Air	The emissions from any power plant facility must be expressed in tons/year for comparison to regulatory thresholds. FPL has performed all of the necessary air modeling and has applied the best available control technology to the proposed power plant design. The changes in the ambient air quality that would result from this plant are much less than the EPA and FDEP degradation standards, which are even more stringent than that Ambient Air Quality Standards established by EPA and FDEP to protect human health, welfare and the environment.
72	Mike Christiansen	FDEP PSD Public Meeting	SCR not state of the art	Air	
73	Mike Christiansen	FDEP PSD Public Meeting	Must think about the future for our children	Other	

74	Mike Christiansen	FDEP PSD Public Meeting	Concerned about spills from large diesel storage tanks – more storage than Exxon Valdez spill Concerned about impact of a spill on the wildlife refuge	Diesel Storage tank/Oil Spills	Section General
75	Mike Christiansen	FDEP PSD Public Meeting	One single pollutant may not be the problem (air emissions may be OK), but the cumulative effects of the entire plant are problem	section Air Quality	The emissions from any power plant facility must be expressed in tons/year for comparison to modeling and has applied the best available control technology to the proposed power plant de this plant are much less than the EPA and FDEP degradation standards, which are even more EPA and FDEP to protect human health, welfare and the environment.

March 30, 2006

Director of Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Rd.
Mail Station #5505
Tallahassee, FL. 32399-2400
D.E.P. File # 0990646-071-AC
WCEC in Loxahatchee, FL.

Sharon A. Waite
15058 75th Ln. No.
Loxahatchee, FL. 33470

Dear Mr. Director,

If Am painfully aware of the FPL plant that is planned near me.

It will have 12 stacks 140' high and spew out 40 Tons of sulfuric acid mist etc. This area is rural and we have septic tanks and wells. We don't even have gas stations here. What mater you think a 12.6 million gallon diesel stockpile in the ground will fly? The Palm Beach Aggregates will be blasting until 2032 (permitted already). This is adjacent to the pits my tax money paid $212 m. for (ASR wells). FPL is not going to be allowed to utilize them to cool turbines. Why did Wellington and Royal Palm Beach receive letters about this and not the acreage residents? They aren't near this. It's planned right next to our community.

I'd say lets clean up Riviera Beach plant first. It's the dirtiest in the state.

I also call for a public hearing and this letter to be included in your final report.

As a sidebar, FPL will not be tolerated to use the ASR wells as a place to inject their waste.

I never want to see this project come to fruition for another 660,000 new units.

Stop this project now!

Sincerely
Sharon A. Waite

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

March 30, 2006

A.A. Linero, P.E.
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Mail Station #5505
Tallahassee, FL 32399-2400

Re: Florida Power & Light Company
West County Energy Center Project
DEP File No. 0990646-001-AC (PSD-FL-354)

Dear Mr. Linero:

Florida Power & Light Company (FPL) is in receipt of the Draft Prevention of Significant Deterioration (PSD) Permit and Technical Evaluation and Preliminary Determination (TEPD) for the West County Energy Center, issued by the Department on March 1, 2006. In accordance with the Department's Notice of Intent to Issue a PSD permit, this letter and attachments convey requested corrections and clarifications in the Draft PSD and the TEPD. Specifically, attached to this letter are two documents, Attachment 1 & 2, with proposed edits to the Draft PSD and TEPD that we would like you to consider.

Thank you for the time and care you have taken in your review of the West County Energy Center Project. Please call if you have any questions. You can reach me at (561) 691-7518.

Sincerely,

Barbara P. Linkiewicz
Environmental Licensing Manager

cc: Steven Palmer, DEP Siting Office
Ken Kosky, Golder Associates

ATTACHMENT 1

West County Energy Center
PSD Draft Air Permit, issued March 1, 2006
Florida Power & Light Company – Comments

March 30, 2006

1. **Page 1, Expiration Date**: The Draft PSD permit has an expiration date of December 31, 2009. The commercial operation date of the West County Unit 2 is after the expiration date (June 2010). Consistent with historical DEP practice, and to allow for construction delays, the expiration date of the permit should be 18 months after commercial operation of the second unit, December 31, 2011.

2. **Page 2, Facility Description, second paragraph**: We request that the language be updated to reflect a 26-cell cooling tower as follows:

   "Each combined cycle unit will consist of: three nominal 250 megawatt Model 510G gas-turbine-electrical generator sets with evaporative inlet cooling systems; three supplementary-fired heat recovery steam generators (HRSG's) with SCR reactors; one nominal 428 mmBtu/hour (LHV) gas-fired duct burner located within each of the three HRSG's; three 149 feet-exhaust stacks; one ~~24~~ 26-cell mechanical draft cooling tower; and a common nominal 500 megawatt steam-electrical generator."

3. **Page 4, Relevant Documents:** We request that "Letter from FPL to DEP dated December 29, 2005" with details on Mitsubishi 501G technology, including update to nominal megawatts and size of oil tanks be added to the list of Relevant Documents.

4. **Page 7, Equipment and Control Technology, Gas Turbines:** We request the following clarification:

   "4. Gas Turbines. The permittee is authorized to install, tune, operate, and maintain six Model 501G gas turbine-electrical generator sets each with a nominal generating capacity of 250 MW..."

5. **Page 10, Emissions Standards, Footnote h:** To clarify that if a CO catalyst in installed, the rolling average will be calculated from the installation of the catalyst forward, we propose the following:

   "h. Rolling Average. Enforcement discretion may be exercised for up to 12 months with respect to the 6 ppmvd @ 15% O2 limit for any combustion turbine / supplementary-fired heat recovery steam generator upon notification by the permittee of intent to install oxidation catalyst. The permittee shall have 12 months to complete the oxidation catalyst installation. ~~From time of notification to~~ After completing the installation of the catalyst, all prior partial or complete calendar months shall be excluded from the 12 month rolling average."

6. **Page 17, NSPS Applicability.** NSPS Kb is not applicable in its entirety because the fuel that is being used has a maximum true vapor pressure less than 3.5 kPa. FPL suggests that the reference to NSPS Kb be removed and the rest of the section be renumbered accordingly.

~~"NSPS APPLICABILITY~~

~~1. NSPS Subpart Kb Applicability: The distillate fuel oil tanks are subject to Subpart Kb, which applies to any storage tank with a capacity greater than or equal to 10,300 gallons (40 cubic meters) that is used to store volatile organic liquids for which construction, reconstruction, or modification is commenced after July 23, 1984. Tanks with a capacity greater than or equal to 40,000 gallons (151 cubic meters) storing a liquid with a maximum true vapor pressure less than 3.5 kPa are exempt from the General Provisions (40 CFR 60, Subpart A) and from the provisions of NSPS Subpart Kb, except for the record keeping requirements specified below. [40 CFR 60.110b(a) and (c); Rule 62-204.800(7)(b), F.A.C.]~~

EQUIPMENT SPECIFICATIONS

~~2.~~ 1. Equipment: The permittee is authorized…

EMISSIONS AND PERFORMANCE REQURIEMENTS

~~3.~~ 2. Hours of Operation…

NOTIFICATION, REPORTING AND RECORDS

~~4.~~ 3. Oil Tank Records: The permittee shall keep readily accessible records showing the dimension of each storage vessel and an analysis showing the capacity of each storage tank. Records shall be retained for the life of the facility. The permittee shall also keep records sufficient to determine the annual throughput of distillate fuel oil for each storage tank for use in the Annual Operating Report.
~~[Rule 62-204.800(7)(b)16, F.A.C., 40 CFR 60.116b(a) and (b)]~~"

7. **Page 18, Equipment, Cooling Tower:** We request that the language be updated to reflect a 26-cell cooling tower as follows:

"1. Cooling Tower. The permittee is authorized to install two new ~~24~~ 26-cell mechanical draft cooling towers with the following nominal design characteristics:…

8. **Page 18, Emissions and Performance Requirements:** Correct typo:

"2. Drift Rate. Within 60 days of commencing operation, the permittee shall ~~submit~~ certify that the cooling tower was constructed to achieve the specified drift rate of no more than 0.0005 percent of the circulating water flow rate."

9. **Page 21, Emission Unit Description:** We request the following clarification:

"011. Four nominal 2,250 Kw Liquid Fueled Emergency Generators – Reciprocating Internal Combustion Engines"

10. **All pages, footer:** Correct typo:

"FP&L West County Energy Center"

ATTACHMENT 2

West County Energy Center
Technical Evaluation and Preliminary Determination, issued March 1, 2006
Florida Power & Light Company – Comments

March 30, 2006

1. **Page 2, Figure 1**: SW St. Lucie should be removed from this Figure, as it is no longer a proposed FPL project.

2. **Page 3, Project Description, first paragraph**: For accuracy and consistency with the Draft PSD permit, please make the corrections indicated below:

   "The applicant proposes to construct two "three-on-one" combined cycle units (Units 1 and 2). Each combined cycle unit will consist of: three nominal 250 megawatt (MW) "G" Class gas-turbine-electrical generator sets (~~probably~~ Mitsubishi Heavy Industries Model 501G) with evaporative inlet cooling systems; three supplementary-fired heat recovery steam generators (HRSG's) with SCR reactors and gas-fired duct burners (nominal 428 mmBtu/hour LHV); three 149 feet-exhaust stacks; one ~~22~~ 26-cell mechanical draft cooling tower; and a common nominal 500 MW steam-electrical generator."

3. **Page 4, Stack Parameters:** For accuracy and consistency with the Draft PSD permit, please make the correction indicated below:

   "Stack Parameters: Each heat recovery steam generator has a combined cycle stack (HRSG stack) that is at least 149 feet tall with a nominal diameter of ~~23~~ 22 feet.

4. **Page 5, Inlet Conditioning:** We request clarification of the description as follows:

   "Inlet Conditioning: Evaporative cooling is a system that allows for the injection of fine water droplets into the gas turbine compressor inlet air or inlet air is drawn through a wetted media, which reduces the gas temperature through evaporative cooling..."

5. **Page 6, Table 1, Applicant's Initial Estimated Annual Emissions for both Combined Cycle Units:** For accuracy and consistency with the PSD application and the published notice, please make the correction indicated below.

Pollutant	Project Emissions TPY	PSD Significant Emission Rate, TPY	PSD Review Required?
CO	968	100	Yes
Pb	0.050	0.6	No
NO_x	841	40	Yes
PM/PM_{10}	~~511/211~~ 611/420	25/15	Yes
SO_2	407	40	Yes
SAM	41	7	Yes
VOC	176	40	Yes

6. **Page 7, Title 40, Description:** Delete reference to Part 76, as it only applies to coal-fired units.

7. **Page 14, first paragraph:** Update 2,200 MW to 2,500 MW for consistency with permit and selected technology:

   "Estimates provided by FPL for the proposed ~~2,200~~ 2,500 MW project also indicate a large cost difference between the two technologies..."

8. **Page 14, Table 3:** There is a question mark after "DB" in the NOx Limit and Fuel column for the Wolf Hollow, TX project.

9. **Page 16, Table 6:** There is a question mark next to "NH_3" in the "PM-lb/mmBTU or lb/hr NH_3 – ppmvd @ 15% 0_2" column for the West County project.

10. **Page 18, Section 4.3 Sulfur Dioxide (SO_2) and Sulfuric Acid Mist (SAM) BACT Determination, paragraph 4:** For accuracy and consistency with the PSD application, please make the correction indicated below:

    "FPL estimated ~~206~~ 203.5 tons per year of SO_2 and 20 tons per year of sulfuric acid mist (SAM) per combined cycle unit. This equates to ~~412~~ 407 and 40 TPY for SO2 and SAM respectively from the two combined cycle units..."

11. **Page 19, Cooling Tower PM Emissions:** For accuracy and consistency with the PSD application and Draft PSD permit, please make the corrections indicated below:

    "The applicant's preliminary design includes a ~~22~~ 26 or 24-cell mechanical draft cooling tower for each combined cycle unit with the following specifications...

    "The Department determines the draft BACT to be a design drift rate of no more than 0.0005% of the circulating water flow rate. At this level, maximum potential PM and PM_{10} emissions from the cooling tower are expected to be on the order of ~~134~~ 201.2 and 10 TPY respectively from the two cooling towers."

12. **Page 20, Table 7, Draft BACT Determination, Footnote h:** To clarify that if a CO catalyst is installed, the rolling average will be calculated from the installation of the catalyst forward, we propose the following:

    "h. Rolling Average. Enforcement discretion may be exercised for up to 12 months with respect to the 6 ppmvd @ 15% O2 limit for any combustion turbine / supplementary-fired heat recovery steam generator upon notification by the permittee of intent to install oxidation catalyst. The permittee shall have 12 months to complete the oxidation catalyst installation. ~~From time of notification to~~ After completing the installation of the catalyst, all prior partial or complete calendar months shall be excluded from the 12 month rolling average."

13. **Page 22, National Emission Standards for Hazardous Air Pollutants Applicable to Gas Turbines, third paragraph:** FPL will meet the limit as it applies when the rule is finalized. However, we provide the following clarification because FPL did not specifically propose to meet a particular standard in our application:

    "~~FPL proposes to meet the limit proposed in YYYY of 91 ppbvd.~~ The Department believes the formaldehyde emission limit will be met given the proposed BACT CO limits of 8.0 and 6 ppmvd @ 15% O_2 for daily and annual operation respectively..."

14. **Page 23, second paragraph:** We request the following clarifications:

    "The ~~limits proposed~~ manufacturer's emissions data provided by FPL ~~for~~ in the West County Energy Center PSD Application are included for comparison. NSPS and NESHAP requirements that are possibly applicable to the auxiliary boilers are also included. Subpart Db requirements, which apply to boilers that are 100 MMBtu/hr or greater are included in the table below because the FPL project appears to specify a nominal 100 MMBtu/hr boiler. The 99.8 MMBtu/hr specification set by FPL must relate to a physical capacity rather than a permit condition."

15. **Page 26, 6th bullet:** We request the following clarification:

    For shutdown, up to three hours in any 24-hour period of excess emissions are allowed.

16. **Page 27, first paragraph:** FPL does not intend to install a damper. For accuracy and consistency with the Draft PSD permit, please remove reference to a permit requirement for installation of a damper.

    "While NOx emissions during warm and cold startups are greater than during full load stead-state operation, such startups are infrequent. Also it is noted that such startups would be preceded by shutdowns of at least 24 or 48 hours. Therefore, the startup emissions would not cause annual emissions greater than the potential emissions under continuous operation. ~~The draft permit will also require the installation of a damper to reduce heat loss during combined cycle shutdowns to minimize the number of combined cycle cold startups.~~"

17. **Page 27, second paragraph:** We request that language be clarified as proposed below to reflect that FPL will not install a separate dump condenser, but may operate in bypass mode and dump steam to the main condenser:

    "Combined Cycle Operations ~~with Dump Condenser~~: If the steam-electrical turbine generator was off line for some reason, it is possible that the gas turbine / HRSG systems would operate without producing any steam generated power. Instead, steam would be delivered ~~to a dump~~ via a steam generator bypass to the condenser. ~~Operation with a dump condenser must still meet the standards established for combined cycle operation with ammonia injection.~~

18. **Page 27, Table 12, Major Sources of NO_x in Palm Palm Beach County (2004):** Update tons per year to be consistent with the PSD permit application.

    Specifically, in the row for FPL's West County Energy Center, "856" should be "841".

19. **Page 28, Table 13, Largest Sources of SO_2 in Palm Palm Beach County (2004):** Update tons per year to be consistent with the PSD permit application.

    Specifically, in the row for FPL's West County Energy Center, "411" should be "407".

20. **Page 28, Table 14, Largest Sources of PM in Palm Palm Beach County (2004):** Update tons per year to be consistent with the PSD permit application.

    Specifically, in the row for FPL's West County Energy Center, "652" should be "611".

21. **Page 28, Table 15, Largest Sources of CO in Palm Palm Beach County (2004):** Update tons per year to be consistent with the PSD permit application.

    Specifically, in the row for FPL's West County Energy Center, "2020" should be "968".

    FPL also notes that the 2004 Annual Operating Report for the Riviera Power Plant was 431 tons of CO, which suggests that it should be included in Table 15.

22. **Page 35, Table 22, PSD Class I Increment Analysis – ENP**: Correct the Allowable Increment from 5 ug/m^3 to 8 ug/m^3.

23. **Page 35, Ozone, Second Paragraph:** Update tons per year to be consistent with the PSD permit application.

    "...The West County Energy Center will add ~~856~~ 841 TPY of NOx and 176 TPY of VOC..."

24. **Page 36, First Paragraph:** Update tons per year to be consistent with the PSD permit application.

    "To conclusively prove whether or not the ~~856~~ 841 TPY of NOx and 176 tons of VOC will not cause or contribute to a violation, a very sophisticated and expensive model would need to be run for the entire region..."

Hopping Green & Sams

Attorneys and Counselors

January 20, 2006

Al Linero, Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399

Re: Florida Power & Light Co.
West County Energy Center
Application for PSD Permit, PSD FPL-FL-354
Application for Site Certification PA-05-47

Dear Mr. Linero:

By letter dated December 2, 2005, Florida Power & Light Co. (FPL), the applicant, waived the deadline for the Department to issue its preliminary determination on the referenced application until January 25, 2006. Representatives of FPL subsequently met with staff of the Department's Bureau of Air Regulation to discuss this matter. In order to allow the opportunity for FPL to submit additional information and for further discussion between staff of the Department's Bureau of Air Regulation and FPL representatives, FPL agrees to waive the deadline for issuance of the Department's preliminary determination under Section 403.507(3), Florida Statutes, and Rule 62-17.135(1)(b), Florida Administrative Code, until March 1, 2006.

The undersigned is authorized to make this waiver on behalf of the applicant. Should you have any questions, please contact me or Barbara Linkiewicz at 561-691-7518.

Sincerely,

Peter C. Cunningham
Attorney for Florida Power & Light Co.

cc: Scott Goorland, Esq., FDEP, OGC
Steve Palmer, FDEP, SCO

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

March 15, 2006

A.A. Linero, P.E.
Program Administrator, South Permitting
Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, FL 32399-2400

Re: **Florida Power & Light Company**
West County Energy Center Project
Proof of Publication of Notice of Intent to Issue PSD Permit
DEP File No. 0990646-001-AC (PSD-FL-354)

Dear Mr. Linero,

Pursuant to Chapter 50 of the Florida Statutes and Rule 62-17.135(1)(c) of the Florida Administrative Code, Florida Power & Light Company published the DEP's Public Notice of Intent to Issue PSD permit for the West County Energy Center in the Palm Beach Post, a newspaper of general circulation in the area affected.

The Notice of Intent to Issue a Permit appeared in the legal classifieds section of the Palm Beach Post on Thursday, March 9, 2005. Enclosed is an original copy of the proof of publication.

Please contact me with any questions at (561) 691-7067 or contact Barbara Linkiewicz at (561) 691-7518.

Sincerely,

Rachel Godino
Environmental Specialist

cc: Steven Palmer, FDEP Siting Office
Barbara Linkiewicz, FPL
Peter Cunningham, Hopping Green & Sams
Ken Kosky, Golder Associates

THE PALM BEACH POST

Published Daily and Sunday
West Palm Beach, Palm Beach County, Florida

PROOF OF PUBLICATION

STATE OF FLORIDA
COUNTY OF PALM BEACH

Before the undersigned authority personally appeared **Kristi Morrow**, who on oath says that she is **Customer Service Supervisor** of The Palm Beach Post, a daily and Sunday newspaper, published at West Palm Beach in Palm Beach County, Florida; that the attached copy of advertising for a **Notice** in the matter of **DEP File #0990646-001-AC** was published in said newspaper in the issues of **March 9, 2006**. Affiant further says that the said The Post is a newspaper published at West Palm Beach, in said Palm Beach County, Florida, and that the said newspaper has heretofore been continuously published in said Palm Beach County, Florida, daily and Sunday and has been entered as second class mail matter at the post office in West Palm Beach, in said Palm Beach County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she/he has neither paid nor promised any person, firm or corporation any discount rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Kristi Morrow

Sworn to and subscribed before 9th day of March, A.D. 2006

Karen M. McLinton

Personally known XX or Produced Identification_____
Type of Identification Produced_____

Karen M. McLinton
Commission # DD359566
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NO. 5399346
PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT
STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEP File No. 0990646-001-AC (PSD-FL-354)
FPL West County Energy Center
Palm Beach County

The Department of Environmental Protection (Department) gives notice of its intent to issue a permit under the requirements for the Prevention of Significant Deterioration of Air Quality (PSD Permit) to the Florida Power & Light Company (FPL). The permit is one of several authorizations needed to construct two nominal 1,250 megawatts (MW) combined cycle units at the proposed FPL West County Energy Center at 4000 205th Street, North in unincorporated Palm Beach County. A determination of Best Available Control Technology (BACT) was required pursuant to Rule 62-212.400(6), Florida Administrative Code (FAC) for emissions of carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM/ PM10), sulfur dioxide (SO2), sulfuric acid mist (SAM), and volatile organic compounds (VOC). The appli- cant's corporate address is Florida Power & Light Company, 700 Universe Boulevard, Juno Beach, Florida 33408.

The two proposed combined cycle units will each consist of: three nominal 250 MW combustion turbine-electrical generators; three supplementary-fired heat recovery steam generators (HRSGs); a single nominal 500 MW steam-electrical generator; a 26-cell mechanical draft cooling tower; and three exhaust stacks. Additional equipment not necessarily associated with a specific unit includes: two 6.3 million gallon diesel fuel storage tanks; two 99.8 MMBtu/hr auxiliary boilers; four 2250 KW emergency generators; and other associated support equipment.

Each combined cycle unit will be permitted to operate continuously while firing inherently clean natural gas. Ultra low sulfur (0.0015 percent sulfur) distillate fuel oil will be allowed as backup fuel for 500 hours per year per combustion turbine. Gas-fired duct burners located within the HRSGs will be used for limited periods of time to raise additional steam for use in the steam turbine-electrical generator.

Selective catalytic reduction (SCR) systems with ammonia injection will be used in conjunction with Dry Low-NOx combustion (gas firing) and wet injection (oil firing) to control NOx emissions. The Department's proposed BACT NOx emission limit is 2.0 parts per million by volume, dry corrected to 15 percent oxygen (ppmvd @15% O2) of NOXx while firing natural gas. Sufficient catalyst will be used to minimize emissions of ammonia reagent. The Department's proposed NOx limit while firing ultra low sulfur fuel oil is 8 ppmvd @15% O2. The Department's proposed BACT CO emission limit is 8.0 ppmvd @15% O2 on a 24-hour basis while burning gas, ultralow sulfur fuel oil, or using the duct burners. A CO limit of 6 ppmvd @15% O2 applies on a 12-month rolling average. A BACT CO limit of 4.1 ppmvd @15% O2 applies during initial and annual full load tests while burning natural gas without use of the duct burners.

Emissions of CO, PM/PM10, SAM, SO2, and VOC will be minimized by the efficient, high-temperature

combustion of inherently clean fuels. Emissions of CO and NOx will be continuously monitored to demonstrate compliance with the conditions of the permit. BACT determinations for the ancillary equipment such as auxiliary boilers, fire pump engines, process heaters, cooling tower, and emergency generators are detailed in the Technical Evaluation and Preliminary determination. The complete set of proposed emission limits is available at the Department offices, the Palm Beach County Health Department, and the website address indicated below.

The applicant's initial estimates of maximum potential annual emissions from the project are summarized in the following table.

Pollutant
CO
Maximum Tons Per Year
968
PSD Significant Emission Rate Tons Per Year
100
PSD Review Required?
Yes
Pollutant
Pb
Maximum Tons Per Year
0.050
PSD Significant Emission Rate Tons Per Year
0.6
PSD Review Required?
No
Pollutant
NOx
Maximum Tons Per Year
841
PSD Significant Emission Rate Tons Per Year
40
PSD Review Required?
Yes
Pollutant
PM/PM10
Maximum Tons Per Year
611/420
PSD Significant Emission Rate Tons Per Year
25/15
PSD Review Required?
Yes
Pollutant
SO2
Maximum Tons Per Year
407
PSD Significant Emission Rate Tons Per Year
40
PSD Review Required?
Yes
Pollutant
SAM
Maximum Tons Per Year
41
PSD Significant Emission Rate Tons Per Year
7
PSD Review Required?
Yes
Pollutant
VOC
Maximum Tons Per Year
176
PSD Significant Emission Rate Tons Per Year
40
PSD Review Required?
Yes

According to the applicant, maximum predicted air quality impacts due to emissions from the proposed new project are less than the modeling significant impact levels applicable to areas in the vicinity of the project (i.e. PSD Class II Areas) for all pollutants except for the 24-hour PM10 impacts. Therefore, multi- source modeling PSD incre- ment consumption modeling was required only for the 24-hour PM10 averaging time. The maximum pre- dicted project impacts in the Class I Everglades National Park (ENP) are less than the applicable modeling significant impact levels for all pollutants except for the 24-hour PM10 impacts. Therefore multi-source increment consumption modeling was required only for the 24-hour PM10 impacts on the ENP. The results of this multi-source increment consumption modeling are shown in the table below.

PM10 PSD Increment Consumed (ug/m3)
Class II 24-hour9.3
Allowable Increment (ug/m3)
30
Percent Increment Consumed
31
PM10 PSD Increment Consumed (ug/m3)
Class I 24-hour1.9
Allowable Increment (ug/m3)
8
Percent Increment Consumed
24

Based on the required analyses, the Department has reasonable assurance that the proposed project will not cause or significantly contribute to a violation of any ambient air quality standard or PSD increment.

The Department will issue the FINAL Permit, in accordance with the conditions of the DRAFT Permit, unless a response received in accor- dance with the following procedures results in a different decision or significant change of terms or conditions. The Department will accept written comments and requests for a public meeting concerning the proposed permit issuance action for a period of thirty (30) days from the date of publication of this Public Notice of Intent to Issue PSD Permit. Written comments or requests for public meetings should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400 or the e-mail address provided below. Any written comments filed shall be made available for public inspection. If comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120. 57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. This PSD permitting action is being coordinated with a certification under the Power Plant Siting Act (Sections 403.501-519, F.S.). If a petition for an administrative hearing on the Department's Intent to Issue is filed by a substantially affected person, that hearing shall be consolidated with the certification hearing, as provided under Section 403.507(3). Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60 (3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accor-dance with the requirements set forth above.

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

Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, Florida 32399-2400
Telephone: 850/488-0114
Fax: 850/922-6979

Department of Environmental Protection
Southeast District Office
400 North Congress Avenue
West Palm Beach, FL 33416-5425
Telephone: 561/681-6600
Fax: 561/681-6790

Palm Beach County Public Health Unit
Environmental Health & Engineering Services
901 Evernia Street
West Palm Beach, Florida 33402
Telephone: 561/355-3136
Fax: 561/355-2442

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the authorized representative, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Program Administrator, South Permitting Section at the Bureau of Air Regulation at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114 for additional in-formation. The application, key correspondence, draft permit and technical evalu- ation can be accessed at www.dep.state.fl.us/air/permitting/construction/westcounty.htm

PUB: The Palm Beach Post March 9, 2006

FPL

December 29, 2005

A.A. Linero, P.E.
Program Administrator, South Permitting
Department of Environmental Protection
Bureau of Air Regulation
111 S. Magnolia Drive, Suite 4
Tallahassee, FL 32399-2400

Re: Florida Power & Light Company
West County Energy Center Project
DEP File No. 0990646-001-AC (PSD-FL-354)

Dear Mr. Linero:

We would like to thank you for all the time and care you have taken in your review of the West County Energy Center Project (West County or WCEC). It is very exciting to be working on a project with new and improved technology, specifically the Mitsubishi Power Systems (MPS) MPS-501G combustion turbine. Florida Power & Light Company (FPL) made the decision to invest in this technology after an extensive evaluation process which looked at the various advanced combustion turbine's commercially available. The use of the MPS-501G advanced combustion turbine for this project will result in an overall combined cycle plant performance improvement of approximately 250 btu/kWh from our most recent combined cycle plant using F class advanced combustion turbines. We are confident that the MPS-501G machine will meet our expectations and be an exceptional addition to our fleet. However, use of this technology does present a level of uncertainty that we hope the Department recognizes and will allow a reasonable amount of flexibility so that we can demonstrate the improved efficiencies that will be gained.

In our conversations about the technical details of these machines, we recognized that it would be helpful to provide additional data to support some of our conclusions. We hope this information will allow the Department to draw the same conclusions regarding the capabilities of these machines and the appropriate requirements for the project. This letter conveys the additional data and provides explanations, where appropriate, on NOx, CO, and VOC, auxiliary boilers, emergency diesel generators and the ecological research performed for the project. Also attached to this letter is a document (**Attachment 1**) outlining some edits that we would like you to consider as we work through the "very preliminary" draft permit issued for internal review. We have not provided specific comments on the entire "Technical

Evaluation and Preliminary Determination". Once you have had the opportunity to review the data presented here and our comments, we would anticipate that you would update the document based on the Department's review. We would like the opportunity to review and comment on the next draft of both the Air Permit and the Technical Evaluation and Preliminary Determination.

In Attachment 1, you will notice that each of the combined cycle units (three-on-one configurations with the MPS-501G combustion turbines) is capable of producing 1,250 megawatts (MWs) rather than the original 1,100 MWs. This additional power generation capability is the result of improved performance, which includes a 2,400 psig/1080°F/1100°F cycle with higher than expected combustion turbine output. Golder Associates has reviewed the range of emissions and consequent impacts as described in the PSD Air Permit and Site Certification Applications. The emissions and impacts are within the ranges presented. The change in MW power generation has no increased emissions or impacts.

Performance and emission tables (Tables A-MPS 1 through 12 included as **Attachment 2)** reflecting the guarantees provided by MPS for the WCEC are enclosed. These tables include the emissions when firing natural gas with duct firing. MPS has guaranteed emission rates at 100 percent load and loads from 60 percent to 90 percent load. The performance and emission tables demonstrate that the performance and emissions are within the envelope included in the original applications. The air impact analyses were conducted for a wide range of turbine inlet conditions (35 °F, 59 °F and 95 °F) and loads (100 and 75 percent). This range in load and turbine inlet temperatures would envelope the performance of the MPS-501G machines selected for the WCEC. As a result, the conclusions reached in the air quality impact sections presented in the Air Construction/PSD Application (Sections 6.0 and 7.0), which demonstrated compliance with ambient air quality standards and PSD Increments are still appropriate for the WCEC using the MPS-501G combustion turbines.

Presented below are the key areas discussed during our November 21, 2005 meeting including information requested by the Department. We have attached specific comments on the very preliminary draft that reflect the MPS information and our comments.

1. NOx Emission Limits: As we have discussed, FPL requested a NOx emission limit of 2.5 ppmvd corrected to 15 percent oxygen when firing natural gas in the Air Construction/PSD Application. We consider this emissions limit as BACT for the WCEC. This is even more appropriate based on specific information obtained from MPS on the performance of the MPS-501G combustion turbine. MPS provided performance curves and tables for NOx emissions versus turbine load using both fuel oil and natural gas. This information is included as **Attachment 3**). A NOx emission limit of 2.5 ppmvd corrected to 15 percent oxygen is consistent as BACT when the WCEC is compared to other recent BACT determinations. This is based on two main factors: WCEC NOx control efficiency required compared to other projects, and WCEC performance (i.e., heat rate) compared to other projects.

Table 1a presents the comparison of the WCEC with the Florida Municipal Power Agency's (FMPA) Treasure Coast Energy Center (TCEC), Progress Energy's Hines Power Block 4 (HPB4) and FPL's Turkey Point Unit 5 (TP5). The emission limits for the TCEC project are

proposed, while the emission limits for the Hines Power Block 4 (HPB4) and the Turkey Point Project have been previously approved. Tables 2a through 2c provide the basis for the comparisons in Table 1a. These data were developed from the information provided to the Department in applications as well as performance determined using model information (referred to as Gate Cycle) and engineering estimates. Tables 1a, 1b, and 2a through 2c are included as **Attachment 4**.

Table 1a presents the NOx control efficiency for each project. The NOx control efficiency for the WCEC at 2.5 ppmvd is greater than any other recent project. The NOx control efficiency for the WCEC at 2.5 ppmvd is greater than the TCEC at 2.0 ppmvd in both the fired (with duct burning) and unfired (without duct burning) cases. In its New Source Review Workshop Manual (Draft October 1990) EPA recognizes control efficiency as a factor in determining control hierarchy (Page B.25).

As shown in Table 1a, WCEC has better performance with the lower heat rate than other recent projects by about 4 percent to over 10 percent depending upon operating condition (unfired and fired). This difference in heat rates is significant. For example, a heat rate reduction of 5 percent for 1,000 MW of generation provides an additional 438,000 MW/year using the same amount of fuel and is equivalent to a 50 MW unit. As the Department is aware, current emission limits being proposed and promulgated as New Source Performance Standards (NSPS) are production based for electric utility units, and are expressed as lb/MW-hr. This type of limit reflects the efficiency of production. If an electric utility unit is more efficient than another unit, it will, all else being equal, have lower lb/MW-hr emissions; that is, less emissions are produced for the same amount of electricity production. Energy efficiency of a combined cycle unit is reflected by the heat rate expressed in Btu/kW-hr. This is reflected in fewer emissions for each MW generated. Clearly, the WCEC will be the most efficient combined cycle plant in Florida. Consideration of energy efficiency should be factored into a determination of BACT for the Project.

The efficiency of each project can be used to calculate an equivalent NOx stack gas concentration in ppmvd. Although a BACT emission limit of 2.5 ppmvd corrected to 15 percent oxygen is proposed for WCEC, the equivalent stack concentration for TCEC when efficiency is considered ranges from 2.17 to 2.28 ppmvd (see Table 1a). This comparison means that while the NOx emission rate for TCEC would be 2.0 ppmvd, the "effective" emission rate based on efficiency would be 2.17 to 2.28 ppmvd as compared to WCEC.

Determination of BACT is made on a case-by-case basis. In the Department's draft evaluation, the use of the Sithe project for comparison as BACT is not appropriate. These projects were clearly required to install NOx control technology that would also meet Lowest Achievable Emission Rate (LAER). LAER does not require a case-by-case comparison of energy, environment and economic impacts. LAER only recognizes that the emission rate can be achieved. As noted in the Department's technical evaluation and preliminary determination, projects in Michigan and Oregon, regions where LAER would not apply, were issued NOx emission limits of 2.5 ppmvd corrected to 15 percent oxygen. The use of the "case-by-case" comparison requirement of BACT is evident in the Department's determinations for the TP5 and HPB4 Projects. FPL proposed the NO_x limits of 2 ppmvd

corrected to 15-percent O_2 when firing natural gas and 8 ppmvd corrected to 15-percent O_2 when firing ultra low-sulfur distillate oil for the TP5 Project due to the close proximity (less than 15 miles) to the Everglades National Park. Indeed, the Department recognized this in the recent issuance of the BACT determination for the Hines Energy Center Power Block 4. In the BACT determination, the Department stated: "The FPL facility is (nearly) adjacent to the Everglades National Park (ENP), and as such, the most stringent emission limits are appropriate." The Department on June 13, 2005 issued the final BACT determination for HPB4 that limited NO_x emissions to 2.5 ppmvd corrected to 15-percent O_2 when firing natural gas for a nominal 500-MW combined cycle unit. The combustion turbines proposed for WCEC will achieve even more NO_x control efficiency than the HPB4 Project as shown in Table 1a.

Taking together the "case-by-case" factors for the WCEC that include greater efficiency, and greater NOx control efficiency, FPL believes a BACT NOx limit of 2.5 ppmvd corrected to 15 percent oxygen is appropriate.

Regarding the NOx emission limit when firing oil, a catalyst vendor was contacted to provide additional information on the design basis for Selective Catalytic Reduction (SCR). The NOx emission limit when firing natural gas as the primary fuel establishes the catalyst volume since it requires the higher control efficiency. The oil emission limit is then established based on the natural gas design. Sulfur is not a significant factor in catalyst deactivation and is not a catalyst poison. For WCEC, a NOx emission limit of 10 ppmvd corrected to 15% oxygen is appropriate with an emission limit of 2.5 ppmvd for gas.

2. CO Emission Limits: FPL requests that the Department establish CO emission limits for the WCEC when firing natural gas similar to those established for Turkey Point Unit 5 and those proposed for the TCEC project. The limits for stack testing purposes would be 4.1 ppmvd corrected for 15 percent oxygen for full load, 7.6 ppmvd corrected for 15 percent oxygen when duct firing. A 24-hour block average of 10 ppmvd corrected for 15 percent oxygen is proposed for continuous compliance. As discussed previously, MPS has guaranteed full load CO emission rates when firing natural gas, the primary fuel, comparable to that proposed for TCEC and contained in the final Air Construction/PSD Permit for Turkey Point Unit 5. MPS has guaranteed CO emissions of 10 ppmvd corrected for 15 percent oxygen for loads from 60 percent to 90 percent. MPS Performance curves and tables are included as **Attachment 3**. As we discussed at our November meeting, operation at loads less than 60 percent would only likely occur during startup and shutdown periods. Indeed, WCEC will be the most efficient combined cycle plant in FPL's combined cycle fleet and is located in the load center. The benefits of this efficiency are also reflected in the lb/MW-hr CO emission rates shown in Table 1b. Clearly, the proposed CO emission rates for WCEC, when considered on a lb/MW-hr basis, would be the lowest of any recent combined cycle facility in Florida.

FPL requests a CO emission limit of 8 ppmvd corrected to 15 percent oxygen when firing distillate oil at full load and a CO emission limit of 10 ppmvd corrected to 15 percent oxygen for continuous compliance. This emission limit is consistent with the CO limits proposed for TCEC and established for TP5. Given the MPS guarantees regarding CO emissions, there is

reasonable assurance that WCEC will comply with the requested CO emission rates without installation of an oxidation catalyst.

3. VOC Emission Rates: The proposed VOC emission limit of 1.2 ppmvd corrected to 15 percent oxygen for natural gas firing is acceptable. However, for natural gas firing with duct firing, FPL is requesting an emission limit of 1.5 ppmvd corrected to 15 percent oxygen. This proposed VOC emission limit is lower than the limit established for TP5 of 1.9 ppmvd corrected to 15 percent oxygen. When firing oil, FPL is requesting a VOC emission rate of 6 ppmvd corrected to 15 percent oxygen.

4. Auxiliary Boiler: While the boiler has not been purchased, a size of approximately 99.8 MMBtu/hr will accommodate the needs of the project. The startup steam needs for the WCEC are 30,000 lb/hr for a single CT/HRSG train. The startup sequence would initially start the first CT/HRSG train with sequential startups of the remaining CT/HRSG trains. An auxiliary boiler with a steam capacity of 85,000 lb/hr and a heat input of approximately 99.8 MMBtu/hr would envelope the startup process since a full 30,000 lb/hr steam would not be required for each train. Once steam is generated in the CT/HRSG trains, a portion can be used for operation.

5. Emergency Diesels: FPL recognizes that the emergency diesel generators that will be purchased would have to meet the NSPS Subpart IIII, when finalized. This proposed NSPS was not yet promulgated when our applications were submitted. We have two comments to the Department's proposed emission limits. First, the emission rates provided in the application were based on specific information on a unit currently available from Caterpillar. There is an inverse relationship between NOx emissions and other emissions from a diesel engine. For example, lower NOx emissions typically mean higher CO and VOC. Thus, using the NOx NSPS emission limit along with the emission limits provided in the application is not technically appropriate. FPL requests that the emission limits proposed by the Department be the same as those provided for in the NSPS. The emission limits for CO, VOC, and PM/PM_{10} would be 8.5 gram/hp-hr, 0.5 gram/hp-hr and 0.54 gram/hp-hr, respectively. The VOC limit was based on a total hydrocarbon limit in the NSPS of 1 gram/hp-hr and assuming 50 percent VOC, which is a common factor.

Second, since the NSPS has not yet been promulgated, FPL requests language in the permit that allows the emission limits to be changed based on the final NSPS.

6. Ecology: Enclosed for your information is the Ecology section from the SCA that provides information about the ecology at the site (see **Attachment 5**). The site is devoid of wetlands and there are no threatened or endangered species residing at this site. The Florida Fish and Wildlife Conservation Commission is a party to the Site Certification and provided no comments on the project. FPL met with the US Fish and Wildlife Service earlier this month and provided information on the project.

7. Fuel Oil Storage Tank Capacity: The PSD and Site Certification Applications reference the need for one 4.2 million-gallon oil storage tank per unit. At this stage in the design, FPL proposes to install two, 6.3 million-gallon oil storage tanks. This will provide assurances that 108 hours of operation on oil will be possible should the situation warrant the use of oil.

Since these specific MPS-501G combustion turbines have not been deployed in Florida, we have suggested that Mitsubishi representatives accompany FPL to Tallahassee to meet with you and others in the Department. A meeting would provide the opportunity for all attendees to gain first hand knowledge from the vendor. We have tentatively organized that meeting for Monday, January 9 based on our understanding of your availability. Please confirm that this date is still acceptable.

We appreciate your consideration of the information provided in this letter, the attachments, and the proposed clarifications to the "very preliminary" draft permit. If you have any questions or require additional information, please contact me at (561) 691-7518. We would welcome the opportunity to discuss the attached information in detail with you once you have had the chance to review it.

Sincerely,

Barbara P. Linkiewicz
Environmental Licensing Manager

cc: Steven Palmer, DEP Siting Coordination Office
Ken Kosky, Golder

Attachment 1

West County Energy Center

Requested Changes to "Very Preliminary" Draft PSD Permit

December 29, 2005

ATTACHMENT 1

West County Energy Center
PSD Air Permit – Very Preliminary Draft
FPL Comments

1) In Section I, page 2 of 24, we request the following clarification in the first paragraph of the Facility Description:

> The FPL West County Energy Center will be a nominal ~~2,220~~ 2,500 megawatt (MW) greenfield power plant. The initial phase is the construction of two nominal ~~1,000~~ 1,250 MW gas-fired combined cycle units that will use ultra low sulfur (ULS) fuel oil as backup fuel. The two combined cycle units are designated as Unit 1 and Unit 2.

2) In Section I, page 2 of 24, we request the following clarification in the second paragraph of the Facility Description:

> ...and a common nominal ~~350~~ 500 MW steam-electrical generator.

3) In Section I, page 2 of 24, we request the following clarification in the list of New Emissions Units:

007 Two nominal ~~4.2~~ 6.3 million distillate fuel oil storage tanks (Note: this capacity will allow approximately 108 hours of on-site oil storage.)
011 Four nominal 2,250 KW (approximately 21 MMBtu) emergency generators
012 One Emergency Fire Pump

4) In Section I, page 4 of 24, please add a period at the end of the sentence under "Compliance Authority".

5) In Section III.A, page 6 of 24, in the table, we request the following clarifications:

> **Description:** ...The project also includes two steam turbine-electrical generators.
>
> **Generating Capacity:** Each of the six gas turbine-electrical generator sets has a nominal generating capacity of 250 MW. Each of the two steam turbine-electrical generators has a nominal generating capacity of ~~350~~ 500 MW. The total nominal generating capacity of each of the "3 on 1" combined cycle units, is approximately ~~1,100~~ 1,250 MW. The total generating capacity of the proposed project is ~~2,220~~ 2,500MW.
>
> **Stack Parameters**:

5) The heat input rates are 2,333 MMBtu per hour when firing natural gas and 2,117 MMBtu per hour when firing distillate fuel oil. The flow rates are 1,330,197 acfm for gas firing and 1,533,502 acfm for oil firing. The stack gas temperature should be 195 degrees F, not 188 degrees F for natural gas firing and is the same as indicated (293 degrees F) for oil firing.

6) In Section III.A, page 8 of 24, we request that 6.d (Oxidation Catalyst) be deleted pursuant to the discussions in the attached letter.

7) In Section III.A, page 8 of 24, in the section title "Performance Restrictions", we request the following clarifications:

7. Permitted Capacity – Gas Turbines: The maximum heat input rate to each gas turbine is 2,333 MMBtu per hour when firing natural gas and 2,117 MMBtu per hour when firing distillate fuel oil (based on compressor inlet air temperature of 59° F, the lower heating value (LHV) of each fuel, and 100% load).

11.b. Inlet ~~Fogging~~ Conditioning: In accordance with the manufacturer's recommendation and appropriate ambient conditions, the evaporative cooling system may be operated to reduce the compressor inlet air temperature and provide additional direct, shaft-driven electrical power. ~~This method of operation is commonly referred to as "fogging."~~

8) Section III.A, page 9 of 24, we request the following clarifications:

11.c. *Duct Firing*: When firing natural gas, each HRSG system may fire natural gas in the duct burners to provide additional steam-generated electrical power. The total combined heat input rate to the duct burners (all six HRSGs) shall not exceed 7,395,840 MMBtu (LHV) during any consecutive 12 months.

12. Emissions Standards: The emission limits in this condition are requested to be changed to the following based on the comments and information provided below (see discussion in attached letter). Note: stack test is at 100% load.

Pollutant	Fuel	Method of Operation	Stack Test, 3-Run Average		CEMS Block Average
			ppmvd @ 15% O_2	lb/hour	ppmvd @ 15% O_2
CO [a]	Oil	Combustion Turbine (CT)	~~4.1~~/8	~~25.8~~/42.0	~~4.1~~/10, 24-hr
	Gas	CT & Duct Burner (DB)	~~4.1~~/7.6	~~26.7~~/52.5	~~4.1~~/10, 24-hr
		CT Normal	4.1	~~24.6~~/23.2	~~4.1~~/10, 24-hr
NO_X [b]	Oil	CT	~~8.0~~/10.0	~~82.4~~/87.4	~~8.0~~/10.0, 24-hr
	Gas	CT &DB	~~2.0~~/2.5	~~24.2~~/28.3	~~2.0~~/2.5, 24-hr
		CT Normal	~~2.0~~/2.5	~~20.0~~/23.8	
PM/PM_{10} [c]	Oil/Gas	All Modes	Fuel Specifications		
			Visible emissions shall not exceed 10% opacity for each 6-minute block average.		
SAM/SO_2 [d]	Oil/Gas	All Modes	Fuel Specifications		

VOC [e]	Oil	CT	~~1.2~~/6.0	~~4.5~~/19.6	NA
	Gas	CT & DB	~~1.2~~/1.5	~~4.1~~/5.4	NA
		CT Normal	1.2	4.1	NA
Ammonia [f]	Oil/Gas	CT, All Modes	5	NA	NA

Note: Please add the following sentence to footnote (a) The stack test limits apply only at high load (90-100% of the combustion turbine capacity).

8) Section III.A, page 11 of 24, we request the following clarifications:

18.a. *Steam Turbine / HRSG System Cold Startup*: For cold startup of the steam turbine system, excess emissions from any gas turbine/HRSG system shall not exceed eight hours in any 24-hour period. A cold "startup of the steam turbine system" is defined as startup of the 3-on-1 combined cycle system following a shutdown of the steam turbine lasting at least 48 hours.

Eight hours is needed for cold start-up of the steam turbine system because of the increased hold times for pre-warming that are required for the Toshiba steam turbine. Both Manatee and Martin projects which have Toshiba steam turbines, are having difficulty managing the six hour limit. The situation is even more critical for the WCEC project due to the higher cycle efficiency (2,400 psig/1,080 degrees F/1,100 degrees F versus 2,100 psig/1,050 degrees F/1,050 degrees F). Adequate time is needed to address water chemistry challenges due to the higher temperatures as well as the thicker drums.

18.d *Fuel Switching*: For ~~oil-to-gas~~ fuel switching, excess emissions shall not exceed ~~1~~ 2 hours in any 24-hour period.

9) Section III.A, page 16 of 24, we request the clarifications below. Recognizing that quarterly reports contain all NSPS and State requirements, this clarification combines the quarterly and semiannual reports.

32.b. Quarterly Permit Excess Emissions Report: Within 30 days following the end of each calendar-quarter, the permittee shall submit a report to the Compliance Authority summarizing periods of CO and NOx emissions in excess of the BACT permit standards following the NSPS format provided in 40 CFR 60.7(c), Subpart A. This also includes reporting any periods of excess emissions as applicable and defined by NSPS Subpart KKKK when the rule is finalized. Periods of startup, shutdown and malfunction shall be monitored, recorded and reported as excess emissions when emission levels exceed the standards specified in the permit. In addition, the report shall summarize the CEMS systems monitor availability for the previous quarter.

For purposes of reporting emissions in excess of NSPS Subpart GG, excess emissions from the gas turbine are defined as: any operating hour in which the CEMS 4-hr rolling average NOx concentration exceeds the NSPS NOx emissions; and any monitoring period during

which the sulfur content of the fuel being fired in the gas turbine exceeds the NSPS standard identified in Appendix GG. For purposes of reporting emissions in excess of NSPS Subpart Da, excess emissions from duct firing are defined as: NOx or PM emissions in excess of the NSPS standards except during periods of startup, shutdown, or malfunction; and SO2 emissions in excess of the NSPS standards except during startup or shutdown.

32.c. *NSPS Semi-Annual Reports*:
The submittal of the Quarterly Excess Emission Reports shall constitute compliance with the requirements of 40 CFR 60.7(d) for the submittal of the Semi-Annual Excess Emissions Report.

{Note: If there are no periods of excess emissions as defined in NSPS Subparts GG, Da, or KKKK, a statement to that effect may be submitted with the Quarterly Excess Emissions Report to suffice for the NSPS Semi-Annual Report.}

[Rules 62-4.130, 62-204.800, 62-210.700(6), F.A.C.; and 40 CFR 60.7, and 60.322(j)(1)]

10) Section III.B, page 17 of 24, we request the following clarifications:

Emission Unit Description
007: Two ~~4.2~~ 6.3 million gallon distillate fuel oil storage tanks

Equipment Specifications
2. Equipment: The permittee is authorized to install, operate, and maintain two ~~4.2~~ 6.3 million gallon distillate fuel oil storage tanks designed to provide ultra low sulfur fuel oil to the gas turbines.

11) Section III. D. pages 19 and 20 of 24. Auxiliary Boiler and Process Heater. As described in the permit application, these sources are not operated continuously and meet the Department criteria for generic exemptions of 5 tons/year in Rule 62-210.300(3)F.A.C. These units are normally classified as insignificant activities in Title V permits. Due to the limited operation and small amount of emissions, FPL requests that the proposed emission limits and testing requirements be deleted.

12) Section III, page 21 of 24, we request the following clarifications:

Equipment Specifications
3. Equipment: The permittee is authorized to install, operate, and maintain ~~two~~ four 2,250 Kw emergency generators.

Emissions and Performance Requirements

4. Hours of Operation and Fuel Specifications: Change hours from 99 to 160, as requested in PSD application.

5. Emergency Generators BACT Emissions Limits: The emission limits for CO, VOC, and PM/PM_{10} should be 8.5 gram/hp-hr, 0.5 gram/hp-Thhr and 0.54 gram/hp-hr, respectively. (see attached letter for explanation).

13) Section III, page 23 of 24, we are providing the following information to be included.

Emission Unit Description
012: Diesel engine fire pump (approximately 300 hp) with associated __500 gallon fuel oil storage tank.

Equipment Specifications
3. Equipment: The permittee is authorized to install, operate, and maintain __one__diesel engine driven fire pump (approximately _300___ hp) and an associated ~~XOO~~ __500__ gallon fuel oil storage tank.

Emissions and Performance Restrictions
4. Hours of Operation: The fire pump may operate in response to emergency conditions and __40 non-emergency hours per year for maintenance testing.

Attachment 2

West County Energy Center

Design Information

Table A-MPS-1 through A-MPS-12

Table A-MPS-1. Design Information and Stack Parameters for the West County Energy Center Project
MPS 501G CT, Dry Low-NO_x Combustor, Natural Gas, Base Load

Parameter	CT Only Turbine Inlet Temperature				CT with Duct Burner Turbine Inlet Temperature			
	35 °F Case 8	59 °F Case 6	75 °F Case 4	95 °F Case 2	35 °F w/DB Case 7	59 °F w/DB Case 5	75 °F w/DB Case 3	95 °F w/DB Case 1
Combustion Turbine Performance								
Net power output (MW)	281.27	262.48	249.44	232.87	281.27	262.48	249.44	232.87
Net heat rate (Btu/kWh, LHV)	8,787	8,891	8,989	9,139	8,787	8,891	8,989	9,139
(Btu/kWh, HHV)	9,754	9,869	9,978	10,144	9,752	9,866	9,972	10,143
Heat Input (MMBtu/hr, LHV)	2,471	2,333	2,241	2,128	2,471	2,333	2,241	2,128
(MMBtu/hr, HHV)	2,743	2,590	2,488	2,362	2,743	2,590	2,488	2,362
Evaporative Cooler	Off	Off	Off	Off	Off	Off	Off	Off
Relative Humidity (%)	40	60	60	50	20	60	60	50
Fuel heating value (Btu/lb, LHV)	20,940	20,940	20,940	20,940	20,940	20,940	20,940	20,940
(Btu/lb, HHV)	23,243	23,243	23,243	23,243	23,243	23,243	23,243	23,243
(HHV/LHV)	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110
Steam Flow (lb/hr)	NA	NA	NA	NA	NA	NA	NA	NA
Duct Burner (DB)								
Heat input (MMBtu/hr, HHV)	0	0	0	0	475	475	475	475
(MMBtu/hr, LHV)	0	0	0	0	427.9	427.9	427.9	427.9
CT/DB Exhaust Flow								
Mass Flow (lb/hr)- provided	5,083,000	4,842,000	4,670,000	4,454,000	5,102,086.0	4,861,086	4,689,086	4,473,086
- provided	NA	NA	NA	NA				
Temperature (°F) - provided	1124	1136	1145	1161	1,124	1,136	1,145	1,161
Moisture (% Vol.)	8.1	8.73	9.4	10.32	9.38	8.66	10.77	11.75
Oxygen (% Vol.)	12.10	12.05	11.96	11.82	10.69	10.55	10.43	10.22
Molecular Weight	28.45	28.69	28.30	28.20	28.37	28.60	28.22	28.11
Fuel Usage								
Fuel usage (lb/hr) = Heat Input (MMBtu/hr) x 1,000,000 Btu/MMBtu (Fuel Heat Content, Btu/lb (LHV))								
Heat input (MMBtu/hr, LHV)	2,471	2,333	2,241	2,128	2,471	2,333	2,241	2,128
Heat content (Btu/lb, LHV)	20,940	20,940	20,940	20,940	20,940	20,940	20,940	20,940
Fuel usage (lb/hr)- calculated	118,004	111,414	107,020	101,624	118,004	111,414	107,020	101,624
Heat content (Btu/cf, LHV)- assumed	933	933	933	933	933	933	933	933
Fuel density (lb/ft^3)	0.0446	0.0446	0.0446	0.0446	0.0446	0.0446	0.0446	0.0446
Fuel usage (cf/hr)- calculated	2,647,288	2,499,443	2,400,879	2,279,818	2,647,288	2,499,443	2,400,879	2,279,818
Fuel Usage - Duct Burner Only								
Fuel usage (lb/hr)- calculated	0	0	0	0	20,436	20,436	20,436	20,436
Fuel usage (cf/hr)- calculated	0	0	0	0	458,458	458,458	458,458	458,458
HRSG Stack								
HRSG - Stack Height (ft)	149	149	149	149	149	149	149	149
Diameter (ft)	22	22	22	22	22	22	22	22
HRSG Stack Flow Conditions								
Velocity (ft/sec) = Volume flow (acfm) / [((diameter)² /4) x 3.14159] / 60 sec/min								
Mass flow (lb/hr)	5,083,000	4,842,000	4,670,000	4,454,000	5,102,086	4,861,086	4,689,086	4,473,086
HRSG Stack Temperature (°F)	196	195	195	195	186	185	185	184
Molecular weight	28.45	28.69	28.30	28.20	28.37	28.60	28.22	28.11
Volume flow (acfm)	1,425,541	1,344,361	1,314,281	1,258,863	1,412,735	1,332,352	1,303,149	1,246,483
Diameter (ft)	22	22	22	22	22	22	22	22
Velocity (ft/sec)- calculated	62.5	58.9	57.6	55.2	61.9	58.4	57.1	54.7

Note: Universal gas constant = 1,545 ft-lb(force)/°R; atmospheric pressure = 2,116.8 lb(force)/ft^2; 14.7 lb/ft^3.

Source: MPS, 2005; CT Performance Data; Golder, 2005 - DB Calculations.

Table A-MPS-2. *Maximum Emissions for Criteria Pollutants for the West County Energy Center Project*
MPS 501 G CT, Dry Low-NO_x Combustor, Natural Gas, Base Load

Parameter	CT Only Turbine Inlet Temperature				CT with Duct Burner Turbine Inlet Temperature			
	35 °F Case 8	59 °F Case 6	75 °F Case 4	95 °F Case 2	35 °F w/DB Case 7	59 °F w/DB Case 5	75 °F w/DB Case 3	95 °F w/DB Case 1
Particulate from CT, DB, and SCR								
Total PM_{10} = PM_{10} (front half) + PM_{10} ($(NH_4)_2SO_4$) from SCR only								
a. PM_{10} (front half) (lb/hr)								
CT- provided	4.0	3.5	3.4	3.2	4.0	9.0	3.5	3.2
DB (lb/hr) - calculated	0.0	0.0	0.0	0.0	2.4	2.4	2.4	2.4
Total CT/DB emission rate (lb/hr)	4.0	3.5	3.4	3.2	6.4	11.4	5.9	5.6
b. PM_{10} ($(NH_4)_2SO_4$) from SCR only = Sulfur trioxide from conversion of SO converts to ammonium sulfate (= PM_{10})								
Particulate from conversion of SO_3 = SO_2 emissions (lb/hr) x conversion of SO_2 to SO_3 x lb SO_3/lb SO_2 x conversion of SO to $(NH_4)_2SO_4$ x lb $(NH_4)_2SO_4$/ lb SO_3								
SO_2 emission rate (lb/hr)- calculated	15.0	14.0	13.5	13.0	17.7	16.9	16.3	15.6
Conversion (%) from SO_2 to SO_3	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
MW SO_3/ SO_2 (80/64)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Conversion (%) from SO_3 to $(NH_4)_2(SO_4)$	100	100	100	100	100	100	100	100
MW $(NH_4)_2$ SO_4/ SO_3 (132/80)	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
SCR Particulate (lb/hr)- calculated	3.03	2.83	2.73	2.63	3.59	3.42	3.30	3.16
Total CT emission rate (lb/hr) [a]	4.0	3.5	3.4	3.2	6.4	11.4	5.9	5.6
Total HRSG stack emission rate (lb/hr) [a + b]	7.0	6.3	6.1	5.8	10.0	14.8	9.2	8.7
(lb/mmBtu, HHV)	NA	NA	NA	NA	NA	NA	NA	NA
Sulfur Dioxide								
SO_2 (lb/hr)= Natural gas (scf/hr) x sulfur content(gr/100 scf) x 1 lb/7000 gr x (lb SO_2 /lb S) /100								
Fuel use (cf/hr)	2,647,288	2,499,443	2,400,879	2,279,818	3,105,746	2,957,900	2,859,337	2,738,275
Sulfur content (grains/ 100 cf)	2	2	2	2	2	2	2	2
lb SO_2 /lb S (64/32)	2	2	2	2	2	2	2	2
CT emission rate (lb/hr)	15.1	14.3	13.7	13.0	NA	NA	NA	NA
HRSG stack emission rate (lb/hr)	15.1	14.3	13.7	13.0	17.7	16.9	16.3	15.6
HRSG stack emission rate (lb/hr) MPS provided	15	14	13.5	13				
Nitrogen Oxides								
NOx (lb/hr) = NOx (ppmvd@ 15% O_2) x {[20.9 x (1-Moisture (%)/100] - Oxygen, dry(%)} x 2116.8 lb/ft^3 x Volume flow (acfm) x 46 (mole. wgt NOx) x 60 min/hr / [1545 x (CT temp.(°F) + 460) x (20.9-15) x 1,000,000 (adj. for ppm)]								
CT/DB, ppmvd @15% O_2	15	15	15	15	16.3	16.0	16.5	16.5
Moisture (%)	8.1	8.73	9.4	10.32	9.38	8.66	10.77	11.75
Oxygen (%)	12.1	12.05	11.96	11.82	10.69	10.55	10.43	10.22
Turbine Flow (acfm)	3,442,161	3,276,227	3,221,473	3,114,495	3,465,115	3,299,355	3,244,732	3,137,986
Turbine Exhaust Temperature (°F)	1,124	1,136	1,145	1,161	1,124	1,136	1,145	1,161
CT/DB Emission rate (lb/hr)	148.5	138.6	134.6	127.9	189.0	181.0	176.0	168.0
CT/DB Emission rate (lb/hr)(provided)	151.0	143.0	138.0	130.0				
HRSG Stack emission rate, ppmvd @ 15% O_2	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
HRSG Stack emission rate (lb/hr)	25.2	23.8	23.0	21.7	28.9	28.3	26.6	25.5
Carbon Monoxide								
CO (lb/hr) = CO(ppm) x [1 - Moisture(%)/100] x 2116.8 lb/ft^2 x Volume flow (acfm) x 28 (mole. wgt CO) x 60 min/hr / [1545 x (CT temp.(°F) + 460°F) x 1,000,000 (adj. for ppm)]								
Basis, ppmvw - calculated	5.37	5.35	5.35	5.36	9.6	9.7	10.0	10.2
Basis, ppmvd @ 15% O2 - provided	4.10	4.10	4.10	4.10	6.2	6.1	6.4	6.5
Moisture (%)	8.10	8.73	9.40	10.32	9.38	8.66	10.77	11.75
Oxygen (%)	12.10	12.05	11.96	11.82	10.69	10.55	10.43	10.22
Turbine Flow (acfm)	3,442,161	3,276,227	3,221,473	3,114,495	3,465,115	3,299,355	3,244,732	3,137,986
Turbine Exhaust Temperature (°F)	1,124	1,136	1,145	1,161	1,124	1,136	1,145	1,161
CT/DB Emission rate (lb/hr)	24.7	23.07	22.4	21.3	43.7	42.1	41.4	40.3
HRSG Stack emission rate (lb/hr)	24.7	23.1	22.4	21.3	43.7	42.1	41.4	40.3
HRSG Stack emission rate (lb/hr)(provided)	24.5	23.2	23.0	21.3				
Volatile Organic Compounds								
VOCs (lb/hr) = VOC(ppmvd) x [1-Moisture(%)/100] x 2116.8 lb/ft^3 x Volume flow (acfm) x 16 (mole. wgt as methane) x 60 min/hr / [1545 x (CT temp.(°F) + 460°F) x 1,000,000 (adj. for ppm)]								
Basis, ppmvw - calculated	1.31	1.30	1.30	1.31	2.2	2.2	2.3	2.3
Basis, ppmvd @ 15% O2 - provided	1.00	1.00	1.00	1.00	1.5	1.5	1.6	1.7
Moisture (%)	8.10	8.73	9.40	10.32	9.38	8.66	10.77	11.75
Oxygen (%) wet	12.10	12.05	11.96	11.82	10.69	10.55	10.43	10.22
Turbine Flow (acfm)	3,442,161	3,276,227	3,221,473	3,114,495	3,465,115	3,299,355	3,244,732	3,137,986
Turbine Exhaust Temperature (°F)	1,124	1,136	1,145	1,161	1,124	1,136	1,145	1,161
CT/DB Emission rate (lb/hr)	3.75	3.52	3.45	3.31	5.65	5.42	5.35	5.21
HRSG Stack emission rate (lb/hr)	3.75	3.52	3.45	3.31	5.65	5.42	5.35	5.21
HRSG Stack emission rate (lb/hr)(provided)	3.50	3.30	3.20	3.00				

Table A-MPS-2. Maximum Emissions for Criteria Pollutants for the West County Energy Center Project
MPS 501 G CT, Dry Low-NO_x Combustor, Natural Gas, Base Load

Parameter	CT Only Turbine Inlet Temperature				CT with Duct Burner Turbine Inlet Temperature			
	35 °F Case 8	59 °F Case 6	75 °F Case 4	95 °F Case 2	35 °F w/DB Case 7	59 °F w/DB Case 5	75 °F w/DB Case 3	95 °F w/DB Case 1
Sulfuric Acid Mist								
Sulfuric Acid Mist (lb/hr)= SO_2 emission (lb/hr) x Conversion to H_2SO_4 (% by weight)/100								
CT SO_2 emission rate (lb/hr) - provided	15.0	14.0	13.5	13.0	17.7	16.9	16.3	15.6
CT Conversion to H_2SO_4 (% by weight) - provided	10	10	10	10	10	10	10	10
DB SO_2 emission rate (lb/hr) - provided	0	0	0	0	0.0	0.0	0.0	0.0
DB Conversion to H_2SO_4 (%) - provided	20	20	20	20	20	20	20	20
HRSG Stack emission rate (lb/hr)	2.30	2.14	2.07	1.99	2.72	2.59	2.50	2.40
- provided	2.3	2.1	2.1	2				
Lead								
Lead (lb/hr) = NA								
Emission Rate Basis	NA	NA	NA	NA	NA	NA	NA	NA
Emission rate (lb/hr)	NA	NA	NA	NA	NA	NA	NA	NA

Note: ppmvd= parts per million, volume dry; O_2= oxygen.

Source: MPS, 2005; CT Performance Data; Golder Associates, 2005 - DB Calculations.

Table A-MPS-3. Design Information and Stack Parameters for the West County Energy Center Project
MPS 501G CT, Dry Low-NO_x Combustor, Natural Gas, 75% Load

Parameter	Turbine Inlet Temperature			
	35 °F	59 °F	75 °F	95 °F
	Case 12	Case 11	Case 10	Case 9
Combustion Turbine Performance				
Net power output (MW)	207.41	193.55	183.93	171.7
Net heat rate (Btu/kWh, LHV)	9,078	9,262	9,422	9,658
(Btu/kWh, HHV)	10,077	10,281	10,458	10,720
Heat Input (MMBtu/hr, LHV)	1,883	1,793	1,732	1,658
(MMBtu/hr, HHV)	2,090	1,990	1,923	1,840
Relative Humidity (%)	60	60	60	50
Fuel heating value (Btu/lb, LHV)	20,940	20,940	20,940	20,940
(Btu/lb, HHV)	23,243	23,243	23,243	23,243
(HHV/LHV)	1.110	1.110	1.110	1.110
CT Exhaust Flow				
Mass flow (lb/hr)- provided	4,156,000	3,998,000	3,885,000	3,742,000
- provided	NA	NA	NA	NA
Temperature (°F) - provided	1,082	1,098	1,110	1,126
Moisture (% Vol.)	7.57	8.17	8.84	9.76
Oxygen (% Vol.)	12.72	12.68	12.58	12.47
Molecular Weight	28.49	28.41	28.34	28.24
Fuel Usage				
Fuel usage (lb/hr) = Heat Input (MMBtu/hr) x 1,000,000 Btu/MMBtu (Fuel Heat Content, Btu/lb (LHV))				
Heat input (MMBtu/hr, LHV)	1,883	1,793	1,732	1,658
Heat content (Btu/lb, LHV)	20,940	20,940	20,940	20,940
Fuel usage (lb/hr)- calculated	89,924	85,626	82,713	79,179
Heat content (Btu/cf, LHV)- assumed	933	933	933	933
Fuel density (lb/ft^3)	0.0446	0.0446	0.0446	0.0446
Fuel usage (cf/hr)- calculated	2,018,064	1,921,609	1,856,233	1,776,925
HRSG Stack				
HRSG - Stack Height (ft)	149	149	149	149
Diameter (ft)	22	22	22	22
HRSG Stack Flow Conditions				
Velocity (ft/sec) = Volume flow (acfm) / [((diameter)^2 /4) x 3.14159] / 60 sec/min				
Mass flow (lb/hr)- provided	4,156,000	3,998,000	3,885,000	3,742,000
HRSG Stack Temperature (°F)	184	185	186	187
Molecular weight	28.49	28.41	28.34	28.24
CT volume flow (acfm)	1,142,935	1,103,980	1,077,313	1,043,032
Diameter (ft)	22	22	22	22
Velocity (ft/sec)- calculated	50.1	48.4	47.2	45.7

Note: Universal gas constant = 1,545 ft-lb(force)/°R; atmospheric pressure = 2,116.8 lb(force)/ft^2; 14.7 lb/ft^3.

Source: MPS, 2005; CT Performance Data; Golder Associates, 2005.

Table A-MPS-4. Maximum Emissions for Criteria Pollutants for the West County Energy Center Project
MPS 501G CT, Dry Low-NO_x Combustor, Natural Gas, 75% Load

Parameter	Turbine Inlet Temperature			
	35 °F	59 °F	75 °F	95 °F
	Case 12	Case 11	Case 10	Case 9
Particulate from CTand SCR				
Total PM_{10} = PM_{10} (front half) + PM_{10} ($(NH_4)_2SO_4$) from SCR only				
a. PM_{10} (front half) (lb/hr)				
CT- provided	3.0	3.0	3.0	3.0
b. PM_{10} ($(NH_4)_2SO_4$) from SCR only = Sulfur trioxide from conversion of SO_2 converts to ammonium sulfate (= PM_{10})				
Particulate from conversion of SO_2 = SO_2 emissions (lb/hr) x conversion of SO_2 to SO_3 x lb SO_3/lb SO_2 x conversion of SO_3 to $(NH_4)_2SO_4$ x lb $(NH_4)_2SO_4$/ lb SO_3				
SO_2 emission rate (lb/hr)- calculated	12.0	11.0	10.0	10.0
Conversion (%) from SO_2 to SO_3	9.8	9.8	9.8	9.8
MW SO_3/ SO_2 (80/64)	1.3	1.3	1.3	1.3
Conversion (%) from SO_3 to $(NH_4)_2(SO_4)$	100	100	100	100
MW $(NH_4)_2$ SO_4/ SO_3 (132/80)	1.7	1.7	1.7	1.7
SCR Particulate (lb/hr)- calculated	2.43	2.22	2.02	2.02
Total CT emission rate (lb/hr) [a]	3.0	3.0	3.0	3.0
Total HRSG stack emission rate (lb/hr) [a + b]	5.4	5.2	5.0	5.0
(lb/mmBtu, HHV)	NA	NA	NA	NA
Total CT emission rate (lb/hr) provided	4.8	4.6	4.4	4.3
Sulfur Dioxide				
SO_2 (lb/hr)= Natural gas (scf/hr) x sulfur content(gr/100 scf) x 1 lb/7000 gr x (lb SO_2 /lb S) /100				
Fuel use (cf/hr)	2,018,064	1,921,609	1,856,233	1,776,925
Sulfur content (grains/ 100 cf)	2	2	2	2
lb SO_2 /lb S (64/32)	2	2	2	2
HRSG Stack emission rate (lb/hr)- calculated	11.5	11.0	10.6	10.2
HRSG Stack emission rate (lb/hr) MPS provided	12.00	11.00	10.00	10.00
Nitrogen Oxides				
NOx (lb/hr) = NOx (ppmvd@ 15% O_2) x {[20.9 x (1-Moisture (%)/100] - Oxygen, dry(%)} x 2116.8 lb/ft^2 x Volume flow (acfm) x 46 (mole. wgt NOx) x 60 min/hr / [1545 x (CT temp.(°F) + 460) x (20.9-15) x 1,000,000 (adj. for ppm)]				
CT / DB, ppmvd @15% O_2	15	15	15	15
Moisture (%)	7.57	8.17	8.84	9.76
Oxygen (%)	12.72	12.68	12.58	12.47
Turbine Flow (acfm)	2,736,655	2,666,668	2,618,237	2,556,799
Turbine Exhaust Temperature (°F)	1,082	1,098	1,110	1,126
CT/DB Emission rate (lb/hr)	112.6	107.2	103.8	99.0
CT/DB Emission rate (lb/hr)(provided)	118.0	107.0	104.0	99.0
HRSG Stack emission rate, ppmvd @ 15% O_2	2.5	2.5	2.5	2.5
HRSG Stack emission rate (lb/hr)	19.7	17.8	17.3	16.5
Carbon Monoxide				
CO (lb/hr) = CO(ppm) x [1 - Moisture(%)/100] x 2116.8 lb/ft^2 x Volume flow (acfm) x 28 (mole. wgt CO) x 60 min/hr / [1545 x (CT temp.(°F) + 460°F) x 1,000,000 (adj. for ppm)]				
Basis, ppmvw	12.10	12.02	12.03	12.00
Basis, ppmvd @ 15% O2 - provided	10	10	10	10
Moisture (%)	7.57	8.17	8.84	9.76
Turbine Flow (acfm)	2,736,655	2,666,668	2,618,237	2,556,799
Turbine Exhaust Temperature (°F)	1,082	1,098	1,110	1,126
HRSG Exhaust Temperature (°F)	184	185	186	187
HRSG Stack emission rate (lb/hr)- calculated	44.5	42.6	41.6	40.1
HRSG Stack emission rate (lb/hr)- provided	46.0	43.0	42.0	40.0

Table A-MPS-4. Maximum Emissions for Criteria Pollutants for the West County Energy Center Project
MPS 501G CT, Dry Low-NO_x Combustor, Natural Gas, 75% Load

Parameter	Turbine Inlet Temperature			
	35 °F	59 °F	75 °F	95 °F
	Case 12	Case 11	Case 10	Case 9
Volatile Organic Compounds				
VOCs (lb/hr) = VOC(ppmvd) x [1-Moisture(%)/100] x 2116.8 lb/ft^2 x Volume flow (acfm) x 16 (mole. wgt as methane) x 60 min/hr / [1545 x (CT temp.(°F) + 460°F) x 1,000,000 (adj. for ppm)]				
Basis, ppmvw	1.21	1.20	1.20	1.20
Basis, ppmvd @ 15% O2 - provided	1	1	1	1
Moisture (%)	7.57	8.17	8.84	9.76
Turbine Flow (acfm)	2,736,655	2,666,668	2,618,237	2,556,799
Turbine Exhaust Temperature (°F)	1,082	1,098	1,110	1,126
HRSG Exhaust Temperature (°F)	184	184	184	184
HRSG Stack emission rate (lb/hr)- calculated	2.82	2.71	2.64	2.54
HRSG Stack emission rate (lb/hr)- provided	3.00	2.00	2.00	2.00
Sulfuric Acid Mist				
Sulfuric Acid Mist (lb/hr)= SO_2 emission (lb/hr) x Conversion to H_2SO_4 (% by weight)/100				
CT SO_2 emission rate (lb/hr) - provided	12.0	11.0	10.0	10.0
CT Conversion to H_2SO_4 (% by weight) - provided	10	10	10	10
DB SO_2 emission rate (lb/hr) - provided	0	0	0	0
DB Conversion to H_2SO_4 (%) - provided	20	20	20	20
HRSG Stack emission rate (lb/hr)- calculated	1.84	1.68	1.53	1.53
- provided	1.9	1.6	1.6	1.5
Lead				
Lead (lb/hr) = NA				
Emission Rate Basis	NA	NA	NA	NA
HRSG Stack emission rate (lb/hr)	NA	NA	NA	NA

Note: ppmvd= parts per million, volume dry; O_2= oxygen.

Source: MPS, 2005; CT Performance Data; Golder, 2005.

Table A-MPS-5. Design Information and Stack Parameters for the West County Energy Center Project
MPS 501G CT, Dry Low-NO_x Combustor, Natural Gas, 60% Load

Parameter	Turbine Inlet Temperature			
	35 °F Case 12	59 °F Case 11	75 °F Case 10	95 °F Case 9
Combustion Turbine Performance				
Net power output (MW)	165.85	154.76	147.06	137.28
Net heat rate (Btu/kWh, LHV)	9,707	9,951	10,156	10,464
(Btu/kWh, HHV)	10,775	11,046	11,273	11,615
Heat Input (MMBtu/hr, LHV)	1,609	1,540	1,493	1,436
(MMBtu/hr, HHV)	1,786	1,709	1,657	1,594
Relative Humidity (%)	60	60	60	50
Fuel heating value (Btu/lb, LHV)	20,940	20,940	20,940	20,940
(Btu/lb, HHV)	23,243	23,243	23,243	23,243
(HHV/LHV)	1.110	1.110	1.110	1.110
CT Exhaust Flow				
Mass flow (lb/hr)- provided	3,493,000	3,375,000	3,293,000	3,188,000
- provided	NA	NA	NA	NA
Temperature (°F) - provided	1,141	1,158	1,170	1,187
Moisture (% Vol.)	7.68	8.29	8.95	9.87
Oxygen (% Vol.)	12.59	12.55	12.46	12.34
Molecular Weight	28.48	28.41	28.33	28.23
Fuel Usage				
Fuel usage (lb/hr) = Heat Input (MMBtu/hr) x 1,000,000 Btu/MMBtu (Fuel Heat Content, Btu/lb (LHV))				
Heat input (MMBtu/hr, LHV)	1,609	1,540	1,493	1,436
Heat content (Btu/lb, LHV)	20,940	20,940	20,940	20,940
Fuel usage (lb/hr)- calculated	76,839	73,543	71,299	68,577
Heat content (Btu/cf, LHV)- assumed	933	933	933	933
Fuel density (lb/ft^3)	0.0446	0.0446	0.0446	0.0446
Fuel usage (cf/hr)- calculated	1,724,411	1,650,461	1,600,090	1,539,002
HRSG Stack				
HRSG - Stack Height (ft)	149	149	149	149
Diameter (ft)	22	22	22	22
HRSG Stack Flow Conditions				
Velocity (ft/sec) = Volume flow (acfm) / [((diameter)^2 /4) x 3.14159] / 60 sec/min				
Mass flow (lb/hr)- provided	3,493,000	3,375,000	3,293,000	3,188,000
HRSG Stack Temperature (°F)	175	176	178	180
Molecular weight	28.48	28.41	28.33	28.23
CT volume flow (acfm)	947,438	919,152	902,039	879,253
Diameter (ft)	22	22	22	22
Velocity (ft/sec)- calculated	41.5	40.3	39.5	38.6

Note: Universal gas constant = 1,545 ft-lb(force)/°R; atmospheric pressure = 2,116.8 lb(force)/ft^2; 14.7 lb/ft^3.

Source: MPS, 2005; CT Performance Data; Golder Associates, 2005.

Table A-MPS-6. Maximum Emissions for Criteria Pollutants for the West County Energy Center Project
MPS 501G CT, Dry Low NO_x Combustor, Natural Gas, 60% Load

Parameter	Turbine Inlet Temperature 35 °F Case 12	59 °F Case 11	75 °F Case 10	95 °F Case 9
Particulate from CTand SCR				
Total PM_{10} = PM_{10} (front half) + PM_{10} ($(NH_4)_2SO_4$) from SCR only				
a. PM_{10} (front half) (lb/hr)				
CT- provided	3.0	2.0	2.0	2.0
b. PM_{10} ($(NH_4)_2SO_4$) from SCR only = Sulfur trioxide from conversion of SO_2 converts to ammonium sulfate (= PM_{10})				
Particulate from conversion of SO_2 = SO_2 emissions (lb/hr) x conversion of SO_2 to SO_3 x lb SO_3/lb SO_2 x conversion of SO_3 to $(NH_4)_2SO_4$ x lb $(NH_4)_2SO_4$/ lb SO_3				
SO_2 emission rate (lb/hr)- calculated	9.0	9.0	9.0	9.0
Conversion (%) from SO_2 to SO_3	9.8	9.8	9.8	9.8
MW SO_3/ SO_2 (80/64)	1.3	1.3	1.3	1.3
Conversion (%) from SO_3 to $(NH_4)_2(SO_4)$	100	100	100	100
MW $(NH_4)_2$ SO_4/ SO_3 (132/80)	1.7	1.7	1.7	1.7
SCR Particulate (lb/hr)- calculated	1.82	1.82	1.82	1.82
Total CT emission rate (lb/hr) [a]	3.0	2.0	2.0	2.0
Total HRSG stack emission rate (lb/hr) [a + b]	4.8	3.8	3.8	3.8
(lb/mmBtu, HHV)	NA	NA	NA	NA
Total CT emission rate (lb/hr) provided	4.1	3.9	3.8	3.6
Sulfur Dioxide				
SO_2 (lb/hr)= Natural gas (scf/hr) x sulfur content(gr/100 scf) x 1 lb/7000 gr x (lb SO_2 /lb S) /100				
Fuel use (cf/hr)	1,724,411	1,650,461	1,600,090	1,539,002
Sulfur content (grains/ 100 cf)	2	2	2	2
lb SO_2 /lb S (64/32)	2	2	2	2
HRSG Stack emission rate (lb/hr)- calculated	9.9	9.4	9.1	8.8
HRSG Stack emission rate (lb/hr) MHI provided	9.00	9.00	9.00	9.00
Nitrogen Oxides				
NOx (lb/hr) = NOx (ppmvd@ 15% O_2) x {[20.9 x (1-Moisture (%)/100] - Oxygen, dry(%)} x 2116.8 lb/ft^2 x Volume flow (acfm) x 46 (mole. wgt NOx) x 60 min/hr / [1545 x (CT temp.(°F) + 460) x (20.9-15) x 1,000,000 (adj. for ppm)]				
CT / DB, ppmvd @15% O_2	15	15	15	15
Moisture (%)	7.59	8.22	8.86	9.75
Oxygen (%)	12.68	12.63	12.57	12.48
Turbine Flow (acfm)	2,388,738	2,338,345	2,304,583	2,262,702
Turbine Exhaust Temperature (°F)	1,171	1,187	1,197	1,209
CT/DB Emission rate (lb/hr)	93.4	89.4	86.6	83.2
CT/DB Emission rate (lb/hr)(provided)	99.0	95.0	93.0	89.0
HRSG Stack emission rate, ppmvd @ 15% O_2	2.5	2.5	2.5	2.5
HRSG Stack emission rate (lb/hr)	16.5	15.8	15.5	14.8
Carbon Monoxide				
CO (lb/hr) = CO(ppm) x [1 - Moisture(%)/100] x 2116.8 lb/ft^2 x Volume flow (acfm) x 28 (mole. wgt CO) x 60 min/hr / [1545 x (CT temp.(°F) + 460°F) x 1,000,000 (adj. for ppm)]				
Basis, ppmvw	12.17	12.10	12.05	11.99
Basis, ppmvd @ 15% O2 - provided	10	10	10	10
Moisture (%)	7.59	8.22	8.86	9.75
Turbine Flow (acfm)	2,388,738	2,338,345	2,304,583	2,262,702
Turbine Exhaust Temperature (°F)	1,171	1,187	1,197	1,209
HRSG Exhaust Temperature (°F)	177	178	180	182
HRSG Stack emission rate (lb/hr)- calculated	37.9	36.3	35.2	33.8
HRSG Stack emission rate (lb/hr)- provided	39.0	37.0	36.0	35.0

Table A-MPS-6. Maximum Emissions for Criteria Pollutants for the West County Energy Center Project
MPS 501G CT, Dry Low NO_x Combustor, Natural Gas, 60% Load

Parameter	Turbine Inlet Temperature			
	35 °F	59 °F	75 °F	95 °F
	Case 12	Case 11	Case 10	Case 9
Volatile Organic Compounds				
VOCs (lb/hr) = VOC(ppmvd) x [1-Moisture(%)/100] x 2116.8 lb/ft^2 x Volume flow (acfm) x 16 (mole. wgt as methane) x 60 min/hr / [1545 x (CT temp.(°F) + 460°F) x 1,000,000 (adj. for ppm)]				
Basis, ppmvw	1.22	1.21	1.20	1.20
Basis, ppmvd @ 15% O2 - provided	1	1	1	1
Moisture (%)	7.59	8.22	8.86	9.75
Turbine Flow (acfm)	2,388,738	2,338,345	2,304,583	2,262,702
Turbine Exhaust Temperature (°F)	1,171	1,187	1,197	1,209
HRSG Exhaust Temperature (°F)	177	177	177	177
HRSG Stack emission rate (lb/hr)- calculated	2.34	2.26	2.20	2.14
HRSG Stack emission rate (lb/hr)- provided	2.00	2.00	2.00	2.00
Sulfuric Acid Mist				
Sulfuric Acid Mist (lb/hr)= SO_2 emission (lb/hr) x Conversion to H_2SO_4 (% by weight)/100				
CT SO_2 emission rate (lb/hr) - provided	9.0	9.0	9.0	9.0
CT Conversion to H_2SO_4 (% by weight) - provided	10	10	10	10
DB SO_2 emission rate (lb/hr) - provided	0	0	0	0
DB Conversion to H_2SO_4 (%) - provided	20	20	20	20
HRSG Stack emission rate (lb/hr)- calculated	1.38	1.38	1.38	1.38
- provided	1.4	1.4	1.4	1.3
Lead				
Lead (lb/hr) = NA				
Emission Rate Basis	NA	NA	NA	NA
HRSG Stack emission rate (lb/hr)	NA	NA	NA	NA

Note: ppmvd= parts per million, volume dry; O_2= oxygen.

Source: MPS, 2005; CT Performance Data; Golder, 2005.

Table A-MPS-7. Design Information and Stack Parameters for the West County Energy Center Project
MPS 501G CT, Dry Low NO_x Combustor, Distillate Oil, Base Load

Parameter	Turbine Inlet Temperature			
	35 °F Case 28	59 °F Case 26	75 °F Case 24	95 °F Case 22
Combustion Turbine Performance				
Net power output (MW)	239.1	221.8	209.8	194.5
Net heat rate (Btu/kWh, LHV)	9,410	9,550	9,690	9,900
(Btu/kWh, HHV)	9,975	10,123	10,271	10,494
Heat Input (MMBtu/hr, LHV)	2,248	2,117	2,030	1,923
(MMBtu/hr, HHV)	2,383	2,244	2,152	2,038
Relative Humidity (%)	60	60	60	50
Fuel heating value (Btu/lb, LHV)	18,387	18,387	18,387	18,387
(Btu/lb, HHV)	19,490	19,490	19,490	19,490
(HHV/LHV)	1.060	1.060	1.060	1.060
CT Exhaust Flow				
Mass Flow (lb/hr)- provided	5,092,000	4,850,000	4,677,000	4,460,000
Temperature (°F) - assumed	982	995	1,006	1,021
Moisture (% Vol.)	7.3	7.9	8.49	9.41
Oxygen (% Vol.)	12.80	12.70	12.59	12.50
Molecular Weight	28.67	28.60	28.55	28.43
Fuel Usage				
Fuel usage (lb/hr) = Heat Input (MMBtu/hr) x 1,000,000 Btu/MMBtu (Fuel Heat Content, Btu/lb (LHV))				
Heat input (MMBtu/hr, LHV)	2,248	2,117	2,030	1,923
Heat content (Btu/lb, LHV)	18,387	18,387	18,387	18,387
Fuel usage (lb/hr)- calculated	122,260	115,136	110,404	104,585
HRSG Stack				
HRSG - Stack Height (ft)	149	149	149	149
Diameter (ft)	22	22	22	22
HRSG Stack Flow Conditions				
Velocity (ft/sec) = Volume flow (acfm) / [((diameter)^2 /4) x 3.14159] / 60 sec/min				
Mass flow (lb/hr) - provided	5,092,000	4,850,000	4,677,000	4,460,000
HRSG Stack Temperature (°F)	292	293	294	294
Molecular weight	28.67	28.60	28.55	28.43
CT volume flow (acfm)	1,624,985	1,553,502	1,502,785	1,438,739
(ft^3/s)- calculated	27,083	25,892	25,046	23,979
Diameter (ft)	22	22	22	22
Velocity (ft/sec)- calculated	71.2	68.1	65.9	63.1

Note: Universal gas constant = 1,545 ft-lb(force)/°R; atmospheric pressure = 2,116.8 lb(force)/ft^2; 14.7 lb/ft^3.

Source: MPS, 2005; CT Performance Data; Golder, 2005.

Table A-MPS-8. Maximum Emissions for Criteria Pollutants for the West County Energy Center Project
MPS 501G CT, Dry Low-NO_x Combustor, Distillate Oil, Base Load

Parameter	Turbine Inlet Temperature 35 °F Case 28	59 °F Case 26	75 °F Case 24	95 °F Case 22
Particulate from CTand SCR				
Total PM_{10} = PM_{10} (front half) + PM_{10} ($(NH_4)_2SO_4$) from SCR only				
a. PM_{10} (front half) (lb/hr)				
CT- provided	37.0	35.0	34.0	32.0
b. PM_{10} ($(NH_4)_2SO_4$) from SCR only = Sulfur trioxide from conversion of SO_2 converts to ammonium sulfate (= PM_{10})				
Particulate from conversion of SO_2 = SO_2 emissions (lb/hr) x conversion of SO_2 to SO_3 x lb SO_3/lb SO_2 x conversion of SO to $(NH_4)_2SO_4$ x lb $(NH_4)_2SO_4$/ lb SO_3				
SO_2 emission rate (lb/hr)- calculated	3.7	3.5	3.3	3.1
Conversion (%) from SO_2 to SO_3	9.8	9.8	9.8	9.8
MW SO_3/ SO_2 (80/64)	1.3	1.3	1.3	1.3
Conversion (%) from SO_3 to $(NH_4)_2(SO_4)$	100	100	100	100
MW $(NH_4)_2$ SO_4/ SO_3 (132/80)	1.7	1.7	1.7	1.7
SCR Particulate (lb/hr)- calculated	0.74	0.70	0.67	0.63
CT emission rate (lb/hr) [a]	37.0	35.0	34.0	32.0
Total HRSG stack emission rate (lb/hr) [a + b]	37.7	35.7	34.7	32.6
(lb/mmBtu, *HHV*)	NA	NA	NA	NA
Total CT emission rate (lb/hr) provided	38.0	36.0	35.0	32.0
Sulfur Dioxide				
SO_2 (lb/hr)= Fuel oil (lb/hr) x sulfur content(% weight) x (lb SO/lb S) /100				
Fuel oil Sulfur Content	0.0015%	0.0015%	0.0015%	0.0015%
Fuel oil use (lb/hr)	122,260	115,136	110,404	104,585
lb SO2 / lb S (64/32)	2	2	2	2
HRSG Stack emission rate (lb/hr)- calculated	3.7	3.5	3.3	3.1
HRSG Stack emission rate (lb/hr)- provided	3.60	3.40	3.30	3.10
Nitrogen Oxides				
NOx (lb/hr) = NOx (ppmvd@ 15% O_2) x {[20.9 x (1-Moisture (%)/100] - Oxygen, dry(%)} x 2116.8 lb/ft^2 x Volume flow (acfm) x 46 (mole. wgt NOx) x 60 min/hr / [1545 x (CT temp.(°F) + 460) x (20.9-15) x 1,000,000 (adj. for ppm)]				
CT/DB, ppmvd @15% O_2	42	42	42	42
Moisture (%)	7.3	7.9	8.49	9.41
Oxygen (%)	12.80	12.70	12.59	12.50
Turbine Flow (acfm)	3,115,995	3,001,787	2,921,860	2,825,958
Turbine Exhaust Temperature (°F)	982	995	1,006	1,021
CT/DB Emission rate (lb/hr)	382.4	363.7	350.6	330.4
CT emission rate (lb/hr)(provided)	394.0	367.0	352.0	334.0
HRSG Stack emission rate, ppmvd @ 15% O_2	10	10	10.0	10.0
HRSG Stack emission rate (lb/hr)	91.1	86.6	83.5	78.7
HRSG Stack emission rate (lb/hr)(provided)	93.8	87.4	83.8	79.5
Carbon Monoxide				
CO (lb/hr) = CO(ppm) x [1 - Moisture(%)/100] x 2116.8 lb/ft^2 x Volume flow (acfm) x 28 (mole. wgt CO) x 60 min/hr / [1545 x (CT temp.(°F) + 460°F) x 1,000,000 (adj. for ppm)]				
Basis, ppmvw	9.62	9.64	9.68	9.63
Basis, ppmvd @ 15% O2 - provided	8	8	8	8
Moisture (%)	7.3	7.9	8.49	9.41
Basis, ppmvd @ 15% O_2	8.00	8.00	8.00	8.00
Turbine Flow (acfm)	3,115,995	3,001,787	2,921,860	2,825,958
Turbine Exhaust Temperature (°F)	982	995	1,006	1,021
HRSG Exhaust Temperature (°F)	292	293	294	294
HRSG Stack emission rate (lb/hr)	44.3	42.2	40.7	38.3
HRSG Stack emission rate (lb/hr)- provided	45.0	42.0	41.0	38.0

Table A-MPS-8. Maximum Emissions for Criteria Pollutants for the West County Energy Center Project
MPS 501G CT, Dry Low-NO_x Combustor, Distillate Oil, Base Load

Parameter	Turbine Inlet Temperature			
	35 °F	59 °F	75 °F	95 °F
	Case 28	Case 26	Case 24	Case 22
Volatile Organic Compounds				
VOCs (lb/hr) = VOC(ppmvd) x 2116.8 lb/ft^2 x Volume flow (acfm) x 16 (mole. wgt as methane) x 60 min/hr / [1545 x (CT temp.(°F) + 460°F) x 1,000,000 (adj. for ppm)]				
Basis, ppmvw	7.21	7.23	7.26	7.22
Basis, ppmvd @ 15% O2 - provided	6.00	6.00	6.00	6.00
Moisture (%)	7.30	7.90	8.49	9.41
Oxygen (%)	12.80	12.70	12.59	12.50
Oxygen (%-dry)	13.81	13.79	13.76	13.80
Turbine Flow (acfm)	3,115,995	3,001,787	2,921,860	2,825,958
Turbine Exhaust Temperature (°F)	982	995	1,006	1,021
HRSG Stack emission rate (lb/hr)	20.50	19.62	19.04	18.13
HRSG Stack emission rate (lb/hr)- provided	20.00	18.00	18.00	17.00
Sulfuric Acid Mist				
Sulfuric Acid Mist (lb/hr)= SO_2 emission (lb/hr) x Conversion to H_2SO_4 (% by weight)/100				
CT SO_2 emission rate (lb/hr) - provided	3.7	3.5	3.3	3.1
CT Conversion to H_2SO_4 (% by weight) - provided	20	20	20	20
DB SO_2 emission rate (lb/hr) - provided	0	0	0	0
DB Conversion to H_2SO_4 (%) - provided	20	20	20	20
HRSG Stack emission rate (lb/hr)- calculated	1.12	1.06	1.01	0.96
- provided	1.2	1.1	1	1
Lead				
Lead (lb/hr) = Basis (lb/10^{12} Btu) x Heat Input (MMBtu/hr) / 1,000,000 MMBtu/10^{12} Btu				
Emission Rate Basis (lb/10^{12} Btu)	14	14	14	14
HRSG Stack emission rate (lb/hr)- calculated	0.0315	0.0296	0.0284	0.0269

Note: ppmvd= parts per million, volume dry; O_2= oxygen.

Source: MPS, 2005; CT Performance Data; Golder, 2005.

Table A-MPS-9. Design Information and Stack Parameters for the West County Energy Center Project
MPS 501G CT, Dry Low-NO_x Combustor, Distillate Oil, 75% Load

Parameter	Turbine Inlet Temperature			
	35 °F Case 32	59 °F Case 31	75 °F Case 30	95 °F Case 29
Combustion Turbine Performance				
Net power output (MW)	179.1	166.1	157.1	145.6
Net heat rate (Btu/kWh, LHV)	9,830	10,060	10,260	10,550
(Btu/kWh, HHV)	10,420	10,664	10,876	11,183
Heat Input (MMBtu/hr, LHV)	1,759	1,670	1,610	1,536
(MMBtu/hr, HHV)	1,865	1,770	1,707	1,628
Relative Humidity (%)	60	60	60	50
Fuel heating value (Btu/lb, LHV)	18,387	18,387	18,387	18,387
(Btu/lb, HHV)	19,490	19,490	19,490	19,490
(HHV/LHV)	1.060	1.060	1.060	1.060
CT Exhaust Flow				
Mass Flow (lb/hr)- with no margin	4,946,000	4,757,000	4,619,000	4,426,000
- provided	NA	NA	NA	NA
Temperature (°F) - assumed	832	847	859	878
Moisture (% Vol.)	5.9	6.5	7.2	8.2
Oxygen (% Vol.)	14.30	14.20	14.20	14.00
Molecular Weight	28.78	28.71	28.58	28.46
Fuel Usage				
Fuel usage (lb/hr) = Heat Input (MMBtu/hr) x 1,000,000 Btu/MMBtu (Fuel Heat Content, Btu/lb (LHV))				
Heat input (MMBtu/hr, LHV)	1,759	1,670	1,610	1,536
Heat content (Btu/lb, LHV)	18,387	18,387	18,387	18,387
Fuel usage (lb/hr)- calculated	95,665	90,825	87,562	83,537
HRSG Stack				
HRSG - Stack Height (ft)	149	149	149	149
Diameter (ft)	22	22	22	22
HRSG Stack Flow Conditions				
Velocity (ft/sec) = Volume flow (acfm) / [((diameter)^2 /4) x 3.14159] / 60 sec/min				
Mass flow (lb/hr)	4,946,000	4,757,000	4,619,000	4,426,000
HRSG Stack Temperature (^{0}F)	271	274	276	278
Molecular weight	28.78	28.71	28.58	28.46
CT volume flow (acfm)	1,528,167	1,479,100	1,447,033	1,395,249
Diameter (ft)	22	22	22	22
Velocity (ft/sec)- calculated	67.0	64.9	63.4	61.2
Velocity (ft/sec)- provided	55	53	52	50

Note: Universal gas constant = 1,545 ft-lb(force)/°R; atmospheric pressure = 2,116.8 lb(force)/ft^2; 14.7 lb/ft^3.

Source: MPS, 2005; CT Performance Data; Golder, 2005.

Table A-MPS-10. Maximum Emissions for Criteria Pollutants for the West County Energy Center Project
MPS 501G CT, Dry Low-NO_x Combustor, Distillate Oil, 75% Load

Parameter	Turbine Inlet Temperature			
	35 °F	59 °F	75 °F	95 °F
	Case 32	Case 31	Case 30	Case 29
Particulate from CTand SCR				
Total PM_{10} = PM_{10} (front half) + PM_{10} ($(NH_4)_2SO_4$) from SCR only				
a. PM_{10} (front half) (lb/hr)				
CT- provided	36.0	35.0	34.0	32.0
b. PM_{10} ($(NH_4)_2SO_4$) from SCR only = Sulfur trioxide from conversion of SO_2 converts to ammonium sulfate (= PM_{10})				
Particulate from conversion of SO_2 = SO_2 emissions (lb/hr) x conversion of SO_2 to SO_3 x lb SO_3/lb SO_2 x conversion of SO_3 to $(NH_4)_2SO_4$ x lb $(NH_4)_2SO_4$/ lb SO_3				
SO_2 emission rate (lb/hr)- calculated	2.9	2.7	2.6	2.5
Conversion (%) from SO_2 to SO_3	9.8	9.8	9.8	9.8
MW SO_3/ SO_2 (80/64)	1.3	1.3	1.3	1.3
Conversion (%) from SO_3 to $(NH_4)_2(SO_4)$	100	100	100	100
MW $(NH_4)_2$ SO_4/ SO_3 (132/80)	1.7	1.7	1.7	1.7
SCR Particulate (lb/hr)- calculated	0.58	0.55	0.53	0.51
CT emission rate (lb/hr) [a]	36.0	35.0	34.0	32.0
Total HRSG stack emission rate (lb/hr) [a + b]	36.6	35.6	34.5	32.5
(lb/mmBtu, HHV)	NA	NA	NA	NA
Total CT emission rate (lb/hr) provided	37.0	36.0	34.0	33.0
Sulfur Dioxide				
SO_2 (lb/hr)= Fuel oil (lb/hr) x sulfur content(% weight) x (lb SO_2 /lb S) /100				
Fuel oil Sulfur Content	0.0015%	0.0015%	0.0015%	0.0015%
Fuel oil use (lb/hr)	95,665	90,825	87,562	83,537
lb SO2 / lb S (64/32)	2	2	2	2
HRSG Stack emission rate (lb/hr)- calculated	2.9	2.7	2.6	2.5
HRSG Stack emission rate (lb/hr)- provided	2.8	2.7	2.6	2.5
Nitrogen Oxides				
NOx (lb/hr) = NOx (ppmvd@ 15% O_2) x {[20.9 x (1-Moisture (%)/100] - Oxygen, dry(%)} x 2116.8 lb/ft^2 x Volume flow (acfm) x 46 (mole. wgt NOx) x 60 min/hr / [1545 x (CT temp.(°F) + 460) x (20.9-15) x 1,000,000 (adj. for ppm)]				
CT/DB, ppmvd @15% O_2	42	42	42	42
Moisture (%)	5.9	6.5	7.2	8.2
Oxygen (%)	14.30	14.20	14.20	14.00
Turbine Flow (acfm)	2,701,316	2,634,484	2,593,256	2,531,312
Turbine Exhaust Temperature (°F)	832	847	859	878
CT emission rate (lb/hr)	302.1	289.8	275.0	264.1
CT emission rate (lb/hr)(provided)	304.0	294.0	283.0	270.0
HRSG Stack, ppmvd @ 15% O_2	10	10	10.0	10.0
HRSG Stack emission rate (lb/hr)- calculated	72.4	70.0	67.4	64.3
HRSG Stack emission rate (lb/hr)- provided	85.0	80.0	77.0	73.0
Carbon Monoxide				
CO (lb/hr) = CO(ppm) x [1 - Moisture(%)/100] x 2116.8 lb/ft^2 x Volume flow (acfm) x 28 (mole. wgt CO) x 60 min/hr / [1545 x (CT temp.(°F) + 460°F) x 1,000,000 (adj. for ppm)]				
Basis, ppmvw	48.33	48.41	47.44	47.88
Basis, ppmvd @ 15% O2 - provided	50	50	50	50
Moisture (%)	5.9	6.5	7.2	8.2
Turbine Flow (acfm)	2,701,316	2,634,484	2,593,256	2,531,312
Turbine Exhaust Temperature (°F)	832	847	859	878
HRSG Exhaust Temperature (°F)	271	274	276	278
HRSG Stack emission rate (lb/hr)	218.9	210.0	199.2	191.4
HRSG Stack emission rate (lb/hr)- provided	219.0	210.0	201.0	192.0

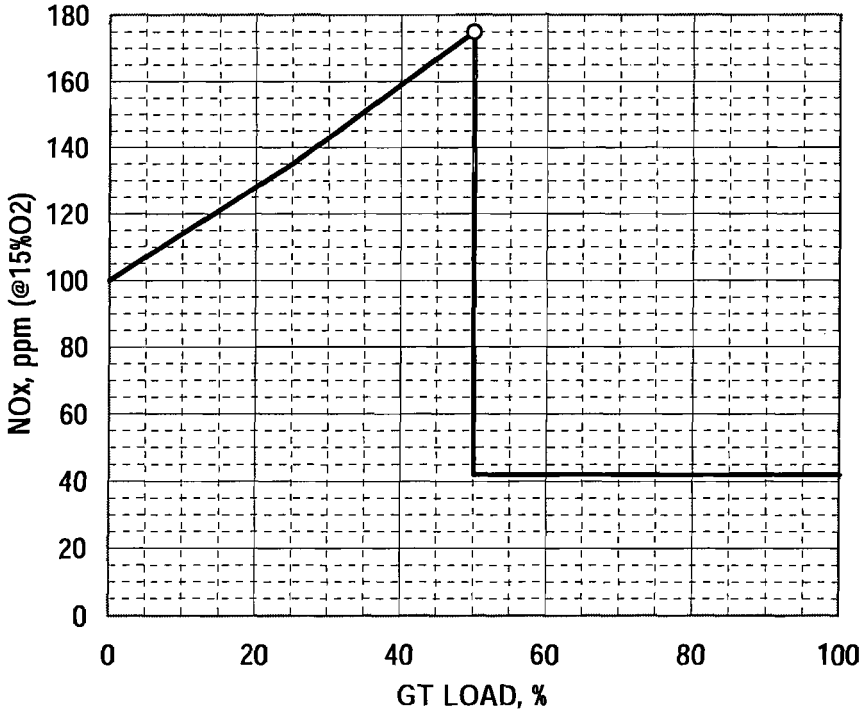
Attachment 3

West County Energy Center

NOx and CO Emission Curves and Tables

EXPECTED NOx EMISSION vs GT LOAD

GT MODEL	: M501G1
TYPE OF COMBUSTOR	: Dry Low NOx
TYPE OF FUEL	: FUEL OIL as per Mitsubishi Liquid Fuel Specification (E00-02646 R0)
NOx CONTROL	: Water Injection



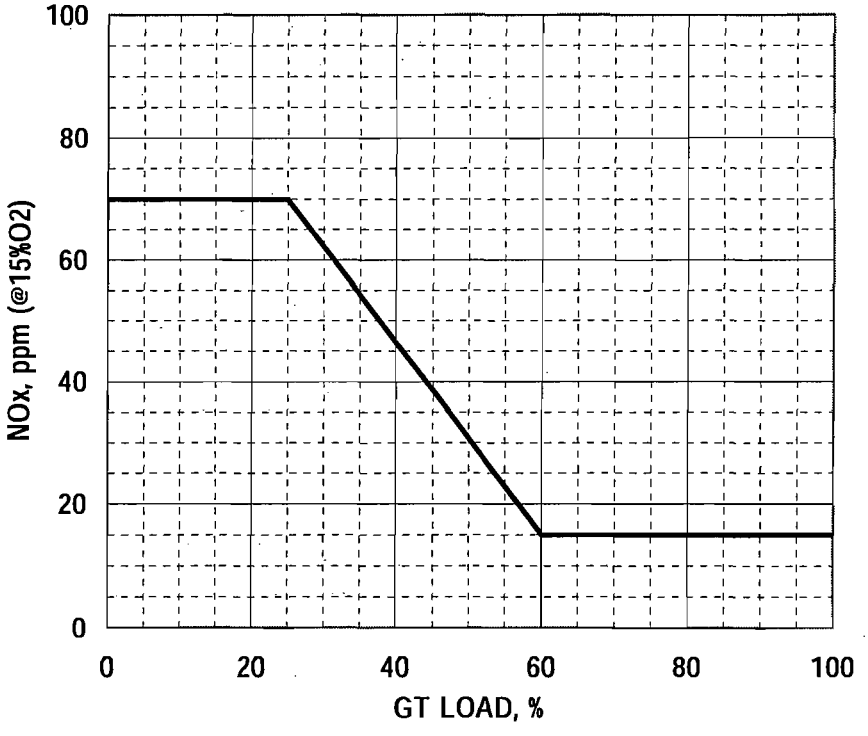
GT LOAD	%	0	5	10	15	20	25	30	35	40	45	50
NOx	ppm,15%O2	100	107	114	121	128	135	143	151	159	167	175

GT LOAD	%	50	55	60	65	70	75	80	85	90	95	100
NOx	ppm,15%O2	42	42	42	42	42	42	42	42	42	42	42

REMARKS : Values given are based on 0.015wt% of Fuel Bound Nitrogen in the Fuel

EXPECTED NOx EMISSION vs GT LOAD

GT MODEL : M501G1
TYPE OF COMBUSTOR : Dry Low NOx
TYPE OF FUEL : NATURAL GAS as per Mitsubishi Gas Fuel Specification (E00-01170 R5)



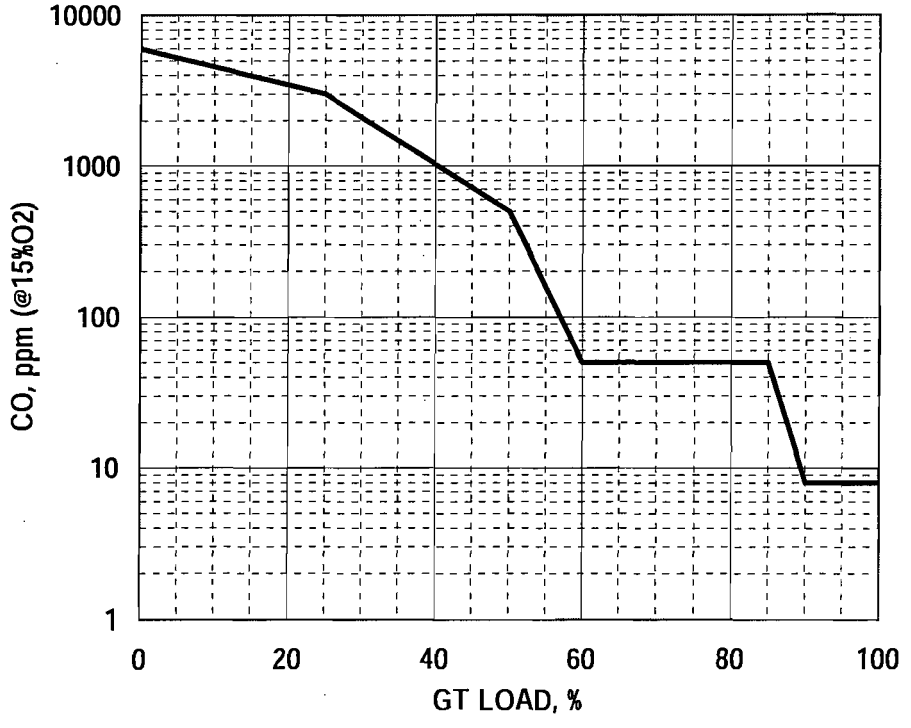
GT LOAD	%	0	5	10	15	20	25	30	35	40	45
NOx	ppm,15%O2	70	70	70	70	70	70	62.2	54.3	46.5	38.6

GT LOAD	%	50	55	60	65	70	75	80	85	90	95	100
NOx	ppm,15%O2	30.8	22.9	15	15	15	15	15	15	15	15	15

REMARKS : Values given are based on no Fuel Bound Nitrogen in the Fuel

EXPECTED CO EMISSION vs GT LOAD

GT MODEL	: M501G1
TYPE OF COMBUSTOR	: Dry Low NOx
TYPE OF FUEL	: FUEL OIL as per Mitsubishi Liquid Fuel Specification (E00-02646 R0)
NOx CONTROL	: Water Injection

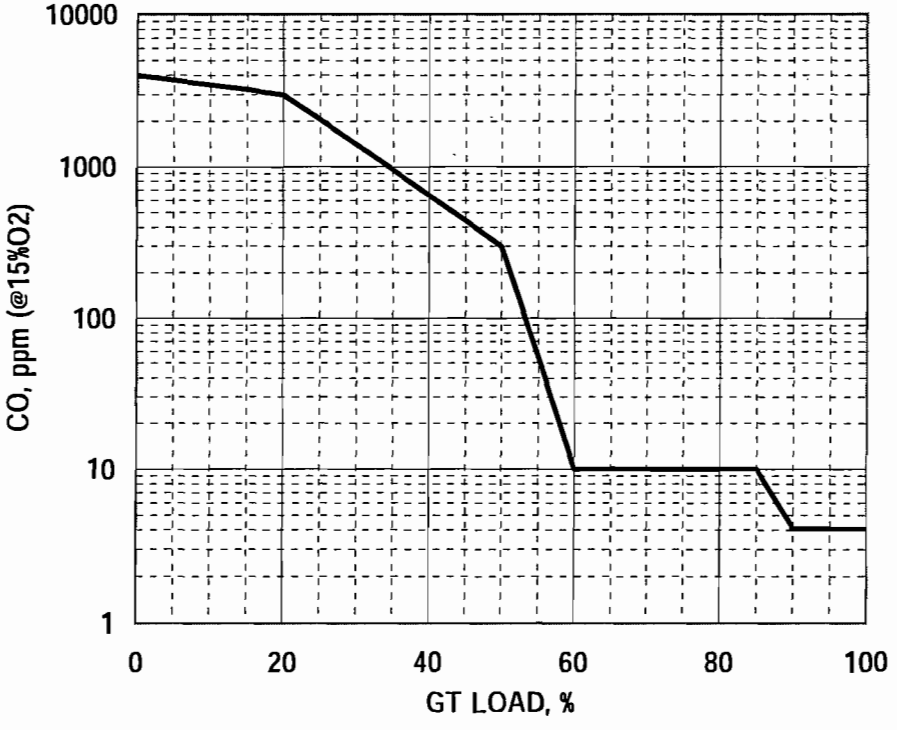


GT LOAD	%	0	5	10	15	20	25	30	35	40	45
CO	ppm,15%O2	6000	5224	4548	3959	3447	3000	2097	1466	1024	716

GT LOAD	%	50	55	60	65	70	75	80	85	90	95	100
CO	ppm,15%O2	500	159	50	50	50	50	50	50	8	8	8

EXPECTED CO EMISSION vs GT LOAD

GT MODEL : M501G1
TYPE OF COMBUSTOR : Dry Low NOx
TYPE OF FUEL : NATURAL GAS as per Mitsubishi Gas Fuel Specification (E00-01170 R5)



GT LOAD	%	0	5	10	15	20	25	30	35	40	45
CO	ppm,15%O2	4000	3723	3465	3224	3000	2044	1393	949	647	441

GT LOAD	%	50	55	60	65	70	75	80	85	90	95	100
CO	ppm,15%O2	300	54.8	10	10	10	10	10	10	4.1	4.1	4.1

Attachment 4

West County Energy Center

Comparison of WCEC to other Projects

(Tables 1a, 1b, 2a through 2c)

Table 1a. Comparison of the NOx Emissions for WCEC, TCEC, HPB4 and TP5 Projects

Turbine Inlet Temperature:	WCEC 75 °F	TCEC 73 °F	HPB4 75 °F	TP5 75 °F
NOx Limit (ppmvd at 15% oxygen) - unfired	2.5	2	2.5	2
NOx Limit (ppmvd at 15% oxygen) - fired	2.5	2	NA	2
NOx Control Efficiency-Unfired	83.33%	77.72%	72.25%	77.80%
NOx Control Efficiency-Fired	84.91%	83.63%		80.87%
Overall Net Heat Rate (Btu/kWhr) - unfired	6,483	6,900	6,830	6,760
Overall Net Heat Rate (Btu/kWhr) - fired	6,644	7,350	NA	6,903
Difference from WCEC in Heat Rate-Unfired		6.43%	5.35%	4.27%
Difference from WCEC in Heat Rate-Fired		10.63%		3.90%
Equivalent NOx Limit based on Efficiency-fired	2.5	2.17	2.60	2.06
Equivalent NOx Limit based on Efficiency-unfired	2.5	2.28	NA	2.10

Note: See Tables 2a through 2c for detailed information.

Table 1b. Comparison of the CO Emissions for WCEC, TCEC, HPB4 and TP5 Projects

Turbine Inlet Temperature:	WCEC 75 °F	TCEC 73 °F	HPB4 75 °F	TP5 75 °F
CO Limit (ppmvd at 15% oxygen) - unfired	4.1	4.1	8	4.1
CO Limit (ppmvd at 15% oxygen) - fired	7.6	7.6		7.6
CO Emissions (lb/MW-hr) - unfired	0.059	0.062	0.119	0.061
CO Emissions (lb/MW-hr) - fired	0.108	0.122	NA	0.113
Difference from WCEC (lb/MW-hr) - Unfired		5.86%	103.77%	3.36%
Difference from WCEC (lb/MW-hr) - Fired		13.22%		4.51%
Overall Net Heat Rate (Btu/kWhr) - unfired	6,483	6,900	6,830	6,760
Overall Net Heat Rate (Btu/kWhr) - fired	6,644	7,350	NA	6,903
Difference from WCEC in Heat Rate-Unfired		6.43%	5.35%	4.27%
Difference from WCEC in Heat Rate-Fired		10.63%		3.90%

Note: See Tables 2a through 2c for detailed information.

Table 2a. Comparison of WCEC and TCEC Projects

Parameter	TCEC	WCEC	Difference	Data Source	
Turbine Inlet Temperature:	73 °F	75 °F	from WCEC	TCEC	WCEC
CTG Heat Input (MMBtu/hr-HHV)	1,722.50	7,641.50		Application Appendix B	Gate Cycle
Heat Rate (Btu/kWhr-HHV)	10,516	9,911		Application Appendix B	Gate Cycle
CTG Power (MW) Gross	163.79802	771		Application Appendix B	Gate Cycle
HRSG Duct Firing (MMBtu/hr-HHV)	545.4	799.2		Application Appendix B	Gate Cycle
STG Power (MW) unfired	92.40	430.1		Gate Cycle Estimate	Gate Cycle
STG Power (MW) fired	153.80	523.1		Gate Cycle Estimate	Gate Cycle
Total Power (MW) - unfired	256.20	1201.10		CTG plus STG	Gate Cycle
Total Power (MW) - fired	317.60	1294.10		CTG plus STG	Gate Cycle
Overall Net Heat Rate (Btu/kWhr) - unfired	6,900.0	6,483.0	6.43%	Gate Cycle Estimate	Gate Cycle
Overall Net Heat Rate (Btu/kWhr) - fired	7,350.0	6,644.0	10.63%	Gate Cycle Estimate	Gate Cycle
PER CT:					
CO Limit (ppmvd at 15% oxygen) - unfired	4.1	4.1		Proposed FDEP Permit Limits	FPL Proposed Permit Limits
CO Limit (ppmvd at 15% oxygen) - fired	7.6	7.6		Proposed FDEP Permit Limits	FPL Proposed Permit Limits
CO Emissions (lb/hr) - unfired	15.47	23		Application Appendix B	MPS Performance Data
CO Emissions (lb/hr) - fired	37.70	45.7		Application Appendix B	MPS Performance Data
CO Emissions (lb/MMBtu) - unfired	0.009	0.009			
CO Emissions (lb/MMBtu) - fired	0.017	0.016			
CO Emissions (lb/MW-hr) - unfired	0.062	0.059	5.86%	Emissions/Generation	Emissions/Generation
CO Emissions (lb/MW-hr) - fired	0.122	0.108	13.22%	Emissions/Generation	Emissions/Generation
Equivalent CO Limit based on Efficiency-fired	4.340				
Equivalent CO Limit based on Efficiency-unfired	8.604				
PER CT:					
NOx Limit (ppmvd at 15% oxygen) - unfired	2	2.5	20.00%	Proposed FDEP Permit Limits	FPL Proposed Permit Limits
NOx Limit (ppmvd at 15% oxygen) - fired	2	2.5	20.00%	Proposed FDEP Permit Limits	FPL Proposed Permit Limits
NOx Emissions (lb/hr) - unfired	12.70	23		Application Appendix B	MPS Performance Data
NOx Emissions (lb/hr) - fired	16.50	24.8		Application Appendix B	MPS Performance Data
NOx Emissions (lb/MMBtu) - unfired	0.0074	0.0090296			
NOx Emissions (lb/MMBtu) - fired	0.0073	0.0088144			
NOx Emissions (lb/MW-hr) - unfired	0.051	0.059	-13.09%	Emissions/Generation	Emissions/Generation
NOx Emissions (lb/MW-hr) - fired	0.053	0.059	-8.69%	Emissions/Generation	Emissions/Generation
Equivalent NOx Limit based on Efficiency-fired	2.173				Corrected for lb/MW-hr
Equivalent NOx Limit based on Efficiency-unfired	2.283				Corrected for lb/MW-hr
PER CT:					
Uncontrolled:					
NOx Emissions (lb/hr) - unfired	57	138		Application Appendix B	MPS Performance Data
NOx Emissions (lb/hr) - fired	100.8	164.3		Application Appendix B	MPS Performance Data
NOx Control - unfired	77.72%	83.33%		Calculated	Calculated
NOx Control - fired	83.63%	84.91%		Calculated	Calculated

Note: Gate Cycle is a propriety program to determine performance. Heat rates based on new and clean condition.

Table 2b. Comparison of WCEC and Turkey Point Unit 5 (TP5) Projects

Parameter	TP5	WCEC	Difference	Data Source	
Turbine Inlet Temperature:	75 °F	75 °F	from WCEC	TP5	WCEC
CTG Heat Input (MMBtu/hr-HHV)	7,016.00	7,641.50		Gate Cycle	Gate Cycle
Heat Rate (Btu/kWhr-HHV)	10,276	9,911		Gate Cycle	Gate Cycle
CTG Power (MW) Gross	682.75594	771		Gate Cycle	Gate Cycle
HRSG Duct Firing (MMBtu/hr-HHV)	842.8	799.2		Gate Cycle	Gate Cycle
STG Power (MW) unfired	383.75	430.1		Gate Cycle	Gate Cycle
STG Power (MW) fired	485.93	523.1		Gate Cycle	Gate Cycle
Total Power (MW) - unfired	1066.51	1201.10		Gate Cycle	Gate Cycle
Total Power (MW) - fired	1168.69	1294.10		Gate Cycle	Gate Cycle
Overall Net Heat Rate (Btu/kWhr) - unfired	6,760.0	6,483.0	4.27%	Gate Cycle	Gate Cycle
Overall Net Heat Rate (Btu/kWhr) - fired	6,903.0	6,644.0	3.90%	Gate Cycle	Gate Cycle
PER CT:					
CO Limit (ppmvd at 15% oxygen) - unfired	4.1	4.1		Permit Limits	FPL Proposed Permit Limits
CO Limit (ppmvd at 15% oxygen) - fired	7.6	7.6		Permit Limits	FPL Proposed Permit Limits
CO Emissions (lb/hr) - unfired	15.70	23		Application Appendix A-updated	MPS Performance Data
CO Emissions (lb/hr) - fired	32.10	45.7		Application Appendix A-updated	MPS Performance Data
CO Emissions (lb/MMBtu) - unfired	0.009	0.009			
CO Emissions (lb/MMBtu) - fired	0.016	0.016			
CO Emissions (lb/MW-hr) - unfired	0.061	0.059	3.36%	Emissions/Generation	Emissions/Generation
CO Emissions (lb/MW-hr) - fired	0.113	0.108	4.51%	Emissions/Generation	Emissions/Generation
Equivalent CO Limit based on Efficiency-fired	4.238				
Equivalent CO Limit based on Efficiency-unfired	7.943				
PER CT:					
NOx Limit (ppmvd at 15% oxygen) - unfired	2	2.5	20.00%	Permit Limits	FPL Proposed Permit Limits
NOx Limit (ppmvd at 15% oxygen) - fired	2	2.5	20.00%	Permit Limits	FPL Proposed Permit Limits
NOx Emissions (lb/hr) - unfired	12.50	23		Application Appendix A-updated	MPS Performance Data
NOx Emissions (lb/hr) - fired	14.00	24.8		Application Appendix A-updated	MPS Performance Data
NOx Emissions (lb/MMBtu) - unfired	0.0071	0.0090296			
NOx Emissions (lb/MMBtu) - fired	0.0071	0.0088144			
NOx Emissions (lb/MW-hr) - unfired	0.048	0.059	-17.70%	Emissions/Generation	Emissions/Generation
NOx Emissions (lb/MW-hr) - fired	0.049	0.059	-16.01%	Emissions/Generation	Emissions/Generation
Equivalent CO Limit based on Efficiency-fired	2.057				Corrected for lb/MW-hr
Equivalent CO Limit based on Efficiency-unfired	2.100				Corrected for lb/MW-hr
PER CT:					
Uncontrolled:					
NOx Emissions (lb/hr) - unfired	56.3	138		Application Appendix B	MPS Performance Data
NOx Emissions (lb/hr) - fired	73.2	164.3		Application Appendix B	MPS Performance Data
NOx Control - unfired	77.80%	83.33%		Calculated	Calculated
NOx Control - fired	80.87%	84.91%		Calculated	Calculated

Note: Gate Cycle is a propriety program to determine performance. Heat rates based on new and clean condition.

Table 2c. Comparison of WCEC and Hines Power Block 4 (HPB4) Projects

Parameter	HPB4	WCEC	Difference	Data Source	
Turbine Inlet Temperature:	75 °F	75 °F	from WCEC	HPB4	WCEC
CTG Heat Input (MMBtu/hr-HHV)	3,508.00	7,641.50		Gate Cycle	Gate Cycle
Heat Rate (Btu/kWhr-HHV)	10,276	9,911		Gate Cycle	Gate Cycle
CTG Power (MW) Gross	341.37797	771		Gate Cycle	Gate Cycle
HRSG Duct Firing (MMBtu/hr-HHV)	NA	799.2			Gate Cycle
STG Power (MW) unfired	191.88	430.1		Gate Cycle	Gate Cycle
STG Power (MW) fired	NA	523.1			Gate Cycle
Total Power (MW) - unfired	533.25	1201.10		Gate Cycle	Gate Cycle
Total Power (MW) - fired	NA	1294.10			Gate Cycle
Overall Net Heat Rate (Btu/kWhr) - unfired	6,830.0	6,483.0	5.35%	Estimated	Gate Cycle
Overall Net Heat Rate (Btu/kWhr) - fired	NA	6,644.0			Gate Cycle
PER CT:					
CO Limit (ppmvd at 15% oxygen) - unfired	8	4.1		Final Permit Limits	FPL Proposed Permit Limits
CO Limit (ppmvd at 15% oxygen) - fired	NA	7.6		Final Permit Limits	FPL Proposed Permit Limits
CO Emissions (lb/hr) - unfired	30.63	23		Application	MPS Performance Data
CO Emissions (lb/hr) - fired	NA	45.7			MPS Performance Data
CO Emissions (lb/MMBtu) - unfired	0.017	0.009			
CO Emissions (lb/MMBtu) - fired	NA	0.016			
CO Emissions (lb/MW-hr) - unfired	0.119	0.059	103.77%	Emissions/Generation	Emissions/Generation
CO Emissions (lb/MW-hr) - fired	NA	0.108		Emissions/Generation	Emissions/Generation
Equivalent CO Limit based on Efficiency-fired	3.892				
Equivalent CO Limit based on Efficiency-unfired	NA				
PER CT:					
NOx Limit (ppmvd at 15% oxygen) - unfired	2.5	2.5	0.00%	Final Permit Limits	FPL Proposed Permit Limits
NOx Limit (ppmvd at 15% oxygen) - fired	NA	2.5		Permit Limits	FPL Proposed Permit Limits
NOx Emissions (lb/hr) - unfired	15.63	23		Application	MPS Performance Data
NOx Emissions (lb/hr) - fired	NA	24.8			MPS Performance Data
NOx Emissions (lb/MMBtu) - unfired	0.0089	0.0090296			
NOx Emissions (lb/MMBtu) - fired	NA	0.0088144			
NOx Emissions (lb/MW-hr) - unfired	0.061	0.059	3.94%	Emissions/Generation	Emissions/Generation
NOx Emissions (lb/MW-hr) - fired	NA	0.059			Emissions/Generation
Equivalent CO Limit based on Efficiency-fired	2.598				Corrected for lb/MW-hr
Equivalent CO Limit based on Efficiency-unfired	NA				Corrected for lb/MW-hr
PER CT:					
Uncontrolled:					
NOx Emissions (lb/hr) - unfired	56.3	138		Application	MPS Performance Data
NOx Emissions (lb/hr) - fired	NA	164.3			MPS Performance Data
NOx Control - unfired	72.25%	83.33%		Calculated	Calculated
NOx Control - fired	NA	84.91%			Calculated

Note: Gate Cycle is a propriety program to determine performance. Heat rates based on new and clean condition.

Attachment 5

West County Energy Center

Ecology Information

West County Energy Center
Site Certification Application
April 14, 2005

Volume 1, Chapter 2
Section 2.3.6 Ecology

2.3.6 ECOLOGY

2.3.6.1 Species-Environmental Relationships

The following subsections include descriptions of important flora and fauna within the Site and the surrounding vicinity. This discussion includes information related to the abundance of important species found and the value of the habitats present. Representative photographs of vegetative communities within the Site and vicinity are found in Appendix 10.5.1.

Terrestrial Ecology Systems—Flora

The following descriptions of the flora and fauna at or near the site follow the FLUCFCS-Level III codes.

Open Land (FLUCFCS Code 190)

The entire Site has been cleared of vegetation during historical agricultural and mining activities, graded, and filled to an elevation of approximately 23 ft NGVD with clean shelly sand fill (Appendix 10.5.1 – Photographs 1 and 2). No vegetative communities have become established on the cleared Site. Almost the entire Site is classified as Open Land.

Vegetative Communities Adjacent to the Site

Outside of the Site, the surrounding vicinity includes improved pasture (FLUCFCS Code 211), the existing FPL Corbett Substation (FLUCFCS Code 831), canals (FLUCFCS Code 510), ditches (FLUCFCS Code 511), Brazilian pepper (FLUCFCS Code 422), and herbaceous wetlands (FLUCFCS Code 641). Dominant species and quality of each vegetative community/land use type are described below. Beyond the immediate vicinity of the Project, the dominant land use is agriculture, specifically sugar cane.

Improved Pasture (FLUCFCS 211)

Improved pasture is located to the west of the Site, within the transmission line right-of-way (ROW) (Appendix 10.5.1, Photograph 3). Portions of the pasture are actively utilized for cattle grazing. The vegetation is dominated by bahia grass (*Paspalum notatum*), Bermuda grass (*Cynodon dactylon*), with occasional Brazilian pepper (*Schinus terebinthifolius*) and agricultural weeds, including ragweed (*Ambrosia artemisiifolia*) and shrubby false buttonweed (*Spermacoce verticillata*).

Canals (FLUCFCS 510)

The SFWMD L-10/L-12 canal is located immediately south of State Road 80 (Appendix 10.5.1, Photograph 4). Vegetation along the banks of the canal include cabbage palm (*Sabal palmetto*), Brazilian pepper, elderberry (*Sambucus canadensis*), torpedo grass (*Panicum repens*), and common reed (*Phragmites australis*).

Ditches (FLUCFCS 511)

Man-made drainage ditches are found on the western boundary of the filled Site (Appendix 10.5.1, Photograph 5) and within the cattle pasture located within the transmission line ROW west of the substation access road (Appendix 10.5.1, Photograph 6).

Vegetation occurring in these areas include Brazilian pepper, leather fern (*Acrostichum danaeifolium*), sedges (*Cyperus* spp.), common reed, elderberry, cabbage palm, maidenhair sedge (*Eleocharis* sp.), paragrass (*Urochloa mutica*), primrose willow (*Ludwigia peruviana* and *L. octovalvis*), and maidencane (*Panicum hemitomon*).

Brazilian Pepper (FLUCFCS 422)

The disturbed area between the filled Site and the FPL Corbett Substation access road contains the exotic invasive species Brazilian pepper (Appendix 10.5.1, Photograph 7), as well as a variety of weedy species including ragweed, shrubby false buttonweed, dogfennel (*Eupatorium capillifolium*), groundsel tree (*Baccharis halimifolia*), sandmat (*Chamaesyce* sp.), Juba's bush (*Iresine diffusa*), and beggarticks (*Bidens alba*).

Herbaceous Wetland (FLUCFCS 641)

Disturbed, low-quality herbaceous wetland areas are found between the filled Site and the FPL Corbett Substation access road (Appendix 10.5.1, Photograph 8). Although no standing water was present and soils are disturbed, these areas support wetland vegetation dominated by common reed, elderberry, maidencane, and primrose willow, with subdominant species including cattail (*Typha latifolia*), leather fern, Brazilian pepper, climbing hempvine (*Mikania scandens*), and bushy bluestem (*Andropogon glomeratus*).

Electrical Utilities (FLKUCFCS 831)

The existing FPL Corbett Substation is located north of the Site and includes transformers and switch gear for the 230- and 500-kV transmission systems.

Terrestrial Ecology Systems—Fauna

The wildlife habitat within the Site has been severely altered by past agricultural, mining excavation and filling activities. Vegetation within the Site has been cleared and the entire Site covered with fill material to an elevation of approximately 23 ft and about 15 ft above the surrounding vicinity, which does not provide suitable habitat for wildlife. Vegetative communities in the vicinity of the Site are also disturbed and do not provide quality wildlife habitat. Species observed within the vicinity of the Site are described below.

Common avian species were observed within the improved pasture and Brazilian pepper area west of the Site. These include cattle egret, eastern meadowlark (*Sturnella magna*), killdeer (*Charadrius vociferous*), yellow-rumped warbler (*Dendroica coronata*), and mourning dove (*Zenaida macroura*). Ditches associated with the improved pasture area, while containing no canopy component, still do provide foraging areas for wading birds. Species observed on the banks of these man-made ditches include little blue heron (*Egretta caerulea*) and great blue heron (*Ardea herodias*). Although not

observed during the field reconnaissance, it is expected that the L10/L12 Canal is utilized by wading birds for foraging and also provides habitat for the American alligator (*Alligator mississippiensis*).

Threatened and Endangered Species—Flora and Fauna

Plant and animal species designated by the U.S. Fish and Wildlife Service (USFWS), the Florida Fish and Wildlife Conservation Commission (FWCC), and the Florida Department of Agriculture and Consumer Services (FDACS) as endangered, threatened, species of special concern, commercially exploited, or under review, were included in this category.

No threatened or endangered species were observed or are expected to utilize the cleared and filled Site. A number of wetland dependent animal species (e.g., wading birds) have the potential to use the drainage ditches and canals in the vicinity of the Site for resting and feeding. These species are common to the area and use other similar habitats that are found throughout the surrounding region.

Threatened and Endangered Species—Methodology

Prior to the field surveys, literature and agency surveys were undertaken to determine the species that could potentially be present in the habitats found on the Site. Primary sources of information are the Florida Natural Areas Inventory (FNAI) database (1997); Florida Committee on Rare and Endangered Plants and Animals (FCREPA) reports; Preservation of Native Flora of Florida Law, Rule Chapter 5B-40, F.A.C.; the Regulated Plant Index (5B-40.0055); and Notes on Florida's Endangered and Threatened Plants, FDACS, Division of Plant Industry, Bureau of Entomology, Nematology and Plant Pathology - Botany Section, Contribution No. 38, Addition 2, Gainesville. In addition, previous reports of surveys conducted in and near the Site were reviewed.

Plant and Animal Surveys

Because of the rareness and seasonality of threatened and endangered species, either multiseason surveys or an evaluation of threatened and endangered species habitat conditions are necessary to determine their presence or absence on the Site. For this study, an evaluation of the habitat conditions was used to determine the presence or absence of threatened and endangered species. Based on the literature review, federally and state listed species whose ranges include the Site were identified.

Flora—Threatened, endangered, and/or plant species of special concern that occur within Palm Beach County are listed in Table 2.3.6-1. Due to the impacted nature of the Site, no suitable habitat for listed plant species exists within the Site. The FNAI database review did not result in any occurrences of listed plant species in the vicinity of the Site.

Fauna—Threatened, endangered, and/or animal species of special concern that occur within Palm Beach County are listed in Table 2.3.6-1. No unique habitats for threatened and endangered species occur on the Site. The surrounding improved pasture and associated ditches provide low-quality, but suitable habitat for wading birds, including the little blue heron, which is not listed federally by the USFWS but is classified as a species of special concern by the FFWCC. In addition to the little blue heron, it is likely that other wading birds classified by the State as species of special concern may occasionally utilize the pasture ditches and canal to forage, including the white ibis (*Eudocimus alba*), snowy egret (*Egretta thula*), and tricolor heron (*Egretta tricolor*). The L10/L12 Canal provides suitable habitat for the American alligator, classified by the FFWCC as a species of special concern and classified as threatened by the USFWS due to similarity in appearance with the federally endangered American crocodile (*Crocodylus acutus*).

The FNAI database review did not result in any occurrences of listed animal species at the Site. However, several documented occurrences of listed species were noted in the vicinity of the Site. The closest documented occurrence of listed species according to the FNAI database is approximately 3 miles to the west on the north side of State Road 80, where a colony of wading birds was identified by the FFWCC Breeding Bird Atlas Project during 1986-1991. The Project will not adversely impact any listed species in the vicinity of the Site.

2.3.6.2 Pre-Existing Stresses

Terrestrial Systems

The greatest pre-existing stress to terrestrial systems of the Site and surrounding area is the result of past agricultural and mining activities. The natural topography, soils, and hydrology of the Site are extensively altered as a result of the addition of fill material and topographic grading. The natural ecosystems and wildlife habitat previously located at the Site have been lost, and natural drainage features have been modified.

Aquatic Systems

Aquatic systems in the vicinity of the Site are subjected to stress from numerous sources. Pre-existing stresses include:

1. Channelization and dredging,
2. Water management practices for the L10/L12 Canal,
3. Agricultural development,
4. Mining, and
5. Highway construction and operation.

Historical agricultural and mining activities in the area have resulted in the loss of wetlands through ditching and dewatering.

2.3.6.3 Measurement Programs

Terrestrial Ecology

Terrestrial ecological resources were evaluated through Site reconnaissance, agency review, previous studies, and literature searches. Vegetative communities, wildlife utilization, and potential for threatened and endangered wildlife occurrence were addressed during the Site reconnaissance conducted in 2004 and 2005.

Threatened and Endangered Species–Methodology

Prior to the field surveys, literature and agency surveys were undertaken to determine the species that could potentially be present in the habitats found on the Site. Primary sources of information are the FNAI database, FCREPA reports, Preservation of Native Flora of Florida Law, Rule Chapter 5B-40, F.A.C., the Regulated Plant Index (5B-40.0055), and Notes on Florida's Endangered and Threatened Plants, FDACS.

Wetland Methodology

Three agencies, USACE, FDEP, and SWFMD have rules that apply to wetlands. To be jurisdictional, a wetland must ascribe to three characteristics defined by rule: presence of vegetation listed as belonging in wetlands, having a certain defined hydrology, and the presence of hydric soils. The applicable characteristics for wetland determination as prescribed by the regulatory agencies were used.

Hopping Green & Sams

Attorneys and Counselors

December 2, 2005

Al Linero, Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399

Re: Florida Power & Light Co.
West County Energy Center
Application for PSD Permit, PSD FPL-FL-354
Application for Site Certification PA-05-47

Dear Mr. Linero:

By letter dated November 9, 2005, Florida Power & Light Co. (FPL), the applicant, waived the deadline for the Department to issue its preliminary determination on the referenced application until December 14, 2005. Representatives of FPL subsequently met with staff of the Department's Bureau of Air Regulation to discuss this matter. In order to allow the opportunity for FPL to submit additional information and for further discussion between staff of the Department's Bureau of Air Regulation and FPL representatives, FPL agrees to waive the deadline for issuance of the Department's preliminary determination under Section 403.507(3), Florida Statutes, and Rule 62-17.135(1)(b), Florida Administrative Code, until January 25, 2006.

The undersigned is authorized to make this waiver on behalf of the applicant. Should you have any questions, please contact me or Barbara Linkiewicz at 561-691-7518.

Sincerely,

Peter C. Cunningham
Attorney for Florida Power & Light Co.

cc: Scott Goorland, Esq., FDEP, OGC
Steve Palmer, FDEP, SCO

Hopping Green & Sams

Attorneys and Counselors

November 9, 2005

Al Linero, Bureau of Air Regulation
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399

Re: Florida Power & Light Co.
West County Energy Center
Application for PSD Permit, PSD FPL-FL-354
Application for Site Certification PA-05-47

Dear Mr. Linero:

Florida Power & Light Co. (FPL), the applicant, hereby waives the deadline for the Department to issue its preliminary determination on the referenced application under Section 403.507(3), Florida Statutes, and Rule 62-17.135(1)(b), Florida Administrative Code. In order to allow the opportunity for further discussion between staff of the Department's Bureau of Air Regulation and FPL representatives, FPL agrees to waive the deadline for issuance of the Department's preliminary determination until December 14, 2005.

The undersigned is authorized to make this waiver on behalf of the applicant. Should you have any questions, please contact me or Barbara Linkiewicz at 561-691-7518.

Sincerely,

Peter C. Cunningham
Attorney for Florida Power & Light Co.

cc: Scott Goorland, Esq., FDEP, OGC
Steve Palmer, FDEP, SCO

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

April 22, 2005

Application Scanned ON 4/21/2005

Mr. John Bunyak, Chief
Policy, Planning & Permit Review Branch
NPS – Air Quality Division007-AC
P. O. Box 25287
Denver, Colorado 80225

RE: Florida Power and Light Company
West County Energy Center
0990646-001-AC, PSD-FL-354

Dear Mr. Bunyak:

Enclosed for your review and comment is a PSD application submitted by Florida Power and Light Company for construction of the West County Energy Center in Loxahatchee, Palm Beach County, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/921-9533. If you have any questions, please contact Cindy Mulkey, review engineer, at 850/921-8968.

Sincerely,

Patty Adams

for A. A. Linero, P.E., Administrator
South Permitting Section

AAL/pa

Enclosure

cc: C. Mulkey

Department of
Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

March 1, 2006

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Randall R. LaBauve, Vice President
Florida Power & Light Company (FPL)
West County Power Plant
700 Universe Boulevard
Juno Beach, Florida 33408

Re: FPL West County Energy Center
DEP File No. 0990646-001-AC (PSD-FL-354)
Two 1,250 MW Combined Cycle Units

Dear Mr. LaBauve:

Enclosed are documents indicating the Department's preliminary determination to issue a permit pursuant to the rules for the Prevention of Significant Deterioration of Air Quality (PSD) to FPL for the construction of two nominal 1,250 megawatt combined cycle units at the proposed West County Energy Center in Palm Beach County. The documents include: the "Intent to Issue PSD Permit;" the "Public Notice of Intent to Issue PSD Permit;" the Department's "Technical Evaluation and Preliminary Determination" including a draft determination of Best Available Control Technology; and the Draft Permit.

The Public Notice must be published one time only in a newspaper of general circulation in the area affected, pursuant to Chapter 50, Florida Statutes. According to Paragraph 62-17.135(1)(c), F.A.C. the applicant shall have published the notice no later than 10 days (i.e. by March 11, 2006) after the preliminary determination has been issued.

Please submit any other written comments you wish to have considered concerning the Department's proposed action to Mr. A. A. Linero, Program Administrator, South Permitting at the above letterhead address. If you have any questions, please call Debbie Nelson at 850/921-9537 (meteorologist), Teresa Heron at 850/921-9521 (review engineer) or Mr. Linero at 850/921-9523 (P.E. Administrator).

Sincerely,

Trina L. Vielhauer

Trina L. Vielhauer, Chief,
Bureau of Air Regulation

TLV/aal/th

Enclosures

7000 1670 0013 3110 0468

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Mr. Randall R. LaBauve
Vice President
Environmental Services
Florida Power & Light
700 Universe Blvd.
Juno Beach, Florida 33408

PS Form 3800, May 2000 — See Reverse for Instructions

No Green Card

PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP File No. 0990646-001-AC (PSD-FL-354)

FPL West County Energy Center
Palm Beach County

The Department of Environmental Protection (Department) gives notice of its intent to issue a permit under the requirements for the Prevention of Significant Deterioration of Air Quality (PSD Permit) to the Florida Power & Light Company (FPL). The permit is one of several authorizations needed to construct two nominal 1,250 megawatts (MW) combined cycle units at the proposed FPL West County Energy Center at 4000 205th Street, North in unincorporated Palm Beach County. A determination of Best Available Control Technology (BACT) was required pursuant to Rule 62-212.400(6), Florida Administrative Code (FAC) for emissions of carbon monoxide (CO), nitrogen oxides (NO_X), particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), sulfuric acid mist (SAM), and volatile organic compounds (VOC). The applicant's corporate address is Florida Power & Light Company, 700 Universe Boulevard, Juno Beach, Florida 33408.

The two proposed combined cycle units will each consist of: three nominal 250 MW combustion turbine-electrical generators; three supplementary-fired heat recovery steam generators (HRSGs); a single nominal 500 MW steam-electrical generator; a 24-cell mechanical draft cooling tower; and three exhaust stacks. Additional equipment not necessarily associated with a specific unit includes: two 6.3 million gallon diesel fuel storage tanks; two 99.7 MMBtu/hr auxiliary boilers; four 2250 KW emergency generators; and other associated support equipment.

Each combined cycle unit will be permitted to operate continuously while firing inherently clean natural gas. Ultra low sulfur (0.0015 percent sulfur) distillate fuel oil will be allowed as backup fuel for 500 hours per year per combustion turbine. Gas-fired duct burners located within the HRSGs will be used for limited periods of time to raise additional steam for use in the steam turbine-electrical generator.

Selective catalytic reduction (SCR) systems with ammonia injection will be used in conjunction with Dry Low-NO_X combustion (gas firing) and wet injection (oil firing) to control NO_X emissions. The Department's proposed BACT NO_X emission limit is 2.0 parts per million by volume, dry corrected to 15 percent oxygen (ppmvd @15% O_2) of NO_X while firing natural gas. Sufficient catalyst will be used to minimize emissions of ammonia reagent. The Department's proposed NO_X limit while firing ultra low sulfur fuel oil is 8 ppmvd @15% O_2. The Department's proposed BACT CO emission limit is 8.0 ppmvd @15% O_2 on a 24-hour basis while burning gas, ultralow sulfur fuel oil, or using the duct burners. A CO limit of 6 ppmvd @15% O_2 applies on a 12-month rolling average. A BACT CO limit of 4.1 ppmvd @15% O_2 applies during initial and annual full load tests while burning natural gas without use of the duct burners.

Emissions of CO, PM/PM_{10}, SAM, SO_2, and VOC will be minimized by the efficient, high-temperature combustion of inherently clean fuels. Emissions of CO and NO_X will be continuously monitored to demonstrate compliance with the conditions of the permit. BACT determinations for the ancillary equipment such as auxiliary boilers, fire pump engines, process heaters, cooling tower, and emergency generators are detailed in the Technical Evaluation and Preliminary determination. The complete set of proposed emission limits is available at the Department offices, the Palm Beach County Health Department, and the website address indicated below.

The applicant's initial estimates of maximum potential annual emissions from the project are summarized in the following table.

Pollutant	Maximum Tons Per Year	PSD Significant Emission Rate Tons Per Year	PSD Review Required?
CO	968	100	Yes
Pb	0.050	0.6	No
NO_X	841	40	Yes
PM/PM_{10}	511/211	25/15	Yes
SO_2	407	40	Yes
SAM	41	7	Yes
VOC	176	40	Yes

According to the applicant, maximum predicted air quality impacts due to emissions from the proposed new project are less than the significant impact levels applicable to areas outside of the Everglades National Park (i.e. PSD Class II Areas) Therefore; multi-source modeling was not required for ambient air quality standards Class II increments. The predicted impacts in the Class I Everglades National Park (ENP) are less than the applicable significant impact levels except for the 3-hour and 24-hour SO_2 and 24-hour PM_{10} impacts. Therefore multi-source increment modeling was required for the 3-hour and 24-hour SO_2 and 24-hour PM_{10} impacts upon the ENP. The following table summarizes the maximum predicted 3-hour and 24-hour SO_2 and 24-hour PM_{10} increment consumption by the new project and by all projects in the general area since 1977.

	PM_{10} Increment Consumed in ug/m^3 and % at ENP		SO_2 Increment Consumed in ug/m^3 and % at ENP	
Averaging Time	By Project	All Sources	By Project	All Sources
24-hour	0.5 (10% of Allowable)	2.1 (42% of Allowable)	0.4 (8% of Allowable)	4.1 (82% of Allowable)
3-hour	No Analysis Required	No Analysis Required	2 (8% of Allowable)	18 (72% of Allowable)

Based on the required analyses, the Department has reasonable assurance that the proposed project will not cause or significantly contribute to a violation of any ambient air quality standard or PSD increment.

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 and requests for a public meeting concerning the proposed permit issuance action for a period of thirty (30) days from the date of publication of this Public Notice of Intent to Issue PSD Permit. Written comments or requests for public meetings should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400 or the e-mail address provided below. Any written comments filed shall be made available for public inspection. If comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. This PSD permitting action is being coordinated with a certification under the Power Plant Siting Act (Sections 403.501-519, F.S.). If a petition for an administrative hearing on the Department's Intent to Issue is filed by a substantially affected person, that hearing shall be consolidated with the certification hearing, as provided under Section 403.507(3). Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

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

Department of Environmental Protection Bureau of Air Regulation 111 S. Magnolia Drive, Suite 4 Tallahassee, Florida 32399-2400 Telephone: 850/488-0114 Fax: 850/922-6979	Department of Environmental Protection Southeast District Office 400 North Congress Avenue West Palm Beach, FL 33416-5425 Telephone: 561/681-6600 Fax: 561/681-6790	Palm Beach County Public Health Unit Environmental Health & Engineering Services 901 Evernia Street West Palm Beach, Florida 33402 Telephone: 561/355-3136 Fax: 561/355-2442

The complete project file includes the application, technical evaluations, Draft Permit, and the information submitted by the authorized representative, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Program Administrator, South Permitting Section at the Bureau of Air Regulation at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114 for additional information. The application, key correspondence, draft permit and technical evaluation can be accessed at www.dep.state.fl.us/air/permitting/construction/westcounty.htm

In the Matter of an
Application for Permit by:

Mr. Randall R. LaBauve, Vice President
Florida Power and Light Company (FPL)
700 Universe Boulevard
Juno Beach, Florida 33408

DEP File No. 0990646-001-AC
Draft Permit No. PSD-FL-354
FPL West County Energy Center
Two 1,250 MW Combined Cycle Units
Palm Beach County

_____/

INTENT TO ISSUE PSD PERMIT

The Department of Environmental Protection (Department) gives notice of its intent to issue a permit pursuant to the rules for the Prevention of Significant Deterioration of Air Quality (PSD Permit), copy of DRAFT PSD Permit attached, for the proposed project as detailed in the application specified above and the attached Technical Evaluation and Preliminary Determination for the reasons stated below.

The applicant, FPL, applied on April 14, 2005 (sufficient on September 12, 2005) to the Department for a PSD Permit for two nominal 1,250 megawatt combined cycle units at the proposed FPL West County Energy Center at 4000, 205th Street North in unincorporated Palm Beach County.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that a PSD Permit is required.

The Department intends to issue this air construction permit based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-110.106(7)(a)1., F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue PSD Permit (Notice). The notice shall be published one time only in the legal advertisement section of a newspaper of general circulation in the area affected. Rule 62-110.106(7)(b), F.A.C., requires that the applicant cause the Notice to be published as soon as possible after notification by the Department of its intended action. Pursuant to Rule 62-17.135(1)(c), F.A.C. the applicant shall have published in the appropriate newspapers the Notice no later than 10 days after the preliminary determination has been issued. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-0114; Fax 850/ 922-6979). You must provide proof of publication within seven days of publication, pursuant to Rule 62-110.106(5), F.A.C. No permitting action for which published notice is required shall be granted until proof of publication of notice is made by furnishing a uniform affidavit in substantially the form prescribed in section 50.051, F.S. to the office of the Department issuing the permit. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rules 62-110.106(9) & (11), F.A.C.

The Department will issue the final permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments and requests for public meetings concerning the proposed permit issuance action for a period of 30 (thirty) days from the date of publication of the enclosed Public Notice. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below.

This PSD permitting action is being coordinated with a certification under the Power Plant Siting Act (Sections 403.501-519, F.S.). If a petition for an administrative hearing on the Department's Intent to Issue is filed by a substantially affected person, that hearing shall be consolidated with the certification hearing, as provided under Section 403.507(3).

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above. Mediation is not available in this proceeding.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each

rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.

Trina L. Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Intent to Issue Air Construction Permit (including the Public Notice, Technical Evaluation and Preliminary Determination, and the DRAFT permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 3/1/06 to the persons listed:

Randall R. La Bauve, FPL*
Chair, Palm Beach County BCC
Mayor, Village of Royal Palm Beach
Mayor, Village of Wellington
John Benjamin, Everglades National Park
Gregg Worley, U.S. EPA Region 4, Atlanta GA
John Bunyak, National Park Service, Denver CO
Steven L. Palmer, DEP Siting Office
Darrel Graziani, DEP SED
Paul Darst, Department of Community Affairs
Jim Stormer, Palm Beach County Public Health Unit
Ken Kosky, P.E., Golder
Barbara Linkiewicz, FPL

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

(Clerk) 3/1/06 (Date)

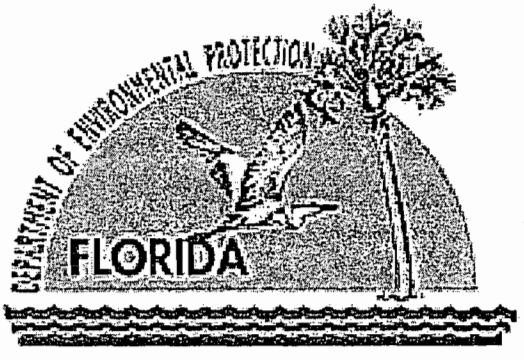
TECHNICAL EVALUATION
AND
PRELIMINARY DETERMINATION

Florida Power and Light Company
West County Energy Center

Two Nominal 1,250-Megawatt Combined Cycle Units

Palm Beach County

DEP File No. 0990646-001-AC (PSD-FL-354)



Florida Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation
New Source Review Section

March 1, 2006

1. APPLICATION INFORMATION

Applicant Name and Address

Florida Power and Light Company
700 Universe Boulevard
Juno Beach, Florida 33035

Authorized Representative:
Randall R. LaBauve, Vice President

Processing Schedule

- April 14, 2005: Received Site Certification Application (SCA) including PSD application
- June 27: Sufficiency determination issued by DEP Siting Coordination Office (SCO)
- August 12: Received Response to SCO sufficiency questions
- September 12: SCO issues determination finding SCA/PSD Application sufficient
- November 9: FP&L waives Preliminary Determination Issuance deadline
- December 2: FP&L waives Preliminary Determination Issuance deadline
- December 29: FP&L submits details regarding Mitsubishi 501G technology
- January 20, 2006 FP&L waives Preliminary Determination Issuance deadline
- March 1, 2006: Preliminary Determination issued

Facility Description and Location

The Florida Power and Light (FPL) Company proposes to construct the West County Energy Center (WCEC) at 4000 205th Street, North in unincorporated Palm Beach County. The location with respect to other FPL facilities in Florida is shown in Figure 1. The proposed WCEC site is bounded by SR 80 (Southern Boulevard) on the south, FPL 500 kV transmission lines on the west, a major electrical substation on the northwest corner, as well as mining lands to the north and east.

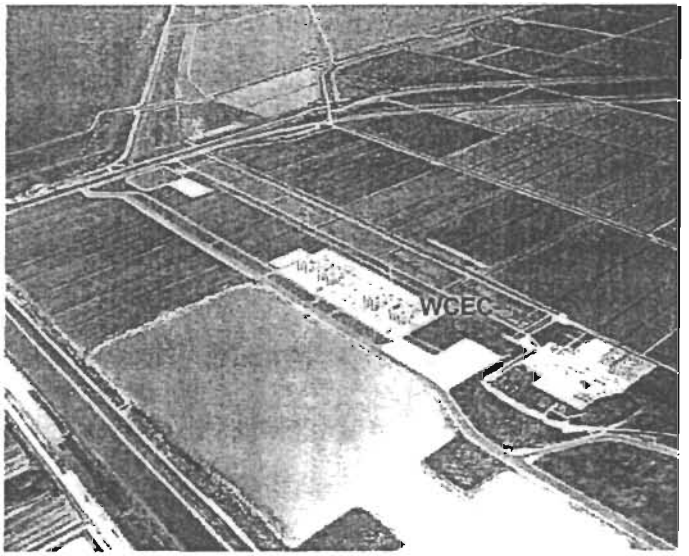


Figure 1. Proposed Location FPL WCEC Figure 2. Aerial View, Rendition from Northeast

The Arthur R. Marshall Loxahatchee National Wildlife Refuge is located south of Southern Boulevard. The northwest corner of the refuge is visible in the upper left hand side of Figure 2,

which is a rendition of the future plant on the proposed site looking from the northeast. The Villages of Wellington and Royal Palm Beach are located a few miles east of the site. The site is located approximately 107 km north of the PSD Class I Everglades National Park. UTM coordinates are Zone 17; 562.19 km E; 2953.04 km N.

Regulatory Categories

Standards of Performance for New Stationary Sources (NSPS). The proposed facility will be subject to one or more NSPS.

National Emission Standards for Hazardous Air Pollutants (NESHAP): The proposed facility is a "Major Source" of hazardous air pollutants (HAPs) and will be subject to one or more NESHAP.

Title IV: The proposed facility will operate units subject to the Acid Rain provisions of the Clean Air Act.

Title V: The proposed facility is a Title V or "Major Source" of air pollution because the potential emissions of at least one regulated pollutant exceed 100 tons per year or because it is a Major Source of HAPs. Regulated pollutants include pollutants such as carbon monoxide (CO), nitrogen oxides (NO_X), particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), and volatile organic compounds (VOC).

Prevention of Significant Deterioration (PSD): The proposed facility is located in an area that is in attainment with, or designated as unclassifiable for, each pollutant subject to a National Ambient Air Quality Standard. It is classified as a fossil fuel-fired steam electric plant, which is one of the 28 PSD Major Facility Categories identified in Table 62-212.400-1, F.A.C. Emissions from the proposed facility will be greater than 100 tons per year for at least one regulated pollutant. Therefore, the proposed facility is a Major Facility with respect to Rule 62-212.400, F.A.C.

Siting: The proposed facility is a steam electrical generating plant. The project will result in more than 75 MW of steam-generated electrical power and is subject to the power plant siting provisions of Chapter 62-17, F.A.C.

2. PROPOSED PROJECT

Project Description

The applicant proposes to construct two "three-on-one" combined cycle units (Units 1 and 2). Each combined cycle unit will consist of: three nominal 250 megawatt (MW) "G" Class gas turbine-electrical generator sets (probably Mitsubishi Heavy Industries Model M501G) with evaporative inlet cooling systems; three supplementary-fired heat recovery steam generators (HRSG's) with SCR reactors and gas-fired duct burners (nominal 428 mmBtu/hour, LHV); three 149 foot exhaust stacks; one 22- cell mechanical draft cooling tower; and a common nominal 500 MW steam-electrical generator.

Additional ancillary equipment will include: four 2250 KW emergency generators; two natural gas fired fuel heaters; two 6.3 million gallon diesel fuel storage tank; two 85,000 lb/hr auxiliary steam boilers; and other associated support equipment. Following are additional project characteristics.

- Fuels: Each gas turbine will fire natural gas as the primary fuel and *ultra low sulfur* (0.0015% Sulfur) distillate oil as a restricted alternate fuel. Emissions of all pollutants increase with the firing of oil. The applicant requests 500 hours per year per gas turbine (or equivalent) for oil firing.

- Generating Capacity: Each of the three gas turbines has a nominal generating capacity of 250 MW. Each of the three heat recovery steam generators (HRSGs) provides steam to the single steam turbine electrical generator, which has a nominal capacity of 500 MW. The nominal capacity of each unit is 1,250 MW.
- Controls: CO, PM/PM_{10}, and VOC will be minimized by the efficient combustion of natural gas and distillate oil at high temperatures. Emissions of SAM and SO_2 will be minimized by firing natural gas and ultra low sulfur (ULS) distillate oil. NO_X emissions will be reduced with dry low-NOx (DLN) combustion technology for gas firing and water injection for oil firing. In combination with these NO_X controls, a selective catalytic reduction (SCR) system further reduces NO_X emissions during combined cycle operation.
- Continuous Monitors: Each gas turbine is required to continuously monitor NO_X emissions in accordance with the acid rain provisions. The same monitors as well as CO monitors are employed for demonstration of continuous compliance with certain Best Available Control Technology (BACT) determinations. Flue gas oxygen content or carbon dioxide content will be monitored as a diluent gas.
- Stack Parameters: Each heat recovery steam generator has a combined cycle stack (HRSG stack) that is at least 149 feet tall with a nominal diameter of 23 feet. The following summarizes the exhaust characteristics of each of the six combustion turbine/HRSG sets, exclusive of the 428 mmBtu/hour (LHV) duct burners:

Fuel	Heat Input Rate (LHV)	Compressor Inlet Temp.	Exhaust Temp., °F	Flow Rate ACFM
Gas	2333 mmBtu/hour	59° F	195° F	1,330,197
Oil	2117 mmBtu/hour	59° F	293° F	1,553,502

Project Description

A gas turbine is an internal combustion engine that operates with rotary rather than reciprocating motion. A longitudinal section diagram of an M501G (rotor inside of casing) from an MHI brochure is shown in the left hand side of the figures below. The photograph on the right hand side of the figure is of the rotor being lowered into the shell (not visible) of an M501G. The compressor rotating blades are in the foreground and the 4-stage expansion section is in the background.

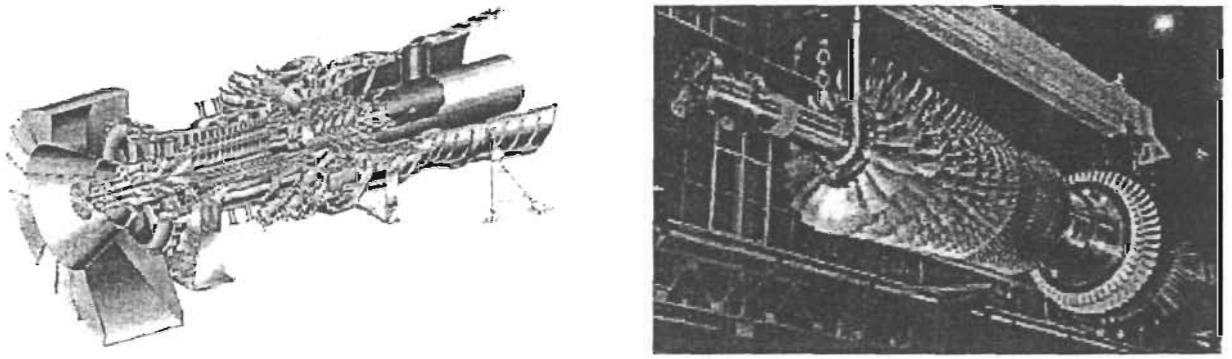


Figure 3. Longitudinal View of M501G, Photograph of Rotor (Source: MHI Website)

Ambient air is drawn into the 17-stage compressor of the M501G where it is compressed to a pressure ratio greater than 19 atmospheres. The compressed air is then directed to the combustor section, which consists of 16 separate steam-cooled, can-annular, Dry Low NO_X (DLN) combustors. Fuel is introduced, ignited, and burned. The combustor outlet temperature is greater than 2,700 °F.

The hot combustion gases routed through the steam-cooled transition pieces then are diluted with additional cool air from the compressor and directed to the turbine (expansion) section. 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. Turbine exhaust gas is discharged at a temperature of approximately 1200 °F and high excess oxygen and is available for additional energy recovery.

Each unit will operate in combined cycle mode as depicted in Figure 4. Each of three combustion turbines per unit will drive an electric generator while the exhausted gases from each combustion turbine will raise additional steam in three heat recovery steam generators (HRSG's). The steam from the three HRSG's, in-turn, will drive a single, separate steam turbine-electrical generator per unit producing additional electrical power.

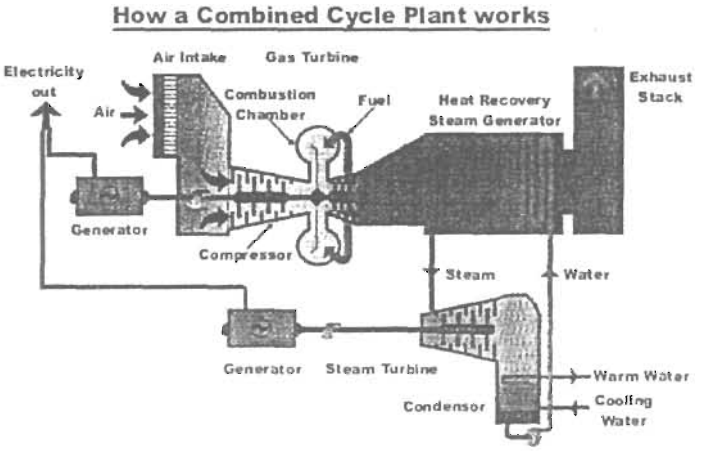


Figure 4. Combined Cycle Unit (Unfired HRSG)

In combined cycle mode, the thermal efficiency of G-Class combustion turbines approximately 58 percent (%) on the basis of lower heating value and about 53% based on the higher heating value.

- Inlet Conditioning: Evaporative cooling is the injection of fine water droplets into the gas turbine compressor inlet air, which reduces the gas temperature through evaporative cooling. Lower compressor inlet temperatures result in more mass flow rate through the gas turbine with a boost in electrical power production. The emissions performance remains within the normal profile of the gas turbine for the lower compressor inlet temperatures. This is typically implemented at ambient temperatures of 60° F or higher.
- Duct Burning: Gas-fired duct burners (DB) can be used in the HRSG to provide additional heat to the turbine exhaust gas and produce even more steam-generated electricity. Duct firing is useful during periods of high-energy demand. The applicant requests 2880 hours of duct burning per year for each HRSG.

Further process details are provided in the Draft BACT determination, Section 4.0 below.

Potential Emissions

The project will result in emissions of carbon monoxide (CO), lead (Pb), nitrogen oxides (NO_X), particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), sulfuric acid mist (SAM), and volatile organic compounds (VOC). The following table summarizes the applicant's initial estimate of the annual emissions in tons per year from the proposed project (gas turbines, duct burners, and cooling tower).

Table 1. Applicant's Initial Estimated Annual Emissions for both Combined Cycle Units

Pollutant	Project Emissions TPY	PSD Significant Emission Rate, TPY	PSD Review Required?
CO	968	100	Yes
Pb	0.050	0.6	No
NO_X	841	40	Yes
PM/PM_{10}	511/211	25/15	Yes
SO_2	407	40	Yes
SAM	41	7	Yes
VOC	176	40	Yes

3. RULE APPLICABILITY

State Regulations

The project is subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The Florida Statutes authorize the Department of Environmental Protection to establish rules and regulations regarding air quality as part of the Florida Administrative Code (F.A.C.). This project is subject to the following rules in the Florida Administrative Code.

Chapter	Description
62-4	Permitting Requirements
62-17	Electrical Power Plant Siting
62-204	State Implementation Plan (AAQS, PSD Increments, adoption of Federal Regulations)
62-210	Stationary Sources of Air Pollution – General Requirements
62-212	Preconstruction Review (including PSD Requirements)
62-213	Operation Permits for Major Sources of Air Pollution
62-214	Acid Rain Program Requirements
62-296	Emission Limiting Standards
62-297	Emissions Monitoring

Federal Regulations

This project is also subject to certain applicable federal provisions regarding air quality as established by the EPA in the Code of Federal Regulations (CFR) and summarized below.

Title 40	Description
Part 60	New Source Performance Standards (NSPS)
Part 63	National Emission Standards for Hazardous Air Pollutants (NESHAP)
Part 72	Acid Rain - Permits Regulation
Part 73	Acid Rain – Sulfur Dioxide Allowance System
Part 75	Acid Rain - Continuous Emissions Monitoring
Part 76	Acid Rain - Nitrogen Oxides Emissions Reduction Program
Part 77	Acid Rain - Excess Emissions

Description of PSD Applicability Requirements

The Department regulates major air pollution sources in accordance with Florida's Prevention of Significant Deterioration (PSD) program, as defined in Rule 62-212.400, F.A.C. A PSD review is only required in areas that are currently in attainment with the National Ambient Air Quality Standard (AAQS) for a given pollutant or areas designated as "unclassifiable" for the pollutant. A new facility is considered "major" with respect to PSD if the facility emits or has the potential to emit:

- 250 tons per year or more of any regulated air pollutant, or
- 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the 28 Major Facility Categories (Table 62-212.400-1, F.A.C.), or
- 5 tons per year of lead.

For new projects at existing PSD-major sources, each regulated pollutant is reviewed for PSD applicability based on emissions thresholds known as the Significant Emission Rates (SERs) listed in Table 62-212.400-2, F.A.C. For each significant pollutant exceeding the respective SER, the applicant must propose the Best Available Control Technology (BACT) to minimize emissions and conduct an ambient impact analysis as applicable. BACT determinations for this project are required for NO_X, CO, VOC, SO_2, SAM and PM/PM_{10}.

The other part of PSD review requires an Air Quality Analysis consisting of: an air dispersion modeling analysis to estimate the resulting ambient air pollutant concentrations; a comparison of modeled concentrations from the project with National Ambient Air Quality Standards and PSD Increments; an analysis of the air quality impacts from the proposed project upon soils, vegetation, wildlife, and visibility (Air Quality Related Values – AQRVs); and an evaluation of the air quality impacts resulting from associated commercial, residential, and industrial growth related to the proposed project.

4. DRAFT DETERMINATION OF BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

4.1 BACT Determination Procedure

BACT is defined in Rule 62-210.200 (definitions), FAC as follows:

(a) An emission limitation, including a visible emissions standard, based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, taking into account:

1. *Energy, environmental and economic impacts, and other costs;*

2. *All scientific, engineering, and technical material and other information available to the Department; and*

3. *The emission limiting standards or BACT determinations of Florida and any other state; determines is achievable through application of production processes and available methods, systems and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of each such pollutant.*

(b) If the Department determines that technological or economic limitations on the application of measurement methodology to a particular part of an emissions unit or facility would make the imposition of an emission standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reductions achievable by implementation of such design, equipment, work practice or operation.

(c) Each BACT determination shall include applicable test methods or shall provide for determining compliance with the standard(s) by means which achieve equivalent results.

(d) In no event shall application of best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR Parts 60, 61, and 63.

According to Rule 62-212.400(4)(c), FAC, the applicant must at a minimum provide certain information in the application including:

(c) A detailed description as to what system of continuous emission reduction is planned for the source or modification, emission estimates, and any other information necessary to determine best available control technology (BACT) including a proposed BACT;

The Department conducts its case-by-case BACT determinations in accordance with the requirements given above. Additionally the Department generally conducts its reviews in such a manner that the determinations are consistent with those conducted using the Top/Down Methodology described by EPA.

4.2 NO_X BACT Determinations for Combustion Turbines and Duct Burners

Nitrogen Oxides Formation

Nitrogen oxides form in the gas turbine combustion process as a result of the dissociation of molecular nitrogen and oxygen to their atomic forms and subsequent recombination into seven different oxides of nitrogen.

Thermal NO_X forms in the high temperature area of the gas turbine combustor as seen on the left hand side of Figure 5. Thermal NO_X increases exponentially with increases in flame temperature and linearly with increases in residence time. By maintaining a low fuel ratio (lean combustion), the flame temperature will be lower, thus reducing the potential for NO_X formation. The relationship between flame and firing temperature, output and NO_X formation are depicted in the right side of Figure 5, which is from a GE discussion on these principles.

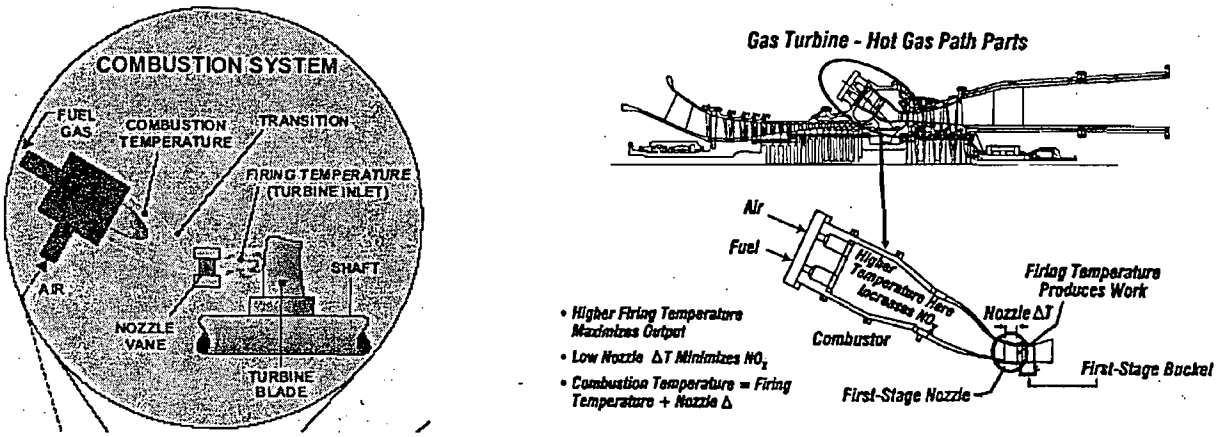


Figure 5. Relation between Combustion and Firing Temperatures and NO_X Formation

In all but the most recent gas turbine combustor designs, the high temperature combustion gases are cooled to an acceptable temperature with dilution air prior to entering the turbine (expansion) section. The sooner this cooling occurs, the lower the thermal NO_X formation. Cooling is also required to protect the first stage nozzle. When this is accomplished by air cooling, the air is injected into the component and is ejected into the combustion gas stream, causing a further drop in combustion gas temperature. This, in turn, lowers achievable thermal efficiency for the unit. The alternative of steam cooling is discussed below.

Prompt NO_X is formed in the proximity of the flame front as intermediate combustion products. The contribution of prompt to overall NO_X is relatively small in near-stoichiometric combustors and increases for leaner fuel mixtures. This provides a practical limit for NO_X control by lean combustion.

Fuel NO_X is formed when fuels containing bound nitrogen are burned. This phenomenon is not important for natural gas-fired projects such as this FPL project.

Uncontrolled emissions range from about 100 to over 600 parts per million by volume, dry, corrected to 15 percent oxygen (ppmvd @15% O_2). The Department estimates uncontrolled emissions at approximately 200 ppmvd @15% O_2 for each turbine of the FPL project. The proposed NO_X controls will reduce these emissions significantly. For reference, the New Source Performance Standard (40 CFR 60, Subpart GG) for NO_X emissions from large G-Class gas turbines is greater than 110 ppmvd @15%O_2. This constitutes the legal floor (absolute maximum NO_X value) in a "Top/Down" BACT determination.

Descriptions of Available NO_X Controls

Wet Injection. Injection of either water or steam directly into the combustor lowers the flame temperature and thereby reduces thermal NO_X formation. There is a physical limit to the amount of water or steam that may be injected before flame instability or cold spots in the combustion zone would cause adverse operating conditions for the combustion turbine.

Advanced dual fuel combustor designs can tolerate large amounts of steam or water without causing flame instability and can typically achieve NO_X emissions in the range of 30 to 42 ppmvd when employing wet injection for backup fuel oil firing. Wet injection results in control efficiencies on the order of 80 to 85% for oil firing. These values often form the basis for further reduction to BACT limits by other techniques as discussed below.

Carbon monoxide (CO) and hydrocarbon (HC) emissions are relatively low for most gas turbines. However steam and (more so) water injection may increase emissions of both of these pollutants.

Combustion Controls: Dry Low NO_X (DLN). The excess air in lean combustion cools the flame and reduces the rate of thermal NO_X formation. Lean premixing of fuel and air prior to combustion can further reduce NO_X emissions. This is accomplished by minimizing localized fuel-rich pockets (and high temperatures) that can occur when trying to achieve lean mixing within the combustion zones. These principles are incorporated into the M501G DLN combustor shown on the left hand side of Figure 6. There is a central diffusion pilot nozzle that provides stability but ultimately limits the ability of the combustor to achieve the lowest possible NO_X emissions without further control.

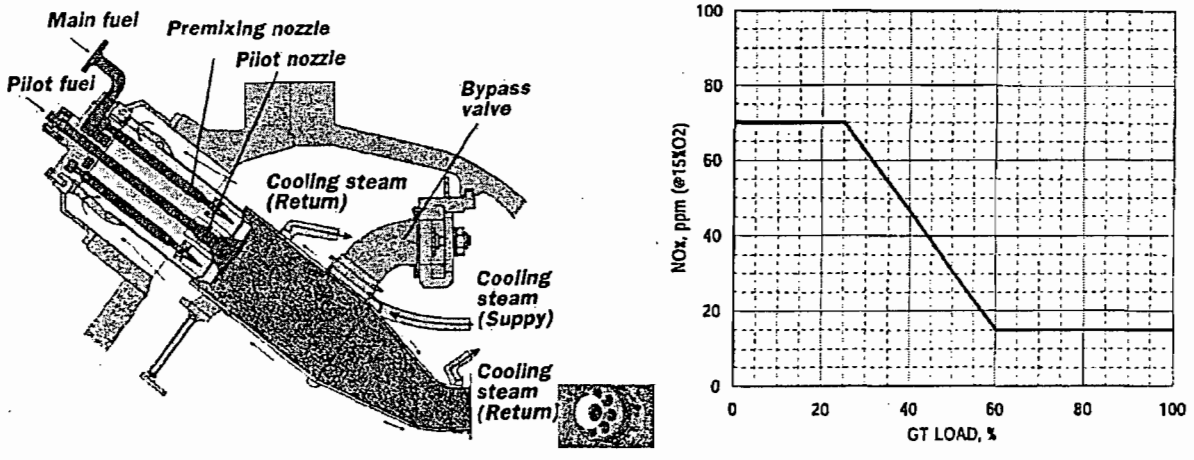


Figure 6. M501G DLN Combustor, Nozzle Block and NO_X versus Load Specification

The graph on the right hand side contains the NO_X specifications for new Mitsubishi M501G1 combustion turbines.[1] The combustor emits NO_X at concentrations less than 15 ppmvd at loads between 60 and 100 percent of capacity. The firing temperature within the 60-100% load range is between roughly 2500 and 2750 °F. The low NO_X values are an excellent achievement considering the high firing temperature.

The difference between combustion temperature and firing temperature into the first stage is minimized by steam cooling of the transition piece and first stage nozzle. Thus a lower combustion temperature (and lower NO_X) can be achieved by steam cooling compared with air cooling for a given firing temperature (equal work). Alternatively a higher firing temperature (more work, greater efficiency) can be achieved by steam cooling compared with air cooling for a given combustion temperature (equal NO_X).

It is believed that the combustor for the M501G1 can actually achieve low NO_X emissions (< 20 ppm) at lower load than suggested by the diagram. The tendency to increase NOX concentrations is mitigated by decreasing firing temperature.

Catalytic Combustion – XONON™. Catalytic combustion involves using a catalytic bed to oxidize a lean air and fuel mixture within a combustor instead of burning with a flame as described above. In a catalytic combustor the air and fuel mixture oxidizes at lower temperatures, producing less NO_X.[2] In the past, the technology was not reliable because the catalyst would not last long enough to make the combustor economical.

There has been increased interest in catalytic combustion as a result of technological improvements and incentives to reduce NO_X emissions without the use of add-on control equipment and reagents.

Catalytica has developed a system know as XONON™, which works by partially burning fuel in a low temperature pre-combustor and completing the combustion in a catalytic combustor. The overall result is low temperature partial combustion (and thus lower NO_X production) followed by flameless catalytic combustion to further attenuate NO_X formation.

In 1998, Catalytica announced the startup of a 1.5 MW Kawasaki gas turbine equipped with XONON™.[3] The turbine is owned by Catalytica and is located at the Gianera Generating Station of Silicon Valley Power, a municipally owned utility serving the City of Santa Clara, California. This turbine and XONON™ system successfully completed over 18,000 hours of commercial operation.[4] By now, at least five such units are operating or under construction with emission limits ranging from 3 to 20 ppmvd.

Emission tests conducted through the EPA's Environmental Technology Verification Program (ETV) confirm NO_X emissions slightly greater than 1 ppm.[5] Despite the very low emission potential of XONON, the technology has not yet been demonstrated to achieve similarly low emissions on large turbines.

It is difficult to apply XONON on large units because they require relatively large combustors and would not likely deliver the same power as a unit relying on conventional diffusion flame or lean premixed combustion. This technology is not feasible at this time for the FPL West County Energy Center project.

Selective Catalytic Reduction (SCR). Selective catalytic reduction (SCR) is an add-on NO_X control technology that is employed in the exhaust stream following the gas turbine. SCR reduces NO_X emissions by injecting ammonia into the flue gas in the presence of a catalyst. Ammonia reacts with NO_X in the presence of a catalyst and excess oxygen yielding molecular nitrogen and water.

The catalysts used in combined cycle, low temperature applications (conventional SCR), are usually vanadium or titanium oxide and account for almost all installations. For high temperature applications (Hot SCR up to 1100 °F), such as simple cycle turbines, zeolite catalysts are available but used in few applications to-date. SCR units are typically used in combination with wet injection or DLN combustion controls.

In the past, sulfur was found to poison the catalyst material. Sulfur-resistant catalyst materials are routinely available. Catalyst formulation improvements have proven effective in resisting sulfur-induced performance degradation with fuel oil in Europe and Japan, where conventional SCR catalyst life in excess of 4 to 6 years has been achieved, while 8 to 10 years catalyst life has been reported with natural gas. Sulfur in fuel is no longer an issue for planned combustion turbines in the United States because of the mandated availability of ultralow sulfur (ULS) diesel fuel. ULS diesel fuel has a sulfur specification that is about as stringent as the natural gas specifications.

Figure 7 (Nooter-Eriksen) below is a diagram of a HRSG. Components 10 and 21 represent the SCR reactor and the ammonia injection grid. The SCR system lies between low and high-pressure steam systems where the temperature requirements for conventional SCR can be met.

Figure 8 is a photograph of the PEF Hines Power Block I. The external lines to the ammonia injection grid are easily visible. The magnitude of the installation can be appreciated from the relative size compared with nearby individuals and vehicles.

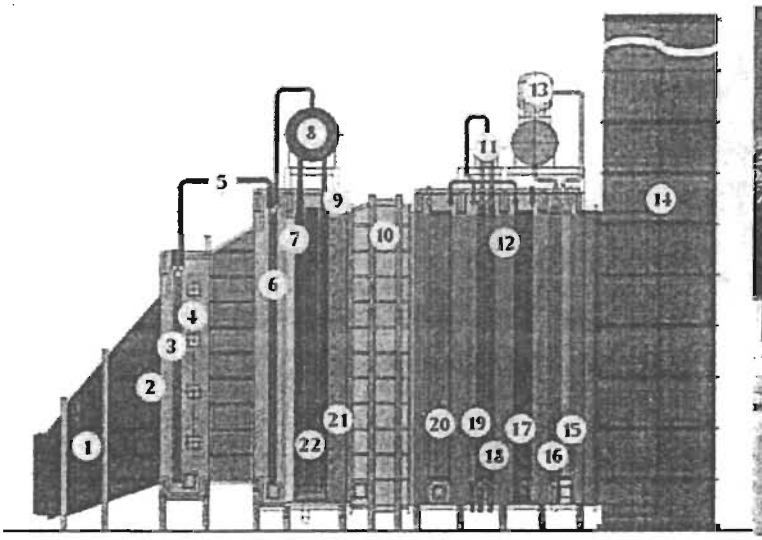


Figure 7 – Key HRSG Components (10 is SCR)

Figure 8 – PEF Hines Block I

If the fuel contains significant amounts of sulfur, high levels of ammonia slip can lead to the formation of bisulfates and other particulate matter. Obviously this is not a problem with natural gas or ultra low sulfur distillate fuel oil. Ammonia slip will gradually increase over the life of the system due to degradation of the catalyst.

The catalyst is typically augmented or replaced over a period of several years although vendors typically guarantee catalysts for about three years. Excessive ammonia use can increase emissions of CO, ammonia (slip) and particulate matter (when sulfur-bearing fuels are used).

The Sithe Mystic Station, Massachusetts is located in an ozone non-attainment area. The project received conditional approval to commence construction in 2000 and started up in 2003.[6] It consists of four M501G combined cycle units with duct burners. Each unit has a NO_X limit of 2 ppmvd @15% O_2. One month of hour-by-hour NO_X data from Unit 82 is presented in Figure 9.

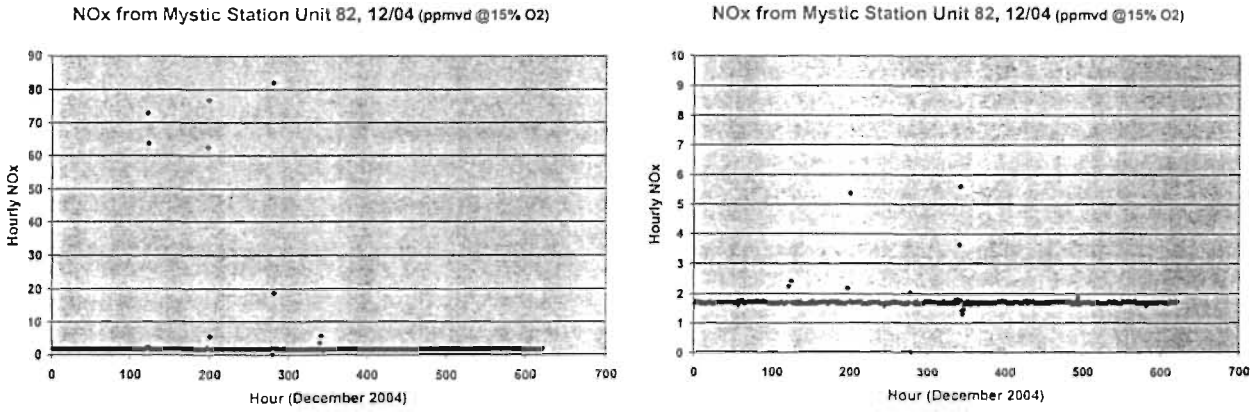


Figure 9. Hourly NO_X Data from Sithe Mystic Station, Massachusetts. December 2004

Unit 82 operated 620 hours during the month of December 2004, typically at combustion turbine electrical generation rates between 170 and 250 MW. The data on the left comprise all reported hours of operation including thirteen measurements related to startups and shutdowns. The same data on the right, in greater resolution, clearly show that, with the exception of the startup and shutdown values, the unit consistently achieved less than 2 ppmvd NO_X @15% O_2.

Since 1999, SCR has been specified for all combined cycle projects in Florida that required a BACT determination. All of the projects rely on DLN or wet injection for basic NO_X control in addition to the add-on SCR systems.

In conclusion, SCR is a commercially available, demonstrated control technology currently employed on numerous large combined cycle combustion turbine projects permitted with very low NO_X emissions. SCR results in further NO_X reduction of 60 to 95% after initial control by DLN or WI in a combined cycle unit or total control on the order 95 to 99%.

SCONO$_X$™. This technology is an NO_X and CO control system developed by Goal Line Environmental Technologies. Alstom Power was the distributor of the technology for large gas turbine projects. Specialized potassium carbonate catalyst beds reduce NO_X emissions using an oxidation-absorption-regeneration cycle. The required operating temperature range is between 300°F and 700°F, which exists within a HRSG.

SCONO$_X$™ systems were installed at seven sites ranging in capacity from 5 to 43 MW.[7] Alstom Power was not successful in marketing the product at large facilities.

SCONO$_X$™ technology (at 2.0 ppmvd) was used to define the Lowest Achievable Emission Rate (LAER) in non-attainment areas. SCONOx™ has demonstrated achievement of lower values (< 1.5 ppmvd) in a small (32 MW) system. SCONOx™ systems also oxidize emissions of CO and VOC for additional emission reductions. Basically, SCONO$_X$™ can match the performance of SCR without the ammonia slip. On the other hand, the catalyst must be intermittently regenerated while on-line through the use of hydrogen produced on-site from natural gas reforming unit.

Table 2 contains averaged cost values for SCONO$_X$™ and SCR developed by the California Air Resources Board for their Legislature.[8] The comparison is for a 500-MW combined-cycle power plant consisting of two combustion gas turbines and one steam turbine meeting BACT requirements.

Table 2. Cost Comparison between SCR and SCONO$_X$ for a 500-MW Unit

Capital Cost ($)		Annual O&M Cost ($)	
SCR/CO	SCONO$_X$™	SCR/CO	SCONO$_X$™
6,259,857	20,747,637	1,355,253	3,027,653

The cost of an oxidation catalyst for CO control is included with the SCR system for comparable evaluation with SCONO$_X$™ multi-pollutant reduction capabilities. Cost figures show that the SCR/oxidation catalyst package costs less than the SCONO$_X$™ system. The report cautions that the values should be used only for relative comparison and not intended for use in detailed engineering.

Estimates provided by FPL for the proposed 2,200 MW project also indicate a large cost difference between the two technologies. While the Department does not accept or reject either set of figures, it appears that SCONO$_X$™ is not cost-effective for the present project.

Applicant's NO_X BACT Proposal

The applicant originally proposed a BACT NO_X limit of 2.5 ppmvd @15% O_2. FPL proposed to meet the BACT emission while burning natural gas by a combination of DLN technology and SCR. FPL proposed a BACT NO_X emission limit of 10 ppmvd @15% O_2 by a combination of wet injection and SCR while burning backup ultra low sulfur fuel oil.

FPL originally submitted an analysis presuming a reduction of NO_X from 35 to 2.5 ppmvd @15% O_2. Subsequently, FPL apparently obtained a guarantee of 15 ppmvd @15% O_2 from the manufacturer of the M501G1 by DLN prior to consideration of further reduction by SCR. Following discussions with the Department, FPL agreed to values of 2.0 and 8.0 ppmvd @15% O_2 while burning natural gas and ultralow sulfur fuel oil, respectively. The average cost effectiveness was estimated by FPL to be $3,385 per ton of NO_X removed (From 15 to 2.0 ppmvd @15% O_2).

Department's Draft NO_X BACT Determinations

Table 3 includes the known determinations for M501G units. All used SCR. Based on this table, the "Top" emission limit is considered by the Department to be 2.0 ppmvd @15% O_2 on a 1-hour average for G-Class units. The FPL West County proposal is included for comparison.

Table 3. NO_X Standards for M501G Combined Cycle Units with Duct Burners

Project Location	Capacity (MW)	NO_X Limit and Fuel (ppmvd @ 15% O_2)	Comments
Sithe Mystic, MA	1,600	2 – NG & DB (1-hr)	LAER, Startup 2003
Sithe Fore River, MA	800	2/6 – NG & DB/FO (1-hr)	LAER, Startup 2003
Wolf Hollow, TX	730	9 – NG (DB?)	BACT, Startup 2003
Covert Generating, MI	1,200	2.5 – NG & DB (24-hr)	BACT, Startup 2004
Port Westward, OR	415	2.5 – NG &DB (3-hr)	BACT, Startup ~ 2007
FPL West County, FL	2,500	2.0/8.0–NG&DB/FO (24-hr)	BACT, Startup ~2009

Notes: NG = Natural Gas DB = Duct Burner FO = Fuel Oil

The data from the Sithe Mystic project provides reasonable assurance that a level of 2.0 ppmvd @15% O_2 can be consistently achieved. The Department will set limits of 2.0 and 8.0 ppmvd @15% O_2 while firing natural gas (with or without use of duct burners) and for the limited firing of ultralow sulfur (ULS) fuel oil, respectively. Averaging times will be 24 hours.

The Department does not consider a 1-hour averaging time to be necessary to insure continuous low NO_X levels. This provides relief from some of the small risks of occasionally exceeding the very low BACT NO_X limits.

The limits of 2.0 and 8.0 ppmvd @15% O_2 represent reductions of 98% and 92% for the gas and oil cases respectively when compared with the applicable New Source Performance Standard at 40 CFR 60, Subpart GG.

4.2 CO and VOC BACT Determination

CO and VOC Formation and Combustor Characteristics

CO and VOC are emitted from combustion turbines due to incomplete fuel combustion. Most combustion turbines incorporate good combustion to minimize emissions of CO and VOC. The obvious control techniques are based upon high temperature, sufficient time, turbulence, and excess air. Additional control can be obtained by installation of oxidation catalyst.

The figure below contains CO specifications while firing natural gas and fuel oil, including the guarantee values that apply between 60 and 100%.[9]

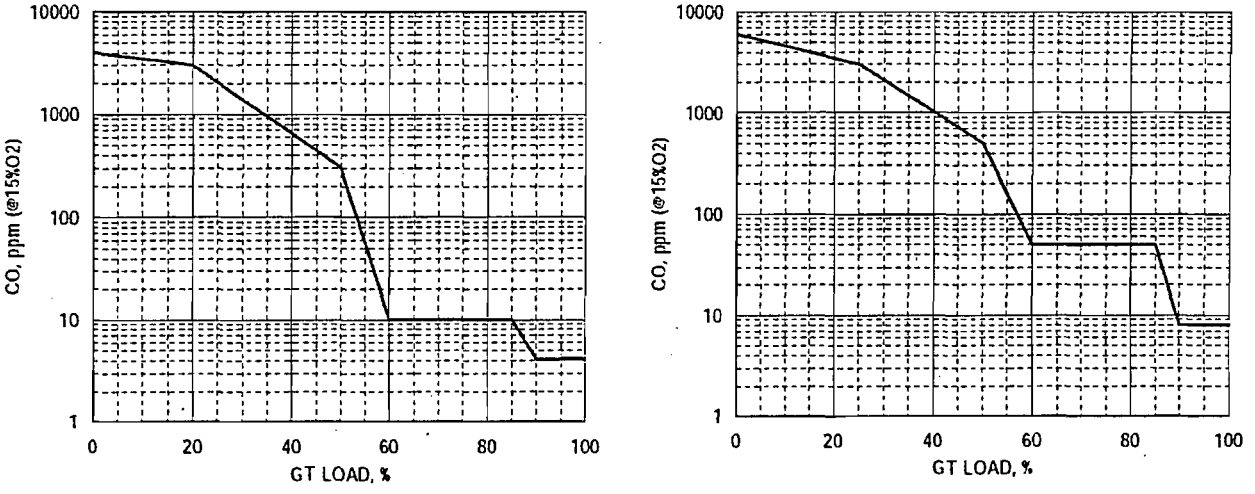


Figure 10. Expected CO versus Load while burning Gas or Fuel Oil. M501G1.

Generally the performance data on the left hand side indicate that the combustor performs very well on natural gas within the range of 60 to 100% of full load. Basically, at 60% of full load the flame and firing temperatures are great enough to destroy most CO. The graph on the right shows the characteristics while firing fuel oil.

Typically VOC concentrations are an order of magnitude less than CO concentrations. Therefore, while burning natural gas, VOC emissions will likely be less than 1 ppm while operating between 60 and 100% of full load. Similarly, VOC emissions less than 5 ppm and as low as 1 ppm are expected while firing fuel oil.

Duct Burner and Fuel Oil Considerations

The presence of a duct burner (refer to Figure 7, Component 4) complicates the evaluation somewhat. Turbine exhaust gas (TEG) enters the HRSG at a relatively high temperature (~1,200 °F) and high excess air (> 12% O_2). In the design shown in Figure 7, some of the heat is used by a high pressure superheater (Component 3). The gas-fired duct burner (Component 4) restores heat to the TEG prior to entering a second superheater (Component 6). Figure 11 shows an individual burner and an array comprising a duct burner. The hot TEG serves as combustion air for gas introduced into the burner array.

The ignition temperatures for CO and methane (not counted as VOC) are between 1,100 and 1,200 °F. VOC such as ethane and propane ignite at temperatures less than 900 °F. All of the necessary conditions are present to minimize further CO and VOC concentration increases when corrected to 15% oxygen.

CO emissions while firing fuel oil should be very low, again, based on the high combustion temperature and the relatively high temperature and excess air in the TEG.

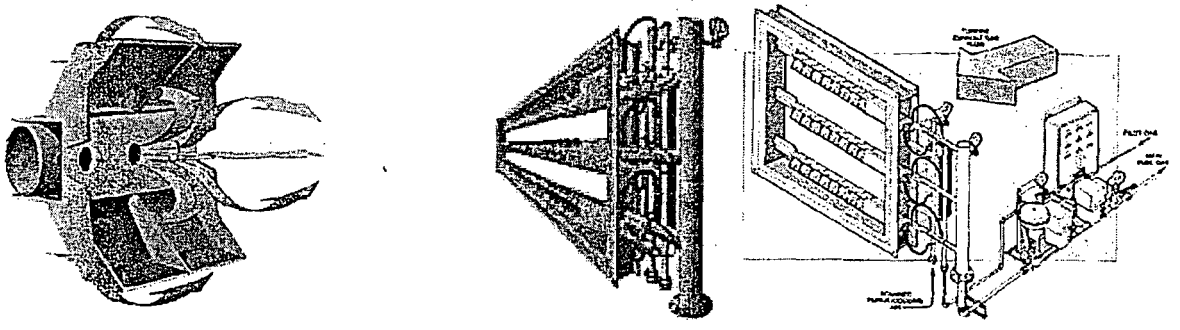


Figure 11 – Individual Burner and Array within Supplementary-Fired HRSG (Coen)

FPL's Initial CO, VOC, and PM/PM_{10} Emission Limit Determination

The known CO and VOC (and PM and ammonia) determinations for projects based on the M501G technology are presented in the following table. FPL's initial proposal (prior to selecting the M501G) is included in the table for comparison.

Table 6. CO, VOC, PM Standards for M501G Combined Cycle Units with Duct Burners

Project Location	CO – ppmvd @15% O_2	VOC – ppmv (@15% O_2)	PM – lb/mmBtu or lb/hr NH_3 – ppmvd @15% O_2
FPL West County	5/7–NG/FO (DB off, 100%, test) 7.2 – NG (DB on, 100%, test) 8.0 – All Modes, 24-hours	1.2 – NG (DB off) 1.9 – NG (DB on) 10 – FO (DB off)	10% Opacity, NH_3 = ? 12 lb/hr (NG, DB off, front+SCR) 14 lb/hr (NG, DB on, front+SCR) 69 lb/hr (FO, DB off, front+SCR)
Sithe Mystic, MA	2.0 – NG & DB (1-hr, Ox-Cat)	1.0 (DB off) 1.7 (DB on)	0.011 (32.5 lb/hr) (NG+DB) (NH_3 = 2.0 ppmvd)
Sithe Fore River, MA	2/7–NG & DB/FO (1-hr, Ox-Cat)	1.0 (DB off) 1.7 (DB on)	0.011 (32.5 lb/hr) (NG+DB) 0.05 (140 lb/hr) (FO+DB) (NH_3 = 2.0 ppmvd)
Covert Generating, MI	5 (Ox-Cat, per MHI Paper)[10] According to Permit:[11] 33.7 lb/hr (NG+DB, 24-hr)	7.7 lb/hr (NG+DB)	33.8 lb/hr (NG+DB) (NH_3 = 10 ppmvd)
Wolf Hollow, TX	33.8 (NG+DB, 24-hr)	VOC = ?	PM = ? (NH_3 = 10 ppmvd)
Port Westward, OR	4.9 (NG+DB, 3-hr, Ox-Cat)	7.7 lb (NG+DB)	(NH_3 = 8 ppmvd)

Notes: NG = CT on Natural Gas DB = Duct Burner FO = Fuel Oil

Department's CO and VOC BACT Proposal

FPL subsequently obtained high load (90-100%) guarantees from Mitsibishi of 4.1 and 8.0 ppmvd CO @15% O_2 for natural gas and fuel oil firing, respectively. The guaranteed CO emission at medium load is 10 ppmvd CO @15% O_2 while firing natural gas. Per Figure 10, expected medium load emissions are 50 ppmvd CO @15% O_2 while firing fuel oil.

The duct burners will operate only when power is required beyond what can be provided when the combustion turbine operates at full load. As long as the duct burners are used, emissions from the combustion turbine are minimized. FPL still estimates greater CO concentrations while using the duct burners than when operating the combustion turbine at full load.

On a given day, each combustion turbine/supplementary-fired HRSG can operate within the full spectrum of loads (60-100%) and fuels. FPL and the Department have agreed that a continuous 24-hour emissions limit to cover all the modes of operation will be 8.0 ppmvd @15% O_2. This and the full load proposals are consistent with recent determinations for FPL Turkey Point and FMPA Treasure Coast combined cycle projects.

Similarly an annual 12-month limit of 6 ppmvd will apply that takes into consideration the preponderance of natural gas operation at 4.1 ppmvd @15% O_2.

While FPL has requested 500 hours per year of ultralow sulfur fuel oil operation, they will rarely use fuel oil. For example Martin Combined Cycle Units 3 and 4 were permitted to fire both natural gas and fuel oil, but were never even commissioned to fire fuel oil.

With respect to the dual-fuel units, FPL advised: *"Our historical practice has been that we run on oil for limited hours each month for reliability purposes (to ensure that the systems operate properly), and from time to time, we burn oil when gas service is interrupted or other factors require us to use back-up fuel. Martin Unit 8 (2005), Fort Myers Units 3A and 3B (since 2003), Fort Lauderdale Units 4 & 5 (since 1996) and Putnam (since 1996) collectively averaged less than 100 hours of oil burning per year per unit."*[12]

The Department agrees that FPL's description is a reasonable expectation for the proposed West County Power Plant. Given the low fuel oil use and restrictive daily and annual CO stack emission concentrations, there is little benefit in installing oxidation catalyst. Furthermore, FPL successfully obtained the lowest guarantees for "G" technology units specified to-date prior to consideration of additional control by catalyst. FPL can install oxidation catalyst at a future date to meet the low CO emission limits if circumstances such as very high natural gas prices cause greater operation at low load conditions characteristic of higher CO concentrations.

The updated VOC proposal while burning natural gas of 1.2 and 1.5 ppmvd @15% O_2 with the duct burner off and on, respectively, is acceptable. The updated proposal of 6.0 ppmvd @15% O_2 while burning fuel oil appears high. However, the most likely expectation is that VOC emissions will be approximately 1 ppmvd and 5 ppmvd @15% for high and medium load, respectively, during the brief periods of fuel oil firing.

Given the 24-hour and annual BACT CO limits, it is reasonable to expect that formaldehyde emissions will be less than 0.091 ppmvd @15% O_2. This value is equal to the applicable formaldehyde limit of Part 63, Subpart YYYY, National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines (CT MACT).

4.3 Sulfur Dioxide (SO2) and Sulfuric Acid Mist (SAM) BACT Determination

SO_2 control processes can be classified into five categories: fuel/material sulfur content limitation, absorption by a solution, adsorption on a solid bed, direct conversion to sulfur, or direct conversion to sulfuric acid. A review of the BACT determinations for combustion turbines contained in the BACT Clearinghouse shows that the exclusive use of low sulfur fuels constitutes the top control option for SO_2.

Basically the use of low sulfur fuels simply means that the sulfur reduction was accomplished to very low levels at the refinery or gas conditioning plant prior to distribution.

For this project the applicant has proposed as BACT the use of ultra low sulfur fuel oil (0.0015 percent sulfur) and clean natural gas with a sulfur fuel specification less than 2 grains of sulfur per 100 standard cubic feet of natural gas ($\leq$ 2 gr/100 SCF). For reference, the sulfur limit given in New Source Performance Standard, 40 CFR 60, Subpart GG applicable to combustion turbines is 0.8% by weight.

FPL estimated 206 tons per year of SO_2 and 20 tons per year of sulfuric acid mist (SAM) per combined cycle unit. This equates to 412 and 40 TPY for SO2 and SAM respectively from the two combined cycle units. Realistically, annual emissions will be approximately one-fourth of the estimated values because the sulfur concentration in the pipeline gas is typically closer to 0.5 gr/100 SCF than to 2 gr/100 SCF. The Department accepts FPL's BACT proposal for SO_2 and SAM. This approach is consistent with other recently permitted projects.

4.4 Particulate Matter (PM/PM10) BACT Determination and Ammonia (NH_3) Control

PM/PM_{10} Formation and Control Options

PM and PM_{10} are emitted from combustion turbines due to incomplete fuel combustion. They are minimized by use of clean fuels and good combustion. Natural gas and ultra low sulfur distillate fuel oil will be the only fuels fired and are efficiently combusted in gas turbines. Clean fuels are necessary to avoid damaging turbine blades and other components already exposed to very high temperature and pressure. Natural gas is an inherently clean fuel and contains no ash. The ultra low sulfur (ULS) fuel oil to be combusted contains a minimal amount of ash and will be used for approximately 500 hours per year making any conceivable add-on control technique for PM/PM_{10} either unnecessary or impractical.

As previously discussed, there will be emissions of NO_X, SO_2, SAM and ammonia (NH_3). These pollutants are ultimately converted to very fine ammonium nitrate and ammonium sulfate species in the environment. The NO_X control technology of SCR can increase PM/PM_{10} emissions from the stack due to formation of ammonium sulfates prior to exiting.

The PM/PM_{10} emission limits for M501G projects are included in Table 6. Comparison is not simple because some of the limits may represent filterable particulate matter while some of the limits represent the sum of filterable and condensable matter. The values shown as FPL's proposal reflect the filterable portion in addition to PM/PM_{10} formed by the conversion of ammonia slip into ammoniated sulfate emissions. FPL proposed only the opacity limit of 10% and not a hard PM/PM_{10} limitation.

The Department notes that FPL will use ultra low sulfur (ULS) fuel oil. ULS fuel oil contains less than 0.0015% sulfur compared with the present 0.05% sulfur specification of low sulfur fuel oil.

The very high combustion temperatures, use of inherently clean fuel (including ULS fuel oil), and a relatively low ammonia emission limit will insure that PM/PM_{10} emissions will be very low and likely less than estimated by FPL. The Department will adopt FPL's proposal of 10% opacity as BACT in conjunction with the use of inherently clean fuels and high temperature, high excess air combustion.

The Department proposes a relatively low ammonia limit of 5 ppmvd @15% O_2 as part of the PM/PM_{10} BACT determination. The low SO_2, NO_X, NH_3, and PM/PM_{10} strategies give assurances that direct $PM_{2.5}$ emissions and formation of $PM_{2.5}$ in the environment by precursors emitted from the project will be minimized.

Cooling Tower PM Emissions

The applicant's preliminary design includes a 26-cell mechanical draft cooling tower for each combined cycle unit with the following specifications: a circulating water flow rate of 306,000 gpm; design hot/cold water temperatures of 105° F/87° F; a design air flow rate of 1,500,000 per cell; a liquid-to-gas air flow ratio of 1.045; and drift eliminators with a drift rate of no more than 0.0005 percent. Cooling towers may emit particulate matter based on the loading in the recirculating water.

FPL estimates annual emissions of 67 tons of PM per cooling tower due to drift losses assuming a drift rate of 0.0005%. PM_{10} emissions are projected to be approximately 5 TPY per cooling tower.

The Department determines the draft BACT to be a design drift rate of no more than 0.0005% of the circulating water flow rate. At this level, maximum potential PM and PM_{10} emissions from the cooling tower are expected to be on the order of 134 and 10 TPY respectively from the two cooling towers.

Applicant's PM/PM_{10} Proposal

FP&L proposes PM/PM_{10} BACT as opacity limit of 10%. FPL proposes PM control from the cooling tower to be accomplished by a 0.0005% drift rate design limitation.

Department's Draft PM/PM_{10} BACT Determinations

The following conditions are established as the draft BACT standards.

- The gas turbines shall fire natural gas as the primary fuel, which shall contain no more than 2.0 grains of sulfur per 100 SCF of natural gas. The duct burners are limited to firing only natural gas meeting this specification. The gas turbines may fire distillate oil as a restricted alternate fuel (≤ 500 hours per year), which shall contain no more than 0.0015% sulfur by weight.
- Visible emissions shall not exceed 10% opacity based on a 6-minute average.
- Ammonia emissions (slip) shall not exceed 5 ppmvd.
- The cooling towers shall be equipped with high-efficiency mist eliminators with a maximum guaranteed drift rate of 0.0005%.

4.5 Department Draft BACT Determinations for Combustion Turbines and Duct Burners

Emissions from each gas turbine shall not exceed the values given in the following table.

Table 7. Draft BACT Determination

Pollutant	Fuel	Method of Operation	Stack Test, 3-Run Average		CEMS Block Average
			ppmvd @ 15% O_2	lb/hr [g]	ppmvd @ 15% O_2
CO [a]	Oil	Combustion Turbine (CT)	8.0	42.0	8.0, 24-hr 6, 12-month [h]
	Gas	CT & Duct Burner (DB)	7.6	52.5	
		CT Normal	4.1	23.2	
NO_X [b]	Oil	CT	8.0	82.4	8.0, 24-hr
	Gas	CT & DB	2.0	24.2	2.0, 24-hr
		CT Normal	2.0	20.0	
PM/PM_{10} [c]	Oil/Gas	All Modes	2 gr S/100SCF of gas, 0.0015% sulfur fuel oil		
			Visible emissions shall not exceed 10% opacity for each 6-minute block average.		
SAM/SO_2 [d]	Oil/Gas	All Modes	2 gr S/100 SCF of gas, 0.0015% sulfur fuel oil		
VOC [e]	Oil	CT	6.0	19.6	NA
	Gas	CT & DB	1.5	5.4	
		CT Normal	1.2	4.1	
Ammonia [f]	Oil/Gas	CT, All Modes	5	NA	NA

a. Compliance with the continuous 24-hour CO standards shall be demonstrated based on data collected by the required CEMS. The initial and annual EPA Method 10 tests associated with the certification of the CEMS instruments shall also be used to demonstrate compliance with the individual standards for natural gas, fuel oil, and basic duct burner modes. The stacks test limits apply only at high load (90-100% of the combustion turbine capacity).

b. Compliance with the continuous NO_X standards shall be demonstrated based on data collected by the required CEMS. The initial and annual EPA Method 7E or Method 20 tests associated with demonstration of compliance with 40 CFR 60, Subpart GG or certification of the CEMS instruments shall also be used to demonstrate compliance with the individual standards for natural gas, fuel oil, and duct burner modes during the time of those tests. NO_X mass emission rates are defined as oxides of nitrogen expressed as NO_2.

c. The sulfur fuel specifications combined with the efficient combustion design and operation of each gas turbine represents (BACT) for PM/PM_{10} emissions. Compliance with the fuel specifications, CO standards, and visible emissions standards shall serve as indicators of good combustion. Compliance with the fuel specifications shall be demonstrated by keeping records of the fuel sulfur content. Compliance with the visible emissions standard shall be demonstrated by conducting tests in accordance with EPA Method 9.

d. The fuel sulfur specifications effectively limit the potential emissions of SAM and SO_2 from the gas turbines and represent BACT for these pollutants. Compliance with the fuel sulfur specifications shall be determined by the ASTM methods for determination of fuel sulfur as detailed in the draft permit.

e. Compliance with the VOC standards shall be demonstrated by conducting tests in accordance with EPA Method 25A. Optionally, EPA Method 18 may also be performed to deduct emissions of methane and ethane. The emission standards are based on VOC measured as methane. The limits apply only at high load (90-100% of the combustion turbine capacity). Compliance with the CO CEMS based limits at lower loads shall be deemed as compliance with the VOC limit.

f. Compliance with the ammonia slip standard shall be demonstrated by conducting tests in accordance with EPA Method CTM-027.

g. The mass emission rate standards are based on a turbine inlet condition of 59° F and may be adjusted to actual test conditions in accordance with the performance curves and/or equations on file with the Department.

h. Rolling Average. Enforcement discretion may be exercised for up to 12 months with respect to the 6 ppmvd @15% O_2 limit for any combustion turbine/supplementary-fired heat recovery steam generator upon notification by the permittee of intent to install oxidation catalyst. The permittee shall have 12 months to complete the oxidation catalyst installation. From time of notification to installation of the catalyst all partial or complete calendar months shall be excluded from the 12-month rolling average.

4.6 New Source Performance Standards Applicable to Gas Turbines and Duct Burners

Combustion Turbines

Stationary gas turbines are subject to the federal New Source Performance Standards in Subpart GG of 40 CFR 60. These requirements result in the following standards based on compressor inlet conditions of 59° F and 60% relative humidity:

- NO_X (gas) ≤ 75 ppmvd @ 15% O_2 (assuming 25% LHV simple cycle efficiency);
- NO_X (oil) ≤ 114 ppmvd @ 15% O_2 (corrected for approximate 38% LHV efficiency characteristic of G-Class units); and
- SO_2 emissions are limited by the use of a fuel with a sulfur content of no more than 0.8% by weight.

A more recent standard was proposed by EPA on February 18, 2005. The proposed standard, 40 CFR60, Subpart KKKK would require adherence to the following limits:

- NO_X (gas) ≤0.39 lb/megawatt-hour (lb/MWH);
- NO_X (oil) ≤1.2 lb/MWH; and
- SO_2 emissions are limited by the use of a fuel with a sulfur content of no more than 0.05% (500 ppmw) by weight.

The Department considers the draft BACT standards more stringent than the NSPS standards. This is obvious in the case of the Subpart GG standards (2 and 8 ppmvd NO_X @15% O_2). These values are approximately equal to 0.06 and 0.22 lb NO_X/MWH while burning gas and fuel oil respectively..

The final rule will be applicable to the WCEC at the time of publication in the Federal Register. When the rule becomes final, WCEC may no longer be subject to NSPS Subparts Da and GG.

Duct Burners

Each HRSG has a gas-fired duct burner (DB) with a maximum heat input rate of 475 MMBtu per hour (MMBtu/hr, HHV). This subjects the duct burners to the federal New Source Performance Standards in Subpart Da of 40 CFR 60, which applies to combined cycle units with a heat input rate from fossil fuel of more than 250 MMBtu per hour. The following emissions standards apply:

- NO_X ≤ 1.6 lb/MW-hr (gross)
- SO_2 ≤ 0.20 lb/MMBtu
- PM ≤ 0.03 lb/MMBtu

The Department's proposed BACT NO_X standard for the combination of gas turbine and duct burner emissions is equivalent to approximately 0.06 lb/MW-hr for NO_X. The specifications for the ultra low sulfur fuel oil and natural gas insure that the NSPS PM and SO_2 emission limits for the duct burners will easily be met.

As mentioned in the previous section, Subpart Da may not apply to the WCEC if and when Subpart KKKK is promulgated as a final NSPS. An Appendix to the permit will summarize applicable federal requirements.

4.7 National Emission Standards for Hazardous Air Pollutants Applicable to Gas Turbines

The West County Energy Center will be a new major source of hazardous air pollutant emissions. As such, the proposed new combustion turbines would be subject to NESHAP Subpart YYYY, which became final on March 5, 2004.[13] According to the final rule, each unit would be considered a "new lean premix gas-fired stationary combustion turbine". Therefore, each new combustion turbine would be subject to an emissions standard for formaldehyde of no more than 91 parts per billion by volume, dry (ppbvd @15% O_2). Compliance must be demonstrated by initial and annual performance tests. In addition, acceptable operating parameters must be specified that show compliance with the standard. These operating parameters must be continuously monitored that ensure continuous compliance.

On April 7, 2004, EPA published two proposals that potentially affect applicability of Subpart YYYY.[14] EPA has stayed the applicability of YYYY to units such as those proposed for the West County Energy Center project and EPA proposed to permanently delete such units (as well as certain other classes) from the list of sources subject to the regulation.

FP&L proposes to meet the limit proposed in YYYY of 91 ppbvd. The Department believes the formaldehyde emission limit will be met given the proposed BACT CO limits of 8.0 and 6 ppmvd @15% O_2 for daily and annual operation respectively. It is also expected that the units will easily demonstrate compliance with the formaldehyde limit during the initial and annual test requirements.

The draft permit will reflect the present status of the rule. The final permit will reflect Subpart YYYY to the extent that it is applicable on the date the Department issues its final decision on the present application.

4.8 BACT Determinations for Auxiliary Boilers

One gas-fired auxiliary boiler is required for each combined cycle unit. The primary purpose of the auxiliary boiler is to provide steam for combustor cooling until steam of sufficient quality can be provided by the HRSG.

The specifications for the auxiliary boilers are as follows:

- Nebraska Boiler or equivalent;
- Usage of 500 hours per year;
- Maximum heat input rate of 99.8 MMBtu/hr heat input; and
- Steam capacity: 85,000 lb/hr.

A recent BACT determination was conducted for the Port Westward, Oregon project. An auxiliary boiler was required for startup of an M501G combined cycle unit. A 91 MMBtu auxiliary boiler was specified for that project.

The state of Oregon conducted a search of BACT determinations in the RACT/BACT/LAER Clearinghouse (RBLC) in early 2005. Approximately 20 RBLC determinations were reviewed by the State of Oregon for auxiliary boilers in the range of 10 to 100 MMBtu/hr that are used in support of combined cycle projects. Separate tables were developed for NO_X, SO_2, CO, VOC, and PM/PM_{10}.

The ranges from the Oregon survey are presented in the following table along with the limits set for the M501G projects for which the auxiliary boiler limits are known. The auxiliary boilers considered are in the range of 10 to 100 MMBtu/hr. All of the auxiliary boilers listed for M501G projects are between 90 and 100 MMBtu/hr.

The limits proposed by FPL for the West County project are included for comparison. NSPS and NESHAP requirements that are possibly applicable to the auxiliary boilers are also included. Subpart Db requirements, which apply to boilers that are 100 MMBtu/hr or greater are included because the FPL project appears to specify a nominal 100 MMBtu/hr boiler. The 99.8 MMBtu/hr specification set by FPL must relate to a physical capacity rather than a permit condition.

Table 8. CO, NO_X, VOC, PM Standards – Auxiliary Boilers for Combined Cycle Units

Project Location	CO (lb/MMBtu)	NO_X (lb/MMBtu)	VOC lb/MMBtu	PM/PM_{10} (lb/MMBtu)
RBLC Survey	0.016 – 0.15	0.01 – 0.23	0.004 – 0.018	0.0042 – 0.012
Port Westward, OR	0.08	0.05	0.005	0.002
Sithe Mystic, MA	0.08	0.035	0.008	0.007
Sithe Fore River, MA	0.08 and 100 ppm @3% O_2	0.035/0.10 (NG/FO)	0.008/0.004 (NG/FO)	0.007/0.08 (NG/FO)
Covert Generating, MI		DLB & FGR		
FPL West County, FL	0.18	0.10	0.005	0.002
NSPS Subpart Db		0.20		
NSPS Subpart Dc	Boilers between 10 and 100 mmBtu/hr - Record Keeping Required			
NESHAP Subpart DDDD	400 ppm@3% O_2			

Notes: NG = Natural Gas FO = Fuel Oil LNB = Low NO_X Burners FGR = Flue Gas Recirculation

The NO_X and CO values proposed by FPL for the WCEC project are greater than most of the projects in the Oregon survey or the other M501G projects. Even though Michigan did not set limits for the auxiliary boiler at Covert Generating, it is obvious that the specifications for Low NO_X Burners (LNB's)and Flue Gas Recirculation (FGR) will yield very low NO_X emissions. The Department does not have the details from the Wolf Hollow, Texas M501G project.

The auxiliary boilers will be used in the WCEC for the same purpose as they are used in the other M501G projects. The Department will adopt the NO_X and CO values from the Oregon determination as BACT. These values can be achieved by numerous suppliers by good combustion techniques and LNB's without resorting to catalysts, ultra LNB's, or FGR. The annual PM/PM_{10} and VOC emissions are estimated by FPL at less than 1 TPY.

4.9 BACT Determinations for Emergency Generators

Two standby emergency generators are included for each combined cycle unit. These will be used when electricity is not available to the site, such as during hurricanes. According to the application, these would be classified as insignificant emission units. However, a BACT determination is required because BACT applies on the entire facility.

FPL included, as an example, information on Caterpillar Gen Set standby emergency generators with the following specifications:

- Caterpillar Model 3516 engine with Frame 828, Type SR4B generator (or equivalent);
- Usage of 500 hours per year;
- Engine rated at 3,120 Brake Horse Power (BHP); and
- Generator rated at 2,250 kW.

On July 11, 2005 EPA proposed Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (ICE).[15] The values applicable to generators sets in the size category of the emergency generators proposed by FPL are given in the following table.

Table 9. EPA Non-road Stationary Compression ICE Standards, grams/bhp-hr

Engine Power	Type	Tier	CO	HC	NMHC+ NO_X	NO_X	PM
2,250 kW 3,120 hp	**Emergency**	1 (2007)	8.5	1.0		6.9	0.4
	Stationary	2 (2007)	2.6		4.8		0.12
	Emergency	2 (2011)	2.6		4.8		0.12
	Stationary	4 (2011)	2.6		0.30 (NMHC)	0.50	0.07
	Stationary	4 (2015)	2.6		0.14 (NMHC)	0.50	0.022

Notes: bhp = brake horse power HC = hydrocarbons NMHC non-methane hydrocarbons

Emergency engines built after April 1 2006 must comply with Tier 1. Beginning in 2007, EPA Tier 1 certification is required. Tier 1 Certification will be allowed for emergency engines until 2011 when Tier 2 EPA Certification will be required.

The Department accepts the values given for emergency ICE as BACT in conjunction with use of ultralow sulfur (ULS) fuel oil. Use of ULS fuel oil will result in substantially less PM than indicated for the Tier 1 and Tier 2 requirements above and will also minimize PM_{10}, and $PM_{2.5}$ emissions and precursors.

As emergency generators, these units will be subject to the notification requirements of 40 CFR 63, Subpart ZZZZ – NESHAP for Reciprocating Internal Combustors Engines.

4.10 BACT Determinations for Natural Gas Heaters

Two natural gas heaters are required for the project. The purpose of these units is to heat natural gas above dew point temperature and prevent condensation.

FPL included, as an example, specifications for the gas heaters are as follows:

- Hannover Compression Company or equivalent;
- Continuous use although actual use will be much less; and
- Maximum heat input rate of 10 MMBtu/hr heat input.

Table 10. Proposed Emissions from Natural Gas-fired Fuel Heaters

SO_2	NO_X	CO	VOC	PM
2 gr/100 SCF	0.095 lb/MMBtu	0.08 lb/MMBtu	0.005 lb/mmBtu	0.002 lb/mmBtu

According to an interpretive memorandum by EPA in response to a Department inquiry, gas heaters in the subject size category are subject to 40 CFR 60, Subpart Dc.

4.11 BACT Determinations for Emergency Fire Pump Engines

Emergency fire pump engines were not mentioned in the application. However they are obviously project requirements. This category was included in the Standards of Performance for Stationary Compression ICE discussed in the previous section.

The standards vary depending on the size of the engine. For example, the standards for engines from model year 2007 are given in the following table:

Table 11. EPA Proposed Emergency Fire Pump Standards, grams/bhp-hr

Size (hp)	CO	NMHC+NO_X	PM
< 11	6.0	7.8	0.75
11 to < 25	4.9	7.1	0.60
25 to < 50	4.1	7.1	0.60
50 to < 175	3.7	7.8	0.60
175 and greater	2.6	7.8	0.40

Notes: bhp = brake horse power NMHC non-methane hydrocarbons

The Department proposes BACT for the emergency generators as compliance with the proposed standards and use of 0.05% sulfur fuel oil. Even though ULS fuel oil will be available on-site, there is no reason to require it given that any fire emissions will overwhelm the benefits of ULS fuel oil.

5. PERIODS OF EXCESS EMISSIONS

5.1 Excess Emissions Prohibited

In accordance with Rule 62-210.700(4), F.A.C., "Excess emissions which are caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably be prevented during startup, shutdown, or malfunction shall be prohibited." All such preventable emissions shall be included in the compliance determinations for CO and NO_X emissions.

5.2 Alternate Standards and Excess Emissions Allowed

In accordance with Rule 62-210.700, F.A.C., "Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration." In addition, the rule states that, "Considering operational variations in types of industrial equipment operations affected by this

rule, the Department may adjust maximum and minimum factors to provide reasonable and practical regulatory controls consistent with the public interest." Therefore, the Department has the authority to regulate defined periods of operation that may result in emissions in excess of the proposed BACT standards based on the given characteristics of the specific project.

Startup when the heat recovery steam generator (HRSG) or steam turbine-electrical generator is cold must be performed gradually to prevent thermal damage to the components. The gradual warming of the HRSG and steam turbine components is accomplished by operating the gas turbines for extended periods at reduced loads, which results in higher emissions. The durations are minimized by use of the auxiliary steam generators proposed for the project. In general, the sequences of startup/shutdown are managed by the automated control system.

Based on information from FPL regarding startup and shutdown, the Department establishes the following conditions for excess emissions for each gas turbine/HRSG system.

Excess emissions resulting from startup, shutdown, or malfunction shall be permitted provided that best operational practices are adhered to and the duration of excess emissions shall be minimized. Excess emissions resulting from startup, shutdown, or documented malfunctions occurrences shall in no case exceed two hours in any 24-hour period except for the following specific cases:

- For the very infrequent oil-to-gas and gas-to-oil fuel switching, excess emissions shall not exceed 2 hour in any 24-hour period.
- Steam turbine startups occur as little as once during a ten-year period. For cold startup of the steam turbine system, excess emissions from any gas turbine/HRSG system shall not exceed 8 hours in any 24-hr period. A cold startup of the "steam turbine system" is defined as startup of the 3-on-1 combined cycle system following a shutdown lasting at least 48 hours.
- Gas turbine/HRSG startups are infrequent but occur more often than steam turbine startups. For cold startup of a gas turbine/HRSG system, excess emissions shall not exceed 4 hours in any 24-hr period. A cold startup of a "gas turbine/HRSG system" is defined as a startup after the pressure in the high-pressure (HP) steam drum falls below 450 psig for at least a one–hour period. Short startup is enhanced by the use of the auxiliary steam generators that assist in heating surfaces and provide high quality steam for transition piece and nozzle cooling.
- For shutdown, up to three hours of excess emissions are allowed.
- For startup, ammonia injection shall begin as soon as the system reaches the manufacturer's specifications.
- During startup and shutdown, the opacity of the exhaust gases shall not exceed 10%, except for up to ten 6-minute averaging periods in a calendar day during which the opacity shall not exceed 20%. Data for each 6-minute averaging period shall be exclusive from other 6-minute averaging periods.

While NO_X emissions during warm and cold startups are greater than during full load steady-state operation, such startups are infrequent. Also, it is noted that such startups would be preceded by shutdowns of at least 24 or 48 hours. Therefore, the startup emissions would not cause annual emissions greater than the potential emissions under continuous operation. The draft permit will also require the installation of a damper to reduce heat loss during combined cycle shutdowns to minimize the number of combined cycle cold startups.

Combined Cycle Operation with Dump Condenser: If the steam-electrical turbine generator was off line for some reason, it is possible that the gas turbine/HRSG systems would operate without producing any steam generated power. Instead, steam would be delivered to a dump condenser. Operation with a dump condenser must still meet the standards established for combined cycle operation with ammonia injection.

6. AIR QUALITY IMPACT ANALYSIS

6.1 Introduction

The proposed project will increase emissions of six pollutants at levels in excess of PSD significant amounts: PM/PM_{10}, CO, NO_X, SO_2, VOC and SAM. PM_{10}, SO_2 and NO_X are criteria pollutants and have national and state ambient air quality standards (AAQS), PSD increments, significant impact levels and de minimis monitoring levels defined for them. CO is a criteria pollutant and has only AAQS, significant impact levels and de minimis monitoring levels defined for it. There are no applicable PSD increments, AAQS, significant impact or de minimis monitoring levels for SAM and VOC. VOC and NO_X are ozone precursors and any net increase of 100 tons per year of either pollutant requires an ambient impact analysis including the gathering of preconstruction ambient air quality data.

6.2 Major Stationary Sources in Palm Beach County

The current largest stationary sources of air pollution in Palm Beach County are listed below. The information is from annual operating reports submitted to the Department.

Table 12. Major Sources of NO_X in Palm Beach County (2004)

Owner	Site Name	Tons per year
Florida Power & Light	Riviera Power Plant	3808
Palm Beach County SWA	Resource Recovery Facility	1121
New Hope Power Partnership	Okeelanta Cogeneration Plant	872
Sugar Cane Growers Co-Op	Sugar Cane Growers Co-Op	861
Florida Power & Light	**West County Energy (proposed)**	**856**
U.S. Sugar Corp.	Bryant Mill	443
Osceola Farms	Osceola Farms	348
United Technologies Corp.	Pratt & Whitney Aircraft	238
Atlantic Sugar Association	Atlantic Sugar Mill	240

Table 13. Largest Sources of SO_2 in Palm Beach County (2004)

Owner	Site Name	Tons per year
Florida Power & Light	Riviera Power Plant	11410
Sugar Cane Growers Co-Op	Sugar Cane Growers Co-Op	646
Florida Power & Light	**West County Energy (proposed)**	**411**
Atlantic Sugar Association	Atlantic Sugar Mill	351
Palm Beach County SWA	Resource Recovery Facility	251
New Hope Power Partnership	Okeelanta Cogeneration Plant	230

Table 14. Largest Sources of PM in Palm Beach County (2004)

Owner	Site Name	Tons per year
Florida Power & Light	Riviera Power Plant	923
Florida Power & Light	**West County Energy (proposed)**	**652**
Sugar Cane Growers Co-Op	Sugar Cane Growers Co-Op	440
Osceola Farms	Osceola Farms	287
US Sugar Corporation	Bryant Sugar Mill	260
Atlantic Sugar Association	Atlantic Sugar Mill	240

Table 15. Largest Sources of CO in Palm Beach County (2004)

Owner	Site Name	Tons per year
U.S. Sugar Corp.	Bryant Mill	11,354
Osceola Farms	Osceola Farms	8063
Florida Power & Light	**West County Energy (proposed)**	**2020**
New Hope Power Partnership	Okeelanta Cogeneration Plant	1517
Atlantic Sugar Association	Atlantic Sugar Mill	1342
New Hope Power Partnership	Okeelanta Cogeneration Plant	230

Table 16. Largest Sources of VOC in Palm Beach County (2004)

Owner	Site Name	Tons per year
US Sugar Corporation	Bryant Sugar Mill	1365
Osceola Farms	Osceola Farms	667
Sugar Cane Growers Co-Op	Sugar Cane Growers Co-Op	584
Atlantic Sugar Association	Atlantic Sugar Mill	477
Florida Power & Light	**West County Energy (proposed)**	**176**
George Weston Bakeries, Inc.	Arnold and Thomas Bakery	65

6.3 Air Quality and Monitoring in the Palm Beach County

The Palm Beach County Health Department operates twelve monitors at seven sites measuring PM_{10}, $PM_{2.5}$, ozone, CO, NO_2 and SO_2. The 2004 monitoring network is shown in the figure below.

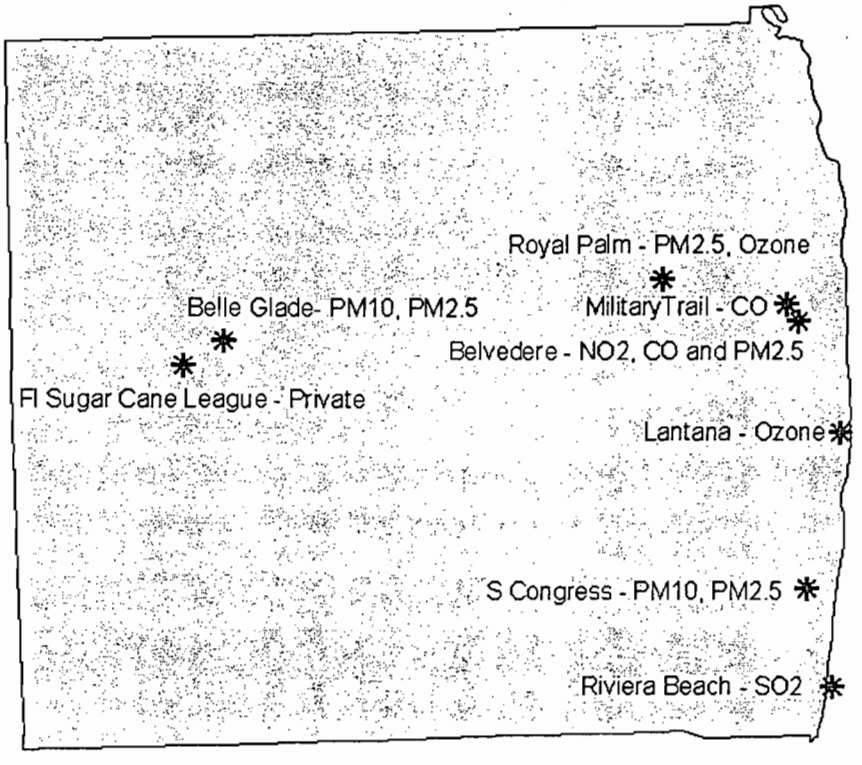


Figure 12. Palm Beach County Health Department Ambient Air Monitoring Network

Measured ambient air quality information is summarized in the following table.

Table 17. Ambient Air Quality in Palm Beach County Nearest to Project Site (2004)

Pollutant	Location	Averaging Period	Ambient Concentration				
			High	2nd High	Mean	Standard	Units
PM_{10}	Belle Glade	24-hour	31	30		150 [a]	ug/m^3
		Annual			17*	50 [b]	ug/m^3
SO_2	Riviera Beach	3-hour	2	2		500 [a]	ppb
		24-hour	1	1		100[a]	ppb
		Annual			1*	20 [b]	ppb
NO_2	Palm Beach	Annual			10*	53 [b]	ppb
CO	West Palm Beach Military Trail	1-hour	4	4		35 [a]	ppm
		8-hour	2	2		9 [a]	ppm
Ozone	Royal Palm Beach	1-hour	0.080	0.077		0.12 [C]	ppm
		8-hour	0.072	0.069		0.08 [C]	ppm

* The Mean does not satisfy summary criteria due to missing data.
a - Not to be exceeded more than once per year
b - Arithmetic mean
c - Not to be exceeded on more than an average of one day per year over a three-year period

The highest measured values of all pollutants are all less than the respective National Ambient Air Quality Standards (NAAQS). Based on local emission trends, it is not likely that ground-level concentrations will approach the NAAQS levels, at least at the monitoring locations. One exception is ozone because it is formed from precursors that are clearly available (NO_X and VOC) from local industrial and transportation emissions. The tendency to form ozone is accentuated by hot ambient temperature, solar insolation, high pressure, and relatively low wind speed. Such conditions when combined with cyclical drought or Everglades fires have the greatest potential to cause ozone exceedances.

Although low CO concentrations are recorded at the single monitor located on Military Trail, it is likely that CO concentrations will occasionally be greater in the area of sugar cane farming and milling due to fires and inefficient combustion of moist bagasse.

6.4 Air Quality Impact Analysis

Significant Impact Analysis

Significant Impact Levels (SILs) are defined for PM/PM_{10}, CO, NO_X and SO_2. A significant impact analysis is performed on each of these pollutants to determine if a project can cause an increase in ground level concentration greater than the SIL for each pollutant.

In order to conduct a significant impact analysis, the applicant uses the proposed project's emissions at worst load conditions as inputs to the models. The models used in this analysis and any required subsequent modeling analyses are described below. The highest predicted short-term concentrations and highest predicted annual averages predicted by this modeling are

compared to the appropriate SILs for the PSD Class I Everglades National Park (ENP) and the PSD Class II Areas (everywhere except the ENP).

For the Class II analysis a combination of fence line, near-field and far-field receptors were chosen for predicting maximum concentrations in the vicinity of the project. The fence line receptors consisted of discrete Cartesian receptors spaced at 50-meter intervals around the facility fence line. The remaining receptor grid consisted of densely spaced Cartesian receptors at 100 meters apart starting at the property line and extending to 2 kilometers. Beyond 2 kilometers, Cartesian receptors with a spacing of 250 meters were used out to 3 kilometers from the facility. From 3.5 to 10 kilometers, Cartesian receptors with a spacing of 500 meters were used.

For the Class I analysis 251 discrete receptors located at the ENP were used. These receptors represent a subset of receptors provided by the National Park Service.

If this modeling at worst-load conditions shows ground-level increases less than the SILs, the applicant is exempted from conducting any further modeling. If the modeled concentrations from the project exceed the SILs, then additional modeling including emissions from all major facilities or projects in the region (multi-source modeling) is required to determine the proposed project's impacts compared to the AAQS or PSD increments.

The applicant's initial PM/PM_{10}, CO, NO_X, and SO_2 air quality impact analyses for this project indicated that maximum predicted impacts from all pollutants are less than the applicable SILs for the Class II area (i.e. all areas except ENP) except for PM_{10} on a 24-hour basis. These values are tabulated in the table below and compared with existing ambient air quality measurements from the local ambient monitoring network.

Table 18. Maximum Projected Air Quality Impacts from FPL West County Energy Center for Comparison to the PSD Class II Significant Impact Levels

Pollutant	Averaging Time	Max Predicted Impact (ug/m^3)	Significant Impact Level (ug/m^3)	Baseline Concentrations (ug/m^3)	Ambient Air Standards (ug/m^3)	Significant Impact?
SO_2	Annual	0.2	1	~3	60	NO
	24-Hour	4	5	~3	260	NO
	3-Hour	14	25	~5	1300	NO
PM_{10}	Annual	0.3	1	~17	50	NO
	24-Hour	11	5	~31	150	YES
CO	8-Hour	52	500	~2300	10,000	NO
	1-Hour	121	2000	~4600	40,000	NO
NO_2	Annual	0.4	1	~19	100	NO

It is obvious that maximum predicted impacts from the project are much less than the respective AAQS and the baseline concentrations in the area. SO_2, Annual PM_{10}, CO and NO_X are also less than the respective significant impact levels that would otherwise require more detailed modeling efforts.

The nearest PSD Class I area is the Everglades National Park (ENP) located about 105 km to the south of the project site. Maximum air quality impacts from the proposed project are summarized in the following table. The results of the initial PM/PM_{10}, NO_X and SO_2 air quality impact analyses for this project indicated that maximum predicted impacts from SO_2, annual PM_{10}, and NO_2 are less than the applicable SILs for the Class I area. Therefore no further detailed modeling efforts are required for these pollutants.

Maximum predicted impacts from 24-Hour PM_{10} are greater than the applicable SILs for the Class I area. Although the values are miniscule compared with the ambient air quality standards given in the previous table, additional modeling was required as discussed below.

Table 19. Maximum Air Quality Impacts from the FP&L West County Energy Center Project for comparison to the PSD Class I SILs at ENP

Pollutant	Averaging Time	Max. Predicted Impact at Class I Area (ug/m^3)	Class I Significant Impact Level (ug/m^3)	Significant Impact?
PM_{10}	Annual	0.006	0.2	NO
	24-hour	0.4	0.3	YES
NO_2	Annual	0.004	0.1	NO
SO_2	Annual	0.004	0.1	NO
	24-hour	0.1	0.2	NO
	3-hour	0.4	1	NO

Preconstruction Ambient Monitoring Requirements

A preconstruction monitoring analysis is done for those pollutants with listed de minimis impact levels. These are levels, which, if exceeded, would require pre-construction ambient monitoring. For this analysis, as was done for the significant impact analysis, the applicant uses the proposed project's emissions at worst load conditions as inputs to the models. As shown in the following table, the maximum predicted impacts for all pollutants with listed de minimis impact levels were less than these levels except for PM_{10} on a 24-hour basis. Therefore, no pre-construction monitoring is required for those pollutants except for PM_{10} on a 24-hour basis.

Table 20. Maximum Air Quality Impacts for Comparison to the De Minimis Ambient Impact Levels.

Pollutant	Averaging Time	Max Predicted Impact (ug/m^3)	De Minimis Level (ug/m^3)	Baseline Concentrations (ug/m^3)	Impact Greater Than De Minimis?
PM_{10}	24-hour	11	10	~31	YES
NO_2	Annual	0.4	14	~19	NO
SO_2	24-hour	4	13	~3	NO
CO	8-hour	52	575	~4600	NO

There are no ambient standards or *de minimus* air quality levels associated with VOC, which is a precursor for the pollutant ozone. The impacts of VOC emissions on ozone levels are not usually seen locally, but contribute to regional formation of ozone. Projects with VOC emissions greater than 100 tons per year are required to perform an ambient impact analysis for ozone including the gathering of preconstruction ambient air quality data. The applicant estimated annual potential VOC emissions from the project to be 176 tons per year. Therefore, preconstruction monitoring for ozone is required.

Based on the preceding discussions, the only additional detailed air quality analyses (inclusive of all sources in the area) required by the PSD regulations for this project are the following:

- A multi-source AAQS and PSD increment analysis for 24-Hour PM_{10} in the ENP Class I area and Class II area;
- A Preconstruction Monitoring analysis for 24-Hour PM_{10} and ozone (VOC);
- An analysis of impacts on soils, vegetation, visibility, and of growth-related air quality modeling impacts.

Models and Meteorological Data Used in the Air Quality Analysis

PSD Class II Area: The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project in the surrounding Class II Area. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. It 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/output parameters. 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 satisfied 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 at Palm Beach International Airport. The 5-year period of meteorological data was from 1987 through 1991. This airport station was selected for use in the study because it is the closest primary weather station to the study area and is most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

In reviewing this permit application, 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 should EPA revise 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.

PSD Class I Area: The California Puff (CALPUFF) dispersion model was used to evaluate the pollutant emissions from the proposed project in the Class I ENP beyond 50 km from the proposed project. Meteorological MM4 and MM5 data used in this model was from 1990, 1992 and 1996. Meteorological surface data used were from Tampa, Daytona Beach, Vero Beach, Fort Myers, Key West, Miami, West Palm Beach and Orlando. Meteorological upper air data used were from Ruskin, Key West and West Palm Beach. Hourly precipitation data were obtained from 23 stations around the central and southern part of the state.

CALPUFF is a non-steady state, Lagrangian, long-range transport model that incorporates Gaussian puff dispersion algorithms. This model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, line, area, and volume sources.

The CALPUFF model has the capability to treat time-varying sources, is suitable for modeling domains from tens of meters to hundreds of kilometers, and has mechanisms to handle rough or complex terrain situations. Finally, the CALPUFF model is applicable for inert pollutants as well as pollutants that are subject to linear removal and chemical conversion mechanism.

Multi-source PSD Class II Increment Analysis

The PSD increment represents the amount that new sources in an area may increase ambient ground level concentrations of a pollutant from a baseline concentration. The maximum predicted 24-hour PM_{10} PSD Class II area impacts from this project and all other increment-consuming sources in the vicinity of the West County Energy Center are shown in the following table.

Table 21. PSD Class II Increment Analysis

Pollutant	Averaging Time	2nd Highest-High All Sources Max Predicted Impact ($\mu g/m^3$)	Allowable Increment ($\mu g/m^3$)	Impact Greater Than Allowable Increment?
PM_{10}	24-hour	9.3	30	NO

Through a "Development Order" by the county of Palm Beach, the county requested that the applicant provide an Increment analysis for annual PM_{10}, SO_2 and NO_X to determine what percentage of the Class II Increment the project was going to consume. The "Order" permits the project to be built as long as the impacts are not expected to consume more than 50% of the Increment. This analysis was also submitted to the Department. Results show that the project impacts are below 50% of the Increment for PM_{10}, SO_2 and NO_X for all averaging times however, the Department did not review this modeling since it was not required regarding this PSD analysis.

The proposed project is for 2,500 MW total. The modeling results in the Tables of this Draft reflect this capacity. However, the "Ultimate Site Capacity" is expected to be 3300 MW. The Increment modeling for the county was based on this capacity. Modeling based on 3300 MW was also submitted to the Department as part of the Site Certification requirements. The results of this modeling concluded that the project would still be less than the Allowable Increment for PM_{10} on a 24-hour basis. The 24-hour PM_{10} high, second-high for 3300MW capacity was predicted to be 9.7 ($\mu g/m^3$).

Multi-source PSD Class I Increment Analysis

The maximum predicted 24-hour PM_{10} PSD Class I area impacts from this project and all other increment-consuming sources in the vicinity of the ENP are shown in the following table.

Table 22. PSD Class I Increment Analysis – ENP

Pollutant	Averaging Time	2nd Highest-High All Sources Max Predicted Impact ($\mu g/m^3$)	Allowable Increment ($\mu g/m^3$)	Impact Greater Than Allowable Increment?
PM_{10}	24-hour	1.9	5	NO

AAQS Analysis

For pollutants subject to an AAQS review, the total impact on ambient air quality is obtained by adding a "background" concentration to the maximum modeled concentration. This "background" concentration takes into account all sources of a particular pollutant that are not explicitly modeled. The results of the AAQS analysis are summarized in the table below. As shown in this table, emissions from the proposed facility are not expected to cause or contribute to a violation of an AAQS.

Table 23. Ambient Air Quality Impacts

Pollutant	Averaging Time	Major Sources Impact (ug/m^3)	Background Conc. (ug/m^3)	Total Impact (ug/m^3)	Total Impact Greater Than AAQS?	Florida AAQS (ug/m^3)
PM_{10}	24-hour	23.1	30	53.1	NO	150

Ozone

Ozone is an area-wide pollution problem and the solution to reducing ozone levels is broad-based local and regional reductions in NO_X and VOC emissions (the precursors to ozone formation). According to the applicant, in 1999, Palm Beach County had total emissions of NO_X and VOC from stationary sources of 11,555 TPY and 2,557 TPY respectively. When adding in the main VOC contributor, mobile sources, the total VOC TPY is 54,600.

The West County Energy Center will add 856 TPY of NO_X and 176 TPY of VOC. The proposed facility will have very low emissions per unit of energy produced, but will still contribute appreciably to regional NO_X loading. VOC emissions will add less than 1% of regional VOC emissions.

In the near future, many existing power plants and other industries that contribute to visibility impairment will reduce emissions of NO_X and SO_2 pursuant to the Clean Air Interstate Rule (CAIR) and the requirements of Best Available Retrofit Technology (BART). A number of the plants included in the CAIR and BART process are located in the Tri-County Area (Miami-Dade, Broward, and Palm Beach Counties).

To conclusively prove whether or not the 856 tons of NO_X and 176 tons of VOC will not cause or contribute to a violation, a very sophisticated and expensive model would need to be run for the entire region. The key inputs to the model would be traffic, power plants throughout the region, other industrial sources, and meteorology. The uncertainty in any regional ozone model would be greater than the contribution from this project.

Preconstruction Monitoring Analysis for 24-hour PM_{10} and Ozone

The applicant provided an ozone and PM_{10} Ambient Air Quality analysis for the area of Palm beach County closest to the project site. There is an ozone monitoring site 8 miles to the east of the project site and a PM_{10} monitor 17 miles to the west of the project site. Both of which are close to the proposed project and are representative of the air quality in the vicinity of the project. Therefore, placing preconstruction monitors at the project site is not needed, nor required to obtain background air quality concentrations.

The air quality in the vicinity of the project is detailed in above sections. The county is in attainment for both ozone and PM_{10}. PM_{10} modeling also shows that the proposed project will not contribute to a violation of the standard.

6.5 Additional Impacts Analysis

Impact on Soils, Vegetation, and Wildlife:

Very low emissions are expected from the natural gas and distillate oil fired gas turbines in comparison with conventional power plants generating equal power. Emissions of acid rain and ozone precursors will be very low. The maximum ground-level concentrations predicted to occur for PM_{10}, CO, NO_X, and SO_2 as a result of the proposed project, including background concentrations and all other nearby sources, will be considerably less than the respective AAQS.

Since the project impacts are either less than significant or considerably less than the AAQS, it is reasonable to assume the impacts on soils, vegetation, or wildlife will be minimal or insignificant. The following example is instructive.

According to the applicant, lichens are a plant species in the area of the project that are sensitive to air pollutants. SO_2 levels of 200-400 $\mu g/m^3$ for a 6 hour period in the course of a week for 10 weeks can lead to adverse impacts. SO_2 impacts from the West County Energy Center will be much less than these levels and therefore, will not contribute to adverse impacts on vegetation such as lichens.

Air pollutants can also adversely impact wildlife. According to the application, rats and hamsters have decreased respiratory disease defenses when exposed to levels of 100 μg $NiCl_2/m^3$ continuously for 2 hours. Short-term PM_{10} levels predicted from the West County Energy Center will be well below this level and therefore, will not contribute to adverse impacts on wildlife, such as rats and hamsters.

As part of the Additional Impact Analysis, Air Quality Related Values (AQRV) are evaluated with respect to the Class I area. This includes the analysis of sulfur and nitrogen deposition. The CALPUFF model is also used in this analysis to produce quantitative impacts. The results of the analysis show that nitrogen and sulfur deposition rates are less than the significant impact levels (0.01 kg/ha/yr) determined by the National Park Service.

According to the applicant, the predicted deposition rates of sulfur and nitrogen of 0.0032 and 0.0022 kg/ha/yr respectively, impacts are still much less than the buffering capacities of the soils in the ENP and much less than the observed deposition rates existing in the area.

The low NO_X limit coupled with the use of ultra low sulfur fuel oil and inherently clean natural gas will minimize any possible effects due to sulfur and nitrogen deposition. Additionally the fuels are extremely low in mercury content. The very low sulfur deposition rate from the proposed project will also minimize activation of mercury in the soils by sulfur reducing bacteria.

Impact on Visibility:

The applicant submitted a regional haze analysis for the ENP. The analysis included modeling from the CALPUFF model.

Despite FPL's initial BACT proposals to minimize SO_2, NO_X, and PM, the CALPUFF model predicts modeled impacts above the 5% visibility impairment based on criteria from the NPS. If the facility continuously operates on fuel oil, impairment can occur during 6 days in three years. Because of the limitation in fuel oil use, the probability that the meteorology on a given day which lead to visibility impairment will coincide is low and the most probable expectation is that there will be no days of visibility impairment over a period of three years. The revised (lower) NOX proposals will further mitigate effects on visibility.

Growth-Related Impacts Due to the Proposed Project:

There will be short-term increases in the labor force to construct the project. According to the applicant, about 350 additional workers will be needed over the 36-month construction period. These temporary increases will not result in significant commercial and residential growth near the project. Operation of the new facility will require few new permanent employees, which will cause no significant impact on the local area.

The project is a response to state-wide electrical growth and the legal requirement that certain investor owned utilities in Florida maintain a 20 percent electrical reserve. This project is one of several projects identified by FP&L in its annual 10 year plans submitted to the Public Service Commission.

Overall the project will not cause additional growth in the given area, but is a response to projected state-wide electrical power demand growth. Although the project could have been located elsewhere in Southeast Florida, the exact location is the result of economic optimization and transmission constraints.

Growth-Related Air Quality Impacts since 1977:

According to the applicant, population growth in the area of the proposed project, Palm Beach County, has increased 128% from 1977 to 2000. The number of residential households has also increased in the county, 91% from 1977 to 2001. During this time period, the number of those employed in the county grew about 181%. Transportation in the county also grew in terms of vehicle miles traveled by 69 percent over the same time period.

The applicant addressed industrial growth in Palm Beach County as well. The manufacturing industry has seen a 49% employee increase from 1977-2000 but even greater, the agricultural industry saw about a 513% increase in employees (1977-2000). Existing Utility Facilities in Palm Beach County include the FPL Riviera Facility and Lake Worth Utility.

Despite the growth in Southeast Florida, air quality has improved as evidenced by the redesignation of the Tri-County (Broward, Miami-Dade, and Palm Beach) area to attainment status with respect to the ozone standard.

Endangered Species Considerations

The purpose of the ESA is to conserve "the ecosystems upon which endangered and threatened species depend" and to conserve and recover listed species.[16] Under the law, species may be listed as either "endangered" or "threatened".

Endangered means a species is in danger of extinction throughout all or a significant portion of its range. Threatened means a species is likely to become endangered within the foreseeable future. All species of plants and animals, except pest insects, are eligible for listing as endangered or threatened.

While state PSD permits are not generally reviewed for adherence with the Endangered Species Act, the State of Florida's Power Plant Certification process requires an assessment of existing ecology and determination of project impacts. Chapter 2 of the Site Certification Application includes a characterization of the existing environment including vegetation, land use and ecology. Chapters 4 and 5 address the effects of construction and operation on ecological systems aquatic and terrestrial ecology. These sections are available at State and local environmental program offices.

According to the U. S. Fish and Wildlife Service (F&WS) website at there were 111 threatened or endangered species (per the federal list) in Florida on May 18, 2004. The reader is referred to the following website: http://ecos.fws.gov/tess_public/TESSWebpageUsaLists?state=FL

For reference, the F&WS recently noticed the availability of an implementation schedule for the South Florida Multi-Species Recovery Plan designed to restore endangered or threatened animals and plants to the point where they are again secure, self sustaining components of their ecosystems.[17]

According to the application, federally listed endangered species known to occur in Palm Beach County include several kinds of turtles, the peregrine falcon, the snail kite, the wood stork, the red cockaded woodpecker, the Florida Panther, the manatee, the American crocodile, and at least five plants or lichens. There is also a State listing that is more extensive and stringent than the federal one. The two lists include numerous threatened species, species of special concern, and candidates for listing.

According to FPL's application, the precise project site has no endangered species. According to the statement in the ecological impact section "the site does not contain any habitat suitable for endangered or threatened species."

The application recognizes the existence of the Arthur M. Marshall Loxahatchee National Wildlife Refuge (ARM Loxahatchee NWR) in close proximity south of the proposed site. The A.R.M. Loxahatchee NWR (see Figure 13) is operated by the U.S. Fish and Wildlife Service (U.S. F&WS). It is described in its website at: http://loxahatchee.fws.gov/Refuge/index.asp

According to the website the refuge is "the last northernmost portion of the unique Everglades. With over 221 square miles of Everglades habitat, A.R.M. Loxahatchee National Wildlife Refuge is home to the American alligator and the endangered Everglades snail kite. In any given year, as many as 257 species of birds may use the refuge's diverse wetland habitats."

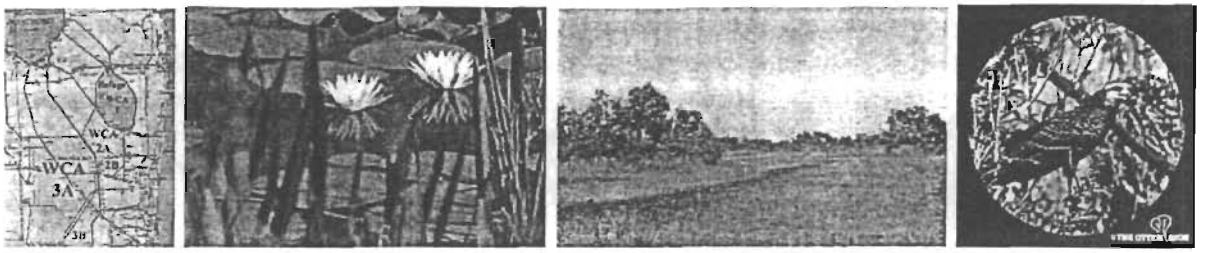


Figure 13. Location of ARM Loxahatchee NWR, Slough, Wet Prairie Habitat, Snail Kite

FPL is known to have an active manatee programs in the vicinity of its conventional coastal power plants where the mammals congregate near the thermal discharges. The Riviera Power Plant in Palm Beach County is one such site where FPL maintained a Manatee Viewing Area until it was closed due to security concerns.

FPL provided documentation of a meeting with the U.S. F&WS South Florida Field Office representatives and their South Florida Ecological Services personnel in Vero Beach.[18] They provided the ecology sections of the Site Certification Application. The Department is not aware of any further requirements or consultation provided by the U.S. F&WS related to the Endangered Species Act.

7. Preliminary Determination

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the Draft Permit. This determination is based on a technical review of the complete PSD application, reasonable assurances provided by the applicant, the draft determinations of Best Available Control Technology (BACT), review of the air quality impact analysis, and the conditions specified in the draft permit.

Deborah Nelson is the project meteorologist responsible for reviewing and validating the air quality impact analysis. She may be contacted at deborah.nelson@dep.state.fl.us and 850-921-9537. Teresa Heron is responsible for reviewing the application, and preparing the draft permit. She may be contacted at teresa.heron@dep.state.fl.us and 850-921-9529. Alvaro Linero is the project engineer responsible for preparing the draft BACT determination. He may be contacted at alvaro.linero@dep.state.fl.us and 850-921-9523.

REFERENCES

1 Letter. Linkiewicz, B., FPL to Linero, A. West County Energy Center Project. December 29, 2005. Enclosure: Expected NO_X Emission versus GT Load while Operating on Natural Gas. GT Model M501G1.

2 Compliance Manual. California EPA, CARB Compliance Division. Gas Turbines. June 1996.

3 News Release. Catalytica. First Gas Turbine with Catalytica's XONON installed to Produce Electricity at a Utility. October 8, 1998.

4 News Release. Catalytica. Catalytica Energy Systems XONON Cool Combustion System Demonstrating NO_X Emissions Well Below its 3 ppm Guarantee in Commercial Gas Turbine Applications. February 17, 2004.

5 Statement. EPA and Research Triangle Institute. ETV Joint Verification Statement. XONON™ Cool Combustion. December, 2000.

6 Conditional Approval. Major Comprehensive Plan - PSD Permit. Sithe Mystic Development LLC. Application No. MBR-99-COM-012. Massachusetts Department of Environmental Protection. January 25, 2000.

7 White Paper. Emerachem. NO_X Abatement Technology for Stationary Gas Turbine Power Plants – An Overview of Selective Catalytic Reduction (SCR) and Catalytic Absorption ($SCONO_X$™) Emission Control Systems. September 19, 2002.

8 Draft Report to the Legislature. California Air Resources Board. Gas -Fired Power Plant NO_X Emissions Controls and Related Environmental Impacts. March 2004.

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10 Technical Review. Matsuda, H., et.al., MHI. A Commencement of Commercial Operation at Mystic Combined Cycle Plant as First Unit of M501G Combined Cycle in United States. MHI Technical Review Vol. 41 No. 5, October 2004.

11 Permit to Install. Covert Generating Company LLC. Permit 325-00A (Modification of previous Permit). Michigan Department of Environmental Quality. January 9, 2003.

12 Electronic Communication. Godino, R., FPL to Linero, A., Florida DEP West County Air Permit. February 22, 2005.

13 Final Rule. National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines. Federal Register / Vol. 69, No. 44 / Friday, March 5, 2004. Pages 10512 – 10548.

14 Proposed Rule. National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines. Federal Register Vol. 69, No. 67, April 7, 2004. Pages 18327 – 18343.

15 Proposed Rule. Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. Federal Register / Vol. 70, No. 131 / July 11, 2005. Pages 39869 – 39904.

16 Pamphlet. ESA Basics. ESA Basics – Over 25 Years of Protecting Endangered Species. U.S. Fish and Wildlife Service. Arlinton, VA. October 2002.

17 Notice of Availability. Federal Register/Vol. 69, No.64, April 2, 2004.

18 Letter. Linkiewicz, B., FPL to Webb, A., U.S. FW&S, South Florida Ecological Services. West County Energy Center Project. January 6, 2006.

PERMITTEE:

Florida Power and Light Company (FPL)
700 Universe Boulevard
Juno Beach, Florida 33408

Authorized Representative:
Randall R. LaBauve, Vice President

FPL West County Energy Center
DEP File No. 0990646-001-AC
Permit No. PSD-FL-354
SIC No. 4911
Expires: December 31, 2009

PROJECT AND LOCATION

This permit authorizes the construction of two nominal 1,250 megawatt combined cycle units at the proposed Florida Power and Light Company (FPL) West County Energy Center.

The proposed project will be located at 4000 205th Street, North, in unincorporated Palm Beach County. This site encompasses 220 acres of which approximately 40 acres will be used for two combined cycle units.

UTM coordinates are Zone 17; 562.19 km E; 2953.04 km N.

STATEMENT OF BASIS

This PSD construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.) The project was processed in accordance with the requirements of Rule 62-212.400, F.A.C., the preconstruction review program for the Prevention of Significant Deterioration (PSD) of Air Quality. Pursuant to Chapter 62-17, F.A.C. and Chapter 403 Part II, F.S., the project is also subject to Electrical Power Plant Siting. The permittee is authorized to install the proposed equipment in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department.

CONTENTS

Section I. General Information
Section II. Administrative Requirements
Section III. Emissions Units Specific Conditions
Section IV. Appendices

Michael G. Cooke, Director (Date)
Division of Air Resources Management

FACILITY DESCRIPTION

The FPL West County Energy Center will be a nominal 2,500 megawatt (MW) greenfield power plant. The initial phase is the construction of two nominal 1,250 MW gas-fired combined cycle units that will use ultralow sulfur (ULS) fuel oil as backup fuel. The two combined cycle units are designated as Unit 1 and Unit 2.

Each combined cycle unit will consist of: three nominal 250 megawatt Model 501G gas turbine-electrical generator sets with evaporative inlet cooling systems; three supplementary-fired heat recovery steam generators (HRSG's) with SCR reactors; one nominal 428 mmBtu/hour (LHV) gas-fired duct burner located within each of the three HRSG's; three 149 feet exhaust stacks; one 24- cell mechanical draft cooling tower; and a common nominal 500 MW steam-electrical generator.

Additional ancillary equipment will include: four emergency generators; two natural gas fired fuel heaters; two diesel fuel storage tanks; two auxiliary steam boilers; and other associated support equipment.

{Note: Throughout this permit, the electrical generating capacities represent nominal values for the given operating conditions.}

NEW EMISSIONS UNITS

This permit authorizes construction and installation of the following new emissions units.

ID	Emission Unit Description
001	Unit 1A – one nominal 250 MW gas turbine with supplementary-fired heat recovery steam generator
002	Unit 1B – one nominal 250 MW gas turbine with supplementary-fired heat recovery steam generator
003	Unit 1C – one nominal 250 MW gas turbine with supplementary-fired heat recovery steam generator
004	Unit 2A – one nominal 250 MW gas turbine with supplementary-fired heat recovery steam generator
005	Unit 2B – one nominal 250 MW gas turbine with supplementary-fired heat recovery steam generator
006	Unit 2C – one nominal 250 MW gas turbine with supplementary-fired heat recovery steam generator
007	Two nominal 6.3 million distillate fuel oil storage tanks*
008	Two 26 cell mechanical draft cooling towers
009	Two nominal 85,000 lb/hr (99.8 MMBtu/hr) auxiliary boilers
010	Two nominal 10 MMBtu/hr gas-fired process heaters
011	Four nominal 2,250 KW (~ 21 MMBtu/hr) emergency generators
012	One nominal 300-hp emergency diesel fire pump engine and 500 gallon fuel oil storage tank

* This capacity will allow approximately 108 hours of on-site oil storage

REGULATORY CLASSIFICATION

Title III: This facility will be major for hazardous air pollutants (HAPs).

Title IV: The facility will operate emissions units subject to the acid rain provisions of the Clean Air Act.

Title V: Because potential emissions of at least one regulated pollutant exceed 100 tons per year, the new facility is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C. Regulated pollutants include pollutants such as carbon monoxide (CO), nitrogen oxides (NO_X), particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), and volatile organic compounds (VOC).

PSD: The facility is located in an area designated as "attainment," "maintenance," or "unclassifiable" for each pollutant subject to a National Ambient Air Quality Standard. The facility is considered a "fossil fuel fired steam electric plant of more than 250 million BTU per hour of heat input", which is one of the 28 PSD source categories with the lower PSD applicability threshold of 100 tons per year. Potential emissions of at least one regulated pollutant exceed 100 tons per year. Therefore, the facility is classified as a PSD-major source of air pollution with respect to Rule 62-212.400, F.A.C., Prevention of Significant Deterioration (PSD) of Air Quality.

NSPS: This project is subject to applicable requirements of 40 CFR 60, Subparts GG (Standards of Performance for Stationary Gas Turbines) and Da (Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978). When the proposed 40 CFR 60, NSPS-Subpart KKKK (Standards of Performance for Stationary Combustion Turbines for Which Construction is Commenced After February 18, 2005) becomes final, the facility will be subject to Subpart KKKK, and may no longer be subject to Subparts GG and Da. This project is also subject to applicable requirements of 40 CFR 60, NSPS-Subpart Kb (Standards of Performance for Volatile Organic Liquid Storage Vessels for which Construction, Reconstruction, or Modification Commenced After July 23, 1984); to 40 CFR 60, NSPS-Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units) and to 40 CFR 60, NSPS-Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (ICE); Proposed Rule- Federal Register / Vol. 70, No. 131 / July 11, 2005.

NESHAPs: This project is subject to applicable requirements of 40 CFR 63, Subpart YYYY, National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Gas Turbines. This project is also subject to applicable requirements of 40 CFR 63, Subpart ZZZZ, National Emissions Standards for Reciprocating Internal Combustion Engines (RICE); and to 40 CFR 63, Subpart DDDDD National Emissions Standards for Industrial, Commercial, or Institutional Boilers and Process Heaters.

Siting: The facility is subject to Electrical Power Plant Siting in accordance with Chapter 62-17, F.A.C. and Chapter 403, Part II, F.S.

PERMITTING AUTHORITY

All documents related to applications for permits to construct, operate or modify an emissions unit shall be submitted to the Bureau of Air Regulation of the Florida Department of Environmental Protection (DEP) at 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400. Copies of all such documents shall also be submitted to the Compliance Authority.

COMPLIANCE AUTHORITY

All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Department of Environmental Regulation Southeast District office (DEP-SED), 400 North Congress Avenue, Suite 200, West Palm Beach, FL 33401.

APPENDICES

The following Appendices are attached as part of this permit.

Appendix A: Subparts A from NSPS 40 CFR 60 and NESHAP 40 CFR63; Identification of General Provisions.

Appendix BD: Final BACT Determinations and Emissions Standards.

Appendix Da: NSPS Requirements for Duct Burners, 40 CFR 60, Subpart Da.

Appendix Dc: NSPS Requirements for Small Steam Generating Units, 40 CFR 60, Subpart Dc.

Appendix DDDDD: NESHAP Requirements for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD.

Appendix GC: General Conditions.

Appendix GG: NSPS Requirements for Gas Turbines, 40 CFR 60, Subpart GG.

Appendix SC: Standard Conditions.

Appendix XS: Semiannual NSPS Excess Emissions Report.

Appendix YYYY: NESHAP Requirements for Gas Turbines, 40 CFR 63, Subpart YYYY.

Appendix ZZZZ: NESHAP Requirements for Stationary Reciprocating Internal Combustion Engines, 40 CFR 63, Subpart ZZZZ.

The following 40 CFR 60, New Source Standard Performance (NSPS) subparts, shall become part of this permit on the effective final date of each regulation:

Standards of Performance (NSPS) for Stationary Compression Ignition Internal Combustion Engines (ICE), 40 CFR 60, Subpart IIII; Proposed Rule (published July 11, 2005). This subpart will be eventually incorporated as Appendix IIII.

Standards of Performance (NSPS) for Stationary Gas Turbines, 40 CFR 60 Subpart KKKK; Proposed Rules (published February 18, 2004). This subpart will be eventually incorporated as Appendix KKKK.

RELEVANT DOCUMENTS

The documents listed below are not a part of this permit; however, they are specifically related to this permitting action and are on file with the Department.

- Permit application received on April 14, 2005;
- Department PSD Application Sufficiency comments dated June 13, 2005;
- Sufficiency Responses received August 12, 2005;
- Draft permit package issued on March 1, 2006;
- Final Certification by the Power Plant Siting Board on Month Day, Year; and
- Final Determination distributed concurrently with Final PSD Permit.

1. General Conditions: The permittee shall operate under the attached General Conditions listed in Appendix GC of this permit. General Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]

2. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.); Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.); and the Title 40, Parts 51, 52, 60, 63, 72, 73, and 75 of the Code of Federal Regulations (CFR), adopted by reference in Rule 62-204.800, F.A.C. The terms used in this permit have specific meanings as defined in the applicable chapters of the Florida Administrative Code. The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
[Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]

3. Construction and Expiration: The permit expiration date includes sufficient time to complete construction, perform required testing, submit test reports, and submit an application for a Title V operation permit to the Department. Approval to construct shall become invalid for any of the following reasons: construction is not commenced within 18 months after issuance of this permit; construction is discontinued for a period of 18 months or more; or construction is not completed within a reasonable time. The Department may extend the 18-month period upon a satisfactory showing that an extension is justified. In conjunction with an extension of the 18-month period to commence or continue construction (or to construct the project in phases), the Department may require the permittee to demonstrate the adequacy of any previous determination of Best Available Control Technology (BACT) for emissions units regulated by the project. For good cause, the permittee may request that this PSD air construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation at least sixty (60) days prior to the expiration of this permit. [Rules 62-4.070(4), 62-4.080, 62-210.300(1), and 62-212.400(6)(b), F.A.C.]

4. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]

5. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Chapters 62-210 and 62-212, F.A.C.]

6. Application for Title IV Permit: At least 24 months before the date on which the new units begin serving an electrical generator greater than 25 MW, the permittee shall submit an application for a Title IV Acid Rain Permit to the Department's Bureau of Air Regulation in Tallahassee and a copy to the Region 4 Office of the U.S. Environmental Protection Agency in Atlanta, Georgia. [40 CFR 72]

7. Application for Title V Permit: The permittee shall submit an application, pursuant to Chapter 62-213, F.A.C, for a Title V air operation permit at least 90 days before the expiration of this permit, but no later than 180 days after commencing operation of the new units. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, a Compliance Assurance Monitoring Plan (as necessary), and such additional information as the Department may by law require.

A. COMBINED CYCLE UNITS 1 AND 2 – GAS TURBINES (EUs 001, 002, 003, 004, 005, and 006)

This section of the permit addresses the following emissions units.

Combined Cycle Units 1 and 2 and associated equipment

Description: Emissions units 001, 002, 003, 004, 005, and 006. Each emission unit consists of: a Model 501G combustion gas turbine-electrical generator set with automated gas turbine control, inlet air filtration system and evaporative cooling, a gas-fired heat recovery steam generator (HRSG) with duct burner, a HRSG stack, and associated support equipment. Each combined cycle unit is comprised of three of the described emission units. The project also includes two steam turbine-electrical generators, each of which serves a combined cycle unit.

Fuels: Each gas turbine fires natural gas as the primary fuel and ultra low sulfur distillate fuel oil as a restricted alternate fuel.

Generating Capacity: Each of the six gas turbine-electrical generator sets has a nominal generating capacity of 250 MW. Each of the two steam turbine-electrical generators has a nominal generating capacity of 500 MW. The total nominal generating capacity of each of the "3 on 1" combined cycle unit is approximately 1,250 MW. The total nominal generating capacity of the proposed project is 2,500 MW.

Controls: The efficient combustion of natural gas and restricted firing of ultra low sulfur distillate fuel oil minimizes the emissions of CO, PM/PM_{10}, SAM, SO_2 and VOC. Dry Low-NO_X (DLN) combustion technology for gas firing and water injection for oil firing reduce NOx emissions. A selective catalytic reduction (SCR) system further reduces NO_X emissions.

Stack Parameters: Each HRSG has a stack at least 149 feet tall with a nominal diameter of 22 feet. The Department may require the permittee to perform additional air dispersion modeling should the actual specified stack dimensions change. The following summarizes the exhaust characteristics without the duct burners:

Fuel	Heat Input Rate (LHV)	Compressor Inlet Temp.	Exhaust Temp., °F	Flow Rate ACFM
Gas	2,333 MMBtu/hour	59° F	195° F	1,330,197
Oil	2,117 MMBtu/hour	59° F	293° F	1,533,502

Continuous Monitors: Each stack is equipped with continuous emissions monitoring systems (CEMS) to measure and record CO and NO_X emissions as well as flue gas oxygen or carbon dioxide content.

APPLICABLE STANDARDS AND REGULATIONS

1. BACT Determinations: Determinations of the Best Available Control Technology (BACT) were made for carbon monoxide (CO), nitrogen oxides (NO_X), particulate matter (PM/PM_{10}), sulfuric acid mist (SAM), sulfur dioxide (SO_2) and volatile organic compounds (VOC).

   See Appendix BD of this permit for a summary of the final BACT determinations.
   [Rule 62-212.400(BACT), F.A.C.]

2. NSPS Requirements: The combustion turbines shall comply with all applicable requirements of 40 CFR 60, listed below, adopted by reference in Rule 62-204.800(7)(b), F.A.C. The Department determines that compliance with the BACT emissions performance requirements also assures compliance with the New Source Performance Standards for Subpart Da, Subpart GG, and Subpart KKKK (as proposed). Some separate reporting and monitoring may be required by the individual subparts.

   a *Subpart A, General Provisions*, including:

   - 40 CFR 60.7, Notification and Record Keeping
   - 40 CFR 60.8, Performance Tests

- 40 CFR 60.11, Compliance with Standards and Maintenance Requirements
- 40 CFR 60.12, Circumvention
- 40 CFR 60.13, Monitoring Requirements
- 40 CFR 60.19, General Notification and Reporting Requirements

b *Subpart Da, Standards of Performance for Electric Utility Steam Generating Units:* These provisions include standards for duct burners.

c *Subpart GG, Standards of Performance for Stationary Gas Turbines:* These provisions include a requirement to correct test data to ISO conditions; however, such correction is not used for compliance determinations with the BACT standards.

d *Subpart KKKK, Standards of Performance for Stationary Gas Turbines:* These provisions were published February 18, 2004 as a proposed new NSPS standard. The final rule will be applicable to Unit 001 through Unit 006 at the time of publication in the Federal Register. When the rule becomes final, Unit 001 through Unit 006 gas turbines may no longer be subject to NSPS Subparts Da and GG.

3. NESHAP Requirements: The combustion turbines are subject to 40 CFR 63, Subpart A, Identification of General Provisions and 40 CFR 63, Subpart YYYY, National Emissions Standard for Hazardous Air Pollutants for Stationary Combustion Gas Turbines. The project must comply with the Initial Notification requirements set forth in Sec. 63.6145 but need not comply with any other requirement of Subpart YYYY until EPA takes final action to require compliance and publishes a document in the Federal Register. (Reference: Appendix YYYY and Appendix A, NESHAP Subpart A of this permit).

EQUIPMENT AND CONTROL TECHNOLOGY

4. Gas Turbines: The permittee is authorized to install, tune, operate, and maintain six Model 501G gas turbine-electrical generator sets each with a generating capacity of 250 MW. Each gas turbine shall include an automated gas turbine control system and have dual-fuel capability. Ancillary equipment includes an inlet air filtration system and an evaporative inlet air-cooling system. The gas turbines will utilize DLN combustors. [Application; Design]

5. HRSGs: The permittee is authorized to install, operate, and maintain six new heat recovery steam generators (HRSGs) with separate HRSG exhaust stacks. Each HRSG shall be designed to recover exhaust heat energy from one of the six gas turbines (1A to 1C and 2A to 2C) and deliver steam to one of the two steam turbine electrical generators. Each HRSG may be equipped with a gas-fired duct burner having a nominal heat input rate of 428 MMBtu per hour (LHV).

6. Gas Turbine/Supplementary-fired HRSG Emission Controls

a. *DLN Combustion*: The permittee shall operate and maintain the DLN system to control NO_X emissions from each gas turbine when firing natural gas. Prior to the initial emissions performance tests required for each gas turbine, the DLN combustors and automated gas turbine control system shall be tuned to achieve sufficiently low CO and NO_X values to meet the CO and NO_X limits with the additional SCR control technology described below. Thereafter, each system shall be maintained and tuned in accordance with the manufacturer's recommendations.

b. *Water Injection*: The permittee shall install, operate, and maintain a water injection system to reduce NO_X emissions from each gas turbine when firing distillate fuel oil. Prior to the initial emissions performance tests required for each gas turbine, the water injection system shall be tuned to achieve sufficiently low CO and NO_X values to meet the CO and NO_X limits with the additional SCR control technology described below. Thereafter, each system shall be maintained and tuned in accordance with the manufacturer's recommendations.

c. *Selective Catalytic Reduction (SCR) System*: The permittee shall install, tune, operate, and maintain an SCR system to control NO_X emissions from each gas turbine when firing either natural gas or distillate fuel oil. The SCR system consists of an ammonia (NH_3) injection grid, catalyst, ammonia storage, monitoring and control system, electrical, piping and other ancillary equipment. The SCR system shall be designed, constructed and operated to achieve the permitted levels for NO_X and NH_3 emissions.

d. *Oxidation Catalyst*: The permittee shall design and build the project to facilitate possible future installation of oxidation catalyst system to control CO emissions from each gas combustion turbine/supplementary-fired heat recovery steam generator. The permittee may install oxidation catalyst during project construction or, after notifying the Department, at a future date as described in Specific Condition 12.h.

e. *Ammonia Storage:* In accordance with 40 CFR 60.130, the storage of ammonia shall comply with all applicable requirements of the Chemical Accident Prevention Provisions in 40 CFR 68.

[Design; Rule 62-212.400(BACT), F.A.C.]

PERFORMANCE RESTRICTIONS

7. Permitted Capacity - Gas Turbines: The nominal heat input rate to each gas turbine is 2,333 MMBtu per hour when firing natural gas and 2,117 MMBtu per hour when firing distillate fuel oil (based on a compressor inlet air temperature of 59° F, the lower heating value (LHV) of each fuel, and 100% load). Heat input rates will vary depending upon gas turbine characteristics, ambient conditions, alternate methods of operation, and evaporative cooling. The permittee shall provide manufacturer's performance curves (or equations) that correct for site conditions to the Permitting and Compliance Authorities within 45 days of completing the initial compliance testing. Operating data may be adjusted for the appropriate site conditions in accordance with the performance curves and/or equations on file with the Department. [Rule 62-210.200(PTE), F.A.C.]

8. Permitted Capacity - HRSG Duct Burners: The total nominal heat input rate to the duct burners for each HRSG is 428 MMBtu per hour based on the lower heating value (LHV) of natural gas. Only natural gas shall be fired in the duct burners. [Rule 62-210.200(PTE), F.A.C.]

9. Authorized Fuels: The gas turbine shall fire natural gas as the primary fuel, which shall contain no more than 2.0 grains of sulfur per 100 standard cubic feet of natural gas. As a restricted alternate fuel, the gas turbine may fire ultra low sulfur distillate fuel oil containing no more than 0.0015% sulfur by weight. The gas turbine shall fire no more than 500 hours of fuel oil, during any calendar year. [Rules 62-210.200(PTE) and 62-212.400 (BACT), F.A.C.]

10. Hours of Operation: Subject to the operational restrictions of this permit, the gas turbines may operate throughout the year (8760 hours per year). Restrictions on individual methods of operation are specified below.

11. Methods of Operation: Subject to the restrictions and requirements of this permit, the gas turbines may operate under the following methods of operation.

    a. *Combined Cycle Operation*: Each gas turbine/HRSG system may operate to produce direct, shaft-driven electrical power and steam-generated electrical power from the steam turbine-electrical generator as a three-on-one combined cycle unit subject to the restrictions of this permit. In accordance with the specifications of the SCR and HRSG manufacturers, the SCR system shall be on line and functioning properly during combined cycle operation or when the HRSG is producing steam.

    b. *Inlet Conditioning*: In accordance with the manufacturer's recommendations and appropriate ambient conditions, the evaporative cooling system may be operated to reduce the compressor inlet air

temperature and provide additional direct, shaft-driven electrical power.

c. *Duct Firing*: When firing natural gas, each HRSG system may fire natural gas in the duct burners to provide additional steam-generated electrical power. The total combined heat input rate to the duct burners (all six HRSGs) shall not exceed 7,395,840 MMBtu (LHV) during any consecutive 12 months.

[Application; Rules 62-210.200(PTE) and 62-212.400(BACT), F.A.C.]

EMISSIONS STANDARDS

12. Emissions Standards: Emissions from each gas turbine shall not exceed the following standards.

Pollutant	Fuel	Method of Operation	Stack Test, 3-Run Average		CEMS Block Average
			ppmvd @ 15% O_2	lb/hr [g]	ppmvd @ 15% O_2
CO [a]	Oil	Combustion Turbine (CT)	8.0	42.0	8.0, 24-hr 6, 12-month [h]
	Gas	CT & Duct Burner (DB)	7.6	52.5	
		CT Normal	4.1	23.2	
NO_X [b]	Oil	CT	8.0	82.4	8.0, 24-hr
	Gas	CT & DB	2.0	24.2	2.0, 24-hr
		CT Normal	2.0	20.0	
PM/PM_{10} [c]	Oil/Gas	All Modes	2 gr S/100SCF of gas, 0.0015% sulfur fuel oil		
			Visible emissions shall not exceed 10% opacity for each 6-minute block average.		
SAM/SO_2 [d]	Oil/Gas	All Modes	2 gr S/100 SCF of gas, 0.0015% sulfur fuel oil		
VOC [e]	Oil	CT	6.0	19.6	NA
	Gas	CT & DB	1.5	5.4	
		CT Normal	1.2	4.1	
Ammonia [f]	Oil/Gas	CT, All Modes	5	NA	NA

a. Compliance with the continuous 24-hour CO standards shall be demonstrated based on data collected by the required CEMS. The initial and annual EPA Method 10 tests associated with the certification of the CEMS instruments shall also be used to demonstrate compliance with the individual standards for natural gas, fuel oil, and basic duct burner modes. The stacks test limits apply only at high load (90-100% of the combustion turbine capacity).

b. Compliance with the continuous NO_X standards shall be demonstrated based on data collected by the required CEMS. The initial and annual EPA Method 7E or Method 20 tests associated with demonstration of compliance with 40 CFR 60, Subpart GG or certification of the CEMS instruments shall also be used to demonstrate compliance with the individual standards for natural gas, fuel oil, and duct burner modes during the time of those tests. NO_X mass emission rates are defined as oxides of nitrogen expressed as NO_2.

c. The sulfur fuel specifications combined with the efficient combustion design and operation of each gas turbine represents (BACT) for PM/PM_{10} emissions. Compliance with the fuel specifications, CO standards, and visible emissions standards shall serve as indicators of good combustion. Compliance with the fuel specifications shall be demonstrated by keeping records of the fuel sulfur content. Compliance with the visible emissions standard shall be demonstrated by conducting tests in accordance with EPA Method 9.

d. The fuel sulfur specifications effectively limit the potential emissions of SAM and SO_2 from the gas turbines and represent BACT for these pollutants. Compliance with the fuel sulfur specifications shall be determined by the ASTM methods for determination of fuel sulfur as detailed in the draft permit.

e. Compliance with the VOC standards shall be demonstrated by conducting tests in accordance with EPA Method 25A. Optionally, EPA Method 18 may also be performed to deduct emissions of methane and ethane. The emission standards are based on VOC measured as methane. The limits apply only at high load (90-100% of the combustion turbine capacity). Compliance with the CO CEMS based limits at lower loads shall be deemed as compliance with the VOC limit.

f. Compliance with the ammonia slip standard shall be demonstrated by conducting tests in accordance with EPA Method CTM-027.

g. The mass emission rate standards are based on a turbine inlet condition of 59° F and may be adjusted to actual test conditions in accordance with the performance curves and/or equations on file with the Department.

h. Rolling Average. Enforcement discretion may be exercised for up to 12 months with respect to the 6 ppmvd @15% O_2 limit for any combustion turbine/supplementary-fired heat recovery steam generator upon notification by the permittee of intent to install oxidation catalyst. The permittee shall have 12 months to complete the oxidation catalyst installation. From time of notification to installation of the catalyst all partial or complete calendar months shall be excluded from the 12-month rolling average.

{"DB" means duct burning. "SCR" means selective catalytic reduction. "NA" means not applicable}.

[Rule 62-212.400(BACT), F.A.C.]

13. Duct Burners: The duct burners are also subject to the provisions of Subpart Da of the New Source Performance Standards in 40 CFR 60, which are summarized in Appendix Da.

{Permitting Note: The BACT limits applicable during duct firing are much more stringent than the standards of NSPS Subpart Da for duct burners. Therefore compliance with the BACT limits insures compliance with the emission limitations in Subpart Da} [Subpart Da, 40 CFR 60]

EXCESS EMISSIONS

{Permitting Note: The following conditions apply only to the SIP-based emissions standards specified in Condition No. 12 of this section. Rule 62-210.700, F.A.C. (Excess Emissions) cannot vary or supersede any federal provision of the NSPS, or Acid Rain programs.}

14. Operating Procedures: The Best Available Control Technology (BACT) determinations established by this permit rely on "good operating practices" to reduce emissions. Therefore, all operators and supervisors shall be properly trained to operate and maintain the gas turbines, HRSGs, and pollution control systems in accordance with the guidelines and procedures established by each manufacturer. The training shall include good operating practices as well as methods of minimizing excess emissions.
[Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

15. Alternate Visible Emissions Standard: Visible emissions due to startups, shutdowns, and malfunctions shall not exceed 10% opacity except for up to ten, 6-minute averaging periods during a calendar day, which shall not exceed 20% opacity. [Rule 62-212.400(BACT), F.A.C.]

16. Definitions

a. *Startup* is defined as the commencement of operation of any emissions unit which has shut down or ceased operation for a period of time sufficient to cause temperature, pressure, chemical or pollution control device imbalances, which result in excess emissions.
[Rule 62-210.200(245), F.A.C.]

b. *Shutdown* is the cessation of the operation of an emissions unit for any purpose.
[Rule 62-210.200(230), F.A.C.]

c. *Malfunction* is defined as any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner. [Rule 62-210.200(159), F.A.C.]

17. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. All such preventable emissions shall be included in any compliance determinations based on CEMS data. [Rule 62-210.700(4), F.A.C.]

18. Excess Emissions Allowed: As specified in this condition, excess emissions resulting from startup, shutdown, oil-to-gas fuel switches and documented malfunctions are allowed provided that operators employ the best operational practices to minimize the amount and duration of emissions during such incidents. For each gas turbine/HRSG system, excess emissions resulting from startup, shutdown, or documented malfunctions shall not exceed two hours in any 24-hour period except for the specific cases listed below. A "documented malfunction" means a malfunction that is documented within one working day of detection by contacting the Compliance Authority by telephone, facsimile transmittal, or electronic mail.

    a. *Steam Turbine/HRSG System Cold Startup*: For cold startup of the steam turbine system, excess emissions from any gas turbine/HRSG system shall not exceed eight hours in any 24-hour period. A cold "startup of the steam turbine system" is defined as startup of the 3-on-1 combined cycle system following a shutdown of the steam turbine lasting at least 48 hours.

    {Permitting Note: During a cold startup of the steam turbine system, each gas turbine/HRSG system is sequentially brought on line at low load to gradually increase the temperature of the steam-electrical turbine and prevent thermal metal fatigue. Note that shutdowns and documented malfunctions are separately regulated in accordance with the requirements of this condition.}

    b. *Shutdown Combined Cycle Operation*: For shutdown of the combined cycle operation, excess emissions from any gas turbine/HRSG system shall not exceed three hours in any 24-hour period.

    c. *Gas Turbine/HRSG System Cold Startup*: For cold startup of a gas turbine/HRSG system, excess emissions shall not exceed four hours in any 24-hour period. "Cold startup of a gas turbine/HRSG system" is defined as a startup after the pressure in the high-pressure (HP) steam drum falls below 450 psig for at least a one-hour period.

    d. *Fuel Switching*: For fuel switching, excess emissions shall not exceed 2 hour in any 24-hour period.

19. Ammonia Injection: Ammonia injection shall begin as soon as operation of the gas turbine/HRSG system achieves the operating parameters specified by the manufacturer. As authorized by Rule 62-210.700(5), F.A.C., the above conditions allow excess emissions only for specifically defined periods of startup, shutdown, fuel switching, and documented malfunction of the gas turbines.
[Design; Rules 62-212.400(BACT) and 62-210.700, F.A.C.]

20. DLN Tuning: CEMS data collected during initial or other major DLN tuning sessions shall be excluded from the CEMS compliance demonstration provided the tuning session is performed in accordance with the manufacturer's specifications. A "major tuning session" would occur after completion of initial construction, a combustor change-out, a major repair or maintenance to a combustor, or other similar circumstances. Prior to performing any major tuning session, the permittee shall provide the Compliance Authority with an advance notice of at least 14 days that details the activity and proposed tuning schedule. The notice may be by telephone, facsimile transmittal, or electronic mail.
[Design; Rule 62-4.070(3), F.A.C.]

EMISSIONS PERFORMANCE TESTING

21. Test Methods: Any required tests shall be performed in accordance with the following reference methods.

Method	*Description of Method and Comments*
CTM-027	Procedure for Collection and Analysis of Ammonia in Stationary Source {Notes: This is an EPA conditional test method. The minimum detection limit shall be 1 ppm.}
7E	Determination of Nitrogen Oxide Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
10	Determination of Carbon Monoxide Emissions from Stationary Sources {Notes: The method shall be based on a continuous sampling train.}
18	Measurement of Gaseous Organic Compound Emissions by Gas Chromatography {Note: EPA Method 18 may be used (optional) concurrently with EPA Method 25A to deduct emissions of methane and ethane from the measured VOC emissions.}
20	Determination of Nitrogen Oxides, Sulfur Dioxide and Diluent Emissions from Stationary Gas Turbines
25A	Determination of Volatile Organic Concentrations

Method CTM-027 is published on EPA's Technology Transfer Network Web Site at www.epa.gov/ttn/emc/ctm.html . The other methods are described in Appendix A of 40 CFR 60, adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department.
[Rules 62-204.800, F.A.C.; 40 CFR 60, Appendix A]

22. Initial Compliance Determinations: Each gas turbine shall be stack tested to demonstrate initial compliance with the emission standards for CO, NO_X, VOC, visible emissions, and ammonia slip. The tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after the initial startup of each unit configuration. Each unit shall be tested when firing natural gas, when using the duct burners and when firing distillate fuel oil. Referenced method data collected during the required Relative Accuracy Test Audits (RATAs) may be used to demonstrate compliance with the initial CO and NO_X standards. With appropriate flow measurements (or fuel measurements and approved F-factors), CEMS data may be used to demonstrate compliance with the CO and NO_X mass rate emissions standards. CO and NO_X emissions recorded by the CEMS shall also be reported for each run during tests for visible emissions, VOC and ammonia slip. The Department may require the permittee to conduct additional tests after major replacement or major repair of any air pollution control equipment, such as the SCR catalyst, oxidation catalyst, DLN combustors, etc.
[Rule 62-297.310(7)(a)1, F.A.C. and 40 CFR 60.8]

23. Continuous Compliance: The permittee shall demonstrate continuous compliance with the 24-hour CO and NO_X emissions standards based on data collected by the certified CEMS. Within 45 days of conducting any RATA on a CEMS, the permittee shall submit a report to the Compliance Authority summarizing results of the RATA. Compliance with the CO emission standards also serves as an indicator of efficient fuel combustion and oxidation catalyst operation, which reduces emissions of particulate matter and volatile organic compounds. The Department also reserves the right to use data from the continuous monitoring record and from annual RATA tests to determine compliance with the short term CO and NO_X limits for each method of operation given in Condition 12 above. [Rule 62-212.400 (BACT), F.A.C.]

24. Annual Compliance Tests: During each federal fiscal year (October 1st to September 30th), each gas turbine shall be tested to demonstrate compliance with the emission standards for visible emissions. NO_X and CO emissions data collected during the required continuous monitor Relative Accuracy Test Audits (RATAs) may be used to demonstrate compliance with the CO and NO_x standards. Annual testing to determine the ammonia slip shall be conducted while firing the primary fuel.. NO_X emissions recorded by the CEMS shall

be reported for each ammonia slip test run. CO emissions recorded by the CEMS shall be reported for the visible emissions observation period.

{Permitting Note: After initial compliance with the VOC standards is demonstrated, annual compliance tests for VOC emissions are not required. Compliance with the continuously monitored CO standards shall indicate efficient combustion and low VOC emissions. The Department retains the right to require VOC testing if CO limits are exceeded or for the reasons given in Appendix SC, Condition 17, Special Compliance Tests.}

[Rules 62-212.400 (BACT) and 62-297.310(7)(a)4, F.A.C.]

CONTINUOUS MONITORING REQUIREMENTS

25. CEM Systems: The permittee shall install, calibrate, maintain, and operate continuous emission monitoring systems (CEMS) to measure and record the emissions of CO and NO_X from the combined cycle gas turbine in a manner sufficient to demonstrate continuous compliance with the CEMS emission standards of this section. Each monitoring system shall be installed, calibrated, and properly functioning prior to the initial performance tests. Within one working day of discovering emissions in excess of a CO or NO_X standard (and subject to the specified averaging period), the permittee shall notify the Compliance Authority.

    a. *CO Monitors.* The CO monitors shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 4 or 4A. Quality assurance procedures shall conform to the requirements of 40 CFR 60, Appendix F, and the Data Assessment Report of Section 7 shall be made each calendar quarter, and reported semiannually to the Compliance Authority. The RATA tests required for the CO monitor shall be performed using EPA Method 10 in Appendix A of 40 CFR 60 and shall be based on a continuous sampling train. The CO monitor span values shall be set appropriately considering the allowable methods of operation and corresponding emission standards.

    b. *NO_X Monitors.* Each NO_X monitor shall be certified, operated, and maintained in accordance with the requirements of 40 CFR 75. Record keeping and reporting shall be conducted pursuant to Subparts F and G in 40 CFR 75. The RATA tests required for the NO_X monitor shall be performed using EPA Method 20 or 7E in Appendix A of 40 CFR 60.

    c. *Diluent Monitors.* The oxygen (O_2) or carbon dioxide (CO_2) content of the flue gas shall be monitored at the location where CO and NO_X are monitored to correct the measured emissions rates to 15% oxygen. If a CO_2 monitor is installed, the oxygen content of the flue gas shall be calculated using F-factors that are appropriate for the fuel fired. Each monitor shall comply with the performance and quality assurance requirements of 40 CFR 75.

26. CEM Data Requirements:

    a. *Data Collection*: Emissions shall be monitored and recorded at all times including startup, operation, shutdown, and malfunction except for continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments. The CEMS shall be designed and operated to sample, analyze, and record data evenly spaced over an hour. If the CEMS measures concentration on a wet basis, the CEM system shall include provisions to determine the moisture content of the exhaust gas and an algorithm to enable correction of the monitoring results to a dry basis (0% moisture). Alternatively, the owner or operator may develop through manual stack test measurements a curve of moisture contents in the exhaust gas versus load for each allowable fuel, and use these typical values in an algorithm to enable correction of the monitoring results to a dry basis (0% moisture). Final results of the CEMS shall be expressed as ppmvd corrected to 15% oxygen. The CEMS shall be used to demonstrate compliance with the CEMS emission standards for CO and NO_X as specified in this permit. For purposes of determining compliance with the CEMS emissions standards of this permit, missing (or

excluded) data shall not be substituted. Upon request by the Department, the CEMS emission rates shall be corrected to ISO conditions to demonstrate compliance with the applicable standards of 40 CFR 60.332.

b. *Valid Hour*: Hourly average values shall begin at the top of each hour. Each hourly average value shall be computed using at least one data point in each fifteen-minute quadrant of an hour, where the unit combusted fuel during that quadrant of an hour. Notwithstanding this requirement, an hourly value shall be computed from at least two data points separated by a minimum of 15 minutes (where the unit operates for more than one quadrant of an hour). If less than two such data points are available, the hourly average value is not valid. An hour in which any oil is fired is attributed towards compliance with the permit standards for oil firing. The permittee shall use all valid measurements or data points collected during an hour to calculate the hourly average values.

c. *24-hour Block Averages*: A 24-hour block shall begin at midnight of each operating day and shall be calculated from 24 consecutive hourly average emission rate values. If a unit operates less than 24 hours during the block, the 24-hour block average shall be the average of all available valid hourly average emission rate values for the 24-hour block. For purposes of determining compliance with the 24-hour CEMS standards, the missing data substitution methodology of 40 CFR Part 75, subpart D, shall not be utilized. Instead, the 24-hour block average shall be determined using the remaining hourly data in the 24-hour block. [Rule 62-212.400(BACT), F.A.C.]

{Permitting Note: There may be more than one 24-hour compliance demonstration required for CO and NO_X emissions depending on the use of alternate methods of operation}

d. *Data Exclusion:* Each CEMS shall monitor and record emissions during all operations including episodes of startup, shutdown, malfunction, fuel switches and DLN tuning. Some of the CEMS emissions data recorded during these episodes may be excluded from the corresponding CEMS compliance demonstration subject to the provisions of Condition Nos. 17 and 18 of this section. All periods of data excluded shall be consecutive for each such episode and only data obtained during the described episodes (startup, shutdown, malfunction, fuel switches, DLN tuning) may be used for the appropriate exclusion periods. The permittee shall minimize the duration of data excluded for such episodes to the extent practicable. Data recorded during such episodes shall not be excluded if the episode was caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure, which may reasonably be prevented. Best operational practices shall be used to minimize hourly emissions that occur during such episodes. Emissions of any quantity or duration that occur entirely or in part from poor maintenance, poor operation, or any other equipment or process failure, which may reasonably be prevented, shall be prohibited.

e. *Availability*: Monitor availability for the CEMS shall be 95% or greater in any calendar quarter. The quarterly excess emissions report shall be used to demonstrate monitor availability. In the event 95% availability is not achieved, the permittee shall provide the Department with a report identifying the problems in achieving 95% availability and a plan of corrective actions that will be taken to achieve 95% availability. The permittee shall implement the reported corrective actions within the next calendar quarter. Failure to take corrective actions or continued failure to achieve the minimum monitor availability shall be violations of this permit, except as otherwise authorized by the Department's Compliance Authority.

[NSPS Subparts Da and GG; Rule 62-297.520, F.A.C.; 40 CFR 60.7(a)(5) and 40 CFR 60.13; 40 CFR Part 51, Appendix P; 40 CFR 60, Appendix B - Performance Specifications; 40 CFR 60, Appendix F - Quality Assurance Procedures; and Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

27. Ammonia Monitoring Requirements: In accordance with the manufacturer's specifications, the permittee shall install, calibrate, operate and maintain an ammonia flow meter to measure and record the ammonia injection rate to the SCR system by the time of the initial compliance tests. The permittee shall document and periodically update the general range of ammonia flow rates required to meet permitted emissions levels over the range of load conditions allowed by this permit by comparing NO_X emissions recorded by the CEM system with ammonia flow rates recorded using the ammonia flow meter. During NO_X monitor downtimes or malfunctions, the permittee shall operate at the ammonia flow rate and, as applicable for fuel oil firing, the water-to-fuel ratio, that are consistent with the documented flow rate for the combustion turbine load condition. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

RECORDS AND REPORTS

28. Monitoring of Capacity: The permittee shall monitor and record the operating rate of each gas turbine and HRSG duct burner system on a daily average basis, considering the number of hours of operation during each day (including the times of startup, shutdown and malfunction). Such monitoring shall be made using a monitoring component of the CEM system required above, or by monitoring daily rates of consumption and heat content of each allowable fuel in accordance with the provisions of 40 CFR 75 Appendix D. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

29. Monthly Operations Summary: By the fifth calendar day of each month, the permittee shall record the following for each fuel in a written or electronic log for each gas turbine for the previous month of operation: fuel consumption, hours of operation, hours of duct firing, and the updated 12-month rolling totals for each. Information recorded and stored as an electronic file shall be available for inspection and printing within at least three days of a request by the Department. The fuel consumption shall be monitored in accordance with the provisions of 40 CFR 75 Appendix D. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

30. Fuel Sulfur Records: The permittee shall demonstrate compliance with the fuel sulfur limits specified in this permit by maintaining the following records of the sulfur contents.

    a. *Natural Gas Sulfur Limit*: Compliance with the fuel sulfur limit for natural gas shall be demonstrated by keeping reports obtained from the vendor indicating the average sulfur content of the natural gas being supplied from the pipeline for each month of operation. Methods for determining the sulfur content of the natural gas shall be ASTM methods D4084-82, D4468-85, D5504-01, D6228-98 and D6667-01, D3246-81 or more recent versions.

    b. *Distillate Fuel Oil Sulfur Limit*: Compliance with the distillate fuel oil sulfur limit shall be demonstrated by taking a sample, analyzing the sample for fuel sulfur, and reporting the results to each Compliance Authority before initial startup. Sampling the fuel oil sulfur content shall be conducted in accordance with ASTM D4057-88, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, and one of the following test methods for sulfur in petroleum products: ASTM methods D5453-00, D129-91, D1552-90, D2622-94, or D4294-90. More recent versions of these methods may be used. For each subsequent fuel delivery, the permittee shall maintain a permanent file of the certified fuel sulfur analysis from the fuel vendor. At the request of a Compliance Authority, the permittee shall perform additional sampling and analysis for the fuel sulfur content.

    The above methods shall be used to determine the fuel sulfur content in conjunction with the provisions of 40 CFR 75 Appendix D. [Rules 62-4.070(3) and 62-4.160(15), F.A.C.]

31. Emissions Performance Test Reports: A report indicating the results of any required emissions performance test shall be submitted to the Compliance Authority no later than 45 days after completion of the last test run. The test report shall provide sufficient detail on the tested emission unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test

results were properly computed. At a minimum, the test report shall provide the applicable information listed in Rule 62-297.310(8)(c), F.A.C. and in Appendix SC of this permit. [Rule 62-297.310(8), F.A.C.].

32. Excess Emissions Reporting:

a. *Malfunction Notification:* If emissions in excess of a standard (subject to the specified averaging period) occur due to malfunction, the permittee shall notify the Compliance Authority within (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. In addition, the Department may request a written summary report of the incident.

b. *SIP Quarterly Permit Limits Excess Emissions Report*: Within 30 days following the end of each calendar-quarter, the permittee shall submit a report to the Compliance Authority summarizing periods of CO and NOx emissions in excess of the BACT permit standards following the NSPS format in 40 CFR 60.7(c), Subpart A. Periods of startup, shutdown and malfunction, shall be monitored, recorded and reported as excess emissions when emission levels exceed the standards specified in this permit. In addition, the report shall summarize the CEMS systems monitor availability for the previous quarter.

c. *NSPS Semi-Annual Excess Emissions Reports*: For purposes of reporting emissions in excess of NSPS Subpart GG, excess emissions from the gas turbine are defined as: any operating hour in which the CEMS 4-hr rolling average NOx concentration exceeds the NSPS NOx emissions standard identified in Appendix GG; and any monitoring period during which the sulfur content of the fuel being fired in the gas turbine exceeds the NSPS standard identified in Appendix GG. For purposes of reporting emissions in excess of NSPS Subpart Da, excess emissions from duct firing are defined as: NO_X or PM emissions in excess of the NSPS standards except during periods of startup, shutdown, or malfunction; and SO2 emissions in excess of the NSPS standards except during startup or shutdown. Within thirty (30) days following each calendar semi-annual period, the permittee shall submit a report on any periods of excess emissions that occurred during the previous semi-annual period to the Compliance Authority. This also includes reporting any periods of excess emissions as applicable and defined by NSPS Subpart KKKK when the rule is finalized.

{Note: If there are no periods of excess emissions as defined in NSPS Subparts GG, Da, or KKKK, a statement to that effect may be submitted with the SIP Quarterly Report to suffice for the NSPS Semi-Annual Report.}

[Rules 62-4.130, 62-204.800, 62-210.700(6), F.A.C., and 40 CFR 60.7, and 60.332(j)(1)]

33. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating hours and emissions from this facility. The permittee shall also keep records sufficient to determine the annual throughput of distillate fuel oil for the fuel oil storage tank for use in the Annual Operating Report. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.]

B. DISTILLATE FUEL OIL STORAGE TANK (EU 007)

This section of the permit addresses the following emissions unit.

ID	Emission Unit Description
007	Two Nominal 6.3 million gallon distillate fuel oil storage tanks

NSPS APPLICABILITY

1. NSPS Subpart Kb Applicability: The distillate fuel oil tanks are subject to Subpart Kb, which applies to any storage tank with a capacity greater than or equal to 10,300 gallons (40 cubic meters) that is used to store volatile organic liquids for which construction, reconstruction, or modification is commenced after July 23, 1984. Tanks with a capacity greater than or equal to 40,000 gallons (151 cubic meters) storing a liquid with a maximum true vapor pressure less than 3.5 kPa are exempt from the General Provisions (40 CFR 60, Subpart A) and from the provisions of NSPS Subpart Kb, except for the record keeping requirements specified below. [40 CFR 60.110b(a) and (c); Rule 62-204.800(7)(b), F.A.C.]

   The listed emission units shall comply with 40 CFR 60, Subpart Kb only to the extent that the regulations apply to the emission unit and its operations.

EQUIPMENT SPECIFICATIONS

2. Equipment: The permittee is authorized to install, operate, and maintain two 6.3 million gallon distillate fuel oil storage tank designed to provide ultra low sulfur fuel oil to the gas turbines. [Applicant Request; Rule 62-210.200(PTE), F.A.C.]

EMISSIONS AND PERFORMANCE REQUIREMENTS

3. Hours of Operation: The hours of operation are not restricted (8760 hours per year). [Applicant Request; Rule 62-210.200(PTE), F.A.C.]

NOTIFICATION, REPORTING AND RECORDS

4. Oil Tank Records: The permittee shall keep readily accessible records showing the dimension of each storage vessel and an analysis showing the capacity of each storage tank. Records shall be retained for the life of the facility. The permittee shall also keep records sufficient to determine the annual throughput of distillate fuel oil for each storage tank for use in the Annual Operating Report. [Rule 62-204.800(7)(b)16, F.A.C.; 40 CFR 60.116b(a) and (b)]

C. COOLING TOWER (EU 008)

This section of the permit addresses the following new emissions unit.

ID	Emission Unit Description
008	Two 26-cell mechanical draft cooling towers

EQUIPMENT

1. Cooling Tower: The permittee is authorized to install two new 24-cell mechanical draft cooling towers with the following nominal design characteristics: a circulating water flow rate of 306,000 gpm; design hot/cold water temperatures of 105° F/87° F; a design air flow rate of 1,500,000 per cell; a liquid-to-gas air flow ratio of 1.045; and drift eliminators. The permittee shall submit the final design details within 60 days of selecting the vendor. [Application; Design]

EMISSIONS AND PERFORMANCE REQUIREMENTS

2. Drift Rate: Within 60 days of commencing operation, the permittee shall submit certify that the cooling tower was constructed to achieve the specified drift rate of no more than 0.0005 percent of the circulating water flow rate. *{Permitting Note: This work practice standard is established as BACT for PM/PM_{10} emissions from the cooling tower. Based on this design criteria, potential emissions are expected to be less than 100 tons of PM per year and less than 5 tons of PM_{10} per year. Actual emissions are expected be lower than these rates.}*. [Rule 62-212.400(BACT), F.A.C.]

This section of the permit addresses the following emissions units.

ID	Emission Unit Description
009	Two limited use gas-fueled auxiliary boilers (99.8 MMBTU/h and 85,000 lb/hr)
010	Two gas-fueled 10 MMBtu/hr process heaters

NESHAP APPLICABILITY

1. NESHAP Subpart DDDDD Applicability: These emissions units are subject to Subpart DDDDD, which applies to an industrial, commercial, or institutional boiler or process heater as defined in Sec. 63.7575 that is located at, or is part of, a major source of HAP as defined in Sec. 40 CFR 63.2.

   The listed emission units shall comply with 40 CFR 63, NESHAP Subpart DDDDD only to the extent that the regulations apply to the emission unit and its operations (e.g. limited use gas-fueled or small gas-fueled categories.

   [40 CFR 63, Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, or Institutional Boiler or Process Heater]

NSPS APPLICABILITY

2. NSPS Subpart Dc Applicability: Each 99.8 MMBTU/hr (85,000 lb/hr) auxiliary boiler is subject to all applicable requirements of 40 CFR 60, Subpart Dc which applies to Small Industrial, Commercial, or Institutional Boiler. Specifically, each emission unit shall comply with 40 CFR60.48c Reporting and Recordkeeping Requirements.

   [Rule 62-204.800(7)(b) and 40 CFR 60, NSPS-Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, attached as Appendix Dc].

EMISSIONS AND TESTING REQUIREMENTS

3. Auxiliary Boiler BACT Emissions Limits:

NO_X	CO	VOC, SO_2, PM/PM_{10}
0.05 lb/MMBtu	0.08 lb/MMBtu	2 gr S/100SCF natural gas spec and 10% Opacity

4. Auxiliary Boilers Testing Requirements: Each unit shall be stack tested to demonstrate initial compliance with the emission standards for CO, NO_X and visible emissions. The tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after the initial startup of each combined cycle unit.

   [Rule 62-297.310(7)(a)1, F.A.C. and 40 CFR 63.7]

   Test Methods: Any required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
7E	Determination of Nitrogen Oxide Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
10	Determination of Carbon Monoxide Emissions from Stationary Sources {Notes: The method shall be based on a continuous sampling train.}

5. Annual CO Performance Test for Auxiliary Boilers: Pursuant to 40 CFR 63.7515(e) permittee shall conduct an annual CO test according to Sec. 63.7520. Each annual performance test must be conducted between 10 and 12 months after the previous performance test.

   [40 CFR 63.7515 and Rule 62-204.800(11)(b)84. F.A.C.]

6. Natural Gas Fired Process Heaters BACT Emissions Limits:

NO_X	CO	VOC, SO_2, PM/PM_{10}
0.095 lb/MMBtu	0.08 lb/MMBtu	2 gr S/100SCF natural gas spec and 10% Opacity

7. Natural Gas Fired Process Heaters Testing Requirements: Each unit shall be stack tested to demonstrate initial compliance with the emission standards for CO, NO_X and visible emissions. The tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after the initial startup of each combined cycle unit. As an alternative, a Manufacturer certification of emissions characteristics of the purchased model that are at least as stringent as the BACT values can be used to fulfill this requirement.

   [Rule 62-297.310(7)(a)1, F.A.C. and 40 CFR 60.8]

   Test Methods: Any required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
7E	Determination of Nitrogen Oxide Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
10	Determination of Carbon Monoxide Emissions from Stationary Sources {Notes: The method shall be based on a continuous sampling train.}

EQUIPMENT SPECIFICATIONS

8. Equipment: The permittee is authorized to install, operate, and maintain two auxiliary boilers with a maximum design heat input of 99.8 MMBtu/hr (85,000 lb/hr) each to produce steam during start up of the CTs and two 10 MMBtu/hr process heaters for the purpose of heating the natural gas supply to the CTs. [Applicant Request; Rule 62-210.200(PTE), F.A.C.]

PERFORMANCE REQUIREMENTS

9. Hours of Operation: The hours of operation of each limited use gas-fueled auxiliary boiler shall not exceed 500 hours per year. The gas-fueled process heaters are allowed to operate continuously (8760 hours per year). [Applicant Request; Rule 62-210.200(PTE), F.A.C. and 40 CFR 63.7575]

NOTIFICATION, REPORTING AND RECORDS

10. Notification: Initial notification is required for the two limited use 99.8 MMBtu/hr gas-fueled auxiliary boilers. Initial notification is not required for the two small gas-fueled 10 MMBtu/hr process heaters. [40 CFR 63.9, 40 CFR 63.7506(c) and Rule 62-204.800(11)(b) F.A.C.]

11. Reporting: The permittee shall maintain records of the amount of natural gas used in the heaters and auxiliary boilers. These records shall be submitted to the Compliance Authority on an annual basis or upon request. [Rule 62-4.070(3] F.A.C.]

EMERGENCY GENERATOR (011)

This section of the permit addresses the following emissions unit.

ID	Emission Unit Description
011	Four 2,250 Kw Liquid Fueled Emergency Generators – Reciprocating Internal Combustion Engines

NESHAPS APPLICABILITY

1. NESHAPS Subpart ZZZZ Applicability: These emergency generators are Liquid Fueled Reciprocating Internal Combustion Engines (RICE) and are subject to 40 CFR 63, Subpart ZZZZ. They shall comply with 40 CFR 63, NESHAP Subpart ZZZZ only to the extent that the regulations apply to the emissions unit and its operations.

   [40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) and Rule 62-204.800(11)(b)80, F.A.C.]

NSPS APPLICABILITY

2. NSPS Subpart IIII Applicability: These emergency generators are Stationary Compression Ignition Internal Combustion Engines (Stationary ICE) and are subject to 40 CFR 60, Subpart IIII. They shall comply with 40 CFR 60, Subpart IIII only to the extent that the regulations apply to the emission unit and its operations (e.g. non-road, emergency, displacement, capacity, model year selected).

   [40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines; Proposed Rule- Federal Register Vol. 70, No. 131, July 11, 2005. Pages 39869 – 39904].

EQUIPMENT SPECIFICATIONS

3. Equipment: The permittee is authorized to install, operate, and maintain four 2,250 Kw emergency generators. [Applicant Request; Rule 62-210.200(PTE), F.A.C.]

EMISSIONS AND PERFORMANCE REQUIREMENTS

4. Hours of Operation and Fuel Specifications: The hours of operation shall not exceed 160 hours per year per each generator. The generators are allowed to burn 0.0015% sulfur fuel oil. [Applicant Request; Rule 62-210.200(PTE), F.A.C.]

5. Emergency Generators BACT Emissions Limits:

NO_X	CO	Hydrocarbons[1]	SO_2	PM/PM_{10}
6.9 gm/bhp-hr	8.5 gm/bhp-hr	1.0 gm/bhp-hr	0.0015% S F.O.	0.4 gm/bhp-hr

   Note 1. Hydrocarbons are surrogate for VOC.

   {The Draft BACT limits are equal to the values corresponding to the Tier 1 values cited in the proposed rule 40 CFR 60, Subpart IIII. The Final BACT will be revised to comport with the final rule when issued.}

6. Emergency Generators Testing Requirements: Each unit shall be stack tested to demonstrate initial compliance with the emission standards for CO, NO_X and visible emissions. The tests shall be conducted within 60 days after achieving the maximum production rate at which the unit will be operated, but not later than 180 days after the initial startup of each combined cycle unit. As an alternative, an EPA Certification of emissions characteristics of the purchased model that are at least as stringent as the BACT values and the use of ULS fuel oil can be used to fulfill this requirement.

   [Rule 62-297.310(7)(a)1, F.A.C.; 40 CFR 60.8 and 40 CFR 60.4211]

Test Methods: Any required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
7E	Determination of Nitrogen Oxide Emissions from Stationary Sources
9	Visual Determination of the Opacity of Emissions from Stationary Sources
10	Determination of Carbon Monoxide Emissions from Stationary Sources {Notes: The method shall be based on a continuous sampling train.}

NOTIFICATION, REPORTING AND RECORDS

7. Notifications: Initial notification are required pursuant to 40 CFR 60.7, 40 CFR 63.9, and 40 CFR 63.6590 (b) (i) for the four 2,250 Kw RICE units.

8. Reporting: The permittee shall maintain records of the amount of liquid fuel used. These records shall be submitted to the Compliance Authority on an annual basis or upon request. [Rule 62-4.070(3] F.A.C.].

EMERGENCY FIRE PUMP (012)

This section of the permit addresses the following emissions unit.

ID	Emission Unit Description
012	One nominal 300-hp emergency diesel fire pump engine and 500 gallon fuel oil storage tank.

NESHAP APPLICABILITY

1. NESHAP Subpart ZZZZ Applicability: This unit consists of one or more Emergency Fire Pump Engines that are also Liquid Fueled Reciprocating Internal Combustion Engines (RICE), subject to 40 CFR 63, Subpart ZZZZ. They shall comply with 40 CFR 63, NESHAP Subpart ZZZZ only to the extent that the regulations apply to the emission unit and its operations (e.g. Limited Use, Emergency Fire Pumps).

   [40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) and Rule 62-204.800(11)(b)80, F.A.C.]

NSPS APPLICABILITY

2. NSPS Subpart IIII Applicability: These fire pumps engines are Emergency Stationary Compression Ignition Internal Combustion Engines (Stationary ICE) and are subject to 40 CFR 60, Subpart IIII. They shall comply with 40 CFR 60, Subpart IIII only to the extent that the regulations apply to the emissions unit and its operations (e.g. fire pumps, horsepower, model year selected).

   [40 CFR 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines; Proposed Rule- Federal Register, Vol. 70, No. 131, July 11, 2005. Pages 39869 – 39904].

EQUIPMENT SPECIFICATIONS

3. Equipment: The permittee is authorized to install, operate, and maintain one diesel engine driven fire pump (approximately 300 hp) and an associated 500 gallon fuel oil storage tank.

EMISSIONS AND PERFORMANCE REQUIREMENTS

4. Hours of Operation: The fire pump may operate in response to emergency conditions and 40 non-emergency hours per year for maintenance testing.
   [Applicant Request; Rule 62-210.200 (PTE), F.A.C.

5. Authorized Fuel: This unit shall fire low sulfur fuel oil (or superior fuel), which shall contain no more than 0.05% sulfur by weight. [Rules 62-210.200(PTE) and 62-212.400 (BACT), F.A.C.]

   Compliance with the distillate fuel oil sulfur limit shall be demonstrated by taking a sample, analyzing the sample for fuel sulfur, and reporting the results to each Compliance Authority before initial startup. Sampling the fuel oil sulfur content shall be conducted in accordance with ASTM D4057-88, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, and one of the following test methods for sulfur in petroleum products: ASTM methods D5453-00, D129-91, D1552-90, D2622-94, or D4294-90. More recent versions of these methods may be used. For each subsequent fuel delivery, the permittee shall maintain a permanent file of the certified fuel sulfur analysis from the fuel vendor. At the request of a Compliance Authority, the permittee shall perform additional sampling and analysis for the fuel sulfur content.

6. Fire Pump Engine BACT Emissions Limits:

The following limits apply based on the size category of fire pumps located at the facility.

Size (hp)	CO	NMHC+NO_X	PM
175 and greater	2.6	7.8	0.40

Note 1. Non-Methane Hydrocarbons (NMHC) are surrogate for VOC.

{The Draft BACT limits are equal to the values corresponding to the respective size class indicated above and cited in the proposed rule 40 CFR 60, Subpart IIII. The Final BACT will be revised to comport with the final rule when issued.}

7. Fire Pump Engine Certification: Manufacturer certification shall be provided to the Department in lieu of actual testing. [Rule 62-212.400 (BACT), F.A.C. and 40 CFR 60.411]

SECTION IV. APPENDICES

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Appendix A	NSPS Subpart A and NESHAP Subpart A - Identification of General Provisions
Appendix BD	Final BACT Determinations and Emissions Standards
Appendix Da	NSPS Subpart Da Requirements for Duct Burners
Appendix Dc	NSPS Subpart Dc Requirements for Small Industrial Commercial-Institutional Steam Generating Units
Appendix DDDDD	NESHAP Requirements for Industrial, Commercial, and Institutional Boilers and Process Heaters from 40 CFR 63, Subpart DDDDD
Appendix GC	General Conditions
Appendix GG	NSPS Subpart GG Requirements for Gas Turbines
Appendix SC	Standard Conditions
Appendix XS	Semiannual NSPS Excess Emissions Report
Appendix YYYY	NESHAP Requirements for Gas Turbines from 40 CFR 63, Subpart YYYY
Appendix ZZZZ	NESHAP Requirements for Reciprocating Internal Combustion Engines from 40 CFR 63, Subpart ZZZZ

NSPS SUBPART A, IDENTIFICATION OF GENERAL PROVISIONS

The provisions of this Subpart may be provided in full upon request. Emissions units subject to a New Source Performance Standard of 40 CFR 60 are also subject to the applicable requirements of Subpart A, the General Provisions, including:

§ 60.1 Applicability.

§ 60.2 Definitions.

§ 60.3 Units and abbreviations.

§ 60.4 Address.

§ 60.5 Determination of construction or modification.

§ 60.6 Review of plans.

§ 60.7 Notification and Record Keeping.

§ 60.8 Performance Tests.

§ 60.9 Availability of information.

§ 60.10 State Authority.

§ 60.11 Compliance with Standards and Maintenance Requirements.

§ 60.12 Circumvention.

§ 60.13 Monitoring Requirements.

§ 60.14 Modification.

§ 60.15 Reconstruction.

§ 60.16 Priority List.

§ 60.17 Incorporations by Reference.

§ 60.18 General Control Device Requirements.

§ 60.19 General Notification and Reporting Requirements.

Individual subparts may exempt specific equipment or processes from some or all of these requirements. The general provisions may be provided in full upon request.

NESHAP - SUBPART A, IDENTIFICATION OF GENERAL PROVISIONS

The provisions of this Subpart may be provided in full upon request. Emissions units subject to a National Emission Standards for Hazardous Air Pollutants of 40 CFR 63 are also subject to the applicable requirements of Subpart A, the General Provisions, including:

§ 63.1 Applicability.

§ 63.2 Definitions.

§ 63.3 Units and abbreviations.

§ 63.4 Prohibited Activities and Circumvention.

§ 63.5 Preconstruction Review and Notification Requirements.

§ 63.6 Compliance with Standards and Maintenance Requirements.

§ 63.7 Performance Testing Requirements.

§ 63.8 Monitoring Requirements.

§ 63.9 Notification Requirements.

§ 63.10 Recordkeeping and Reporting Requirements.

§ 63.11 Control Device Requirements.

§ 63.12 State Authority and Delegations.

§ 63.13 Addresses of State Air Pollution Control Agencies and EPA Regional Offices.

§ 63.14 Incorporation by Reference.

§ 63.15 Availability of Information and Confidentiality.

Individual subparts may exempt specific equipment or processes from some or all of these requirements. The general provisions may be provided in full upon request.

DRAFT BACT DETERMINATIONS AND EMISSIONS STANDARDS

Refer to the draft BACT proposal discussed in the initial Technical Evaluation for this project and to the Final Determination issued with the Final permit for the rationale regarding the following BACT determination.

Pollutant	Fuel	Method of Operation	Stack Test, 3-Run Average		CEMS Block Average
			ppmvd @ 15% O_2	lb/hr [g]	ppmvd @ 15% O_2
CO [a]	Oil	Combustion Turbine (CT)	8.0	42.0	8.0, 24-hr 6, 12-month [h]
	Gas	CT & Duct Burner (DB)	7.6	52.5	
		CT Normal	4.1	23.2	
NO_X [b]	Oil	CT	8.0	82.4	8.0, 24-hr
	Gas	CT & DB	2.0	24.2	2.0, 24-hr
		CT Normal	2.0	20.0	
PM/PM_{10} [c]	Oil/Gas	All Modes	2 gr S/100SCF of gas, 0.0015% sulfur fuel oil		
			Visible emissions shall not exceed 10% opacity for each 6-minute block average.		
SAM/SO_2 [d]	Oil/Gas	All Modes	2 gr S/100 SCF of gas, 0.0015% sulfur fuel oil		
VOC [e]	Oil	CT	6.0	19.6	NA
	Gas	CT & DB	1.5	5.4	
		CT Normal	1.2	4.1	
Ammonia [f]	Oil/Gas	CT, All Modes	5	NA	NA

a. Compliance with the continuous 24-hour CO standards shall be demonstrated based on data collected by the required CEMS. The initial and annual EPA Method 10 tests associated with the certification of the CEMS instruments shall also be used to demonstrate compliance with the individual standards for natural gas, fuel oil, and basic duct burner modes. The stacks test limits apply only at high load (90-100% of the combustion turbine capacity).

b. Compliance with the continuous NO_X standards shall be demonstrated based on data collected by the required CEMS. The initial and annual EPA Method 7E or Method 20 tests associated with demonstration of compliance with 40 CFR 60, Subpart GG or certification of the CEMS instruments shall also be used to demonstrate compliance with the individual standards for natural gas, fuel oil, and duct burner modes during the time of those tests. NO_X mass emission rates are defined as oxides of nitrogen expressed as NO_2.

c. The sulfur fuel specifications combined with the efficient combustion design and operation of each gas turbine represents (BACT) for PM/PM_{10} emissions. Compliance with the fuel specifications, CO standards, and visible emissions standards shall serve as indicators of good combustion. Compliance with the fuel specifications shall be demonstrated by keeping records of the fuel sulfur content. Compliance with the visible emissions standard shall be demonstrated by conducting tests in accordance with EPA Method 9.

d. The fuel sulfur specifications effectively limit the potential emissions of SAM and SO_2 from the gas turbines and represent BACT for these pollutants. Compliance with the fuel sulfur specifications shall be determined by the ASTM methods for determination of fuel sulfur as detailed in the draft permit.

e. Compliance with the VOC standards shall be demonstrated by conducting tests in accordance with EPA Method 25A. Optionally, EPA Method 18 may also be performed to deduct emissions of methane and ethane. The emission standards are based on VOC measured as methane. The limits apply only at high load (90-100% of the combustion turbine capacity). Compliance with the CO CEMS based limits at lower loads shall be deemed as compliance with the VOC limit.

f. Compliance with the ammonia slip standard shall be demonstrated by conducting tests in accordance with EPA Method CTM-027.

g. The mass emission rate standards are based on a turbine inlet condition of 59° F and may be adjusted to actual test conditions in accordance with the performance curves and/or equations on file with the Department.

h. Rolling Average. Enforcement discretion may be exercised for up to 12 months with respect to the 6 ppmvd @15% O_2 limit for any combustion turbine/supplementary-fired heat recovery steam generator upon notification by the permittee of intent to install oxidation catalyst. The permittee shall have 12 months to complete the oxidation catalyst installation. From time of notification to installation of the catalyst all partial or complete calendar months shall be excluded from the 12-month rolling average.

DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:

A. A. Linero, P.E., Program Administrator
South Permitting Section
Department of Environmental Protection
Bureau of Air Regulation
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Recommended By:

Trina L. Vielhauer, Chief
Bureau of Air Regulation

Date

Approved By:

Michael G. Cooke, Director
Division of Air Resources Management

Date

A 99.8 MMBTu/hr (85,000 lb/hr) auxiliary boiler will serve each combined cycle unit system to produce steam during start up of the CTs. They are regulated as Emissions Unit 009. The provisions of this Subpart may be provided in full upon request.

{Note: Only applicable definitions have been included.}

§ 60.40c Applicability and delegation of authority.

(a) Except as provided in paragraph (d) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million Btu per hour (Btu/hr)) or less, but greater than or equal to 2.9 MW (10 million Btu/hr).

(b) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, § 60.48c(a)(4) shall be retained by the Administrator and not transferred to a State.

(c) Steam generating units which meet the applicability requirements in paragraph (a) of this section are not subject to the sulfur dioxide (SO_2) or particulate matter (PM) emission limits, performance testing requirements, or monitoring requirements under this subpart (§ 60.42c, 60.43c, 60.44c, 60.45c, 60.46c, or 60.47c) during periods of combustion research, as defined in § 60.41c.

(d) Any temporary change to an existing steam generating unit for the purpose of conducting combustion research is not considered a modification under § 60.14.

§ 60.41c Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.

Annual capacity factor means the ratio between the actual heat input to a steam generating unit from an individual fuel or combination of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam ch a separate source (such as a stationary gas turbine, internal combustion engine, or kiln) provides exhaust gas to a steam generating unit.

Heat input means heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources (such as stationary gas turbines, internal combustion engines, and kilns).

Natural gas means (1) a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane, or (2) liquefied petroleum (LP) gas, as defined by the American Society for Testing and Materials in ASTM D1835-86, 87, 91, or 97, "Standard Specification for Liquefied Petroleum Gases" (incorporated by reference -- see § 60.17).

Steam generating unit means a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system. This term does not include process heaters as defined in this subpart.

§ 60.42c Standard for sulfur dioxide.

§ 60.43c Standard for particulate matter.

§ 60.44c Compliance and performance test methods and procedures for sulfur dioxide.

§ 60.45c Compliance and performance test methods and procedures for particulate matter.

§ 60.46c Emission monitoring for sulfur dioxide

§ 60.47c Emission monitoring for particulate matter.

Complete Speaker Card if you wish to speak concerning this item.

Name: Sharon White

Organization: Taxpayer

#1

Complete Speaker Card if you wish to speak concerning this item.

Name: Alex Larson

Organization: _____

#2

791-0875

Complete Speaker Card if you wish to speak concerning this item.

Name: Patricia D. Curry

Organization: none

#3

Complete Speaker Card if you wish to speak concerning this item.

Name: JOHN EARLEY

Organization: ME

#4

Complete Speaker Card if you wish to speak concerning this item.

Name: John Koch

Organization: Sierra Club

#5

Complete Speaker Card if you wish to speak concerning this item.

Name: Nancy Gribble

Organization: self | Fox Trail POA

#6

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Name: JOAN SHEWMAKE

Organization: _____

#7

Complete Speaker Card if you wish to speak concerning this item.

Name: Ralph O. Bair

Organization: ALA.

#8

Complete Speaker Card if you wish to speak concerning this item.

Name: EDWARD SMITH

Organization: IBEW LU. 728

#9

Complete Speaker Card if you wish to speak concerning this item.

Name: FRED GORDON

Organization: _____

#10

Complete Speaker Card if you wish to speak concerning this item.

Name: William Kelleher

Organization: I BELIEVE IN COMMUNITY

#11

Complete Speaker Card if you wish to speak concerning this item.

Name: Yvette Trelles

Organization: Hispanic Chamber of Commerce

#12

Complete Speaker Card if you wish to speak concerning this item.

Name: William Callendine

Organization: Lu. 728

#13

Complete Speaker Card if you wish to speak concerning this item.

Name: DAVID KIPP

Organization: L.U. 349 IBEW

#14

Complete Speaker Card if you wish to speak concerning this item.

Name: Orlando Rios

Organization:

#15

Complete Speaker Card if you wish to speak concerning this item.

Name: Rosa Durando

Organization: Aud Soc. Eu.

#16

Complete Speaker Card if you wish to speak concerning this item.

Name: CHARLES BANTEL

Organization: IBEW 728

#17

Home owner next to Riviera Bch Plant

Complete Speaker Card if you wish to speak concerning this item.

Name: JANIXX PARISI

Organization: Wellington Chamber

#18

+ Wall. Rotary

Complete Speaker Card if you wish to speak concerning this item.

Name: Fritz G. Erie

Organization: Cross Town Mortgage

#19

Complete Speaker Card if you wish to speak concerning this item.

Name: Rachel Scott

Organization: FPL

#72

§ 60.48c Reporting and recordkeeping requirements.

(a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by § 60.7 of this part. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

(3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

(4) Notification if an emerging technology will be used for controlling SO_2 emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of § 60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.

(g) The owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day.

(i) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.

(j) The reporting period for the reports required under this subpart is each six-month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.

The HRSG duct burners are part of the Units 1 and 2 gas turbine/HRSG systems, which are regulated as Emissions Units 001, 002, 003, 004, 005, and 006. The provisions of this Subpart may be provided in full upon request.

§ 60.40a Applicability and Designation of Affected Facility.

The HRSG duct burner systems are part of an electric utility steam generating unit that is capable of combusting more than 250 MMBtu per hour heat input of fossil fuel for which construction or modification is commenced after September 18, 1978. Therefore, the requirements of NSPS Subpart Da apply to the HRSG duct burners systems. Only emissions resulting from combustion of fuels in the steam generating unit are subject to this subpart. Emissions from the gas turbines are subject to the requirements of NSPS Subpart GG. The HRSG duct burner systems are also subject to the applicable requirements of the General Provisions in Subpart A.

§ 60.41a Definitions.

"Duct burner" means a device that combusts fuel and that is placed in the exhaust duct from another source, such as a stationary gas turbine, internal combustion engine, kiln, etc., to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a heat recovery steam generating unit.

"Electric utility combined cycle gas turbine" means any combined cycle gas turbine used for electric generation that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW electrical output to any utility power distribution system for sale. Any steam distribution system that is constructed for the purpose of providing steam to a steam electric generator that would produce electrical power for sale is also considered in determining the electrical energy output capacity of the affected facility.

"Electric utility steam generating unit" means any steam electric generating unit that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW electrical output to any utility power distribution system for sale. Any steam supplied to a steam distribution system for the purpose of providing steam to a steam-electric generator that would produce electrical energy for sale is also considered in determining the electrical energy output capacity of the affected facility.

"Fossil fuel" means natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such material for the purpose of creating useful heat.

"Gross output" means the gross useful work performed by the steam generated. For units generating only electricity, the gross useful work performed is the gross electrical output from the turbine/generator set. For cogeneration units, the gross useful work performed is the gross electrical output plus one half the useful thermal output (i.e., steam delivered to an industrial process).

"Potential electrical output capacity" is defined as 33 percent of the maximum design heat input capacity of the steam generating unit (e.g., a steam generating unit with a 100–MW (340 million Btu/hr) fossil-fuel heat input capacity would have a 33–MW potential electrical output capacity). For electric utility combined cycle gas turbines the potential electrical output capacity is determined on the basis of the fossil-fuel firing capacity of the steam generator exclusive of the heat input and electrical power contribution by the gas turbine.

"Steam generating unit" means any furnace, boiler, or other device used for combusting fuel for the purpose of producing steam (including fossil-fuel-fired steam generators associated with combined cycle gas turbines; nuclear steam generators are not included).

§ 60.42a Standard for Particulate Matter.

§ 60.42a(a)(1) establishes a particulate matter limit of 0.03 lb/MMBtu heat input from the combustion of gaseous fuel and an opacity limit of 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. Natural gas is the primary fuel for the gas turbines with very low sulfur distillate oil as a backup fuel. Natural gas is the exclusive fuel for the duct burner systems. As the worst case, the maximum PM/PM10 emissions are expected to be less than 0.01 lb/MMBtu heat input from firing distillate oil in the gas turbine and natural gas in the duct burners. The stack opacity is limited by permit to 10% or less. Therefore, the Department determines that compliance with the conditions of the PSD permit ensure compliance with the requirements of NSPS Subpart Da.

§ 60.43a Standard for Sulfur Dioxide.

In accordance with § 60.43a(b)(2), sulfur dioxide emissions shall not exceed 0.20 lb/MMBtu heat input from the combustion of gaseous fuel for uncontrolled sources. Natural gas is the primary fuel for the gas turbines with very low sulfur distillate oil (≤ 0.05% sulfur by weight) as a backup fuel. Natural gas is the exclusive fuel for the duct burner systems. As the worst case, the maximum SO_2 emissions are expected to be less than 0.05 lb/MMBtu heat input from firing distillate oil in the gas turbine and natural gas in the duct burners. Therefore, the Department determines that compliance with the conditions of the PSD permit ensure compliance with the requirements of NSPS Subpart Da.

§ 60.44a Standard for Nitrogen Oxides.

In accordance with § 60.44a(d)(1), nitrogen oxides (expressed as NO_2) from a gas turbine/HRSG system with duct burners shall not exceed 1.6 pounds per megawatt-hour gross energy output. The permittee shall demonstrate compliance with this requirement based upon an initial test. Thereafter, compliance with the BACT standards of the PSD permit will demonstrate compliance with the NSPS Subpart Da limit. After investigation, if there is good reason to believe that this standard is being violated, the Department may require subsequent compliance testing in accordance with Rule 62-297.310(7)(b), F.A.C.

§ 60.46a Compliance Provisions.

The HRSG duct burner systems are restricted to the exclusive firing of natural gas. The maximum expected emissions of particulate matter and sulfur dioxide are much lower than the limits established by this subpart. Therefore, no testing is required to demonstrate compliance with the standards specified in § 60.42a (particulate matter) and § 60.43a (sulfur dioxide). Compliance with the opacity limit of 10% established in the PSD permit ensures compliance with the NSPS opacity standard.

In accordance with § 60.46a(k)(1), compliance with the nitrogen oxides (NO_X) standard specified in § 60.44a(d)(1) for duct burners used in combined cycle systems shall be determined as follows:

$$E = [(Csg \times Qsg) - (Cte \times Qte)]/(Osg \times h) \qquad \text{(Equation 1)}$$

Where:

E = Emission rate of NOx from the duct burner, ng/J (lb/Mwh) gross output

Csg = Average hourly concentration of NO_X exiting the steam generating unit, ng/ dscm (lb/dscf)

Cte = Average hourly concentration of NO_X in the turbine exhaust upstream from duct burner, ng/dscm (lb/dscf)

Qsg = Average hourly volumetric flow rate of exhaust gas from steam generating unit, dscm/hr (dscf/hr)

Qte = Average hourly volumetric flow rate of exhaust gas from combustion turbine, dscm/hr (dscf/hr)

Osg = Average hourly gross energy output from steam generating unit, J (Mwh)

h = Average hourly fraction of the total heat input to the steam generating unit de-rived from the combustion of fuel in the affected duct burner

Method 7E of Appendix A of Part 60 shall be used to determine the NO_X concentrations (Csg and Cte). Method 2, 2F or 2G of Appendix A of Part 60, as appropriate, shall be used to determine the volumetric flow rates (Qsg and Qte) of the exhaust gases. The volumetric flow rate measurements shall be taken at the same time as the concentration measurements.

The owner or operator shall develop, demonstrate, and provide information satisfactory to the Administrator to determine the average hourly gross energy output from the steam generating unit, and the average hourly percentage of the total heat input to the steam generating unit derived from the combustion of fuel in the affected duct burner.

Compliance with the emissions limits under § 60.44a(d)(1) is determined by the three-run average (nominal 1- hour runs) for the initial performance tests. Thereafter, compliance with the NOx limits established in the PSD permit shall demonstrate compliance with NO_X limit specified in NSPS Subpart Da.

In accordance with § 60.46a(k)(3), when an affected duct burner steam generating unit utilizes a common steam turbine with one or more affected duct burner steam generating units, the owner or operator shall either:

Determine compliance with the applicable NO_X emissions limits by measuring the emissions combined with the emissions from the other units utilizing the common steam turbine; or

Develop, demonstrate, and provide information satisfactory to the Administrator on methods for apportioning the combined gross energy output from the steam turbine for each of the affected duct burners. The Administrator may approve such demonstrated substitute methods for apportioning the combined gross energy output measured at the steam turbine whenever the demonstration ensures accurate estimation of emissions regulated under Part 60.

§ 60.47a Emission Monitoring.

In accordance with § 60.47a(o), the owner or operator of a duct burner, as described in § 60.41a, which is subject to the NO_X standards of § 60.44a(a)(1) or (d)(1) is not required to install or operate a continuous emissions monitoring system to measure NO_X emissions; a wattmeter to measure gross electrical output; meters to measure steam flow, temperature, and pressure; and a continuous flow monitoring system to measure the flow of exhaust gases discharged to the atmosphere.

§ 60.48a Compliance Determination Procedures and Methods.

In accordance with § 60.48a (d)(1), EPA Method 19 shall be used to determine the NO_X emission rate when demonstrating compliance with the NO_X standard specified in § 60.44a. In accordance with § 60.48a(f), electric utility combined cycle gas turbines are performance tested for particulate matter, sulfur dioxide, and nitrogen oxides using the procedures of Method 19. The sulfur dioxide and nitrogen oxides emission rates from the gas turbine used in Method 19 calculations are determined when the gas turbine is performance tested under subpart GG. The potential uncontrolled particulate matter emission rate from a gas turbine is defined as 17 ng/J (0.04 lb/million Btu) heat input.

§ 60.49a Reporting requirements.

Compliance with reporting requirements of the PSD permit ensure compliance with the requirements of NSPS Subpart Da.

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:

   a. Have access to and copy and records that must be kept under the conditions of the permit;
   b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
   c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

   Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

   a. A description of and cause of non-compliance; and

   b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

   The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida

Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

    a. Determination of Best Available Control Technology (X);
    b. Determination of Prevention of Significant Deterioration (X);
    c. Compliance with National Emission Standards for Hazardous Air Pollutants (X); and
    d. Compliance with New Source Performance Standards (X).

14. The permittee shall comply with the following:

    a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

    b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

    c. Records of monitoring information shall include:

        1) The date, exact place, and time of sampling or measurements;
        2) The person responsible for performing the sampling or measurements;
        3) The dates analyses were performed;
        4) The person responsible for performing the analyses;
        5) The analytical techniques or methods used; and
        6) The results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

The gas turbines are regulated as Emissions Units 001, 002, 003, 004, 005, and 006. The provisions of this Subpart may be provided in full upon request.

§ 60.330 Applicability and Designation of Affected Facility.

Each unit has a heat input at peak load equal to or greater than 10 MMBtu per hour (LHV) and will commence construction after October 3, 1977. Therefore, the gas turbines are subject to NSPS Subpart GG.

§ 60.331 Definitions.

The following applicable terms are defined by this subpart:

(a) Stationary gas turbine means any simple cycle gas turbine, regenerative cycle gas turbine or any gas turbine portion of a combined cycle steam/electric generating system that is not self propelled. It may, however, be mounted on a vehicle for portability.

(b) Simple cycle gas turbine means any stationary gas turbine which does not recover heat from the gas turbine exhaust gases to preheat the inlet combustion air to the gas turbine, or which does not recover heat from the gas turbine exhaust gases to heat water or generate steam.

(d) Combined cycle gas turbine means any stationary gas turbine which recovers heat from the gas turbine exhaust gases to heat water or generate steam.

(g) ISO standard day conditions mean 288 degrees Kelvin, 60 percent relative humidity and 101.3 kilopascals pressure.

(h) Efficiency means the gas turbine manufacturer's rated heat rate at peak load in terms of heat input per unit of power output based on the lower heating value of the fuel.

(i) Peak load means 100 percent of the manufacturer's design capacity of the gas turbine at ISO standard day conditions.

(j) Base load means the load level at which a gas turbine is normally operated.

(q) Electric utility stationary gas turbine means any stationary gas turbine constructed for the purpose of supplying more than one-third of its potential electric output capacity to any utility power distribution system for sale.

§ 60.332 Standard for Nitrogen Oxides.

In accordance with § 60.332(a)(1) and (b), emissions of nitrogen oxides (NO_X) from electric utility stationary gas turbines with a heat input at peak load greater than 100 MMBtu Btu per hour (LHV) shall not exceed the following standard.

$$STD = 0.0075 \frac{(14.4)}{Y} + F$$

Where:

STD = Allowable NO_X emissions (percent by volume at 15 percent oxygen and on a dry basis).

Y = Manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt-hour.

F = NO_X emission allowance for fuel-bound nitrogen as de-fined in paragraph (a)(3) of this section.

§ 60.332(a)(3) defines an allowable NO_X contribution based on the fuel bound nitrogen content, F. However, natural gas and distillate oil contain negligible concentrations of fuel bound nitrogen. Therefore, "F" shall be assumed to be 0. Based on the manufacturer's data and compressor inlet conditions of 59° F and 60% relative humidity, the heat rate for gas firing is 9250 Btu/KW-h at peak load and for oil firing is 9960 Btu/KW-h at peak load. This results in "Y" values of 9.8 for gas firing and 10.5 for oil firing. The equivalent NSPS NO_X emission standards are 110/103 ppmvd at 15% oxygen for gas/oil firing. Compliance with the NOx standards of the PSD permit ensure compliance with the applicable NSPS standards. The permittee shall make the correction when required by the Department or Administrator.

§ 60.333 Standard for Sulfur Dioxide

In accordance with § 60.333(b), fuel fired in the gas turbines shall contain no more than 0.8% sulfur by weight. The conditions of the PSD permit limit allowable fuels to natural gas (≤ 2.0 grains of sulfur per 100 standard cubic feet of natural gas) and distillate oil (≤ 0.05% sulfur by weight). These conditions ensure compliance with the NSPS standard for sulfur dioxide.

§ 60.334 Monitoring of Operations.

The PSD permit requires keeping monthly records of the fuel sulfur content of natural gas. For distillate oil, the PSD permit requires initial fuel sulfur sampling and then keeping records of the fuel sulfur content based on vendor information "as supplied" for each subsequent shipment. Appropriate test methods are also specified in the PSD permit. These requirements constitute a custom fuel monitoring schedule that ensures compliance with the NSPS requirements for monitoring the nitrogen and sulfur contents of the fuels. The requirement to monitor the nitrogen contents of these fuels is waived due to negligible concentrations and the PSD conditions that require compliance with the NO_X standards to be demonstrated by CEMS. The CEMS shall be installed, operated, and maintained in accordance with the requirements of the PSD permit.

For the purpose of reports required under § 60.7(c), periods of excess emissions that shall be reported are: any 1-hour period of NO_X emissions greater than the NSPS standard; and any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8% sulfur by weight (for sulfur dioxide emissions). The permittee shall submit a semiannual report of emissions in excess of the NSPS standards.

§ 60.335 Test Methods and Procedures.

In accordance with § 60.335(c), compliance with the nitrogen oxides standards in § 60.332 shall be determined by computing the nitrogen oxides emission rate (NO_X) for each run using the following equation:

$$NOx = (NOxo)\,(Pr/Po)^{0.5}\, e^{19(Ho-0.00633)}\,(288°K/Ta)^{1.53}$$

Where:

NOx	=	Emission rate of NOx at 15 percent O2 and ISO standard ambient conditions, volume percent
NOxo	=	Observed NOx concentration, ppm by volume
Pr	=	Reference combustor inlet absolute pressure at 101.3 kilopascals ambient pressure, mm Hg
Po	=	Observed combustor inlet absolute pressure at test, mm Hg
Ho	=	Observed humidity of ambient air, g H_2O/g air
e	=	Transcendental constant, 2.718
Ta	=	Ambient temperature, °K

Tests for nitrogen oxides emissions shall be conducted in accordance with the schedule and methods specified in the PSD permit. The permittee is allowed to conduct initial performance tests at a single load because a NO_X monitor shall be used to demonstrate compliance with the specified NO_X limits. The permittee is allowed to make the initial compliance demonstration for NO_X emissions using certified CEMS data, provided that compliance is based on a minimum of three test runs representing a total of at least three hours of data, and that the CEMS be calibrated in accordance with the procedure in section 6.2.3 of Method 20 following each run. Alternatively, initial compliance may be demonstrated using data collected during the initial relative accuracy test audit (RATA) performed on the NO_X monitor. The permittee is not required to have the NO_X monitor continuously correct NO_X emissions concentrations to ISO conditions. However, the permittee shall make the correction when required by the Department or Administrator.

The permittee shall use the methods specified in the PSD permit to demonstrate compliance with the fuel sulfur specification, which will ensure compliance with the NSPS standard.

Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities at this facility.

EMISSIONS AND CONTROLS

1. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]

2. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]

3. Excess Emissions Allowed: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]

4. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]

5. Excess Emissions - Notification: In case of excess emissions resulting from malfunctions, the permitee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]

6. VOC or OS Emissions: No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]

7. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and62-210.200(203), F.A.C.]

8. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20 percent opacity. [Rule 62-296.320(4)(b)1, F.A.C.]

9. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

TESTING REQUIREMENTS

10. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]

11. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2), F.A.C.]

12. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]

13. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C.

    a. Required Sampling Time. Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes. The minimum observation period for a visible emissions compliance test shall be thirty (30) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur.

    b. Minimum Sample Volume. Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet.

    c. Calibration of Sampling Equipment. Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C.

    [Rule 62-297.310(4), F.A.C.]

14. Determination of Process Variables

    a. Required Equipment. The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.

    b. Accuracy of Equipment. Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

    [Rule 62-297.310(5), F.A.C.]

15. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C.

16. Test Notification: The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator. [Rule 62-297.310(7)(a)9, F.A.C.]

17. Special Compliance Tests: When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

18. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide

sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

1) The type, location, and designation of the emissions unit tested.
2) The facility at which the emissions unit is located.
3) The owner or operator of the emissions unit.
4) The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
5) The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
6) The type of air pollution control devices installed on the emissions unit, their general condition, their normal operating parameters (pressure drops, total operating current and GPM scrubber water), and their operating parameters during each test run.
7) A sketch of the duct within 8 stack diameters upstream and 2 stack diameters downstream of the sampling ports, including the distance to any upstream and downstream bends or other flow disturbances.
8) The date, starting time and duration of each sampling run.
9) The test procedures used, including any alternative procedures authorized pursuant to Rule 62-297.620, F.A.C. Where optional procedures are authorized in this chapter, indicate which option was used.
10) The number of points sampled and configuration and location of the sampling plane.
11) For each sampling point for each run, the dry gas meter reading, velocity head, pressure drop across the stack, temperatures, average meter temperatures and sample time per point.
12) The type, manufacturer and configuration of the sampling equipment used.
13) Data related to the required calibration of the test equipment.
14) Data on the identification, processing and weights of all filters used.
15) Data on the types and amounts of any chemical solutions used.
16) Data on the amount of pollutant collected from each sampling probe, the filters, and the impingers, are reported separately for the compliance test.
17) The names of individuals who furnished the process variable data, conducted the test, analyzed the samples and prepared the report.
18) All measured and calculated data required to be determined by each applicable test procedure for each run.
19) The detailed calculations for one run that relate the collected data to the calculated emission rate.
20) The applicable emission standard, and the resulting maximum allowable emission rate for the emissions unit, plus the test result in the same form and unit of measure.
21) A certification that, to the knowledge of the owner or his authorized agent, all data submitted are true and correct. When a compliance test is conducted for the Department or its agent, the person who conducts the test shall provide the certification with respect to the test procedures used. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

RECORDS AND REPORTS

19. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rules 62-4.160(14) and 62-213.440(1)(b)2, F.A.C.]

20. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.]

SEMIANNUAL NSPS EXCESS EMISSIONS REPORT

FIGURE 1. SUMMARY REPORT - GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE

[Note: This form is referenced in 40 CFR 60.7, Subpart A-General Provisions]

Pollutant *(Circle One)*: SO_2 NO_X TRS H_2S CO Opacity

Reporting period dates: From _____ to _____

Company: _____

Emission Limitation: _____

Address: _____

Monitor Manufacturer: _____

Model No.: _____

Date of Latest CMS Certification or Audit: _____

Process Unit(s) Description: _____

Total source operating time in reporting period [1]: _____

Emission data summary [1]	CMS performance summary [1]
1. Duration of excess emissions in reporting period due to:	1. CMS downtime in reporting period due to:
a. Startup/shutdown ..... ____	a. Monitor equipment malfunctions ..... ____
b. Control equipment problems ..... ____	b. Non-Monitor equipment malfunctions ..... ____
c. Process problems ..... ____	c. Quality assurance calibration ..... ____
d. Other known causes ..... ____	d. Other known causes ..... ____
e. Unknown causes ..... ____	e. Unknown causes ..... ____
2. Total duration of excess emissions ..... ____	2. Total CMS Downtime ..... ____
3. Total duration of excess emissions x (100) / [Total source operating time] ..... ____ %[2]	3. [Total CMS Downtime] x (100) / [Total source operating time] ..... ____ %[2]

[1] For opacity, record all times in minutes. For gases, record all times in hours.

[2] For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in 40 CFR 60.7(c) shall be submitted.

Note: On a separate page, describe any changes since the last in CMS, process or controls.

I certify that the information contained in this report is true, accurate, and complete.

Name: _____

Signature: _____ *Date*: _____

Title: _____

The gas turbines are subject to the applicable requirements of this 40 CFR 63, Subpart YYYY. The provisions of this Subpart may be provided in full upon request. The gas turbines are regulated as Emissions Units 001, 002, 003, 004, 005, and 006.

Applicability of NESHAP Subpart YYYY

The West County Energy Center will be a major source of hazardous air pollutant emissions. As such, the proposed new combustion turbines are subject to NESHAP Subpart YYYY, which became final on March 5, 2004. According to the final rule, each unit is considered a "new lean premix gas-fired stationary combustion turbine". Therefore, each new combustion turbine is subject to an emissions standard for formaldehyde of no more than 91 parts per billion by volume, dry (ppbvd @ 15% O_2). Compliance must be demonstrated by initial and annual performance tests. In addition, acceptable operating parameters must be specified that show continuous compliance with the standard. These operating parameters must be continuously monitored that ensure continuous compliance.

Staying of the Rule

On August 18, 2004, EPA stayed the effectiveness of 40 CFR 63, Subpart YYYY for lean premix gas turbines such as those proposed for the West County Project. Following is the change in 40 CFR 63 that stays effectiveness:

§ 63.6095(d) Stay of standards for gas-fired subcategories.

If you start up a new or reconstructed stationary combustion turbine that is a lean premix gas-fired stationary combustion turbine or diffusion flame gas-fired stationary combustion turbine as defined by this subpart, you must comply with the Initial Notification requirements set forth in Sec. 63.6145 but need not comply with any other requirement of this subpart until EPA takes final action to require compliance and publishes a document in the Federal Register.

Requirements

The applicable requirements in Subpart YYYY are:

§ 63.6145 What notifications must I submit and when?

(a) You must submit all of the notifications in §§ 63.7(b) and (c), 63.8(e), 63.8(f)(4), and 63.9(b) and (h) that apply to you by the dates specified.

(b) As specified in § 63.9(b)(2), if you start up your new or reconstructed stationary combustion turbine before March 5, 2004, you must submit an Initial Notification not later than 120 calendar days after March 5, 2004.

(c) As specified in § 63.9(b), if you start up your new or reconstructed stationary combustion turbine on or after March 5, 2004, you must submit an Initial Notification not later than 120 calendar days after you become subject to this subpart.

(d) If you are required to submit an Initial Notification but are otherwise not affected by the emission limitation requirements of this subpart, in accordance with § 63.6090(b), your notification must include the information in § 63.9(b)(2)(i) through (v) and a statement that your new or reconstructed stationary combustion turbine has no additional emission limitation requirements and must explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary combustion turbine).

(e) If you are required to conduct an initial performance test, you must submit a notification of intent to conduct an initial performance test at least 60 calendar days before the initial performance test is scheduled to begin as required in § 63.7(b)(1).

(f) If you are required to comply with the emission limitation for formaldehyde, you must submit a Notification of Compliance Status according to § 63.9(h)(2)(ii). For each performance test required to demonstrate compliance with the emission limitation for formaldehyde, you must submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th calendar day following the completion of the performance test.

[Rules 62-4.070(3) and 62-204.800, F.A.C.; Subparts A and YYYY in 40 CFR 63]

The auxiliary boilers and process heaters are subject to the applicable requirements of this 40 CFR 63, Subpart DDDDD. The provisions of this Subpart may be provided in full upon request.

Source: Federal Register Dated 9/12/04

What This Subpart Covers
63.7480 What is the purpose of this subpart?
63.7485 Am I subject to this subpart?
63.7490 What is the affected source of this subpart?
63.7491 Are any boilers or process heaters not subject to this subpart?
63.7495 When do I have to comply with this subpart?

Emission Limits and Work Practice Standards
63.7499 What are the subcategories of boilers and process heaters?
63.7500 What emission limits, work practice standards, and operating limits must I meet?

General Compliance Requirements
63.7505 What are my general requirements for complying with this subpart?
63.7506 Do any boilers or process heaters have limited requirements?
63.7507 What are the health-based compliance alternatives for the hydrogen chloride (HCl) and total selected metals (TSM) standards?

Testing, Fuel Analyses, and Initial Compliance Requirements
63.7510 What are my initial compliance requirements and by what date must I conduct them?
63.7515 When must I conduct subsequent performance tests or fuel analyses?
63.7520 What performance tests and procedures must I use?
63.7521 What fuel analyses and procedures must I use?
63.7522 Can I use emission averaging to comply with this subpart?
63.7525 What are my monitoring, installation, operation, and maintenance requirements?
63.7530 How do I demonstrate initial compliance with the emission limits and work practice standards?

Continuous Compliance Requirements
63.7535 How do I monitor and collect data to demonstrate continuous compliance?
63.7540 How do I demonstrate continuous compliance with the emission limits and work practice standards?
63.7541 How do I demonstrate continuous compliance under the emission averaging provision?

Notifications, Reports, and Records
63.7545 What notifications must I submit and when?
63.7550 What reports must I submit and when?
63.7555 What records must I keep?
63.7560 In what form and how long must I keep my records?

Other Requirements and Information
63.7565 What parts of the General Provisions apply to me?
63.7570 Who implements and enforces this subpart?
63.7575 What definitions apply to this subpart?

Tables to Subpart DDDDD of Part 63

Table 1 to Subpart DDDDD of Part 63--Emission Limits and Work Practice Standards

Table 2 to Subpart DDDDD of Part 63--Operating Limits for Boilers and Process Heaters With Particulate Matter Emission Limits

Table 3 to Subpart DDDDD of Part 63--Operating Limits for Boilers and Process Heaters With Mercury Emission Limits and Boilers and Process Heaters That Choose to Comply With the Alternative Total Selected Metals Emission Limits

Table 4 to Subpart DDDDD of Part 63--Operating Limits for Boilers and Process Heaters With Hydrogen Chloride Emission Limits

Table 5 to Subpart DDDDD of Part 63--Performance Testing Requirements

Table 6 to Subpart DDDDD of Part 63--Fuel Analysis Requirements

Table 7 to Subpart DDDDD of Part 63--Establishing Operating Limits

Table 8 to Subpart DDDDD of Part 63--Demonstrating Continuous Compliance

Table 9 to Subpart DDDDD of Part 63--Reporting Requirements

Table 10 to Subpart DDDDD of Part 63--Applicability of General Provisions to Subpart DDDDD (See Appendix B)

Appendices to Subpart DDDDD

Appendix A to Subpart DDDDD--Methodology and Criteria for Demonstrating Eligibility for the Health-Based Compliance Alternatives Specified for the Large Solid Fuel Subcategory

Appendix B to Subpart DDDDD--Applicability of General Provisions to Subpart DDDDD

The emergency generators and fired pump are subject to the applicable requirements of this 40 CFR 63, Subpart ZZZZ. The provisions of this Subpart may be provided in full upon request.

Source: Federal Register dated 6/15/04; Effective Date 8/16/04

What This Subpart Covers
63.6580 The purpose of subpart ZZZZ
63.6585 Subject to this subpart
63.6590 Parts of my plant does this subpart cover
63.6595 Compliance with this subpart

Emission Limitations
63.6600 Emission limitations and operating limitations

General Compliance Requirements
63.6605 General requirements for complying with this subpart

Testing and Initial Compliance Requirements
63.6610 Dates to conduct the initial performance tests or other initial compliance demonstrations
63.6615 Subsequent performance tests
63.6620 Performance tests and other procedures
63.6625 Monitoring, installation, operation, and maintenance requirements
63.6630 Initial compliance with the emission limitations and operating limitations

Continuous Compliance Requirements
63.6635 Monitoring and collecting data to demonstrate continuous compliance
63.6640 Continuous compliance with the emission limitations and operating limitations

Notification, Reports, and Records
63.6645 Notifications
63.6650 Reports
63.6655 Records
63.6660 Records form and retention

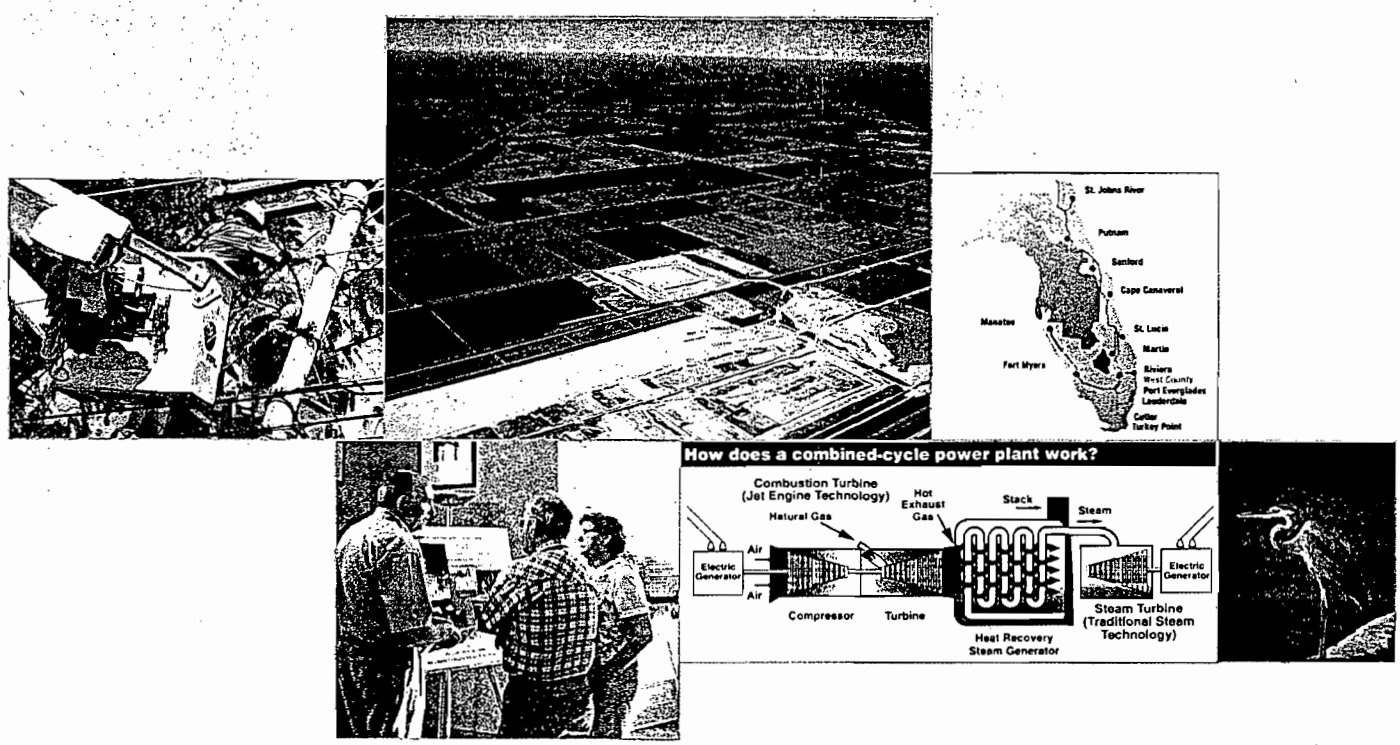
Other Requirements and Information
63.6665 General Provisions
63.6670 implementation and enforcement
63.6675 Definitions

Tables to Subpart ZZZZ of Part 63
Table 1a to Subpart ZZZZ of Part 63--Emission Limitations for Existing, New, and Reconstructed Spark Ignition, 4SRB Stationary RICE
Table 1b to Subpart ZZZZ of Part 63--Operating Limitations for Existing, New, and Reconstructed Spark Ignition, 4SRB Stationary RICE
Table 2a to Subpart ZZZZ of Part 63--Emission Limitations for New and Reconstructed Lean Burn and Compression Ignition Stationary RICE

Table 2b to Subpart ZZZZ of Part 63--Operating Limitations for New and Reconstructed Lean Burn and Compression Ignition Stationary RICE
Table 3 to Subpart ZZZZ of Part 63--Subsequent Performance Tests
Table 4 to Subpart ZZZZ of Part 63--Requirements for Performance Tests
Table 5 to Subpart ZZZZ of Part 63--Initial Compliance with Emission Limitations and Operating Limitations
Table 6 to Subpart ZZZZ of Part 63--Continuous Compliance with Emission Limitations and Operating Limitations
Table 7 to Subpart ZZZZ of Part 63--Requirements for Reports
Table 8 to Subpart ZZZZ of Part 63--Applicability of General Provisions to Subpart ZZZZ- See Appendix A to Subpart ZZZZ

Appendix A to Subpart ZZZZ of Part 63- Applicability of General Provisions to Subpart ZZZZ

West County energy center



Air Construction/PSD Permit Application Sufficiency Information

FPL


Copy of the audio tape from 4/19/06
Public Meeting on FPL - West County
Communicator Series™
P/I Cassette Low Noise/High Output
CI20

Golder Associates Inc.

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Gainesville, FL 32653-1500
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September 17, 2007

Project No. 0738-7652

Air Permitting – South
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Attn: Ms. Debbie Nelson, Meteorologist

RE: AIR MODELING PROTOCOL FOR ASSESSING POLLUTANT AND AIR QUALITY RELATED VALUE IMPACTS FOR THE ADDITION OF UNIT 3 AT FPL'S WEST COUNTY ENERGY CENTER

On behalf of Florida Power & Light Company (FPL), Golder Associates Inc. (Golder) is providing this air modeling protocol to the Florida Department of Environmental Protection (FDEP) to present proposed near-field and Prevention of Significant Deterioration (PSD) Class I modeling methodologies to be used for the proposed addition of Unit 3 at the West County Energy Center (WCEC). The protocol presents the most current, accepted air modeling techniques and methodologies for predicting both near-field and far-field pollutant concentrations, based on recommendations consistent with FDEP and U.S. Environmental Protection Agency (EPA) requirements, as well as those of the Federal Land Managers (FLMs) for affected PSD Class I areas.

The key features of the air modeling analyses are included in the following sections.

PROJECT DESCRIPTION

Project Emissions

The proposed Project involves the addition of an additional 3-on-1 combined-cycle unit with a total net generating capacity of 1,250 megawatts to FPL's existing WCEC site in central Palm Beach County. The combustion turbine (CT) and heat recovery steam generator (HRSG) train for WCEC Unit 3 will use the same equipment design as WCEC Units 1 and 2. The primary fuel will be natural gas, with ultra-low sulfur distillate fuel oil (0.0015 percent sulfur) for use as the backup fuel for up to 500 hours per year per CT. Duct firing with natural gas up to 260 million British thermal units per hour (MMBtu/hr) (lower heating value) in each HRSG for an equivalent of 2,880 hours per year is also proposed. The proposed Project will result in emissions increases above the EPA significant emission rates (SER) for the following pollutants, thereby requiring PSD review for each pollutant:

- Sulfur dioxide (SO_2) – 193 tons per year (TPY);
- Nitrogen oxides (NO_x) – 332 TPY;
- Total particulate matter (PM) – 225 TPY;
- PM with aerodynamic diameters less than or equal to 10 microns (PM_{10}) – 130 TPY;
- Carbon monoxide (CO) – 413 TPY;
- Sulfuric acid mist (SAM) – 32.6 TPY; and
- Volatile organic compounds (VOC) – 66 TPY.

The maximum short-term emissions in pounds per hour (lb/hr) for different emission units of the Project are presented below:

Emission Unit	SO_2	PM_{10}	NO_x	CO	H_2SO_4
CT/HRSG (oil)	2.8	37.0	57.9	37.2	0.9
(gas)	12.0	4.8	15.7	27.2	1.9
Cooling Tower	–	1.17	–	–	–
Emergency Generator	0.03	0.6	61.7	2.3	–
Heater	0.05	0.02	0.95	0.8	–

Note: CT/HRSG emission rates are per CT/HRSG unit. A total of three units are planned.

Project Location

The existing WCEC site is mostly rural and flat and is located approximately 107 kilometers (km) north of the PSD Class I area of the Everglades National Park (NP). Because the second nearest PSD Class I area, the Chassahowitzka National Wilderness Area (NWA), is located 306 km from the site, the PSD Class I analysis will address impacts only at the Everglades NP. The locations of the nearest PSD Class I areas and Project site are shown in Figure 1.

The approximate location for this site is 562.2 km East and 2953.0 km North in the Universal Transverse Mercator (UTM) coordinate system in North American Datum (NAD) 27.

Palm Beach County is classified as an attainment area (includes unclassifiable) for all applicable pollutants: SO_2, nitrogen dioxide (NO_2), CO, PM_{10}, and ozone. Palm Beach County and surrounding counties are designated as PSD Class II areas for SO_2, PM, and NO_2. Palm Beach County is also designated a maintenance area for ozone.

Building Downwash Considerations

The proposed HRSG stacks will be approximately 140 feet tall and will be evaluated for determining compliance with Good Engineering Practice (GEP) regulations and the potential influence of nearby buildings and structures that could cause building downwash. For each stack that is below the GEP height, direction-specific building heights and maximum projected widths will be determined using the Building Profile Input Program (BPIP, Version 04274), which incorporates the Plume Rise Model Enhancement (PRIME) downwash algorithm developed by the Electric Power Research Institute (EPRI). The direction-specific building information output by BPIP will be input to the air dispersion model for processing.

DISPERSION MODELING – NEAR-FIELD ANALYSIS

A source impact analysis is required by FDEP Rule 62-212.400(5) Florida Administrative Code (F.A.C.). The near-field air modeling analysis will be performed using the American Meteorological Society (AMS)/EPA Regulatory Model (AERMOD, Version 07026) to predict concentrations in the vicinity of the proposed Project site location. The near-field analysis is based on predicting impacts within 50 km of the Project. The EPA regulatory default options will be used to predict all maximum impacts. These options include:

- Final plume rise at all receptor locations
- Stack-tip downwash
- Buoyancy-induced dispersion
- Default wind speed profile coefficients
- Default vertical potential temperature gradients
- Calm wind processing

Meteorological Data

The meteorological data to be used for the near-field analysis will consist of a 5-year hourly record from Palm Beach International Airport (PBI) and coincident upper air sounding data collected at Florida International University in Miami for years 2001 to 2005. The PBI meteorological data was processed with the AERMOD meteorological pre-processor program AERMET (Version 06341). The PBI meteorological data set has been used for the PSD application for the WCEC Units 1 and 2. The appropriateness of using the PBI weather data for the WCEC site with AERMOD will be confirmed with the FDEP prior to performing the modeling.

Receptors

Receptors will be placed along the WCEC site's restricted property boundary (i.e., fenceline) and beyond the fenceline according to the following receptor spacing.

- Along the property boundary or fenceline – 50 meters (m);
- Beyond the fenceline to 2 km – 100 m;
- From 2 km to 5 km – 250 m;
- From 5 km to 7 km – 500 m; and
- From 7 km to 10 km – 1,000 m.

All maximum predicted concentrations will be obtained from a receptor grid comprising 50-m resolution on the fence line and 100-m resolution or less beyond the fence line. AERMOD's terrain preprocessing program, AERMAP, Version 06341, will be used to process the receptor grid data in all near-field areas, using 7.5-minute U. S. Geological Survey (USGS) Digital Elevation Model (DEM) files.

Additional receptors will be modeled (i.e., extend the receptor grid beyond 10 km) if the maximum Project impacts on a pollutant-specific basis are not predicted to be less than the significant impact levels within 10 km of the site.

Significant Impact Analysis

A significant impact analysis will be performed for the proposed Project's emissions only. The Project's impacts will be evaluated for a range of CT operating loads and ambient temperatures. The operating load and ambient temperature that produces the highest air impacts will be determined. If the highest predicted impact for a particular pollutant exceeds a significant impact level, a more detailed modeling analysis (i.e., cumulative source modeling) will be performed for that pollutant. The critical load and temperature will then be used in the detailed analysis with other background facilities.

AAQS and PSD Class II Impact Analysis

Pollutant-specific analyses will be performed if the Project's impacts are predicted to be greater than the significant impact levels to demonstrate compliance with Florida Ambient Air Quality Standards (AAQS) and with PSD Class II Increments. The AAQS analysis will include the Project along with background facility emission data and a non-modeled background concentration for comparison to the AAQS. In the PSD Class II increment analysis, PSD increment consuming and expanding sources will be modeled for comparison to the allowable PSD Class II increments.

AAQS and PSD Class II Emission Inventories

If a detailed impact assessment is required for one or more pollutants for the near-field modeling analysis, background AAQS and PSD increment-affecting sources for those pollutants will be requested from FDEP. In addition, emissions and stack parameters for facilities will be developed from information contained in previous air modeling reports or from other data sources (e.g.,

Title V Permit Applications). The baseline emissions for the purpose of determining PSD increment consumption will be determined pursuant to the definition of "baseline concentration" in FDEP Rule 62-210.200(37) F.A.C.

To reduce the number of background sources evaluated, the "Screening Threshold" method developed by the North Carolina Department of Natural Resources and Community Development will be used. Based on this technique, facilities whose annual emissions (i.e., tons per year) are less than the threshold quantity, Q, are eliminated from the modeling analysis. Q is equal to $20 \times (D-SIA)$, where D is the distance in km from the facility to the Project site and SIA is the distance of the Project's pollutant-specific significant impact area (SIA). The facilities that are not eliminated in the screening analysis will be included in the AAQS and PSD Class II analyses.

Non-Modeled Background Concentrations

Total air quality impacts for comparison to AAQS will be based on the maximum impacts predicted from the modeled sources added to non-modeled background concentrations. The non-modeled background concentrations account for impacts from sources not explicitly modeled, and are generally estimated from ambient monitoring data representative of the Project site. Monitoring data near the Project site will be reviewed over the last several years and the highest measured concentration will be selected to represent background concentrations.

DISPERSION MODELING – FAR-FIELD ANALYSIS

The Everglades NP PSD Class I Area is located about 102 km south of the WCEC site. The analysis required by FDEP Rule 62-212.400(9) will be conducted.

The California Puff air modeling system (CALPUFF, Version 5.8 – i.e., the latest EPA-approved version) will be used on this Project to predict maximum air quality pollutant and Air Quality Related Value (AQRV) impacts on the Everglades NP. The CALPUFF model is a non-steady state Lagrangian puff long-range transport model that includes algorithms for chemical transformations (important for visibility controlling pollutants), and wet/dry deposition. Recent technical enhancements, including changes to the over-water boundary layer formulation and coastal effects modules (sponsored by the Minerals Management Service), are included in this version. The CALPUFF model will be used in a manner that is consistent with methodologies recommended in the following documents and as discussed in recent telephone conversations with the National Park Service (NPS):

- FLMs' AQRV Workgroup (FLAG) guidance document, finalized in December 2000 and referred to as the FLAG Phase I Report, and
- Interagency Workgroup on Air Quality Models (IWAQM) Phase 2 Summary Report and Recommendations for Modeling Long-Range Transport Impacts (EPA, 1998), referred to as the IWAQM Phase 2 report.

Parameter settings to be used in the CALPUFF modeling will be based on the latest regulatory guidance. Where the modeling guidance recommends regulatory model defaults, those defaults will be used. For ozone background concentrations, observed hourly ozone data for 2001 through 2003 from CASTNET and AIRS stations will be used. These data are available from the TRC website. A fixed monthly ammonia background concentration of 0.5 parts per billion (ppb) will be used. Parameters will be set to generate an hourly relative humidity file and calculate wet and dry fluxes and concentrations.

A sample CALPUFF control file has been included in Appendix A that provides the parameter settings proposed for use for this Project.

Project Emissions and PM Speciation

The CALPUFF model will include the proposed Project's emission, stack, and operating data based on the operating condition that has the highest emissions. Using the latest regulatory guidance, PM emissions for the proposed Project will include six particle size categories. The PM emissions will then be speciated into filterable and condensable species using the POSTUTIL utility program. Note that emissions for condensable inorganic PM are input directly to CALPUFF as sulfate (SO_4).

The effect that each species has on visibility impairment is related to a parameter called the extinction coefficient. The higher the extinction coefficient, the greater is that species' effect on visibility. Filterable PM is speciated into coarse (PMC), fine (PMF), and elemental carbon (EC). The default extinction coefficients for these species are 0.6, 1.0, and 10.0, respectively. PMC is PM with aerodynamic diameters greater than 2.5 microns. Both EC and PMF have aerodynamic diameters equal to or less than 2.5 microns. Condensable PM is composed of sulfate (SO_4) and secondary organic aerosols (SOA). The extinction coefficients for these species are 3 × f(RH) and 4 × f(RH), respectively, where f(RH) is the relative humidity factor.

PM speciation (PM_{10} versus $PM_{2.5}$) will be developed based on the best available vendor information for the proposed Project's emission sources.

A sample POSTUTIL control file for predicting visibility impairment is included in Appendix B.

Building Downwash Considerations

Building data will be included in the modeling using the same building dimensions developed for AERMOD.

Meteorological and Geophysical Data

The air modeling analyses will be conducted using the latest meteorological and geophysical databases that have been developed for use with the most recent versions of CALPUFF. These datasets were developed using CALMET Version 5.8 and were provided by the FDEP. The Florida domain has 4-km spacing and covers the period from 2001 to 2003.

Receptors

The NPS has developed 901 receptors to represent the boundary and internal areas for the Everglades NP. A figure showing the receptor locations at Everglades NP is presented in Figure 2. The minimum distance from the WCEC site to the Everglades NP is approximately 107 km.

Significant Impact Analysis

The CALPUFF model will be used to perform a PSD Class I significant impact analysis at the Everglades NP. The maximum predicted SO_2, NO_2, and PM_{10} concentrations due to the proposed Project will be compared to EPA's proposed PSD Class I significant impact levels. If the Project's impacts exceed the proposed EPA PSD Class I significant impact levels, then a more detailed PSD Class I increment analysis will be performed on a pollutant-specific basis.

The proposed PSD Class I significant impact levels are:

- SO_2: 3-hour – 1.0 micrograms per cubic meter ($\mu g/m^3$); 24-hour – 0.2 $\mu g/m^3$; and annual average – 0.1 $\mu g/m^3$
- NO_2: annual average – 0.1 $\mu g/m^3$
- PM_{10}: 24-hour – 0.3 $\mu g/m^3$; and annual average – 0.2 $\mu g/m^3$

PSD Class I Emission Inventories

If a detailed PSD Class I impact assessment is required for one or more pollutants, PSD-increment affecting sources will be modeled for comparison to the allowable PSD Class I increments. The baseline emissions for the purpose of determining PSD Increment consumption will be determined pursuant to the definition of "baseline concentration" in FDEP Rule 62-210.200(37) F.A.C. An inventory of background PSD Class I increment-affecting sources will be developed with the assistance and concurrence of the FDEP.

Visibility Impact

Based on the FLAG document, current regional haze guidelines characterize a change in visibility by the change in the light-extinction coefficient (b_{ext}). The b_{ext} is the attenuation of light per unit distance due to scattering and absorption by gases and particles in the atmosphere. A change in the extinction coefficient produces a perceived visual change. An index that simply quantifies the percent change in visibility due to the operation of a source is calculated as:

$$\Delta\% = (b_{exts} / b_{extb}) \times 100$$

where: b_{exts} is the extinction coefficient calculated for the source, and

b_{extb} is the background extinction coefficient.

The purpose of the visibility analysis is to calculate the extinction at each receptor for each day (24-hour period) of the year due to the proposed Project emissions. The criteria to determine if the Project's impacts are potentially significant are based on a change in extinction of 5 percent or greater for any day of the year.

The CALPUFF postprocessor model CALPOST will be used to calculate the combined visibility effects from the different pollutants that are emitted from the proposed Project. Based on communications with the NPS, daily background extinction coefficients are to be calculated on an hour-by-hour basis using hourly relative humidity data from CALMET and hygroscopic and non-hygroscopic extinction components specified in the FLAG document (Visibility Method 2). For the Everglades NP, the hygroscopic and non-hygroscopic components are 0.9 and 8.5 inverse megameter (Mm^{-1}) respectively. CALPOST then calculates the percent extinction change for each day of the year. A Rayleigh scattering term of 11.3 Mm^{-1} will be used for the analysis. This value is from Table A of the document entitled, *Revised IMPROVE Algorithm for Estimating Light Extinction from Particle Speciation Data* (IMPROVE, 2005). The revised relative humidity scattering enhancement factor [f(RH)] growth curve published by EPA in 2003 will be used in the analysis.

A sample CALPOST control file for visibility impairment using Method 2 is included in Appendix C.

Additional Visibility Assessments

In order to provide additional useful information for this analysis, Golder will determine the weather conditions for all days for which the visibility impairment is predicted to exceed 5 percent using Visibility Method 2. This analysis will review those days and identify hours with potential

meteorological conditions, such as rain and fog, that lead to existing reduced visibility conditions. These conditions often produce unrealistic impacts for a source when the visibility is already reduced due to natural causes.

Golder will also perform the visibility impairment analysis using Visibility Method 6 which applies monthly average relative humidity factors based on values from Table A-3 of *Guidance for Estimating Natural Visibility Conditions Under the Regional Haze Rule* (EPA, September 2003). This approach is currently recommended for sources that are affected by the Best Available Retrofit Technology (BART) regulations and uses the predicted 98th percentile concentration to compare to visibility criteria. This comparison will provide an additional assessment of potential visibility impairment for the Project based on the evolving approach in assessing regional haze impacts at PSD Class I areas.

Sulfur and Nitrogen Deposition

As part of the AQRV analyses, total sulfur (S) and nitrogen (N) deposition rates will be predicted for the proposed Project at the Everglades NP. The deposition analysis criterion is based on the annual averaging period. The total deposition is estimated in kilograms per hectare per year (kg/ha/yr) of nitrogen or sulfur. The CALPUFF model is used to predict wet and dry deposition fluxes of various oxides of these elements.

For N deposition, the species include:

- Particulate ammonium nitrate (species NO_3), wet and dry deposition;
- Nitric acid (species HNO_3), wet and dry deposition;
- NO_x dry deposition; and
- Ammonium sulfate (species SO_4), wet and dry deposition.

For S deposition, the species include:

- SO_2, wet and dry deposition; and
- SO_4, wet and dry deposition.

The CALPUFF model produces results in units of micrograms per square meter per second ($\mu g/m^2/s$). The modeled deposition rates will be converted to N or S deposition in kg/ha/yr by using a multiplier equal to the ratio of the molecular weights of the substances (IWAQM Phase II report Section 3.3).

Deposition analysis thresholds (DAT) for total N and S deposition of 0.01 kg/ha/yr were provided by the U.S. Fish and Wildlife Service (January 2002). A DAT is the additional amount of N or S deposition within a Class I area, below which estimated impacts from a proposed new or modified source are considered insignificant. The maximum N and S depositions predicted for the proposed Project will be compared to these DAT or significant impact levels.

The wet and dry sulfate and nitrate fluxes will be converted into total N and S fluxes using the POSTUTIL utility program.

A sample control input file for N deposition is included in Appendix D.

ADDITIONAL IMPACT ANALYSES

The additional impact analyses required pursuant to FDEP Rule 62-212.400(8) will be conducted, including an analysis of the impacts of emissions from the Project on soils, vegetation, and visibility. To address such impacts, soil and vegetation types in the vicinity of the plant and in the area will be identified. A literature review will be conducted to identify the most recent data concerning threshold effect levels for the soil and vegetation types in those areas.

The analysis of impacts due to associated growth in the area must also be addressed. Growth effects will be addressed quantitatively and qualitatively, including impacts due to associated growth.

AMBIENT MONITORING ANALYSIS

The analysis required by FDEP Rule 62-212.400(6) will be conducted. The Project's maximum pollutant impacts will also be compared to *de minimis* air monitoring concentration to address preconstruction ambient air monitoring requirements under the PSD regulations. Should the Project's maximum pollutant impacts exceed a *de minimis* monitoring concentration, the applicant will meet the requirements using representative ambient air monitoring data.

We look forward to receiving your comments on this protocol and working with the FDEP on this important Project. If there are any questions, please contact Steve Marks or Ken Kosky at (352) 336-5600. Thank you.

Sincerely,

GOLDER ASSOCIATES INC.

Steven R. Marks, C.C.M.
Associate

Kennard F. Kosky, P.E.
Principal

SRM/tz

Enclosures

Y:\Projects\2007\07387652 FPL WCEC Unit #3\Reports\Modeling Protocol\WestCounty3 air protocol 090707.doc

LEGEND

- WCEC
- National Parks and Wildlife Refuges

REFERENCE

1. WCEC Golder Associates Inc. 2. Aerial Photography - Aerials Express, 1/1/2006 via ESRI ArcGIS Online Imagery
3. National Parks ESRI Data and Maps Media Kit
Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 17

50 0 50 Kilometers

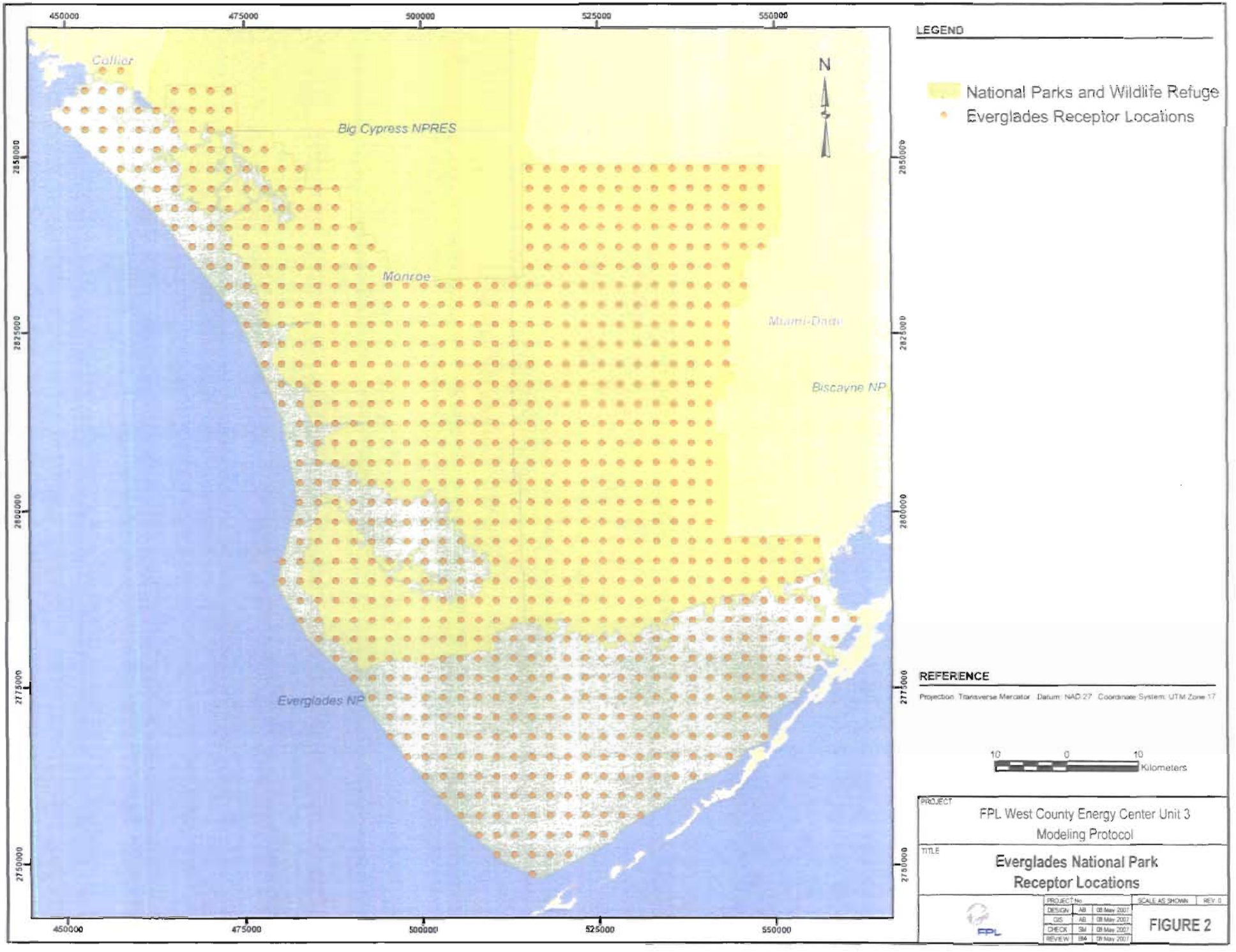
PROJECT
WEST COUNTY ENERGY CENTER UNIT 3
MODELING PROTOCOL

TITLE
AREA MAP

Golder Associates
Gainesville, Florida

PROJECT No. 073-89586-0203			SCALE AS SHOWN	REV. 0
DESIGN	SM	08/23/2007		
GIS	RL	08/23/2007		
CHECK	SM	08/23/2007		
REVIEW	SM	08/23/2007		

FIGURE 1


450000
475000
500000
525000
550000
2850000
2825000
2800000
2775000
2750000
Collier
Big Cypress NPRES
Monroe
Miami-Dade
Biscayne NP
Everglades NP
N
LEGEND
National Parks and Wildlife Refuge
Everglades Receptor Locations
REFERENCE
Projection: Transverse Mercator Datum: NAD 27 Coordinate System: UTM Zone 17
10 0 10
Kilometers
PROJECT
FPL West County Energy Center Unit 3
Modeling Protocol
TITLE
Everglades National Park
Receptor Locations
PROJECT No
SCALE AS SHOWN
REV 0
DESIGN AB 08 May 2007
GIS AB 08 May 2007
CHECK SM 08 May 2007
REVIEW BM 08 May 2007
FPL
FIGURE 2

APPENDIX A

SAMPLE CALPUFF MODEL CONTROL FILE FOR VISIBILITY IMPACTS

```
FPL WCEC UNIT3 - 1250 MW 'G' CLASS - CALPUFF V 5.8              8/22/07
CT/HRSG AND COOLING TOWER
4-km FLORIDA DOMAIN, 2002, VISIB IMPACTS AT EVERGLADES NP
---------------- Run title (3 lines) ------------------------------------------

                    CALPUFF MODEL CONTROL FILE
                    --------------------------

------------------------------------------------------------------------------

INPUT GROUP: 0 -- Input and Output File Names

--------------
Default Name  Type          File Name
------------  ----          ---------
CALMET.DAT    input    * METDAT =             *
    or
ISCMET.DAT    input    * ISCDAT =             *
    or
PLMMET.DAT    input    * PLMDAT =             *
    or
PROFILE.DAT   input    * PRFDAT =             *
SURFACE.DAT   input    * SFCDAT =             *
RESTARTB.DAT  input    * RSTARTB=             *
------------------------------------------------------------------------------
CALPUFF.LST   output   ! PUFLST = EXAMPLE.LST !
CONC.DAT      output   ! CONDAT = EXAMPLE.CON !
DFLX.DAT      output   ! DFDAT  = EXAMPLE.DRY !
WFLX.DAT      output   ! WFDAT  = EXAMPLE.WET !

VISB.DAT      output   ! VISDAT = VISB.DAT    !
RESTARTE.DAT  output   * RSTARTE=             *
------------------------------------------------------------------------------
Emission Files
--------------
PTEMARB.DAT   input    * PTDAT  =             *
VOLEMARB.DAT  input    * VOLDAT =             *
BAEMARB.DAT   input    * ARDAT  =             *
LNEMARB.DAT   input    * LNDAT  =             *
------------------------------------------------------------------------------
Other Files
-----------
OZONE.DAT     input    ! OZDAT  =C:\BARTHRO3\OZONE.DAT !
VD.DAT        input    * VDDAT  =             *
CHEM.DAT      input    * CHEMDAT=             *
H2O2.DAT      input    * H2O2DAT=             *
HILL.DAT      input    * HILDAT=              *
HILLRCT.DAT   input    * RCTDAT=              *
COASTLN.DAT   input    * CSTDAT=              *
FLUXBDY.DAT   input    * BDYDAT=              *
BCON.DAT      input    * BCNDAT=              *
DEBUG.DAT     output   * DEBUG =              *
MASSFLX.DAT   output   * FLXDAT=              *
MASSBAL.DAT   output   * BALDAT=              *
FOG.DAT       output   * FOGDAT=              *
------------------------------------------------------------------------------
All file names will be converted to lower case if LCFILES = T
Otherwise, if LCFILES = F, file names will be converted to UPPER CASE
         T = lower case      ! LCFILES = T !
         F = UPPER CASE
NOTE: (1) file/path names can be up to 70 characters in length


Provision for multiple input files
----------------------------------

     Number of CALMET.DAT files for run (NMETDAT)
                                  Default: 1       ! NMETDAT =   36  !

     Number of PTEMARB.DAT files for run (NPTDAT)
                                  Default: 0       ! NPTDAT =  0  !

     Number of BAEMARB.DAT files for run (NARDAT)
                                  Default: 0       ! NARDAT =  0  !
```

```
     Number of VOLEMARB.DAT files for run (NVOLDAT)
                                    Default: 0       ! NVOLDAT =  0  !

!END!

-------------
Subgroup (0a)
-------------

  The following CALMET.DAT filenames are processed in sequence if NMETDAT>1

Default Name  Type          File Name
------------  ----          ---------
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-01A.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-01B.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-01C.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-02A.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-02B.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-02C.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-03A.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-03B.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-03C.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-04A.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-04B.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-04C.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-05A.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-05B.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-05C.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-06A.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-06B.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-06C.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-07A.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-07B.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-07C.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-08A.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-08B.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-08C.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-09A.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-09B.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-09C.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-10A.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-10B.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-10C.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-11A.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-11B.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-11C.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-12A.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-12B.DAT ! !END!
CALMET.DAT    input    ! METDAT =C:\EPACALMET2002\EPAMET2002-DOM2-12C.DAT ! !END!
-------------------------------------------------------------------------------

INPUT GROUP: 1 -- General run control parameters
--------------

    Option to run all periods found
    in the met. file      (METRUN)   Default: 0       ! METRUN =   0  !

         METRUN = 0 - Run period explicitly defined below
         METRUN = 1 - Run all periods in met. file

     Starting date:   Year (IBYR) -- No default       ! IBYR =  2002 !
     (used only if   Month (IBMO) -- No default       ! IBMO =  1  !
      METRUN = 0)      Day (IBDY) -- No default       ! IBDY =  1  !
                      Hour (IBHR) -- No default       ! IBHR =  1  !

     Note: IBHR is the time at the END of the first hour of the simulation
           (IBHR=1, the first hour of a day, runs from 00:00 to 01:00)

     Base time zone        (XBTZ) -- No default       ! XBTZ = 5.0  !
     The zone is the number of hours that must be
     ADDED to the time to obtain UTC (or GMT)
     Examples: PST = 8., MST = 7.
               CST = 6., EST = 5.

     Length of run (hours) (IRLG) -- No default       ! IRLG = 8760 !
```

```
      Number of chemical species (NSPEC)
                                  Default: 5       ! NSPEC = 12   !

      Number of chemical species
      to be emitted  (NSE)        Default: 3       ! NSE = 10    !

      Flag to stop run after
      SETUP phase (ITEST)         Default: 2       ! ITEST =  2   !
      (Used to allow checking
      of the model inputs, files, etc.)
            ITEST = 1 - STOPS program after SETUP phase
            ITEST = 2 - Continues with execution of program
                        after SETUP

      Restart Configuration:

         Control flag (MRESTART)  Default: 0       ! MRESTART = 0   !

            0 = Do not read or write a restart file
            1 = Read a restart file at the beginning of
                the run
            2 = Write a restart file during run
            3 = Read a restart file at beginning of run
                and write a restart file during run

         Number of periods in Restart
         output cycle (NRESPD)    Default: 0       ! NRESPD =  0   !

            0 = File written only at last period
           >0 = File updated every NRESPD periods

      Meteorological Data Format (METFM)
                                  Default: 1       ! METFM =  1   !

            METFM = 1 - CALMET binary file (CALMET.MET)
            METFM = 2 - ISC ASCII file (ISCMET.MET)
            METFM = 3 - AUSPLUME ASCII file (PLMMET.MET)
            METFM = 4 - CTDM plus tower file (PROFILE.DAT) and
                        surface parameters file (SURFACE.DAT)
            METFM = 5 - AERMET tower file (PROFILE.DAT) and
                        surface parameters file (SURFACE.DAT)

      Meteorological Profile Data Format (MPRFFM)
             (used only for METFM = 1, 2, 3)
                                  Default: 1       ! MPRFFM =  1   !

            MPRFFM = 1 - CTDM plus tower file (PROFILE.DAT)
            MPRFFM = 2 - AERMET tower file (PROFILE.DAT)

      PG sigma-y is adjusted by the factor (AVET/PGTIME)**0.2
      Averaging Time (minutes) (AVET)
                                  Default: 60.0    ! AVET = 60. !
      PG Averaging Time (minutes) (PGTIME)
                                  Default: 60.0    ! PGTIME = 60. !


!END!


------------------------------------------------------------------------------

INPUT GROUP: 2 -- Technical options
--------------


      Vertical distribution used in the
      near field (MGAUSS)                 Default: 1     ! MGAUSS =  1   !
         0 = uniform
         1 = Gaussian

      Terrain adjustment method
      (MCTADJ)                            Default: 3     ! MCTADJ =  3   !
         0 = no adjustment
         1 = ISC-type of terrain adjustment
```

```
   2 = simple, CALPUFF-type of terrain
       adjustment
   3 = partial plume path adjustment

Subgrid-scale complex terrain
flag (MCTSG)                          Default: 0     ! MCTSG =  0   !
   0 = not modeled
   1 = modeled

Near-field puffs modeled as
elongated slugs? (MSLUG)              Default: 0     ! MSLUG =  0   !
   0 = no
   1 = yes (slug model used)

Transitional plume rise modeled ?
(MTRANS)                              Default: 1     ! MTRANS =  1   !
   0 = no  (i.e., final rise only)
   1 = yes (i.e., transitional rise computed)

Stack tip downwash? (MTIP)            Default: 1     ! MTIP =  1  !
   0 = no  (i.e., no stack tip downwash)
   1 = yes (i.e., use stack tip downwash)

Method used to simulate building
downwash? (MBDW)                      Default: 1     ! MBDW =   1  !
   1 = ISC method
   2 = PRIME method

Vertical wind shear modeled above
stack top? (MSHEAR)                   Default: 0     ! MSHEAR =  0  !
   0 = no  (i.e., vertical wind shear not modeled)
   1 = yes (i.e., vertical wind shear modeled)

Puff splitting allowed? (MSPLIT)      Default: 0     ! MSPLIT =  0  !
   0 = no (i.e., puffs not split)
   1 = yes (i.e., puffs are split)

Chemical mechanism flag (MCHEM)       Default: 1     ! MCHEM =  1   !
   0 = chemical transformation not
       modeled
   1 = transformation rates computed
       internally (MESOPUFF II scheme)
   2 = user-specified transformation
       rates used
   3 = transformation rates computed
       internally (RIVAD/ARM3 scheme)
   4 = secondary organic aerosol formation
       computed (MESOPUFF II scheme for OH)

Aqueous phase transformation flag (MAQCHEM)
(Used only if MCHEM = 1, or 3)        Default: 0     ! MAQCHEM =  0   !
   0 = aqueous phase transformation
       not modeled
   1 = transformation rates adjusted
       for aqueous phase reactions

Wet removal modeled ? (MWET)          Default: 1     ! MWET =  1   !
   0 = no
   1 = yes

Dry deposition modeled ? (MDRY)       Default: 1     ! MDRY =  1   !
   0 = no
   1 = yes
   (dry deposition method specified
    for each species in Input Group 3)

Gravitational settling (plume tilt)
modeled ? (MTILT)                     Default: 0     ! MTILT =  0   !
   0 = no
   1 = yes
   (puff center falls at the gravitational
    settling velocity for 1 particle species)

Restrictions:
```

```
    - MDRY  = 1
    - NSPEC = 1  (must be particle species as well)
    - sg    = 0  GEOMETRIC STANDARD DEVIATION in Group 8 is
                 set to zero for a single particle diameter

Method used to compute dispersion
coefficients (MDISP)                  Default: 3     ! MDISP =  3   !

   1 = dispersion coefficients computed from measured values
       of turbulence, sigma v, sigma w
   2 = dispersion coefficients from internally calculated
       sigma v, sigma w using micrometeorological variables
       (u*, w*, L, etc.)
   3 = PG dispersion coefficients for RURAL areas (computed using
       the ISCST multi-segment approximation) and MP coefficients in
       urban areas
   4 = same as 3 except PG coefficients computed using
       the MESOPUFF II eqns.
   5 = CTDM sigmas used for stable and neutral conditions.
       For unstable conditions, sigmas are computed as in
       MDISP = 3, described above.  MDISP = 5 assumes that
       measured values are read

Sigma-v/sigma-theta, sigma-w measurements used? (MTURBVW)
(Used only if MDISP = 1 or 5)         Default: 3     ! MTURBVW =  3  !
   1 = use sigma-v or sigma-theta measurements
       from PROFILE.DAT to compute sigma-y
       (valid for METFM = 1, 2, 3, 4, 5)
   2 = use sigma-w measurements
       from PROFILE.DAT to compute sigma-z
       (valid for METFM = 1, 2, 3, 4, 5)
   3 = use both sigma-(v/theta) and sigma-w
       from PROFILE.DAT to compute sigma-y and sigma-z
       (valid for METFM = 1, 2, 3, 4, 5)
   4 = use sigma-theta measurements
       from PLMMET.DAT to compute sigma-y
       (valid only if METFM = 3)

Back-up method used to compute dispersion
when measured turbulence data are
missing (MDISP2)                      Default: 3     ! MDISP2 =  3  !
(used only if MDISP = 1 or 5)
   2 = dispersion coefficients from internally calculated
       sigma v, sigma w using micrometeorological variables
       (u*, w*, L, etc.)
   3 = PG dispersion coefficients for RURAL areas (computed using
       the ISCST multi-segment approximation) and MP coefficients in
       urban areas
   4 = same as 3 except PG coefficients computed using
       the MESOPUFF II eqns.

[DIAGNOSTIC FEATURE]
Method used for Lagrangian timescale for Sigma-y
(used only if MDISP=1,2 or MDISP2=1,2)
(MTAULY)                              Default: 0     ! MTAULY =  0  !
   0 = Draxler default 617.284 (s)
   1 = Computed as Lag. Length / (.75 q) -- after SCIPUFF
  10 < Direct user input (s)             -- e.g., 306.9


[DIAGNOSTIC FEATURE]
Method used for Advective-Decay timescale for Turbulence
(used only if MDISP=2 or MDISP2=2)
(MTAUADV)                             Default: 0     ! MTAUADV =  0  !
   0 = No turbulence advection
   1 = Computed (OPTION NOT IMPLEMENTED)
  10 < Direct user input (s)    -- e.g., 300


Method used to compute turbulence sigma-v &
sigma-w using micrometeorological variables
(Used only if MDISP = 2 or MDISP2 = 2)
(MCTURB)                              Default: 1     ! MCTURB =  1  !
   1 = Standard CALPUFF subroutines
   2 = AERMOD subroutines
```

```
PG sigma-y,z adj. for roughness?      Default: 0     ! MROUGH =  0  !
(MROUGH)
   0 = no
   1 = yes

Partial plume penetration of          Default: 1     ! MPARTL =  1  !
elevated inversion?
(MPARTL)
   0 = no
   1 = yes

Strength of temperature inversion     Default: 0     ! MTINV =  0  !
provided in PROFILE.DAT extended records?
(MTINV)
   0 = no (computed from measured/default gradients)
   1 = yes

PDF used for dispersion under convective conditions?
                                      Default: 0     ! MPDF =  0  !
(MPDF)
   0 = no
   1 = yes

Sub-Grid TIBL module used for shore line?
                                      Default: 0     ! MSGTIBL = 0  !
(MSGTIBL)
   0 = no
   1 = yes

Boundary conditions (concentration) modeled?
                                      Default: 0     ! MBCON = 0  !
(MBCON)
   0 = no
   1 = yes, using formatted BCON.DAT file
   2 = yes, using unformatted CONC.DAT file

Note:  MBCON > 0 requires that the last species modeled
       be 'BCON'.  Mass is placed in species BCON when
       generating boundary condition puffs so that clean
       air entering the modeling domain can be simulated
       in the same way as polluted air.  Specify zero
       emission of species BCON for all regular sources.

Individual source contributions saved?
                                      Default: 0     ! MSOURCE = 0  !
(MSOURCE)
   0 = no
   1 = yes


Analyses of fogging and icing impacts due to emissions from
arrays of mechanically-forced cooling towers can be performed
using CALPUFF in conjunction with a cooling tower emissions
processor (CTEMISS) and its associated postprocessors.  Hourly
emissions of water vapor and temperature from each cooling tower
cell are computed for the current cell configuration and ambient
conditions by CTEMISS. CALPUFF models the dispersion of these
emissions and provides cloud information in a specialized format
for further analysis. Output to FOG.DAT is provided in either
'plume mode' or 'receptor mode' format.

Configure for FOG Model output?
                                      Default: 0     ! MFOG =  0   !
(MFOG)
   0 = no
   1 = yes  - report results in PLUME Mode format
   2 = yes  - report results in RECEPTOR Mode format


Test options specified to see if
they conform to regulatory
values? (MREG)                        Default: 1     ! MREG =  1   !

   0 = NO checks are made
```

```
        1 = Technical options must conform to USEPA
            Long Range Transport (LRT) guidance
                       METFM     1 or 2
                       AVET      60. (min)
                       PGTIME    60. (min)
                       MGAUSS    1
                       MCTADJ    3
                       MTRANS    1
                       MTIP      1
                       MCHEM     1 or 3 (if modeling SOx, NOx)
                       MWET      1
                       MDRY      1
                       MDISP     2 or 3
                       MPDF      0 if MDISP=3
                                 1 if MDISP=2
                       MROUGH    0
                       MPARTL    1
                       SYTDEP    550. (m)
                       MHFTSZ    0
                       SVMIN     0.5 (m/s)

!END!

-------------------------------------------------------------------------------

INPUT GROUP: 3a, 3b -- Species list
-------------------

------------
Subgroup (3a)
------------

  The following species are modeled:

! CSPEC =          SO2 !          !END!
! CSPEC =          SO4 !          !END!
! CSPEC =          NOX !          !END!
! CSPEC =         HNO3 !          !END!
! CSPEC =          NO3 !          !END!
! CSPEC =       PM0063 !          !END!
! CSPEC =       PM0100 !          !END!
! CSPEC =       PM0125 !          !END!
! CSPEC =       PM0250 !          !END!
! CSPEC =       PM0600 !          !END!
! CSPEC =       PM1000 !          !END!
! CSPEC =           CO !          !END!

                                                        Dry              OUTPUT GROUP
    SPECIES          MODELED           EMITTED        DEPOSITED             NUMBER
     NAME         (0=NO, 1=YES)     (0=NO, 1=YES)    (0=NO,              (0=NONE,
   (Limit: 12                                         1=COMPUTED-GAS      1=1st CGRUP,
    Characters                                        2=COMPUTED-PARTICLE 2=2nd CGRUP,
    in length)                                        3=USER-SPECIFIED)   3= etc.)

!         SO2  =          1,                1,            1,               0   !
!         SO4  =          1,                1,            2,               0   !
!         NOX  =          1,                1,            1,               0   !
!        HNO3  =          1,                0,            1,               0   !
!         NO3  =          1,                0,            2,               0   !
!      PM0063  =          1,                1,            2,               1   !
!      PM0100  =          1,                1,            2,               1   !
!      PM0125  =          1,                1,            2,               1   !
!      PM0250  =          1,                1,            2,               1   !
!      PM0600  =          1,                1,            2,               1   !
!      PM1000  =          1,                1,            2,               1   !
!          CO  =          1,                1,            0,               0   !

!END!

-------------
Subgroup (3b)
-------------
  The following names are used for Species-Groups in which results
```

```
  for certain species are combined (added) prior to output.  The
  CGRUP name will be used as the species name in output files.
  Use this feature to model specific particle-size distributions
  by treating each size-range as a separate species.
  Order must be consistent with 3(a) above.


INPUT GROUP: 4 -- Map Projection and Grid control parameters
--------------

     Projection for all (X,Y):
     -------------------------

     Map projection
     (PMAP)                    Default: UTM    ! PMAP = LCC  !

         UTM :  Universal Transverse Mercator
         TTM :  Tangential Transverse Mercator
         LCC :  Lambert Conformal Conic
          PS :  Polar Stereographic
          EM :  Equatorial Mercator
        LAZA :  Lambert Azimuthal Equal Area

     False Easting and Northing (km) at the projection origin
     (Used only if PMAP= TTM, LCC, or LAZA)
     (FEAST)                   Default=0.0     ! FEAST  = 0.000  !
     (FNORTH)                  Default=0.0     ! FNORTH = 0.000  !

     UTM zone (1 to 60)
     (Used only if PMAP=UTM)
     (IUTMZN)                  No Default      ! IUTMZN =  0 !

     Hemisphere for UTM projection?
     (Used only if PMAP=UTM)
     (UTMHEM)                  Default: N      ! UTMHEM = N  !
         N   :  Northern hemisphere projection
         S   :  Southern hemisphere projection

     Latitude and Longitude (decimal degrees) of projection origin
     (Used only if PMAP= TTM, LCC, PS, EM, or LAZA)
     (RLAT0)                   No Default      ! RLAT0 =  40N !
     (RLON0)                   No Default      ! RLON0 =  97W !

         TTM :  RLON0 identifies central (true N/S) meridian of projection
                RLAT0 selected for convenience
         LCC :  RLON0 identifies central (true N/S) meridian of projection
                RLAT0 selected for convenience
         PS  :  RLON0 identifies central (grid N/S) meridian of projection
                RLAT0 selected for convenience
         EM  :  RLON0 identifies central meridian of projection
                RLAT0 is REPLACED by 0.0N (Equator)
         LAZA:  RLON0 identifies longitude of tangent-point of mapping plane
                RLAT0 identifies latitude of tangent-point of mapping plane

     Matching parallel(s) of latitude (decimal degrees) for projection
     (Used only if PMAP= LCC or PS)
     (XLAT1)                   No Default      ! XLAT1 = 33N  !
     (XLAT2)                   No Default      ! XLAT2 = 45N  !

         LCC :  Projection cone slices through Earth's surface at XLAT1 and XLAT2
         PS  :  Projection plane slices through Earth at XLAT1
                (XLAT2 is not used)

     ----------
     Note:  Latitudes and longitudes should be positive, and include a
            letter N,S,E, or W indicating north or south latitude, and
            east or west longitude.  For example,
            35.9  N Latitude  =  35.9N
            118.7 E Longitude = 118.7E


     Datum-region
     ------------

     The Datum-Region for the coordinates is identified by a character
```

```
     string.  Many mapping products currently available use the model of the
     Earth known as the World Geodetic System 1984 (WGS-84).  Other local
     models may be in use, and their selection in CALMET will make its output
     consistent with local mapping products.  The list of Datum-Regions with
     official transformation parameters is provided by the National Imagery and
     Mapping Agency (NIMA).

     NIMA Datum - Regions(Examples)
     ------------------------------------------------------------------------
     WGS-84     WGS-84 Reference Ellipsoid and Geoid, Global coverage (WGS84)
     NAS-C      NORTH AMERICAN 1927 Clarke 1866 Spheroid, MEAN FOR CONUS (NAD27)
     NAR-C      NORTH AMERICAN 1983 GRS 80 Spheroid, MEAN FOR CONUS (NAD83)
     NWS-84     NWS 6370KM Radius, Sphere
     ESR-S      ESRI REFERENCE 6371KM Radius, Sphere

     Datum-region for output coordinates
     (DATUM)                  Default: WGS-84    ! DATUM = NWS-84 !

METEOROLOGICAL Grid:

     Rectangular grid defined for projection PMAP,
     with X the Easting and Y the Northing coordinate

           No. X grid cells (NX)      No default     ! NX = 263   !
           No. Y grid cells (NY)      No default     ! NY = 206    !
       No. vertical layers (NZ)       No default     ! NZ =  10   !

         Grid spacing (DGRIDKM)       No default     ! DGRIDKM = 4. !
                                      Units: km

              Cell face heights
                  (ZFACE(nz+1))       No defaults
                                      Units: m
   * ZFACE = .0, 20.0, 40.0, 80.0, 160.0, 300.0, 600.0, 1000.0, 1500.0, 2200.0,
             3000.0 *
   ! ZFACE = 0.,20.,40.,80.,160.,320.,640.,1200.,2000.,3000.,4000. !

            Reference Coordinates
           of SOUTHWEST corner of
                grid cell(1, 1):

            X coordinate (XORIGKM)     No default     ! XORIGKM =  721.995 !
            Y coordinate (YORIGKM)     No default     ! YORIGKM = -1598.000 !
                                     Units: km

COMPUTATIONAL Grid:

     The computational grid is identical to or a subset of the MET. grid.
     The lower left (LL) corner of the computational grid is at grid point
     (IBCOMP, JBCOMP) of the MET. grid.  The upper right (UR) corner of the
     computational grid is at grid point (IECOMP, JECOMP) of the MET. grid.
     The grid spacing of the computational grid is the same as the MET. grid.

        X index of LL corner (IBCOMP)      No default     ! IBCOMP =  1  !
                  (1 <= IBCOMP <= NX)

        Y index of LL corner (JBCOMP)      No default     ! JBCOMP =  1  !
                  (1 <= JBCOMP <= NY)


        X index of UR corner (IECOMP)      No default     ! IECOMP = 263 !
                  (1 <= IECOMP <= NX)

        Y index of UR corner (JECOMP)      No default     ! JECOMP = 206 !
                  (1 <= JECOMP <= NY)


SAMPLING Grid (GRIDDED RECEPTORS):

     The lower left (LL) corner of the sampling grid is at grid point
     (IBSAMP, JBSAMP) of the MET. grid.  The upper right (UR) corner of the
     sampling grid is at grid point (IESAMP, JESAMP) of the MET. grid.
```

```
      The sampling grid must be identical to or a subset of the computational
      grid.  It may be a nested grid inside the computational grid.
      The grid spacing of the sampling grid is DGRIDKM/MESHDN.

         Logical flag indicating if gridded
         receptors are used (LSAMP)          Default: T      ! LSAMP = F !
         (T=yes, F=no)

         X index of LL corner (IBSAMP)       No default      ! IBSAMP =  1   !
          (IBCOMP <= IBSAMP <= IECOMP)

         Y index of LL corner (JBSAMP)       No default      ! JBSAMP =  1   !
          (JBCOMP <= JBSAMP <= JECOMP)


         X index of UR corner (IESAMP)       No default      ! IESAMP =  263 !
          (IBCOMP <= IESAMP <= IECOMP)

         Y index of UR corner (JESAMP)       No default      ! JESAMP =  206  !
          (JBCOMP <= JESAMP <= JECOMP)

        Nesting factor of the sampling
         grid (MESHDN)                       Default: 1      ! MESHDN =  1  !
         (MESHDN is an integer >= 1)

!END!

--------------------------------------------------------------------------------


INPUT GROUP: 5 -- Output Options
--------------

     FILE                        DEFAULT VALUE              VALUE THIS RUN
     ----                        -------------              --------------

   Concentrations (ICON)               1                    !  ICON =  1    !
   Dry Fluxes (IDRY)                   1                    !  IDRY =  1    !
   Wet Fluxes (IWET)                   1                    !  IWET =  1    !
   2D Temperature (IT2D)               0                    !  IT2D =  0    !
   2D Density (IRHO)                   0                    !  IRHO =  0    !
   Relative Humidity (IVIS)            1                    !  IVIS =  1    !
    (relative humidity file is
     required for visibility
     analysis)
   Use data compression option in output file?
   (LCOMPRS)                          Default: T          ! LCOMPRS = T !

   *
    0 = Do not create file, 1 = create file


    QA PLOT FILE OUTPUT OPTION:

       Create a standard series of output files (e.g.
       locations of sources, receptors, grids ...)
       suitable for plotting?
       (IQAPLOT)                      Default: 1          !  IQAPLOT =  1    !
         0 = no
         1 = yes

    DIAGNOSTIC MASS FLUX OUTPUT OPTIONS:

       Mass flux across specified boundaries
       for selected species reported?
       (IMFLX)                        Default: 0          ! IMFLX =  0  !
         0 = no
         1 = yes (FLUXBDY.DAT and MASSFLX.DAT filenames
                  are specified in Input Group 0)

       Mass balance for each species
       reported?
       (IMBAL)                        Default: 0          ! IMBAL =  0  !
```

```
        0 = no
        1 = yes (MASSBAL.DAT filename is
             specified in Input Group 0)


    LINE PRINTER OUTPUT OPTIONS:

       Print concentrations (ICPRT)     Default: 0         ! ICPRT =  0   !
       Print dry fluxes (IDPRT)         Default: 0         ! IDPRT =  0   !
       Print wet fluxes (IWPRT)         Default: 0         ! IWPRT =  0   !
       (0 = Do not print, 1 = Print)

       Concentration print interval
       (ICFRQ) in timesteps             Default: 1         ! ICFRQ =  24  !
       Dry flux print interval
       (IDFRQ) in timesteps             Default: 1         ! IDFRQ =  1   !
       Wet flux print interval
       (IWFRQ) in timesteps             Default: 1         ! IWFRQ =  1   !

       Units for Line Printer Output
       (IPRTU)                          Default: 1         ! IPRTU =  3   !
                      for              for
                  Concentration    Deposition
           1 =       g/m**3          g/m**2/s
           2 =      mg/m**3         mg/m**2/s
           3 =      ug/m**3         ug/m**2/s
           4 =      ng/m**3         ng/m**2/s
           5 =     Odour Units

       Messages tracking progress of run
       written to the screen ?
       (IMESG)                          Default: 2         ! IMESG =  2   !
         0 = no
         1 = yes (advection step, puff ID)
         2 = yes (YYYYJJJHH, # old puffs, # emitted puffs)


     SPECIES (or GROUP for combined species) LIST FOR OUTPUT OPTIONS

                  ---- CONCENTRATIONS ----   ------ DRY FLUXES ------   ------ WET FLUXES ------   -- MASS
FLUX --
   SPECIES
   /GROUP         PRINTED?  SAVED ON DISK?   PRINTED?  SAVED ON DISK?   PRINTED?  SAVED ON DISK?   SAVED ON
DISK?
   -------        ------------------------   ------------------------   ------------------------   -----------
----
!          SO2 =     0,           1,           0,           1,           0,           1,           0   !
!          SO4 =     0,           1,           0,           1,           0,           1,           0   !
!          NOX =     0,           1,           0,           1,           0,           1,           0   !
!         HNO3 =     0,           1,           0,           1,           0,           1,           0   !
!          NO3 =     0,           1,           0,           1,           0,           1,           0   !
!         PM10 =     0,           1,           0,           1,           0,           1,           0   !
!           CO =     0,           1,           0,           1,           0,           1,           0   !

     OPTIONS FOR PRINTING "DEBUG" QUANTITIES (much output)

       Logical for debug output
       (LDEBUG)                                 Default: F     ! LDEBUG = F !

       First puff to track
       (IPFDEB)                                 Default: 1     ! IPFDEB =  1  !

       Number of puffs to track
       (NPFDEB)                                 Default: 1     ! NPFDEB =  1  !

       Met. period to start output
       (NN1)                                    Default: 1     ! NN1 =  1   !

       Met. period to end output
       (NN2)                                    Default: 10    ! NN2 =  10  !

!END!

-------------------------------------------------------------------------------
```

```
INPUT GROUP: 6a, 6b, & 6c -- Subgrid scale complex terrain inputs
-------------------------

---------------
Subgroup (6a)
---------------
       Number of terrain features (NHILL)      Default: 0     ! NHILL =  0   !

       Number of special complex terrain
       receptors  (NCTREC)                     Default: 0     ! NCTREC =  0   !

       Terrain and CTSG Receptor data for
       CTSG hills input in CTDM format ?
       (MHILL)                                 No Default     ! MHILL =  2   !
       1 = Hill and Receptor data created
           by CTDM processors & read from
           HILL.DAT and HILLRCT.DAT files
       2 = Hill data created by OPTHILL &
           input below in Subgroup (6b);
           Receptor data in Subgroup (6c)

       Factor to convert horizontal dimensions Default: 1.0   ! XHILL2M = 1. !
       to meters (MHILL=1)

       Factor to convert vertical dimensions   Default: 1.0   ! ZHILL2M = 1. !
       to meters (MHILL=1)

       X-origin of CTDM system relative to     No Default     ! XCTDMKM = 0.0E00 !
       CALPUFF coordinate system, in Kilometers (MHILL=1)

       Y-origin of CTDM system relative to     No Default     ! YCTDMKM = 0.0E00 !
       CALPUFF coordinate system, in Kilometers (MHILL=1)

! END !

---------------
Subgroup (6b)
---------------

                     1 **
     HILL information

HILL          XC        YC       THETAH  ZGRID  RELIEF    EXPO 1    EXPO 2   SCALE 1    SCALE 2    AMAX1
AMAX2
 NO.         (km)      (km)      (deg.)   (m)      (m)       (m)       (m)       (m)        (m)       (m)
(m)
----         ----      ----      ------  -----  ------    ------    ------   -------    -------    -----
-----

---------------
Subgroup (6c)
---------------

    COMPLEX TERRAIN RECEPTOR INFORMATION

                     XRCT        YRCT        ZRCT          XHH
                     (km)        (km)         (m)
                    ------      -----       ------        ----


-------------------
1
     Description of Complex Terrain Variables:
          XC, YC  = Coordinates of center of hill
          THETAH  = Orientation of major axis of hill (clockwise from
                    North)
          ZGRID   = Height of the  0  of the grid above mean sea
                    level
          RELIEF  = Height of the crest of the hill above the grid elevation
          EXPO 1  = Hill-shape exponent for the major axis
          EXPO 2  = Hill-shape exponent for the major axis
          SCALE 1 = Horizontal length scale along the major axis
```

```
          SCALE 2 = Horizontal length scale along the minor axis
          AMAX    = Maximum allowed axis length for the major axis
          BMAX    = Maximum allowed axis length for the major axis

          XRCT, YRCT = Coordinates of the complex terrain receptors
          ZRCT    = Height of the ground (MSL) at the complex terrain
                    Receptor
          XHH     = Hill number associated with each complex terrain receptor
                    (NOTE: MUST BE ENTERED AS A REAL NUMBER)

   **
     NOTE: DATA for each hill and CTSG receptor are treated as a separate
           input subgroup and therefore must end with an input group terminator.

-------------------------------------------------------------------------------


INPUT GROUP: 7 -- Chemical parameters for dry deposition of gases
--------------

      SPECIES     DIFFUSIVITY      ALPHA STAR      REACTIVITY    MESOPHYLL RESISTANCE     HENRY'S LAW
COEFFICIENT
       NAME        (cm**2/s)                                          (s/cm)               (dimensionless)
      -------     -----------      ----------      ----------    --------------------     -------------------
----

!          SO2 =     0.1509,          1000,             8,                0,                0.04 !
!          NOX =     0.1656,             1,             8,                5,                3.5 !
!         HNO3 =     0.1628,             1,            18,                0,          0.00000008 !

!END!


-------------------------------------------------------------------------------


INPUT GROUP: 8 -- Size parameters for dry deposition of particles
--------------

     For SINGLE SPECIES, the mean and standard deviation are used to
     compute a deposition velocity for NINT (see group 9) size-ranges,
     and these are then averaged to obtain a mean deposition velocity.

     For GROUPED SPECIES, the size distribution should be explicitly
     specified (by the 'species' in the group), and the standard deviation
     for each should be entered as 0.  The model will then use the
     deposition velocity for the stated mean diameter.

      SPECIES      GEOMETRIC MASS MEAN        GEOMETRIC STANDARD
       NAME             DIAMETER                  DEVIATION
                        (microns)                 (microns)
      -------      ------------------        ------------------
!          SO4 =         0.48,                     2.    !
!          NO3 =         0.48,                     2.    !
!       PM0063 =         0.63,                     0.    !
!       PM0100 =         1.00,                     0.    !
!       PM0125 =         1.25,                     0.    !
!       PM0250 =         2.50,                     0.    !
!       PM0600 =         6.00,                     0.    !
!       PM1000 =        10.00,                     0.    !

!END!


-------------------------------------------------------------------------------


INPUT GROUP: 9 -- Miscellaneous dry deposition parameters
--------------

     Reference cuticle resistance (s/cm)
     (RCUTR)                          Default: 30    !  RCUTR = 30.0 !
     Reference ground resistance  (s/cm)
     (RGR)                            Default: 10    !    RGR = 10.0 !
     Reference pollutant reactivity
```

```
      (REACTR)                          Default: 8     ! REACTR = 8.0 !

      Number of particle-size intervals used to
      evaluate effective particle deposition velocity
      (NINT)                            Default: 9     !   NINT =  9  !

      Vegetation state in unirrigated areas
      (IVEG)                            Default: 1     !   IVEG =  1  !
         IVEG=1 for active and unstressed vegetation
         IVEG=2 for active and stressed vegetation
         IVEG=3 for inactive vegetation

!END!

--------------------------------------------------------------------------------


INPUT GROUP: 10 -- Wet Deposition Parameters
---------------

                      Scavenging Coefficient -- Units: (sec)**(-1)

        Pollutant      Liquid Precip.       Frozen Precip.
        ---------      --------------       --------------
!           SO2 =         3.0E-05,              0.0E00 !
!           SO4 =         1.0E-04,             3.0E-05 !
!          HNO3 =         6.0E-05,              0.0E00 !
!           NO3 =         1.0E-04,             3.0E-05 !
!        PM0063 =         1.0E-04,             3.0E-05 !
!        PM0100 =         1.0E-04,             3.0E-05 !
!        PM0125 =         1.0E-04,             3.0E-05 !
!        PM0250 =         1.0E-04,             3.0E-05 !
!        PM0600 =         1.0E-04,             3.0E-05 !
!        PM1000 =         1.0E-04,             3.0E-05 !

!END!

--------------------------------------------------------------------------------


INPUT GROUP: 11 -- Chemistry Parameters
---------------

      Ozone data input option (MOZ)     Default: 1            ! MOZ =  1   !
      (Used only if MCHEM = 1, 3, or 4)
         0 = use a monthly background ozone value
         1 = read hourly ozone concentrations from
             the OZONE.DAT data file

      Monthly ozone concentrations
      (Used only if MCHEM = 1, 3, or 4 and
       MOZ = 0 or MOZ = 1 and all hourly O3 data missing)
      (BCKO3) in ppb                    Default: 12*80.
      !  BCKO3 = 12*50. !

      Monthly ammonia concentrations
      (Used only if MCHEM = 1, or 3)
      (BCKNH3) in ppb                   Default: 12*10.
      !  BCKNH3 = 12*0.5 !

      Nighttime SO2 loss rate (RNITE1)
      in percent/hour                   Default: 0.2          ! RNITE1 = .2 !

      Nighttime NOx loss rate (RNITE2)
      in percent/hour                   Default: 2.0          ! RNITE2 = 2.0 !

      Nighttime HNO3 formation rate (RNITE3)
      in percent/hour                   Default: 2.0          ! RNITE3 = 2.0 !

      H2O2 data input option (MH2O2)    Default: 1            ! MH2O2 =  1   !
      (Used only if MAQCHEM = 1)
         0 = use a monthly background H2O2 value
```

```
      1 = read hourly H2O2 concentrations from
          the H2O2.DAT data file

    Monthly H2O2 concentrations
    (Used only if MQACHEM = 1 and
     MH2O2 = 0 or MH2O2 = 1 and all hourly H2O2 data missing)
    (BCKH2O2) in ppb                  Default: 12*1.
    !  BCKH2O2 = 12*1 !


--- Data for SECONDARY ORGANIC AEROSOL (SOA) Option
    (used only if MCHEM = 4)

    The SOA module uses monthly values of:
         Fine particulate concentration in ug/m^3 (BCKPMF)
         Organic fraction of fine particulate     (OFRAC)
         VOC / NOX ratio (after reaction)         (VCNX)
    to characterize the air mass when computing
    the formation of SOA from VOC emissions.
    Typical values for several distinct air mass types are:

       Month    1    2    3    4    5    6    7    8    9   10   11   12
                Jan  Feb  Mar  Apr  May  Jun  Jul  Aug  Sep  Oct  Nov  Dec

    Clean Continental
       BCKPMF   1.   1.   1.   1.   1.   1.   1.   1.   1.   1.   1.   1.
       OFRAC  .15  .15  .20  .20  .20  .20  .20  .20  .20  .20  .20  .15
       VCNX    50.  50.  50.  50.  50.  50.  50.  50.  50.  50.  50.  50.

    Clean Marine (surface)
       BCKPMF  .5   .5   .5   .5   .5   .5   .5   .5   .5   .5   .5   .5
       OFRAC  .25  .25  .30  .30  .30  .30  .30  .30  .30  .30  .30  .25
       VCNX    50.  50.  50.  50.  50.  50.  50.  50.  50.  50.  50.  50.

    Urban - low biogenic (controls present)
       BCKPMF  30.  30.  30.  30.  30.  30.  30.  30.  30.  30.  30.  30.
       OFRAC  .20  .20  .25  .25  .25  .25  .25  .25  .20  .20  .20  .20
       VCNX     4.   4.   4.   4.   4.   4.   4.   4.   4.   4.   4.   4.

    Urban - high biogenic (controls present)
       BCKPMF  60.  60.  60.  60.  60.  60.  60.  60.  60.  60.  60.  60.
       OFRAC  .25  .25  .30  .30  .30  .55  .55  .55  .35  .35  .35  .25
       VCNX    15.  15.  15.  15.  15.  15.  15.  15.  15.  15.  15.  15.

    Regional Plume
       BCKPMF  20.  20.  20.  20.  20.  20.  20.  20.  20.  20.  20.  20.
       OFRAC  .20  .20  .25  .35  .25  .40  .40  .40  .30  .30  .30  .20
       VCNX    15.  15.  15.  15.  15.  15.  15.  15.  15.  15.  15.  15.

    Urban - no controls present
       BCKPMF 100. 100. 100. 100. 100. 100. 100. 100. 100. 100. 100. 100.
       OFRAC  .30  .30  .35  .35  .35  .55  .55  .55  .35  .35  .35  .30
       VCNX     2.   2.   2.   2.   2.   2.   2.   2.   2.   2.   2.   2.

    Default: Clean Continental
    !  BCKPMF = 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00 !
    !  OFRAC  = 0.15, 0.15, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.15 !
    !  VCNX   = 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00 !


!END!


------------------------------------------------------------------------------


INPUT GROUP: 12 -- Misc. Dispersion and Computational Parameters
---------------

    Horizontal size of puff (m) beyond which
    time-dependent dispersion equations (Heffter)
    are used to determine sigma-y and
    sigma-z (SYTDEP)                        Default: 550.   ! SYTDEP = 5.5E02 !

    Switch for using Heffter equation for sigma z
```

```
as above (0 = Not use Heffter; 1 = use Heffter
(MHFTSZ)                                  Default: 0      ! MHFTSZ =  0   !

Stability class used to determine plume
growth rates for puffs above the boundary
layer (JSUP)                              Default: 5      ! JSUP =  5   !

Vertical dispersion constant for stable
conditions (k1 in Eqn. 2.7-3)  (CONK1)    Default: 0.01   ! CONK1 = .01 !

Vertical dispersion constant for neutral/
unstable conditions (k2 in Eqn. 2.7-4)
(CONK2)                                   Default: 0.1    ! CONK2 = .1 !

Factor for determining Transition-point from
Schulman-Scire to Huber-Snyder Building Downwash
scheme (SS used for Hs < Hb + TBD * HL)
(TBD)                                     Default: 0.5    ! TBD = .5 !
   TBD < 0.   ==> always use Huber-Snyder
   TBD = 1.5 ==> always use Schulman-Scire
   TBD = 0.5 ==> ISC Transition-point

Range of land use categories for which
urban dispersion is assumed
(IURB1, IURB2)                            Default: 10     ! IURB1 =  10  !
                                                  19     ! IURB2 =  19  !

Site characterization parameters for single-point Met data files ---------
(needed for METFM = 2,3,4,5)

   Land use category for modeling domain
   (ILANDUIN)                             Default: 20     ! ILANDUIN =  20  !

   Roughness length (m) for modeling domain
   (Z0IN)                                 Default: 0.25   ! Z0IN = .25 !

   Leaf area index for modeling domain
   (XLAIIN)                               Default: 3.0    ! XLAIIN = 3.0 !

   Elevation above sea level (m)
   (ELEVIN)                               Default: 0.0    ! ELEVIN = .0 !

   Latitude (degrees) for met location
   (XLATIN)                               Default: -999.  ! XLATIN = -999.0 !

   Longitude (degrees) for met location
   (XLONIN)                               Default: -999.  ! XLONIN = -999.0 !

Specialized information for interpreting single-point Met data files -----

   Anemometer height (m) (Used only if METFM = 2,3)
   (ANEMHT)                               Default: 10.    ! ANEMHT = 10.0 !

   Form of lateral turbulance data in PROFILE.DAT file
   (Used only if METFM = 4,5 or MTURBVW = 1 or 3)
   (ISIGMAV)                              Default: 1      ! ISIGMAV =  1  !
      0 = read sigma-theta
      1 = read sigma-v

   Choice of mixing heights (Used only if METFM = 4)
   (IMIXCTDM)                             Default: 0      ! IMIXCTDM =  0  !
      0 = read PREDICTED mixing heights
      1 = read OBSERVED mixing heights

Maximum length of a slug (met. grid units)
(XMXLEN)                                  Default: 1.0    ! XMXLEN = 1.0 !

Maximum travel distance of a puff/slug (in
grid units) during one sampling step
(XSAMLEN)                                 Default: 1.0    ! XSAMLEN = 1.0 !

Maximum Number of slugs/puffs release from
one source during one time step
(MXNEW)                                   Default: 99     ! MXNEW =  99   !
```

```
Maximum Number of sampling steps for
one puff/slug during one time step
(MXSAM)                                  Default: 99     ! MXSAM =  99   !

Number of iterations used when computing
the transport wind for a sampling step
that includes gradual rise (for CALMET
and PROFILE winds)
(NCOUNT)                                 Default: 2      ! NCOUNT =  2   !

Minimum sigma y for a new puff/slug (m)
(SYMIN)                                  Default: 1.0    ! SYMIN = 1.0  !

Minimum sigma z for a new puff/slug (m)
(SZMIN)                                  Default: 1.0    ! SZMIN = 1.0  !

Default minimum turbulence velocities sigma-v and sigma-w
for each stability class over land and over water (m/s)
(SVMIN(12) and SWMIN(12))

                ----------  LAND  ----------       ---------  WATER  ----------
   Stab Class :  A    B    C    D    E    F         A   B   C    D    E    F
                 ---  ---  ---  ---  ---  ---       --- --- ---  ---  ---  ---
Default SVMIN : .50, .50, .50, .50, .50, .50,      .37, .37, .37, .37, .37, .37
Default SWMIN : .20, .12, .08, .06, .03, .016,     .20, .12, .08, .06, .03, .016

      ! SVMIN = 0.500, 0.500, 0.500, 0.500, 0.500, 0.500, 0.370, 0.370, 0.370, 0.370, 0.370, 0.370!
      ! SWMIN = 0.200, 0.120, 0.080, 0.060, 0.030, 0.016, 0.200, 0.120, 0.080, 0.060, 0.030, 0.016!

Divergence criterion for dw/dz across puff
used to initiate adjustment for horizontal
convergence (1/s)
Partial adjustment starts at CDIV(1), and
full adjustment is reached at CDIV(2)
(CDIV(2))                                Default: 0.0,0.0  ! CDIV = .0, .0 !

Minimum wind speed (m/s) allowed for
non-calm conditions. Also used as minimum
speed returned when using power-law
extrapolation toward surface
(WSCALM)                                 Default: 0.5    ! WSCALM = .5 !

Maximum mixing height (m)
(XMAXZI)                                 Default: 3000.  ! XMAXZI = 3000.0 !

Minimum mixing height (m)
(XMINZI)                                 Default: 50.    ! XMINZI = 50.0 !

Default wind speed classes --
5 upper bounds (m/s) are entered;
the 6th class has no upper limit
(WSCAT(5))                       Default   :
                                 ISC RURAL : 1.54, 3.09, 5.14, 8.23, 10.8 (10.8+)

                           Wind Speed Class :  1     2     3     4     5
                                              ---   ---   ---   ---   ---
                                    ! WSCAT = 1.54, 3.09, 5.14, 8.23, 10.80 !

Default wind speed profile power-law
exponents for stabilities 1-6
(PLX0(6))                        Default   : ISC RURAL values
                                 ISC RURAL : .07, .07, .10, .15, .35, .55
                                 ISC URBAN : .15, .15, .20, .25, .30, .30

                            Stability Class :  A     B     C     D     E     F
                                              ---   ---   ---   ---   ---   ---
                                    ! PLX0 = 0.07, 0.07, 0.10, 0.15, 0.35, 0.55 !

Default potential temperature gradient
for stable classes E, F (degK/m)
(PTG0(2))                        Default: 0.020, 0.035
                                    ! PTG0 = 0.020,   0.035 !

Default plume path coefficients for
each stability class (used when option
```

```
for partial plume height terrain adjustment
is selected -- MCTADJ=3)
(PPC(6))                  Stability Class :  A     B     C     D     E     F
                             Default  PPC : .50,  .50,  .50,  .50,  .35,  .35
                                         ---   ---   ---   ---   ---   ---
                                    !  PPC = 0.50, 0.50, 0.50, 0.50, 0.35, 0.35 !

Slug-to-puff transition criterion factor
equal to sigma-y/length of slug
(SL2PF)                              Default: 10.        ! SL2PF = 10.0 !

Puff-splitting control variables -----------------------

  VERTICAL SPLIT
  --------------

  Number of puffs that result every time a puff
  is split - nsplit=2 means that 1 puff splits
  into 2
  (NSPLIT)                           Default:   3        ! NSPLIT =  3  !

  Time(s) of a day when split puffs are eligible to
  be split once again; this is typically set once
  per day, around sunset before nocturnal shear develops.
  24 values: 0 is midnight (00:00) and 23 is 11 PM (23:00)
  0=do not re-split    1=eligible for re-split
  (IRESPLIT(24))                     Default:  Hour 17 = 1
  !  IRESPLIT = 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0 !

  Split is allowed only if last hour's mixing
  height (m) exceeds a minimum value
  (ZISPLIT)                          Default: 100.       ! ZISPLIT = 100.0 !

  Split is allowed only if ratio of last hour's
  mixing ht to the maximum mixing ht experienced
  by the puff is less than a maximum value (this
  postpones a split until a nocturnal layer develops)
  (ROLDMAX)                          Default: 0.25       ! ROLDMAX = 0.25 !


  HORIZONTAL SPLIT
  ----------------

  Number of puffs that result every time a puff
  is split - nsplith=5 means that 1 puff splits
  into 5
  (NSPLITH)                          Default:   5        ! NSPLITH =  5  !

  Minimum sigma-y (Grid Cells Units) of puff
  before it may be split
  (SYSPLITH)                         Default:  1.0       ! SYSPLITH = 1.0 !

  Minimum puff elongation rate (SYSPLITH/hr) due to
  wind shear, before it may be split
  (SHSPLITH)                         Default:  2.        ! SHSPLITH = 2.0 !

  Minimum concentration (g/m^3) of each
  species in puff before it may be split
  Enter array of NSPEC values; if a single value is
  entered, it will be used for ALL species
  (CNSPLITH)                         Default:  1.0E-07   ! CNSPLITH = 1.0E-07 !

Integration control variables ------------------------

  Fractional convergence criterion for numerical SLUG
  sampling integration
  (EPSSLUG)                          Default:   1.0e-04  ! EPSSLUG = 1.0E-04 !

  Fractional convergence criterion for numerical AREA
  source integration
  (EPSAREA)                          Default:   1.0e-06  ! EPSAREA = 1.0E-06 !

  Trajectory step-length (m) used for numerical rise
  integration
  (DSRISE)                           Default:   1.0      ! DSRISE = 1.0 !
```

```
      Boundary Condition (BC) Puff control variables ------------------------

      Minimum height (m) to which BC puffs are mixed as they are emitted
      (MBCON=2 ONLY).  Actual height is reset to the current mixing height
      at the release point if greater than this minimum.
      (HTMINBC)                         Default:   500.     ! HTMINBC = 500.0 !

      Search radius (km) about a receptor for sampling nearest BC puff.
      BC puffs are typically emitted with a spacing of one grid cell
      length, so the search radius should be greater than DGRIDKM.
      (RSAMPBC)                         Default:   10.      ! RSAMPBC = 10.0 !

      Near-Surface depletion adjustment to concentration profile used when
      sampling BC puffs?
      (MDEPBC)                          Default:   1        ! MDEPBC =  1  !
         0 = Concentration is NOT adjusted for depletion
         1 = Adjust Concentration for depletion

!END!

-------------------------------------------------------------------------------

INPUT GROUPS: 13a, 13b, 13c, 13d -- Point source parameters
--------------------------------

---------------
Subgroup (13a)
---------------

     Number of point sources with
     parameters provided below      (NPT1)  No default  !  NPT1 =  1 !

     Units used for point source
     emissions below                (IPTU)  Default: 1  !  IPTU =   3  !
           1 =       g/s
           2 =      kg/hr
           3 =      lb/hr
           4 =     tons/yr
           5 =     Odour Unit * m**3/s  (vol. flux of odour compound)
           6 =     Odour Unit * m**3/min
           7 =     metric tons/yr

     Number of source-species
     combinations with variable
     emissions scaling factors
     provided below in (13d)        (NSPT1) Default: 0  !  NSPT1 = 0  !

     Number of point sources with
     variable emission parameters
     provided in external file      (NPT2)  No default  !  NPT2 =  0  !

     (If NPT2 > 0, these point
     source emissions are read from
     the file: PTEMARB.DAT)

!END!

---------------
Subgroup (13b)
---------------
                                                   a
          POINT SOURCE: CONSTANT DATA
          -----------------------------
                                                                                   b          c
  Source       X          Y        Stack    Base      Stack    Exit  Exit     Bldg.  Emission
   No.     Coordinate Coordinate Height Elevation Diameter  Vel.  Temp.     Dwash   Rates
              (km)       (km)      (m)      (m)        (m)  (m/s) (deg. K)
  ------   ---------- ---------- ------  ------   -------- ----- -------- ----- --------
****************   EMISSION RATES ARE IN LB/HR    ***********************

 1  ! SRCNAM = WCEC3!
```

```
 1  ! X = 1669.925, -1327.892, 45.4, 6.1, 6.7, 18.0, 358, 1.0, 12.0, 1.9, 57.9, 0.0, 0.0, 1.5, 4.7, 0.0, 2.8,
11.6, 14.7, 37.2 !
 !END!
```

---

a
Data for each source are treated as a separate input subgroup and therefore must end with an input group terminator.

SRCNAM is a 12-character name for a source
(No default)

X is an array holding the source data listed by the column headings
(No default)

SIGYZI is an array holding the initial sigma-y and sigma-z (m)
(Default: 0.,0.)

FMFAC is a vertical momentum flux factor (0. or 1.0) used to represent the effect of rain-caps or other physical configurations that reduce momentum rise associated with the actual exit velocity.
(Default: 1.0 -- full momentum used)

ZPLTFM is the platform height (m) for sources influenced by an isolated structure that has a significant open area between the surface and the bulk of the structure, such as an offshore oil platform. The Base Elevation is

b
0. = No building downwash modeled, 1. = downwash modeled
1. = Downwash modeled for buildings resting on the surface
2. = Downwash modeled for buildings raised above the surface (ZPLTFM > 0.)
NOTE: must be entered as a REAL number (i.e., with decimal point)

c
An emission rate must be entered for every pollutant modeled. Enter emission rate of zero for secondary pollutants that are modeled, but not emitted. Units are specified by IPTU (e.g. 1 for g/s).

Subgroup (13c)

```
 1  ! SRCNAM = WCEC3 !
      1  !  HEIGHT =       !

      1  !  WIDTH =        !

      1  !  LENGTH =       !

      1  !  XBADJ =        !

      1  !  YBADJ =        !

!END!
```

BUILDING DIMENSION DATA FOR SOURCES SUBJECT TO DOWNWASH

Source No. — a

Effective building height, width, length and X/Y offset (in meters) every 10 degrees. LENGTH, XBADJ, and YBADJ are only needed for MBDW=2 (PRIME downwash option)

Subgroup (13c)

---

a
Building height, width, length, and X/Y offset from the source are treated as a separate input subgroup for each source and therefore must end with an input group terminator. The X/Y offset is the position, relative to the stack, of the center of the upwind face of the projected building, with the x-axis pointing along the flow direction.

Subgroup (13d)

POINT SOURCE: VARIABLE EMISSIONS DATA[a]

Use this subgroup to describe temporal variations in the emission rates given in 13b. Factors entered multiply the rates in 13b. Skip sources here that have constant emissions. For more elaborate variation in source parameters, use PTEMARB.DAT and NPT2 > 0.

IVARY determines the type of variation, and is source-specific:
(IVARY) Default: 0

0 =	Constant	
1 =	Diurnal cycle	(24 scaling factors: hours 1-24)
2 =	Monthly cycle	(12 scaling factors: months 1-12)
3 =	Hour & Season	(4 groups of 24 hourly scaling factors, where first group is DEC-JAN-FEB)
4 =	Speed & Stab.	(6 groups of 6 scaling factors, where first group is Stability Class A, and the speed classes have upper bounds (m/s) defined in Group 12
5 =	Temperature	(12 scaling factors, where temperature classes have upper bounds (C) of: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 50+)

---

[a] Data for each species are treated as a separate input subgroup and therefore must end with an input group terminator.

INPUT GROUPS: 14a, 14b, 14c, 14d -- Area source parameters

Subgroup (14a)

Number of polygon area sources with parameters specified below (NAR1) No default ! NAR1 = 0 !

Units used for area source emissions below (IARU) Default: 1 ! IARU = 1 !

1 =	g/m**2/s
2 =	kg/m**2/hr
3 =	lb/m**2/hr
4 =	tons/m**2/yr
5 =	Odour Unit * m/s (vol. flux/m**2 of odour compound)
6 =	Odour Unit * m/min
7 =	metric tons/m**2/yr

Number of source-species combinations with variable emissions scaling factors provided below in (14d) (NSAR1) Default: 0 ! NSAR1 = 0 !

Number of buoyant polygon area sources with variable location and emission parameters (NAR2) No default ! NAR2 = 0 !
(If NAR2 > 0, ALL parameter data for these sources are read from the file: BAEMARB.DAT)

!END!

Subgroup (14b)

AREA SOURCE: CONSTANT DATA[a]

Source No.	Effect. Height (m)	Base Elevation (m)	Initial Sigma z (m)	Emission Rates [b]

[a] Data for each source are treated as a separate input subgroup and therefore must end with an input group terminator.

[b] An emission rate must be entered for every pollutant modeled. Enter emission rate of zero for secondary pollutants that are modeled, but not emitted. Units are specified by IARU (e.g. 1 for g/m**2/s).

Subgroup (14c)

COORDINATES (UTM-km) FOR EACH VERTEX(4) OF EACH POLYGON

Source No.	Ordered list of X followed by list of Y, grouped by source [a]

[a] Data for each source are treated as a separate input subgroup and therefore must end with an input group terminator.

Subgroup (14d)

AREA SOURCE: VARIABLE EMISSIONS DATA [a]

Use this subgroup to describe temporal variations in the emission rates given in 14b. Factors entered multiply the rates in 14b. Skip sources here that have constant emissions. For more elaborate variation in source parameters, use BAEMARB.DAT and NAR2 > 0.

IVARY determines the type of variation, and is source-specific:
(IVARY) Default: 0

0 =	Constant	
1 =	Diurnal cycle	(24 scaling factors: hours 1-24)
2 =	Monthly cycle	(12 scaling factors: months 1-12)
3 =	Hour & Season	(4 groups of 24 hourly scaling factors, where first group is DEC-JAN-FEB)
4 =	Speed & Stab.	(6 groups of 6 scaling factors, where first group is Stability Class A, and the speed classes have upper bounds (m/s) defined in Group 12
5 =	Temperature	(12 scaling factors, where temperature classes have upper bounds (C) of: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 50+)

---

[a] Data for each species are treated as a separate input subgroup and therefore must end with an input group terminator.

INPUT GROUPS: 15a, 15b, 15c -- Line source parameters

Subgroup (15a)

Number of buoyant line sources
with variable location and emission
parameters (NLN2) — No default ! NLN2 = 0 !

(If NLN2 > 0, ALL parameter data for
these sources are read from the file: LNEMARB.DAT)

Number of buoyant line sources (NLINES) — No default ! NLINES = 0 !

Units used for line source
emissions below (ILNU) — Default: 1 ! ILNU = 1 !

1 = g/s
2 = kg/hr
3 = lb/hr
4 = tons/yr
5 = Odour Unit * m**3/s (vol. flux of odour compound)
6 = Odour Unit * m**3/min
7 = metric tons/yr

Number of source-species
combinations with variable
emissions scaling factors
provided below in (15c) (NSLN1) Default: 0 ! NSLN1 = 0 !

Maximum number of segments used to model
each line (MXNSEG) — Default: 7 ! MXNSEG = 7 !

The following variables are required only if NLINES > 0. They are
used in the buoyant line source plume rise calculations.

Number of distances at which transitional rise is computed	Default: 6	! NLRISE = 6 !
Average building length (XL)	No default (in meters)	! XL = .0 !
Average building height (HBL)	No default (in meters)	! HBL = .0 !
Average building width (WBL)	No default (in meters)	! WBL = .0 !
Average line source width (WML)	No default (in meters)	! WML = .0 !
Average separation between buildings (DXL)	No default (in meters)	! DXL = .0 !
Average buoyancy parameter (FPRIMEL)	No default (in m**4/s**3)	! FPRIMEL = .0 !

!END!

Subgroup (15b)

BUOYANT LINE SOURCE: CONSTANT DATA

---

[a]

Source No.	Beg. X Coordinate (km)	Beg. Y Coordinate (km)	End. X Coordinate (km)	End. Y Coordinate (km)	Release Height (m)	Base Elevation (m)	Emission Rates

---

[a] Data for each source are treated as a separate input subgroup and therefore must end with an input group terminator.

b
An emission rate must be entered for every pollutant modeled. Enter emission rate of zero for secondary pollutants that are modeled, but not emitted. Units are specified by ILNTU (e.g. 1 for g/s).

Subgroup (15c)

---

a
BUOYANT LINE SOURCE: VARIABLE EMISSIONS DATA

Use this subgroup to describe temporal variations in the emission rates given in 15b. Factors entered multiply the rates in 15b. Skip sources here that have constant emissions.

IVARY determines the type of variation, and is source-specific:
(IVARY) Default: 0

0 =	Constant	
1 =	Diurnal cycle	(24 scaling factors: hours 1-24)
2 =	Monthly cycle	(12 scaling factors: months 1-12)
3 =	Hour & Season	(4 groups of 24 hourly scaling factors, where first group is DEC-JAN-FEB)
4 =	Speed & Stab.	(6 groups of 6 scaling factors, where first group is Stability Class A, and the speed classes have upper bounds (m/s) defined in Group 12
5 =	Temperature	(12 scaling factors, where temperature classes have upper bounds (C) of: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 50+)

---

a
Data for each species are treated as a separate input subgroup and therefore must end with an input group terminator.

INPUT GROUPS: 16a, 16b, 16c -- Volume source parameters

Subgroup (16a)

Number of volume sources with parameters provided in 16b,c (NVL1) No default ! NVL1 = 0 !

Units used for volume source emissions below in 16b (IVLU) Default: 1 ! IVLU = 1 !

1 =	g/s
2 =	kg/hr
3 =	lb/hr
4 =	tons/yr
5 =	Odour Unit * m**3/s (vol. flux of odour compound)
6 =	Odour Unit * m**3/min
7 =	metric tons/yr

Number of source-species combinations with variable emissions scaling factors provided below in (16c) (NSVL1) Default: 0 ! NSVL1 = 0 !

Number of volume sources with variable location and emission parameters (NVL2) No default ! NVL2 = 0 !

(If NVL2 > 0, ALL parameter data for

these sources are read from the VOLEMARB.DAT file(s))

!END!

Subgroup (16b)

VOLUME SOURCE: CONSTANT DATA [a]

X UTM Coordinate (km)	Y UTM Coordinate (km)	Effect. Height (m)	Base Elevation (m)	Initial Sigma y (m)	Initial Sigma z (m)	Emission Rates [b]

---

a
Data for each source are treated as a separate input subgroup and therefore must end with an input group terminator.

b
An emission rate must be entered for every pollutant modeled. Enter emission rate of zero for secondary pollutants that are modeled, but not emitted. Units are specified by IVLU (e.g. 1 for g/s).

Subgroup (16c)

VOLUME SOURCE: VARIABLE EMISSIONS DATA [a]

Use this subgroup to describe temporal variations in the emission rates given in 16b. Factors entered multiply the rates in 16b. Skip sources here that have constant emissions. For more elaborate variation in source parameters, use VOLEMARB.DAT and NVL2 > 0.

IVARY determines the type of variation, and is source-specific:
(IVARY) Default: 0

- 0 = Constant
- 1 = Diurnal cycle (24 scaling factors: hours 1-24)
- 2 = Monthly cycle (12 scaling factors: months 1-12)
- 3 = Hour & Season (4 groups of 24 hourly scaling factors, where first group is DEC-JAN-FEB)
- 4 = Speed & Stab. (6 groups of 6 scaling factors, where first group is Stability Class A, and the speed classes have upper bounds (m/s) defined in Group 12
- 5 = Temperature (12 scaling factors, where temperature classes have upper bounds (C) of: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 50+)

---

a
Data for each species are treated as a separate input subgroup and therefore must end with an input group terminator.

INPUT GROUPS: 17a & 17b -- Non-gridded (discrete) receptor information

---

Subgroup (17a)

Number of non-gridded receptors (NREC) No default ! NREC = 281 !

!END!

Subgroup (17b)

NON-GRIDDED (DISCRETE) RECEPTOR DATA [a]

Receptor No.	X Coordinate (km)	Y Coordinate (km)	Ground Elevation (m)	Height Above Ground [b] (m)	
RECEPTORS OBTAINED FROM THE NPS/FWS EXTRACTION PROGRAM					
ALL RECEPTORS ARE LCC (KM)					
901 EVERGLADES NP RECEPTORS					
RECEPTORS OBTAINED FROM THE NPS/FWS EXTRACTION PROGRAM					
ALL RECEPTORS ARE LCC (KM)					
1 ! X =	1660.127,	-1542.381,	0,	0.000!	!END!
2 ! X =	1654.541,	-1540.491,	0,	0.000!	!END!
3 ! X =	1657.082,	-1540.035,	0,	0.000!	!END!
4 ! X =	1659.624,	-1539.579,	0,	0.000!	!END!
5 ! X =	1662.165,	-1539.122,	0,	0.000!	!END!
6 ! X =	1664.706,	-1538.665,	0,	0.000!	!END!
7 ! X =	1651.498,	-1538.144,	0,	0.000!	!END!
8 ! X =	1654.039,	-1537.689,	0,	0.000!	!END!
9 ! X =	1656.580,	-1537.234,	0,	0.000!	!END!
10 ! X =	1659.121,	-1536.778,	0,	0.000!	!END!
11 ! X =	1661.661,	-1536.321,	0,	0.000!	!END!
12 ! X =	1664.201,	-1535.864,	0,	0.000!	!END!
13 ! X =	1666.742,	-1535.406,	0,	0.000!	!END!
14 ! X =	1669.282,	-1534.947,	0,	0.000!	!END!
15 ! X =	1648.457,	-1535.797,	0,	0.000!	!END!
16 ! X =	1650.998,	-1535.343,	0,	0.000!	!END!
17 ! X =	1653.538,	-1534.888,	0,	0.000!	!END!
18 ! X =	1656.078,	-1534.433,	0,	0.000!	!END!
19 ! X =	1658.617,	-1533.977,	0,	0.000!	!END!
20 ! X =	1661.157,	-1533.520,	0,	0.000!	!END!
21 ! X =	1663.697,	-1533.063,	0,	0.000!	!END!
22 ! X =	1666.236,	-1532.605,	0,	0.000!	!END!
23 ! X =	1668.775,	-1532.146,	0,	0.000!	!END!
24 ! X =	1671.315,	-1531.687,	0,	0.000!	!END!
25 ! X =	1673.854,	-1531.227,	0,	0.000!	!END!
26 ! X =	1645.418,	-1533.449,	0,	0.000!	!END!
27 ! X =	1647.957,	-1532.996,	0,	0.000!	!END!
28 ! X =	1650.497,	-1532.542,	0,	0.000!	!END!
29 ! X =	1653.036,	-1532.087,	0,	0.000!	!END!
30 ! X =	1655.575,	-1531.632,	0,	0.000!	!END!
31 ! X =	1658.114,	-1531.177,	0,	0.000!	!END!
32 ! X =	1660.653,	-1530.720,	0,	0.000!	!END!
33 ! X =	1663.192,	-1530.263,	0,	0.000!	!END!
34 ! X =	1665.731,	-1529.805,	0,	0.000!	!END!
35 ! X =	1668.269,	-1529.346,	0,	0.000!	!END!
36 ! X =	1670.808,	-1528.887,	0,	0.000!	!END!
37 ! X =	1673.346,	-1528.427,	0,	0.000!	!END!
38 ! X =	1675.884,	-1527.966,	0,	0.000!	!END!
39 ! X =	1642.380,	-1531.100,	0,	0.000!	!END!
40 ! X =	1644.918,	-1530.648,	0,	0.000!	!END!
41 ! X =	1647.457,	-1530.195,	0,	0.000!	!END!
42 ! X =	1649.996,	-1529.741,	0,	0.000!	!END!
43 ! X =	1652.534,	-1529.287,	0,	0.000!	!END!
44 ! X =	1655.073,	-1528.832,	0,	0.000!	!END!
45 ! X =	1657.611,	-1528.376,	0,	0.000!	!END!
46 ! X =	1660.149,	-1527.920,	0,	0.000!	!END!
47 ! X =	1662.687,	-1527.463,	0,	0.000!	!END!
48 ! X =	1665.225,	-1527.005,	0,	0.000!	!END!
49 ! X =	1667.763,	-1526.547,	0,	0.000!	!END!
50 ! X =	1670.301,	-1526.088,	0,	0.000!	!END!
51 ! X =	1672.838,	-1525.628,	0,	0.000!	!END!
52 ! X =	1675.376,	-1525.167,	0,	0.000!	!END!
53 ! X =	1677.913,	-1524.706,	0,	0.000!	!END!
54 ! X =	1680.450,	-1524.244,	0,	0.000!	!END!
55 ! X =	1639.343,	-1528.750,	0,	0.000!	!END!

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 56 ! X =    1641.881,  -1528.299,        0,       0.000!   !END!
 57 ! X =    1644.419,  -1527.847,        0,       0.000!   !END!
 58 ! X =    1646.957,  -1527.394,        0,       0.000!   !END!
 59 ! X =    1649.495,  -1526.941,        0,       0.000!   !END!
 60 ! X =    1652.033,  -1526.487,        0,       0.000!   !END!
 61 ! X =    1654.571,  -1526.032,        0,       0.000!   !END!
 62 ! X =    1657.108,  -1525.576,        0,       0.000!   !END!
 63 ! X =    1659.645,  -1525.120,        0,       0.000!   !END!
 64 ! X =    1662.183,  -1524.663,        0,       0.000!   !END!
 65 ! X =    1664.720,  -1524.206,        0,       0.000!   !END!
 66 ! X =    1667.257,  -1523.747,        0,       0.000!   !END!
 67 ! X =    1669.794,  -1523.288,        0,       0.000!   !END!
 68 ! X =    1672.331,  -1522.829,        0,       0.000!   !END!
 69 ! X =    1674.867,  -1522.368,        0,       0.000!   !END!
 70 ! X =    1677.404,  -1521.907,        0,       0.000!   !END!
 71 ! X =    1679.940,  -1521.445,        0,       0.000!   !END!
 72 ! X =    1682.476,  -1520.983,        0,       0.000!   !END!
 73 ! X =    1685.012,  -1520.520,        0,       0.000!   !END!
 74 ! X =    1636.308,  -1526.400,        0,       0.000!   !END!
 75 ! X =    1638.845,  -1525.950,        0,       0.000!   !END!
 76 ! X =    1641.383,  -1525.498,        0,       0.000!   !END!
 77 ! X =    1643.920,  -1525.046,        0,       0.000!   !END!
 78 ! X =    1646.457,  -1524.594,        0,       0.000!   !END!
 79 ! X =    1648.995,  -1524.141,        0,       0.000!   !END!
 80 ! X =    1651.531,  -1523.687,        0,       0.000!   !END!
 81 ! X =    1654.068,  -1523.232,        0,       0.000!   !END!
 82 ! X =    1656.605,  -1522.777,        0,       0.000!   !END!
 83 ! X =    1659.142,  -1522.320,        0,       0.000!   !END!
 84 ! X =    1661.678,  -1521.864,        0,       0.000!   !END!
 85 ! X =    1664.215,  -1521.406,        0,       0.000!   !END!
 86 ! X =    1666.751,  -1520.948,        0,       0.000!   !END!
 87 ! X =    1669.287,  -1520.489,        0,       0.000!   !END!
 88 ! X =    1671.823,  -1520.030,        0,       0.000!   !END!
 89 ! X =    1674.359,  -1519.569,        0,       0.000!   !END!
 90 ! X =    1676.895,  -1519.108,        0,       0.000!   !END!
 91 ! X =    1679.430,  -1518.647,        0,       0.000!   !END!
 92 ! X =    1681.966,  -1518.184,        0,       0.000!   !END!
 93 ! X =    1684.501,  -1517.721,        0,       0.000!   !END!
 94 ! X =    1687.036,  -1517.258,        0,       0.000!   !END!
 95 ! X =    1689.571,  -1516.793,        0,       0.000!   !END!
 96 ! X =    1635.811,  -1523.599,        0,       0.000!   !END!
 97 ! X =    1638.348,  -1523.149,        0,       0.000!   !END!
 98 ! X =    1640.884,  -1522.698,        0,       0.000!   !END!
 99 ! X =    1643.421,  -1522.246,        0,       0.000!   !END!
100 ! X =    1645.958,  -1521.794,        0,       0.000!   !END!
101 ! X =    1648.494,  -1521.341,        0,       0.000!   !END!
102 ! X =    1651.030,  -1520.887,        0,       0.000!   !END!
103 ! X =    1653.566,  -1520.432,        0,       0.000!   !END!
104 ! X =    1656.102,  -1519.977,        0,       0.000!   !END!
105 ! X =    1658.638,  -1519.521,        0,       0.000!   !END!
106 ! X =    1661.174,  -1519.065,        0,       0.000!   !END!
107 ! X =    1663.709,  -1518.607,        0,       0.000!   !END!
108 ! X =    1666.245,  -1518.149,        0,       0.000!   !END!
109 ! X =    1668.780,  -1517.690,        0,       0.000!   !END!
110 ! X =    1671.315,  -1517.231,        0,       0.000!   !END!
111 ! X =    1673.850,  -1516.771,        0,       0.000!   !END!
112 ! X =    1676.385,  -1516.310,        0,       0.000!   !END!
113 ! X =    1678.920,  -1515.849,        0,       0.000!   !END!
114 ! X =    1681.455,  -1515.386,        0,       0.000!   !END!
115 ! X =    1683.990,  -1514.923,        0,       0.000!   !END!
116 ! X =    1686.524,  -1514.460,        0,       0.000!   !END!
117 ! X =    1689.058,  -1513.995,        0,       0.000!   !END!
118 ! X =    1632.778,  -1521.249,        0,       0.000!   !END!
119 ! X =    1635.314,  -1520.799,        0,       0.000!   !END!
120 ! X =    1637.850,  -1520.349,        0,       0.000!   !END!
121 ! X =    1640.386,  -1519.898,        0,       0.000!   !END!
122 ! X =    1642.922,  -1519.446,        0,       0.000!   !END!
123 ! X =    1645.458,  -1518.994,        0,       0.000!   !END!
124 ! X =    1647.993,  -1518.541,        0,       0.000!   !END!
125 ! X =    1650.529,  -1518.087,        0,       0.000!   !END!
126 ! X =    1653.064,  -1517.633,        0,       0.000!   !END!
127 ! X =    1655.599,  -1517.178,        0,       0.000!   !END!
128 ! X =    1658.134,  -1516.722,        0,       0.000!   !END!
129 ! X =    1660.669,  -1516.266,        0,       0.000!   !END!
130 ! X =    1663.204,  -1515.808,        0,       0.000!   !END!
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131 ! X =    1665.739,  -1515.351,        0,       0.000!   !END!
132 ! X =    1668.273,  -1514.892,        0,       0.000!   !END!
133 ! X =    1670.808,  -1514.433,        0,       0.000!   !END!
134 ! X =    1673.342,  -1513.973,        0,       0.000!   !END!
135 ! X =    1675.876,  -1513.512,        0,       0.000!   !END!
136 ! X =    1678.410,  -1513.051,        0,       0.000!   !END!
137 ! X =    1680.944,  -1512.589,        0,       0.000!   !END!
138 ! X =    1683.478,  -1512.126,        0,       0.000!   !END!
139 ! X =    1686.012,  -1511.662,        0,       0.000!   !END!
140 ! X =    1688.545,  -1511.198,        0,       0.000!   !END!
141 ! X =    1691.079,  -1510.733,        1,       0.000!   !END!
142 ! X =    1629.747,  -1518.897,        0,       0.000!   !END!
143 ! X =    1632.282,  -1518.449,        0,       0.000!   !END!
144 ! X =    1634.817,  -1517.999,        0,       0.000!   !END!
145 ! X =    1637.353,  -1517.549,        0,       0.000!   !END!
146 ! X =    1639.888,  -1517.098,        0,       0.000!   !END!
147 ! X =    1642.423,  -1516.647,        0,       0.000!   !END!
148 ! X =    1644.958,  -1516.195,        0,       0.000!   !END!
149 ! X =    1647.493,  -1515.742,        0,       0.000!   !END!
150 ! X =    1650.027,  -1515.288,        0,       0.000!   !END!
151 ! X =    1652.562,  -1514.834,        0,       0.000!   !END!
152 ! X =    1655.096,  -1514.379,        0,       0.000!   !END!
153 ! X =    1657.631,  -1513.923,        0,       0.000!   !END!
154 ! X =    1660.165,  -1513.467,        0,       0.000!   !END!
155 ! X =    1662.699,  -1513.010,        0,       0.000!   !END!
156 ! X =    1665.233,  -1512.552,        0,       0.000!   !END!
157 ! X =    1667.767,  -1512.094,        0,       0.000!   !END!
158 ! X =    1670.300,  -1511.635,        0,       0.000!   !END!
159 ! X =    1672.834,  -1511.175,        1,       0.000!   !END!
160 ! X =    1675.367,  -1510.714,        1,       0.000!   !END!
161 ! X =    1677.901,  -1510.253,        0,       0.000!   !END!
162 ! X =    1680.434,  -1509.791,        0,       0.000!   !END!
163 ! X =    1682.967,  -1509.328,        0,       0.000!   !END!
164 ! X =    1685.500,  -1508.865,        0,       0.000!   !END!
165 ! X =    1688.033,  -1508.401,        0,       0.000!   !END!
166 ! X =    1690.565,  -1507.936,        0,       0.000!   !END!
167 ! X =    1693.098,  -1507.471,        0,       0.000!   !END!
168 ! X =    1626.717,  -1516.545,        0,       0.000!   !END!
169 ! X =    1629.251,  -1516.097,        0,       0.000!   !END!
170 ! X =    1631.786,  -1515.649,        1,       0.000!   !END!
171 ! X =    1634.321,  -1515.200,        0,       0.000!   !END!
172 ! X =    1636.855,  -1514.750,        0,       0.000!   !END!
173 ! X =    1639.390,  -1514.299,        1,       0.000!   !END!
174 ! X =    1641.924,  -1513.848,        0,       0.000!   !END!
175 ! X =    1644.458,  -1513.396,        0,       0.000!   !END!
176 ! X =    1646.992,  -1512.943,        0,       0.000!   !END!
177 ! X =    1649.526,  -1512.489,        0,       0.000!   !END!
178 ! X =    1652.060,  -1512.035,        0,       0.000!   !END!
179 ! X =    1654.594,  -1511.580,        0,       0.000!   !END!
180 ! X =    1657.127,  -1511.125,        0,       0.000!   !END!
181 ! X =    1659.661,  -1510.669,        0,       0.000!   !END!
182 ! X =    1662.194,  -1510.212,        0,       0.000!   !END!
183 ! X =    1664.727,  -1509.754,        0,       0.000!   !END!
184 ! X =    1667.260,  -1509.296,        0,       0.000!   !END!
185 ! X =    1669.793,  -1508.837,        0,       0.000!   !END!
186 ! X =    1672.326,  -1508.377,        0,       0.000!   !END!
187 ! X =    1674.858,  -1507.917,        0,       0.000!   !END!
188 ! X =    1677.391,  -1507.456,        0,       0.000!   !END!
189 ! X =    1679.923,  -1506.994,        0,       0.000!   !END!
190 ! X =    1682.456,  -1506.531,        0,       0.000!   !END!
191 ! X =    1684.988,  -1506.068,        0,       0.000!   !END!
192 ! X =    1687.520,  -1505.604,        0,       0.000!   !END!
193 ! X =    1690.052,  -1505.140,        0,       0.000!   !END!
194 ! X =    1692.584,  -1504.674,        0,       0.000!   !END!
195 ! X =    1695.115,  -1504.208,        0,       0.000!   !END!
196 ! X =    1623.688,  -1514.192,        0,       0.000!   !END!
197 ! X =    1626.222,  -1513.745,        0,       0.000!   !END!
198 ! X =    1628.756,  -1513.298,        1,       0.000!   !END!
199 ! X =    1631.290,  -1512.849,        1,       0.000!   !END!
200 ! X =    1633.824,  -1512.400,        1,       0.000!   !END!
201 ! X =    1636.358,  -1511.950,        1,       0.000!   !END!
202 ! X =    1638.892,  -1511.500,        1,       0.000!   !END!
203 ! X =    1641.425,  -1511.049,        1,       0.000!   !END!
204 ! X =    1643.959,  -1510.597,        1,       0.000!   !END!
205 ! X =    1646.492,  -1510.144,        1,       0.000!   !END!
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206 ! X =    1649.025,  -1509.691,        0,       0.000!   !END!
207 ! X =    1651.558,  -1509.237,        0,       0.000!   !END!
208 ! X =    1654.091,  -1508.782,        0,       0.000!   !END!
209 ! X =    1656.624,  -1508.327,        0,       0.000!   !END!
210 ! X =    1659.156,  -1507.871,        1,       0.000!   !END!
211 ! X =    1661.689,  -1507.414,        1,       0.000!   !END!
212 ! X =    1664.221,  -1506.956,        1,       0.000!   !END!
213 ! X =    1666.754,  -1506.498,        0,       0.000!   !END!
214 ! X =    1669.286,  -1506.039,        0,       0.000!   !END!
215 ! X =    1671.818,  -1505.580,        0,       0.000!   !END!
216 ! X =    1674.350,  -1505.120,        0,       0.000!   !END!
217 ! X =    1676.881,  -1504.659,        0,       0.000!   !END!
218 ! X =    1679.413,  -1504.197,        0,       0.000!   !END!
219 ! X =    1681.944,  -1503.735,        0,       0.000!   !END!
220 ! X =    1684.476,  -1503.272,        0,       0.000!   !END!
221 ! X =    1687.007,  -1502.808,        0,       0.000!   !END!
222 ! X =    1689.538,  -1502.343,        0,       0.000!   !END!
223 ! X =    1692.069,  -1501.878,        0,       0.000!   !END!
224 ! X =    1694.600,  -1501.412,        1,       0.000!   !END!
225 ! X =    1697.131,  -1500.946,        0,       0.000!   !END!
226 ! X =    1620.661,  -1511.839,        0,       0.000!   !END!
227 ! X =    1623.195,  -1511.393,        0,       0.000!   !END!
228 ! X =    1625.728,  -1510.946,        0,       0.000!   !END!
229 ! X =    1628.261,  -1510.498,        1,       0.000!   !END!
230 ! X =    1630.795,  -1510.050,        1,       0.000!   !END!
231 ! X =    1633.328,  -1509.601,        1,       0.000!   !END!
232 ! X =    1635.861,  -1509.151,        1,       0.000!   !END!
233 ! X =    1638.394,  -1508.701,        1,       0.000!   !END!
234 ! X =    1640.926,  -1508.250,        1,       0.000!   !END!
235 ! X =    1643.459,  -1507.798,        1,       0.000!   !END!
236 ! X =    1645.992,  -1507.346,        1,       0.000!   !END!
237 ! X =    1648.524,  -1506.892,        1,       0.000!   !END!
238 ! X =    1651.056,  -1506.439,        1,       0.000!   !END!
239 ! X =    1653.588,  -1505.984,        1,       0.000!   !END!
240 ! X =    1656.120,  -1505.529,        1,       0.000!   !END!
241 ! X =    1658.652,  -1505.073,        0,       0.000!   !END!
242 ! X =    1661.184,  -1504.616,        1,       0.000!   !END!
243 ! X =    1663.716,  -1504.159,        1,       0.000!   !END!
244 ! X =    1666.247,  -1503.701,        1,       0.000!   !END!
245 ! X =    1668.778,  -1503.242,        1,       0.000!   !END!
246 ! X =    1671.310,  -1502.783,        1,       0.000!   !END!
247 ! X =    1673.841,  -1502.323,        0,       0.000!   !END!
248 ! X =    1676.372,  -1501.862,        0,       0.000!   !END!
249 ! X =    1678.903,  -1501.400,        0,       0.000!   !END!
250 ! X =    1681.433,  -1500.938,        0,       0.000!   !END!
251 ! X =    1683.964,  -1500.475,        0,       0.000!   !END!
252 ! X =    1686.494,  -1500.012,        0,       0.000!   !END!
253 ! X =    1689.025,  -1499.547,        0,       0.000!   !END!
254 ! X =    1691.555,  -1499.082,        0,       0.000!   !END!
255 ! X =    1694.085,  -1498.617,        1,       0.000!   !END!
256 ! X =    1696.615,  -1498.150,        0,       0.000!   !END!
257 ! X =    1699.145,  -1497.683,        0,       0.000!   !END!
258 ! X =    1620.168,  -1509.039,        0,       0.000!   !END!
259 ! X =    1622.701,  -1508.593,        1,       0.000!   !END!
260 ! X =    1625.234,  -1508.147,        1,       0.000!   !END!
261 ! X =    1627.766,  -1507.699,        1,       0.000!   !END!
262 ! X =    1630.299,  -1507.251,        1,       0.000!   !END!
263 ! X =    1632.831,  -1506.802,        1,       0.000!   !END!
264 ! X =    1635.364,  -1506.353,        1,       0.000!   !END!
265 ! X =    1637.896,  -1505.902,        1,       0.000!   !END!
266 ! X =    1640.428,  -1505.451,        1,       0.000!   !END!
267 ! X =    1642.959,  -1505.000,        1,       0.000!   !END!
268 ! X =    1645.491,  -1504.547,        1,       0.000!   !END!
269 ! X =    1648.023,  -1504.094,        1,       0.000!   !END!
270 ! X =    1650.554,  -1503.641,        1,       0.000!   !END!
271 ! X =    1653.086,  -1503.186,        1,       0.000!   !END!
272 ! X =    1655.617,  -1502.731,        1,       0.000!   !END!
273 ! X =    1658.148,  -1502.275,        1,       0.000!   !END!
274 ! X =    1660.679,  -1501.819,        1,       0.000!   !END!
275 ! X =    1663.210,  -1501.362,        1,       0.000!   !END!
276 ! X =    1665.741,  -1500.904,        1,       0.000!   !END!
277 ! X =    1668.271,  -1500.445,        1,       0.000!   !END!
278 ! X =    1670.802,  -1499.986,        1,       0.000!   !END!
279 ! X =    1673.332,  -1499.526,        1,       0.000!   !END!
280 ! X =    1675.862,  -1499.065,        1,       0.000!   !END!
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281 ! X =    1678.392,  -1498.604,        1,       0.000!   !END!
282 ! X =    1680.922,  -1498.142,        0,       0.000!   !END!
283 ! X =    1683.452,  -1497.679,        0,       0.000!   !END!
284 ! X =    1685.982,  -1497.216,        0,       0.000!   !END!
285 ! X =    1688.511,  -1496.751,        1,       0.000!   !END!
286 ! X =    1691.041,  -1496.287,        0,       0.000!   !END!
287 ! X =    1693.570,  -1495.821,        0,       0.000!   !END!
288 ! X =    1617.144,  -1506.685,        0,       0.000!   !END!
289 ! X =    1619.676,  -1506.240,        0,       0.000!   !END!
290 ! X =    1622.208,  -1505.794,        1,       0.000!   !END!
291 ! X =    1624.740,  -1505.347,        1,       0.000!   !END!
292 ! X =    1627.272,  -1504.900,        1,       0.000!   !END!
293 ! X =    1629.803,  -1504.452,        1,       0.000!   !END!
294 ! X =    1632.335,  -1504.003,        1,       0.000!   !END!
295 ! X =    1634.866,  -1503.554,        1,       0.000!   !END!
296 ! X =    1637.398,  -1503.104,        1,       0.000!   !END!
297 ! X =    1639.929,  -1502.653,        1,       0.000!   !END!
298 ! X =    1642.460,  -1502.202,        0,       0.000!   !END!
299 ! X =    1644.991,  -1501.750,        0,       0.000!   !END!
300 ! X =    1647.522,  -1501.297,        1,       0.000!   !END!
301 ! X =    1650.052,  -1500.843,        1,       0.000!   !END!
302 ! X =    1652.583,  -1500.389,        1,       0.000!   !END!
303 ! X =    1655.113,  -1499.934,        1,       0.000!   !END!
304 ! X =    1657.644,  -1499.478,        1,       0.000!   !END!
305 ! X =    1660.174,  -1499.022,        1,       0.000!   !END!
306 ! X =    1662.704,  -1498.565,        1,       0.000!   !END!
307 ! X =    1665.234,  -1498.107,        1,       0.000!   !END!
308 ! X =    1667.764,  -1497.649,        1,       0.000!   !END!
309 ! X =    1670.294,  -1497.189,        1,       0.000!   !END!
310 ! X =    1672.823,  -1496.730,        1,       0.000!   !END!
311 ! X =    1675.353,  -1496.269,        1,       0.000!   !END!
312 ! X =    1677.882,  -1495.808,        1,       0.000!   !END!
313 ! X =    1680.411,  -1495.346,        0,       0.000!   !END!
314 ! X =    1682.940,  -1494.883,        0,       0.000!   !END!
315 ! X =    1685.469,  -1494.420,        1,       0.000!   !END!
316 ! X =    1687.998,  -1493.956,        1,       0.000!   !END!
317 ! X =    1690.527,  -1493.491,        0,       0.000!   !END!
318 ! X =    1693.055,  -1493.026,        0,       0.000!   !END!
319 ! X =    1616.652,  -1503.886,        0,       0.000!   !END!
320 ! X =    1619.183,  -1503.441,        0,       0.000!   !END!
321 ! X =    1621.715,  -1502.995,        1,       0.000!   !END!
322 ! X =    1624.246,  -1502.549,        1,       0.000!   !END!
323 ! X =    1626.777,  -1502.102,        1,       0.000!   !END!
324 ! X =    1629.308,  -1501.654,        1,       0.000!   !END!
325 ! X =    1631.838,  -1501.205,        0,       0.000!   !END!
326 ! X =    1634.369,  -1500.756,        1,       0.000!   !END!
327 ! X =    1636.900,  -1500.306,        1,       0.000!   !END!
328 ! X =    1639.430,  -1499.855,        0,       0.000!   !END!
329 ! X =    1641.960,  -1499.404,        0,       0.000!   !END!
330 ! X =    1644.491,  -1498.952,        0,       0.000!   !END!
331 ! X =    1647.021,  -1498.499,        1,       0.000!   !END!
332 ! X =    1649.551,  -1498.046,        1,       0.000!   !END!
333 ! X =    1652.080,  -1497.592,        1,       0.000!   !END!
334 ! X =    1654.610,  -1497.137,        1,       0.000!   !END!
335 ! X =    1657.140,  -1496.681,        1,       0.000!   !END!
336 ! X =    1659.669,  -1496.225,        1,       0.000!   !END!
337 ! X =    1662.199,  -1495.768,        1,       0.000!   !END!
338 ! X =    1664.728,  -1495.310,        1,       0.000!   !END!
339 ! X =    1667.257,  -1494.852,        1,       0.000!   !END!
340 ! X =    1669.786,  -1494.393,        1,       0.000!   !END!
341 ! X =    1672.315,  -1493.933,        1,       0.000!   !END!
342 ! X =    1674.843,  -1493.473,        1,       0.000!   !END!
343 ! X =    1677.372,  -1493.012,        1,       0.000!   !END!
344 ! X =    1679.900,  -1492.550,        1,       0.000!   !END!
345 ! X =    1682.428,  -1492.088,        1,       0.000!   !END!
346 ! X =    1684.957,  -1491.624,        1,       0.000!   !END!
347 ! X =    1687.485,  -1491.161,        1,       0.000!   !END!
348 ! X =    1690.013,  -1490.696,        1,       0.000!   !END!
349 ! X =    1692.540,  -1490.231,        1,       0.000!   !END!
350 ! X =    1618.691,  -1500.642,        0,       0.000!   !END!
351 ! X =    1621.221,  -1500.197,        1,       0.000!   !END!
352 ! X =    1623.752,  -1499.750,        1,       0.000!   !END!
353 ! X =    1626.282,  -1499.303,        1,       0.000!   !END!
354 ! X =    1628.812,  -1498.856,        1,       0.000!   !END!
355 ! X =    1631.342,  -1498.407,        0,       0.000!   !END!
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356 ! X =    1633.872,   -1497.958,        0,        0.000!   !END!
357 ! X =    1636.402,   -1497.508,        1,        0.000!   !END!
358 ! X =    1638.932,   -1497.058,        1,        0.000!   !END!
359 ! X =    1641.461,   -1496.606,        0,        0.000!   !END!
360 ! X =    1643.990,   -1496.155,        1,        0.000!   !END!
361 ! X =    1646.520,   -1495.702,        1,        0.000!   !END!
362 ! X =    1649.049,   -1495.249,        1,        0.000!   !END!
363 ! X =    1651.578,   -1494.795,        1,        0.000!   !END!
364 ! X =    1654.107,   -1494.340,        1,        0.000!   !END!
365 ! X =    1656.636,   -1493.885,        1,        0.000!   !END!
366 ! X =    1659.164,   -1493.428,        1,        0.000!   !END!
367 ! X =    1661.693,   -1492.972,        1,        0.000!   !END!
368 ! X =    1664.221,   -1492.514,        1,        0.000!   !END!
369 ! X =    1666.750,   -1492.056,        1,        0.000!   !END!
370 ! X =    1669.278,   -1491.597,        1,        0.000!   !END!
371 ! X =    1671.806,   -1491.138,        1,        0.000!   !END!
372 ! X =    1674.334,   -1490.677,        1,        0.000!   !END!
373 ! X =    1676.862,   -1490.216,        1,        0.000!   !END!
374 ! X =    1679.389,   -1489.755,        1,        0.000!   !END!
375 ! X =    1681.917,   -1489.292,        1,        0.000!   !END!
376 ! X =    1684.444,   -1488.829,        1,        0.000!   !END!
377 ! X =    1686.971,   -1488.366,        1,        0.000!   !END!
378 ! X =    1689.499,   -1487.901,        1,        0.000!   !END!
379 ! X =    1692.026,   -1487.436,        1,        0.000!   !END!
380 ! X =    1618.198,   -1497.844,        0,        0.000!   !END!
381 ! X =    1620.728,   -1497.398,        1,        0.000!   !END!
382 ! X =    1623.258,   -1496.952,        1,        0.000!   !END!
383 ! X =    1625.787,   -1496.505,        1,        0.000!   !END!
384 ! X =    1628.317,   -1496.058,        1,        0.000!   !END!
385 ! X =    1630.846,   -1495.609,        1,        0.000!   !END!
386 ! X =    1633.375,   -1495.160,        0,        0.000!   !END!
387 ! X =    1635.904,   -1494.711,        0,        0.000!   !END!
388 ! X =    1638.433,   -1494.260,        0,        0.000!   !END!
389 ! X =    1640.962,   -1493.809,        1,        0.000!   !END!
390 ! X =    1643.490,   -1493.357,        1,        0.000!   !END!
391 ! X =    1646.019,   -1492.905,        1,        0.000!   !END!
392 ! X =    1648.547,   -1492.452,        1,        0.000!   !END!
393 ! X =    1651.076,   -1491.998,        1,        0.000!   !END!
394 ! X =    1653.604,   -1491.543,        1,        0.000!   !END!
395 ! X =    1656.132,   -1491.088,        1,        0.000!   !END!
396 ! X =    1658.660,   -1490.632,        1,        0.000!   !END!
397 ! X =    1661.187,   -1490.176,        1,        0.000!   !END!
398 ! X =    1663.715,   -1489.718,        1,        0.000!   !END!
399 ! X =    1666.243,   -1489.260,        1,        0.000!   !END!
400 ! X =    1668.770,   -1488.801,        1,        0.000!   !END!
401 ! X =    1671.297,   -1488.342,        1,        0.000!   !END!
402 ! X =    1673.824,   -1487.882,        1,        0.000!   !END!
403 ! X =    1676.351,   -1487.421,        1,        0.000!   !END!
404 ! X =    1617.706,   -1495.046,        0,        0.000!   !END!
405 ! X =    1620.235,   -1494.600,        1,        0.000!   !END!
406 ! X =    1622.764,   -1494.154,        1,        0.000!   !END!
407 ! X =    1625.293,   -1493.707,        1,        0.000!   !END!
408 ! X =    1627.821,   -1493.260,        0,        0.000!   !END!
409 ! X =    1630.350,   -1492.812,        1,        0.000!   !END!
410 ! X =    1632.878,   -1492.363,        0,        0.000!   !END!
411 ! X =    1635.406,   -1491.913,        1,        0.000!   !END!
412 ! X =    1637.934,   -1491.463,        1,        0.000!   !END!
413 ! X =    1640.462,   -1491.012,        1,        0.000!   !END!
414 ! X =    1642.990,   -1490.561,        1,        0.000!   !END!
415 ! X =    1645.518,   -1490.108,        1,        0.000!   !END!
416 ! X =    1648.046,   -1489.655,        1,        0.000!   !END!
417 ! X =    1650.573,   -1489.202,        1,        0.000!   !END!
418 ! X =    1653.101,   -1488.747,        1,        0.000!   !END!
419 ! X =    1655.628,   -1488.292,        1,        0.000!   !END!
420 ! X =    1658.155,   -1487.836,        1,        0.000!   !END!
421 ! X =    1660.682,   -1487.380,        1,        0.000!   !END!
422 ! X =    1663.209,   -1486.922,        1,        0.000!   !END!
423 ! X =    1665.736,   -1486.465,        1,        0.000!   !END!
424 ! X =    1668.262,   -1486.006,        1,        0.000!   !END!
425 ! X =    1670.789,   -1485.547,        1,        0.000!   !END!
426 ! X =    1673.315,   -1485.087,        1,        0.000!   !END!
427 ! X =    1675.841,   -1484.626,        1,        0.000!   !END!
428 ! X =    1617.214,   -1492.248,        0,        0.000!   !END!
429 ! X =    1619.742,   -1491.803,        0,        0.000!   !END!
430 ! X =    1622.270,   -1491.357,        0,        0.000!   !END!
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431 ! X =    1624.798,  -1490.910,        1,       0.000!   !END!
432 ! X =    1627.326,  -1490.463,        1,       0.000!   !END!
433 ! X =    1629.853,  -1490.015,        1,       0.000!   !END!
434 ! X =    1632.381,  -1489.566,        1,       0.000!   !END!
435 ! X =    1634.909,  -1489.116,        1,       0.000!   !END!
436 ! X =    1637.436,  -1488.666,        1,       0.000!   !END!
437 ! X =    1639.963,  -1488.216,        1,       0.000!   !END!
438 ! X =    1642.490,  -1487.764,        1,       0.000!   !END!
439 ! X =    1645.017,  -1487.312,        1,       0.000!   !END!
440 ! X =    1647.544,  -1486.859,        1,       0.000!   !END!
441 ! X =    1650.071,  -1486.405,        1,       0.000!   !END!
442 ! X =    1652.597,  -1485.951,        1,       0.000!   !END!
443 ! X =    1655.124,  -1485.496,        1,       0.000!   !END!
444 ! X =    1657.650,  -1485.040,        1,       0.000!   !END!
445 ! X =    1660.177,  -1484.584,        1,       0.000!   !END!
446 ! X =    1662.703,  -1484.127,        1,       0.000!   !END!
447 ! X =    1665.229,  -1483.669,        1,       0.000!   !END!
448 ! X =    1667.755,  -1483.211,        1,       0.000!   !END!
449 ! X =    1670.280,  -1482.752,        1,       0.000!   !END!
450 ! X =    1672.806,  -1482.292,        1,       0.000!   !END!
451 ! X =    1675.331,  -1481.831,        1,       0.000!   !END!
452 ! X =    1616.721,  -1489.450,        0,       0.000!   !END!
453 ! X =    1619.249,  -1489.005,        0,       0.000!   !END!
454 ! X =    1621.776,  -1488.559,        0,       0.000!   !END!
455 ! X =    1624.303,  -1488.113,        1,       0.000!   !END!
456 ! X =    1626.830,  -1487.666,        1,       0.000!   !END!
457 ! X =    1629.357,  -1487.218,        1,       0.000!   !END!
458 ! X =    1631.884,  -1486.769,        1,       0.000!   !END!
459 ! X =    1634.411,  -1486.320,        1,       0.000!   !END!
460 ! X =    1636.937,  -1485.870,        1,       0.000!   !END!
461 ! X =    1639.464,  -1485.419,        1,       0.000!   !END!
462 ! X =    1641.990,  -1484.968,        1,       0.000!   !END!
463 ! X =    1644.516,  -1484.516,        1,       0.000!   !END!
464 ! X =    1647.043,  -1484.063,        1,       0.000!   !END!
465 ! X =    1649.569,  -1483.610,        1,       0.000!   !END!
466 ! X =    1652.094,  -1483.155,        1,       0.000!   !END!
467 ! X =    1654.620,  -1482.701,        1,       0.000!   !END!
468 ! X =    1657.146,  -1482.245,        1,       0.000!   !END!
469 ! X =    1659.671,  -1481.789,        1,       0.000!   !END!
470 ! X =    1662.197,  -1481.332,        1,       0.000!   !END!
471 ! X =    1664.722,  -1480.874,        1,       0.000!   !END!
472 ! X =    1667.247,  -1480.416,        1,       0.000!   !END!
473 ! X =    1669.772,  -1479.957,        1,       0.000!   !END!
474 ! X =    1672.297,  -1479.497,        1,       0.000!   !END!
475 ! X =    1674.821,  -1479.037,        1,       0.000!   !END!
476 ! X =    1616.229,  -1486.653,        0,       0.000!   !END!
477 ! X =    1618.756,  -1486.208,        0,       0.000!   !END!
478 ! X =    1621.282,  -1485.762,        1,       0.000!   !END!
479 ! X =    1623.809,  -1485.316,        1,       0.000!   !END!
480 ! X =    1626.335,  -1484.869,        1,       0.000!   !END!
481 ! X =    1628.861,  -1484.421,        1,       0.000!   !END!
482 ! X =    1631.387,  -1483.973,        1,       0.000!   !END!
483 ! X =    1633.913,  -1483.523,        1,       0.000!   !END!
484 ! X =    1636.439,  -1483.074,        1,       0.000!   !END!
485 ! X =    1638.965,  -1482.623,        1,       0.000!   !END!
486 ! X =    1641.490,  -1482.172,        1,       0.000!   !END!
487 ! X =    1644.016,  -1481.720,        1,       0.000!   !END!
488 ! X =    1646.541,  -1481.267,        1,       0.000!   !END!
489 ! X =    1649.066,  -1480.814,        1,       0.000!   !END!
490 ! X =    1651.591,  -1480.360,        1,       0.000!   !END!
491 ! X =    1654.116,  -1479.905,        1,       0.000!   !END!
492 ! X =    1656.641,  -1479.450,        1,       0.000!   !END!
493 ! X =    1659.166,  -1478.994,        1,       0.000!   !END!
494 ! X =    1661.690,  -1478.537,        1,       0.000!   !END!
495 ! X =    1664.215,  -1478.080,        1,       0.000!   !END!
496 ! X =    1666.739,  -1477.621,        1,       0.000!   !END!
497 ! X =    1669.263,  -1477.162,        1,       0.000!   !END!
498 ! X =    1671.787,  -1476.703,        1,       0.000!   !END!
499 ! X =    1674.311,  -1476.243,        1,       0.000!   !END!
500 ! X =    1615.737,  -1483.856,        0,       0.000!   !END!
501 ! X =    1618.263,  -1483.411,        1,       0.000!   !END!
502 ! X =    1620.789,  -1482.965,        1,       0.000!   !END!
503 ! X =    1623.314,  -1482.519,        1,       0.000!   !END!
504 ! X =    1625.840,  -1482.072,        1,       0.000!   !END!
505 ! X =    1628.365,  -1481.625,        1,       0.000!   !END!
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506 ! X =    1630.890,   -1481.176,        1,        0.000!   !END!
507 ! X =    1633.416,   -1480.727,        1,        0.000!   !END!
508 ! X =    1635.941,   -1480.278,        1,        0.000!   !END!
509 ! X =    1638.466,   -1479.827,        1,        0.000!   !END!
510 ! X =    1640.990,   -1479.376,        1,        0.000!   !END!
511 ! X =    1643.515,   -1478.924,        1,        0.000!   !END!
512 ! X =    1646.040,   -1478.472,        1,        0.000!   !END!
513 ! X =    1648.564,   -1478.019,        1,        0.000!   !END!
514 ! X =    1651.088,   -1477.565,        1,        0.000!   !END!
515 ! X =    1653.613,   -1477.110,        1,        0.000!   !END!
516 ! X =    1656.137,   -1476.655,        1,        0.000!   !END!
517 ! X =    1658.661,   -1476.199,        1,        0.000!   !END!
518 ! X =    1661.184,   -1475.742,        1,        0.000!   !END!
519 ! X =    1663.708,   -1475.285,        1,        0.000!   !END!
520 ! X =    1666.232,   -1474.827,        1,        0.000!   !END!
521 ! X =    1668.755,   -1474.368,        1,        0.000!   !END!
522 ! X =    1671.278,   -1473.909,        1,        0.000!   !END!
523 ! X =    1673.802,   -1473.449,        1,        0.000!   !END!
524 ! X =    1612.719,   -1481.503,        0,        0.000!   !END!
525 ! X =    1615.245,   -1481.059,        0,        0.000!   !END!
526 ! X =    1617.770,   -1480.614,        1,        0.000!   !END!
527 ! X =    1620.295,   -1480.169,        1,        0.000!   !END!
528 ! X =    1622.820,   -1479.723,        1,        0.000!   !END!
529 ! X =    1625.345,   -1479.276,        1,        0.000!   !END!
530 ! X =    1627.869,   -1478.828,        1,        0.000!   !END!
531 ! X =    1630.394,   -1478.380,        1,        0.000!   !END!
532 ! X =    1632.918,   -1477.931,        1,        0.000!   !END!
533 ! X =    1635.442,   -1477.482,        1,        0.000!   !END!
534 ! X =    1637.967,   -1477.032,        1,        0.000!   !END!
535 ! X =    1640.491,   -1476.581,        1,        0.000!   !END!
536 ! X =    1643.015,   -1476.129,        1,        0.000!   !END!
537 ! X =    1645.538,   -1475.677,        1,        0.000!   !END!
538 ! X =    1648.062,   -1475.224,        1,        0.000!   !END!
539 ! X =    1650.586,   -1474.770,        1,        0.000!   !END!
540 ! X =    1653.109,   -1474.315,        1,        0.000!   !END!
541 ! X =    1655.632,   -1473.860,        1,        0.000!   !END!
542 ! X =    1658.155,   -1473.405,        1,        0.000!   !END!
543 ! X =    1660.678,   -1472.948,        1,        0.000!   !END!
544 ! X =    1663.201,   -1472.491,        1,        0.000!   !END!
545 ! X =    1665.724,   -1472.033,        1,        0.000!   !END!
546 ! X =    1668.247,   -1471.574,        1,        0.000!   !END!
547 ! X =    1670.769,   -1471.115,        1,        0.000!   !END!
548 ! X =    1673.292,   -1470.655,        1,        0.000!   !END!
549 ! X =    1612.228,   -1478.706,        0,        0.000!   !END!
550 ! X =    1614.753,   -1478.262,        1,        0.000!   !END!
551 ! X =    1617.277,   -1477.818,        1,        0.000!   !END!
552 ! X =    1619.801,   -1477.372,        1,        0.000!   !END!
553 ! X =    1622.325,   -1476.927,        1,        0.000!   !END!
554 ! X =    1624.849,   -1476.480,        1,        0.000!   !END!
555 ! X =    1627.373,   -1476.033,        1,        0.000!   !END!
556 ! X =    1629.897,   -1475.585,        1,        0.000!   !END!
557 ! X =    1632.421,   -1475.136,        1,        0.000!   !END!
558 ! X =    1634.944,   -1474.686,        1,        0.000!   !END!
559 ! X =    1637.468,   -1474.236,        1,        0.000!   !END!
560 ! X =    1639.991,   -1473.785,        1,        0.000!   !END!
561 ! X =    1642.514,   -1473.334,        1,        0.000!   !END!
562 ! X =    1645.037,   -1472.882,        1,        0.000!   !END!
563 ! X =    1647.560,   -1472.429,        1,        0.000!   !END!
564 ! X =    1650.083,   -1471.975,        1,        0.000!   !END!
565 ! X =    1652.605,   -1471.521,        1,        0.000!   !END!
566 ! X =    1655.128,   -1471.066,        1,        0.000!   !END!
567 ! X =    1657.650,   -1470.610,        1,        0.000!   !END!
568 ! X =    1660.172,   -1470.154,        1,        0.000!   !END!
569 ! X =    1662.695,   -1469.697,        1,        0.000!   !END!
570 ! X =    1665.217,   -1469.239,        1,        0.000!   !END!
571 ! X =    1667.739,   -1468.781,        1,        0.000!   !END!
572 ! X =    1670.260,   -1468.322,        1,        0.000!   !END!
573 ! X =    1672.782,   -1467.862,        1,        0.000!   !END!
574 ! X =    1609.213,   -1476.353,        0,        0.000!   !END!
575 ! X =    1611.737,   -1475.910,        1,        0.000!   !END!
576 ! X =    1614.261,   -1475.466,        1,        0.000!   !END!
577 ! X =    1616.784,   -1475.022,        1,        0.000!   !END!
578 ! X =    1619.308,   -1474.576,        1,        0.000!   !END!
579 ! X =    1621.831,   -1474.131,        1,        0.000!   !END!
580 ! X =    1624.354,   -1473.684,        1,        0.000!   !END!
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581 ! X =    1626.877,   -1473.237,         1,        0.000!   !END!
582 ! X =    1629.400,   -1472.789,         1,        0.000!   !END!
583 ! X =    1631.923,   -1472.340,         1,        0.000!   !END!
584 ! X =    1634.446,   -1471.891,         1,        0.000!   !END!
585 ! X =    1636.969,   -1471.441,         1,        0.000!   !END!
586 ! X =    1639.491,   -1470.991,         1,        0.000!   !END!
587 ! X =    1642.013,   -1470.539,         1,        0.000!   !END!
588 ! X =    1644.536,   -1470.087,         1,        0.000!   !END!
589 ! X =    1647.058,   -1469.634,         1,        0.000!   !END!
590 ! X =    1649.580,   -1469.181,         1,        0.000!   !END!
591 ! X =    1652.102,   -1468.727,         1,        0.000!   !END!
592 ! X =    1654.623,   -1468.272,         1,        0.000!   !END!
593 ! X =    1657.145,   -1467.816,         1,        0.000!   !END!
594 ! X =    1659.667,   -1467.360,         1,        0.000!   !END!
595 ! X =    1662.188,   -1466.903,         1,        0.000!   !END!
596 ! X =    1664.709,   -1466.446,         1,        0.000!   !END!
597 ! X =    1667.230,   -1465.987,         1,        0.000!   !END!
598 ! X =    1669.751,   -1465.528,         1,        0.000!   !END!
599 ! X =    1672.272,   -1465.069,         1,        0.000!   !END!
600 ! X =    1674.793,   -1464.608,         1,        0.000!   !END!
601 ! X =    1608.723,   -1473.557,         0,        0.000!   !END!
602 ! X =    1611.246,   -1473.114,         1,        0.000!   !END!
603 ! X =    1613.769,   -1472.670,         1,        0.000!   !END!
604 ! X =    1616.291,   -1472.226,         1,        0.000!   !END!
605 ! X =    1618.814,   -1471.781,         1,        0.000!   !END!
606 ! X =    1621.337,   -1471.335,         1,        0.000!   !END!
607 ! X =    1623.859,   -1470.889,         1,        0.000!   !END!
608 ! X =    1626.382,   -1470.442,         1,        0.000!   !END!
609 ! X =    1628.904,   -1469.994,         1,        0.000!   !END!
610 ! X =    1631.426,   -1469.545,         1,        0.000!   !END!
611 ! X =    1633.948,   -1469.096,         1,        0.000!   !END!
612 ! X =    1636.470,   -1468.646,         1,        0.000!   !END!
613 ! X =    1638.991,   -1468.196,         1,        0.000!   !END!
614 ! X =    1641.513,   -1467.745,         1,        0.000!   !END!
615 ! X =    1644.034,   -1467.293,         1,        0.000!   !END!
616 ! X =    1646.556,   -1466.840,         1,        0.000!   !END!
617 ! X =    1649.077,   -1466.387,         1,        0.000!   !END!
618 ! X =    1651.598,   -1465.933,         1,        0.000!   !END!
619 ! X =    1654.119,   -1465.478,         1,        0.000!   !END!
620 ! X =    1656.640,   -1465.023,         1,        0.000!   !END!
621 ! X =    1659.161,   -1464.567,         1,        0.000!   !END!
622 ! X =    1661.681,   -1464.110,         1,        0.000!   !END!
623 ! X =    1664.202,   -1463.652,         1,        0.000!   !END!
624 ! X =    1666.722,   -1463.194,         1,        0.000!   !END!
625 ! X =    1669.242,   -1462.735,         1,        0.000!   !END!
626 ! X =    1671.763,   -1462.276,         1,        0.000!   !END!
627 ! X =    1674.282,   -1461.816,         1,        0.000!   !END!
628 ! X =    1605.710,   -1471.203,         0,        0.000!   !END!
629 ! X =    1608.232,   -1470.761,         0,        0.000!   !END!
630 ! X =    1610.754,   -1470.318,         0,        0.000!   !END!
631 ! X =    1613.277,   -1469.874,         1,        0.000!   !END!
632 ! X =    1615.799,   -1469.430,         1,        0.000!   !END!
633 ! X =    1618.321,   -1468.985,         1,        0.000!   !END!
634 ! X =    1620.842,   -1468.540,         1,        0.000!   !END!
635 ! X =    1623.364,   -1468.093,         0,        0.000!   !END!
636 ! X =    1625.886,   -1467.647,         1,        0.000!   !END!
637 ! X =    1628.407,   -1467.199,         1,        0.000!   !END!
638 ! X =    1630.928,   -1466.751,         1,        0.000!   !END!
639 ! X =    1633.450,   -1466.302,         1,        0.000!   !END!
640 ! X =    1635.971,   -1465.852,         1,        0.000!   !END!
641 ! X =    1638.492,   -1465.402,         1,        0.000!   !END!
642 ! X =    1641.013,   -1464.950,         1,        0.000!   !END!
643 ! X =    1643.533,   -1464.499,         1,        0.000!   !END!
644 ! X =    1646.054,   -1464.046,         1,        0.000!   !END!
645 ! X =    1648.574,   -1463.593,         1,        0.000!   !END!
646 ! X =    1651.095,   -1463.139,         1,        0.000!   !END!
647 ! X =    1653.615,   -1462.685,         1,        0.000!   !END!
648 ! X =    1656.135,   -1462.229,         1,        0.000!   !END!
649 ! X =    1658.655,   -1461.773,         1,        0.000!   !END!
650 ! X =    1661.175,   -1461.317,         1,        0.000!   !END!
651 ! X =    1663.695,   -1460.859,         1,        0.000!   !END!
652 ! X =    1666.214,   -1460.401,         1,        0.000!   !END!
653 ! X =    1668.734,   -1459.943,         1,        0.000!   !END!
654 ! X =    1671.253,   -1459.483,         1,        0.000!   !END!
655 ! X =    1673.772,   -1459.023,         1,        0.000!   !END!
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656 ! X =    1602.698,   -1468.848,        0,        0.000!   !END!
657 ! X =    1605.220,   -1468.407,        0,        0.000!   !END!
658 ! X =    1607.742,   -1467.965,        1,        0.000!   !END!
659 ! X =    1610.263,   -1467.522,        1,        0.000!   !END!
660 ! X =    1612.785,   -1467.079,        1,        0.000!   !END!
661 ! X =    1615.306,   -1466.635,        1,        0.000!   !END!
662 ! X =    1617.827,   -1466.190,        0,        0.000!   !END!
663 ! X =    1620.348,   -1465.745,        1,        0.000!   !END!
664 ! X =    1622.869,   -1465.299,        1,        0.000!   !END!
665 ! X =    1625.390,   -1464.852,        1,        0.000!   !END!
666 ! X =    1627.911,   -1464.404,        1,        0.000!   !END!
667 ! X =    1630.431,   -1463.956,        1,        0.000!   !END!
668 ! X =    1632.952,   -1463.507,        1,        0.000!   !END!
669 ! X =    1635.472,   -1463.058,        1,        0.000!   !END!
670 ! X =    1637.992,   -1462.607,        1,        0.000!   !END!
671 ! X =    1640.512,   -1462.156,        1,        0.000!   !END!
672 ! X =    1643.032,   -1461.705,        1,        0.000!   !END!
673 ! X =    1645.552,   -1461.252,        1,        0.000!   !END!
674 ! X =    1648.072,   -1460.799,        1,        0.000!   !END!
675 ! X =    1650.591,   -1460.346,        1,        0.000!   !END!
676 ! X =    1653.111,   -1459.891,        1,        0.000!   !END!
677 ! X =    1655.630,   -1459.436,        1,        0.000!   !END!
678 ! X =    1658.149,   -1458.980,        1,        0.000!   !END!
679 ! X =    1660.668,   -1458.524,        1,        0.000!   !END!
680 ! X =    1663.187,   -1458.067,        1,        0.000!   !END!
681 ! X =    1665.706,   -1457.609,        1,        0.000!   !END!
682 ! X =    1668.225,   -1457.150,        1,        0.000!   !END!
683 ! X =    1670.743,   -1456.691,        1,        0.000!   !END!
684 ! X =    1673.262,   -1456.231,        1,        0.000!   !END!
685 ! X =    1602.209,   -1466.052,        0,        0.000!   !END!
686 ! X =    1604.731,   -1465.611,        0,        0.000!   !END!
687 ! X =    1607.251,   -1465.169,        1,        0.000!   !END!
688 ! X =    1609.772,   -1464.727,        1,        0.000!   !END!
689 ! X =    1612.293,   -1464.284,        1,        0.000!   !END!
690 ! X =    1614.813,   -1463.840,        1,        0.000!   !END!
691 ! X =    1617.334,   -1463.395,        1,        0.000!   !END!
692 ! X =    1619.854,   -1462.950,        1,        0.000!   !END!
693 ! X =    1622.374,   -1462.504,        1,        0.000!   !END!
694 ! X =    1624.894,   -1462.057,        1,        0.000!   !END!
695 ! X =    1627.414,   -1461.610,        1,        0.000!   !END!
696 ! X =    1629.934,   -1461.162,        1,        0.000!   !END!
697 ! X =    1632.454,   -1460.713,        1,        0.000!   !END!
698 ! X =    1634.973,   -1460.264,        1,        0.000!   !END!
699 ! X =    1637.493,   -1459.814,        1,        0.000!   !END!
700 ! X =    1640.012,   -1459.363,        1,        0.000!   !END!
701 ! X =    1642.531,   -1458.911,        1,        0.000!   !END!
702 ! X =    1645.050,   -1458.459,        1,        0.000!   !END!
703 ! X =    1647.569,   -1458.006,        1,        0.000!   !END!
704 ! X =    1650.088,   -1457.553,        1,        0.000!   !END!
705 ! X =    1652.607,   -1457.098,        1,        0.000!   !END!
706 ! X =    1655.125,   -1456.643,        1,        0.000!   !END!
707 ! X =    1657.644,   -1456.188,        1,        0.000!   !END!
708 ! X =    1660.162,   -1455.731,        1,        0.000!   !END!
709 ! X =    1662.680,   -1455.274,        1,        0.000!   !END!
710 ! X =    1665.198,   -1454.816,        1,        0.000!   !END!
711 ! X =    1667.716,   -1454.358,        1,        0.000!   !END!
712 ! X =    1670.234,   -1453.899,        1,        0.000!   !END!
713 ! X =    1672.751,   -1453.439,        1,        0.000!   !END!
714 ! X =    1675.269,   -1452.979,        1,        0.000!   !END!
715 ! X =    1599.200,   -1463.697,        0,        0.000!   !END!
716 ! X =    1601.721,   -1463.257,        0,        0.000!   !END!
717 ! X =    1604.241,   -1462.816,        0,        0.000!   !END!
718 ! X =    1606.761,   -1462.374,        1,        0.000!   !END!
719 ! X =    1609.281,   -1461.932,        1,        0.000!   !END!
720 ! X =    1611.801,   -1461.489,        1,        0.000!   !END!
721 ! X =    1614.321,   -1461.045,        1,        0.000!   !END!
722 ! X =    1616.840,   -1460.601,        1,        0.000!   !END!
723 ! X =    1619.360,   -1460.155,        1,        0.000!   !END!
724 ! X =    1621.879,   -1459.710,        1,        0.000!   !END!
725 ! X =    1644.548,   -1455.666,        1,        0.000!   !END!
726 ! X =    1647.066,   -1455.213,        1,        0.000!   !END!
727 ! X =    1649.585,   -1454.760,        1,        0.000!   !END!
728 ! X =    1652.102,   -1454.306,        1,        0.000!   !END!
729 ! X =    1654.620,   -1453.851,        1,        0.000!   !END!
730 ! X =    1657.138,   -1453.395,        1,        0.000!   !END!
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731 ! X =    1659.655,  -1452.939,        1,       0.000!   !END!
732 ! X =    1662.173,  -1452.482,        1,       0.000!   !END!
733 ! X =    1664.690,  -1452.024,        1,       0.000!   !END!
734 ! X =    1667.207,  -1451.566,        1,       0.000!   !END!
735 ! X =    1669.724,  -1451.107,        1,       0.000!   !END!
736 ! X =    1672.241,  -1450.647,        1,       0.000!   !END!
737 ! X =    1596.193,  -1461.341,        0,       0.000!   !END!
738 ! X =    1598.712,  -1460.902,        0,       0.000!   !END!
739 ! X =    1601.232,  -1460.462,        1,       0.000!   !END!
740 ! X =    1603.752,  -1460.021,        1,       0.000!   !END!
741 ! X =    1606.271,  -1459.579,        1,       0.000!   !END!
742 ! X =    1608.790,  -1459.137,        1,       0.000!   !END!
743 ! X =    1611.309,  -1458.694,        1,       0.000!   !END!
744 ! X =    1613.828,  -1458.250,        1,       0.000!   !END!
745 ! X =    1616.347,  -1457.806,        1,       0.000!   !END!
746 ! X =    1618.866,  -1457.361,        1,       0.000!   !END!
747 ! X =    1621.384,  -1456.915,        1,       0.000!   !END!
748 ! X =    1644.047,  -1452.873,        1,       0.000!   !END!
749 ! X =    1646.564,  -1452.420,        1,       0.000!   !END!
750 ! X =    1649.081,  -1451.967,        1,       0.000!   !END!
751 ! X =    1651.598,  -1451.513,        1,       0.000!   !END!
752 ! X =    1654.115,  -1451.058,        1,       0.000!   !END!
753 ! X =    1656.632,  -1450.603,        1,       0.000!   !END!
754 ! X =    1659.149,  -1450.147,        1,       0.000!   !END!
755 ! X =    1661.666,  -1449.690,        1,       0.000!   !END!
756 ! X =    1664.182,  -1449.233,        1,       0.000!   !END!
757 ! X =    1666.699,  -1448.775,        1,       0.000!   !END!
758 ! X =    1669.215,  -1448.316,        1,       0.000!   !END!
759 ! X =    1671.731,  -1447.856,        1,       0.000!   !END!
760 ! X =    1674.247,  -1447.396,        1,       0.000!   !END!
761 ! X =    1676.763,  -1446.935,        1,       0.000!   !END!
762 ! X =    1593.187,  -1458.985,        0,       0.000!   !END!
763 ! X =    1595.706,  -1458.546,        0,       0.000!   !END!
764 ! X =    1598.225,  -1458.107,        0,       0.000!   !END!
765 ! X =    1600.743,  -1457.667,        1,       0.000!   !END!
766 ! X =    1603.262,  -1457.226,        1,       0.000!   !END!
767 ! X =    1605.781,  -1456.785,        1,       0.000!   !END!
768 ! X =    1608.299,  -1456.342,        1,       0.000!   !END!
769 ! X =    1610.818,  -1455.900,        1,       0.000!   !END!
770 ! X =    1613.336,  -1455.456,        1,       0.000!   !END!
771 ! X =    1615.854,  -1455.012,        1,       0.000!   !END!
772 ! X =    1618.372,  -1454.567,        1,       0.000!   !END!
773 ! X =    1643.545,  -1450.080,        1,       0.000!   !END!
774 ! X =    1646.061,  -1449.628,        1,       0.000!   !END!
775 ! X =    1648.578,  -1449.175,        1,       0.000!   !END!
776 ! X =    1651.094,  -1448.721,        1,       0.000!   !END!
777 ! X =    1653.611,  -1448.266,        1,       0.000!   !END!
778 ! X =    1656.127,  -1447.811,        1,       0.000!   !END!
779 ! X =    1658.643,  -1447.355,        1,       0.000!   !END!
780 ! X =    1661.159,  -1446.898,        1,       0.000!   !END!
781 ! X =    1663.674,  -1446.441,        1,       0.000!   !END!
782 ! X =    1666.190,  -1445.983,        1,       0.000!   !END!
783 ! X =    1668.705,  -1445.524,        1,       0.000!   !END!
784 ! X =    1671.221,  -1445.065,        1,       0.000!   !END!
785 ! X =    1673.736,  -1444.605,        1,       0.000!   !END!
786 ! X =    1676.251,  -1444.144,        1,       0.000!   !END!
787 ! X =    1590.182,  -1456.627,        0,       0.000!   !END!
788 ! X =    1592.700,  -1456.190,        0,       0.000!   !END!
789 ! X =    1595.219,  -1455.751,        0,       0.000!   !END!
790 ! X =    1597.737,  -1455.312,        1,       0.000!   !END!
791 ! X =    1600.255,  -1454.872,        1,       0.000!   !END!
792 ! X =    1602.773,  -1454.431,        1,       0.000!   !END!
793 ! X =    1605.291,  -1453.990,        1,       0.000!   !END!
794 ! X =    1607.808,  -1453.548,        1,       0.000!   !END!
795 ! X =    1610.326,  -1453.106,        1,       0.000!   !END!
796 ! X =    1612.843,  -1452.662,        1,       0.000!   !END!
797 ! X =    1615.361,  -1452.218,        1,       0.000!   !END!
798 ! X =    1643.043,  -1447.288,        1,       0.000!   !END!
799 ! X =    1645.559,  -1446.836,        1,       0.000!   !END!
800 ! X =    1648.075,  -1446.383,        1,       0.000!   !END!
801 ! X =    1650.590,  -1445.929,        1,       0.000!   !END!
802 ! X =    1653.106,  -1445.475,        1,       0.000!   !END!
803 ! X =    1655.621,  -1445.019,        1,       0.000!   !END!
804 ! X =    1658.136,  -1444.564,        1,       0.000!   !END!
805 ! X =    1660.652,  -1444.107,        1,       0.000!   !END!
```

```
806 ! X =    1663.167,   -1443.650,        1,       0.000!   !END!
807 ! X =    1665.681,   -1443.192,        1,       0.000!   !END!
808 ! X =    1668.196,   -1442.733,        1,       0.000!   !END!
809 ! X =    1670.711,   -1442.274,        1,       0.000!   !END!
810 ! X =    1673.225,   -1441.814,        1,       0.000!   !END!
811 ! X =    1675.740,   -1441.354,        1,       0.000!   !END!
812 ! X =    1587.179,   -1454.269,        0,       0.000!   !END!
813 ! X =    1589.696,   -1453.832,        0,       0.000!   !END!
814 ! X =    1592.214,   -1453.395,        1,       0.000!   !END!
815 ! X =    1594.732,   -1452.956,        1,       0.000!   !END!
816 ! X =    1597.249,   -1452.517,        1,       0.000!   !END!
817 ! X =    1599.766,   -1452.078,        1,       0.000!   !END!
818 ! X =    1602.283,   -1451.637,        1,       0.000!   !END!
819 ! X =    1604.800,   -1451.196,        1,       0.000!   !END!
820 ! X =    1607.317,   -1450.754,        1,       0.000!   !END!
821 ! X =    1609.834,   -1450.312,        1,       0.000!   !END!
822 ! X =    1612.351,   -1449.868,        1,       0.000!   !END!
823 ! X =    1614.867,   -1449.425,        1,       0.000!   !END!
824 ! X =    1642.542,   -1444.496,        1,       0.000!   !END!
825 ! X =    1645.057,   -1444.044,        1,       0.000!   !END!
826 ! X =    1647.572,   -1443.591,        1,       0.000!   !END!
827 ! X =    1650.086,   -1443.137,        1,       0.000!   !END!
828 ! X =    1652.601,   -1442.683,        1,       0.000!   !END!
829 ! X =    1655.116,   -1442.228,        1,       0.000!   !END!
830 ! X =    1657.630,   -1441.772,        1,       0.000!   !END!
831 ! X =    1660.145,   -1441.316,        1,       0.000!   !END!
832 ! X =    1662.659,   -1440.859,        1,       0.000!   !END!
833 ! X =    1665.173,   -1440.401,        1,       0.000!   !END!
834 ! X =    1667.687,   -1439.943,        1,       0.000!   !END!
835 ! X =    1670.201,   -1439.484,        1,       0.000!   !END!
836 ! X =    1672.714,   -1439.024,        1,       0.000!   !END!
837 ! X =    1675.228,   -1438.563,        1,       0.000!   !END!
838 ! X =    1584.177,   -1451.911,        0,       0.000!   !END!
839 ! X =    1586.694,   -1451.475,        0,       0.000!   !END!
840 ! X =    1589.211,   -1451.038,        0,       0.000!   !END!
841 ! X =    1591.728,   -1450.600,        0,       0.000!   !END!
842 ! X =    1594.245,   -1450.162,        1,       0.000!   !END!
843 ! X =    1596.761,   -1449.723,        1,       0.000!   !END!
844 ! X =    1599.278,   -1449.283,        1,       0.000!   !END!
845 ! X =    1601.794,   -1448.843,        1,       0.000!   !END!
846 ! X =    1604.310,   -1448.402,        1,       0.000!   !END!
847 ! X =    1606.827,   -1447.960,        1,       0.000!   !END!
848 ! X =    1609.343,   -1447.518,        1,       0.000!   !END!
849 ! X =    1642.040,   -1441.704,        1,       0.000!   !END!
850 ! X =    1644.554,   -1441.252,        1,       0.000!   !END!
851 ! X =    1647.069,   -1440.799,        1,       0.000!   !END!
852 ! X =    1649.583,   -1440.346,        1,       0.000!   !END!
853 ! X =    1652.097,   -1439.892,        1,       0.000!   !END!
854 ! X =    1654.610,   -1439.437,        1,       0.000!   !END!
855 ! X =    1657.124,   -1438.981,        1,       0.000!   !END!
856 ! X =    1659.638,   -1438.525,        1,       0.000!   !END!
857 ! X =    1662.151,   -1438.068,        1,       0.000!   !END!
858 ! X =    1664.664,   -1437.611,        1,       0.000!   !END!
859 ! X =    1667.178,   -1437.152,        1,       0.000!   !END!
860 ! X =    1669.691,   -1436.693,        1,       0.000!   !END!
861 ! X =    1672.204,   -1436.234,        1,       0.000!   !END!
862 ! X =    1674.716,   -1435.773,        1,       0.000!   !END!
863 ! X =    1581.176,   -1449.551,        0,       0.000!   !END!
864 ! X =    1583.693,   -1449.116,        0,       0.000!   !END!
865 ! X =    1586.209,   -1448.680,        0,       0.000!   !END!
866 ! X =    1588.726,   -1448.243,        0,       0.000!   !END!
867 ! X =    1591.242,   -1447.806,        1,       0.000!   !END!
868 ! X =    1593.758,   -1447.368,        1,       0.000!   !END!
869 ! X =    1596.274,   -1446.929,        1,       0.000!   !END!
870 ! X =    1598.789,   -1446.490,        1,       0.000!   !END!
871 ! X =    1601.305,   -1446.049,        1,       0.000!   !END!
872 ! X =    1603.820,   -1445.609,        1,       0.000!   !END!
873 ! X =    1575.662,   -1447.625,        0,       0.000!   !END!
874 ! X =    1578.178,   -1447.191,        0,       0.000!   !END!
875 ! X =    1580.693,   -1446.757,        0,       0.000!   !END!
876 ! X =    1583.209,   -1446.322,        0,       0.000!   !END!
877 ! X =    1585.725,   -1445.886,        1,       0.000!   !END!
878 ! X =    1588.240,   -1445.449,        0,       0.000!   !END!
879 ! X =    1590.756,   -1445.012,        0,       0.000!   !END!
880 ! X =    1593.271,   -1444.574,        1,       0.000!   !END!
```

```
881 ! X =    1595.786,  -1444.135,        1,      0.000!   !END!
882 ! X =    1598.301,  -1443.696,        1,      0.000!   !END!
883 ! X =    1575.180,  -1444.831,        0,      0.000!   !END!
884 ! X =    1577.695,  -1444.397,        0,      0.000!   !END!
885 ! X =    1580.210,  -1443.963,        0,      0.000!   !END!
886 ! X =    1582.725,  -1443.527,        1,      0.000!   !END!
887 ! X =    1585.240,  -1443.092,        1,      0.000!   !END!
888 ! X =    1587.755,  -1442.655,        0,      0.000!   !END!
889 ! X =    1590.270,  -1442.218,        1,      0.000!   !END!
890 ! X =    1592.784,  -1441.780,        1,      0.000!   !END!
891 ! X =    1595.298,  -1441.342,        1,      0.000!   !END!
892 ! X =    1597.813,  -1440.903,        1,      0.000!   !END!
893 ! X =    1577.213,  -1441.603,        1,      0.000!   !END!
894 ! X =    1579.728,  -1441.169,        1,      0.000!   !END!
895 ! X =    1582.242,  -1440.734,        1,      0.000!   !END!
896 ! X =    1589.784,  -1439.425,        1,      0.000!   !END!
897 ! X =    1592.297,  -1438.987,        1,      0.000!   !END!
898 ! X =    1594.811,  -1438.549,        1,      0.000!   !END!
899 ! X =    1597.324,  -1438.110,        1,      0.000!   !END!
900 ! X =    1579.245,  -1438.375,        1,      0.000!   !END!
901 ! X =    1581.758,  -1437.940,        1,      0.000!   !END!
```

a
Data for each receptor are treated as a separate input subgroup and therefore must end with an input group terminator.

b
Receptor height above ground is optional. If no value is entered, the receptor is placed on the ground.

APPENDIX B

SAMPLE POSTUTIL MODEL CONTROL FILE FOR VISIBILITY IMPACTS

```
FPL WCEC UNIT 3 - POSTUTIL VISIBILITY IMPACTS       8/22/07
EVERGLADES NP CLASS I RECEPTORS
4-km FL DOMAIN, 2002

---------------- Run title (3 lines) ------------------------------------------

                   POSTUTIL MODEL CONTROL FILE
                   ---------------------------

------------------------------------------------------------------------------

INPUT GROUP: 0 -- Input and Output File Names
--------------

-------------
Subgroup (0a)
-------------

Output Files
------------

 File            Default File Name
 ----            -----------------
 List File       POSTUTIL.LST        ! UTLLST =EXAMPLE.LST   !
 Data File       MODEL.DAT           ! UTLDAT =EXAMPLE.CON   !


Input Files
-----------

 A time-varying file of "background" concentrations can be included
 when the ammonia-limiting method (ALM) for setting the HNO3/NO3
 concentration partition is accomplished in 1 step.  This option
 is selected by setting MNITRATE=3 in Input Group 1.
 Species required in the "background" concentration file are:
 SO4, NO3, HNO3 and TNH3 (total NH3).

 File            Default File Name
 ----            -----------------
 BCKG File       BCKGALM.DAT         * BCKGALM =BCKGALM.DAT     *


 A number of CALPUFF data files may be processed in this application.
 The files may represent individual CALPUFF simulations that were made
 for a specific set of species and/or sources.  Specify the total number
 of CALPUFF runs you wish to combine, and provide the filename for each
 in subgroup 0b.

     Number of CALPUFF data files (NFILES)
                                   Default: 1       ! NFILES  = 1   !


 Meteorological data files are needed for the HNO3/NO3 partition option.
 Three types of meteorological data files can be used:
       METFM= 0 - CALMET.DAT
       METFM= 1 - 1-D file with RH, Temp and Rhoair timeseries
       METFM= 2 - 2-D files with either Rh, Temp or Rhoair in each
                  (3 2_D files are needed)
      The default is to use CALMET.DAT files.

                                   Default: 0       ! METFM   = 0   !


 Multiple meteorological data files may be used in sequence to span the
 processing period.  Specify the number of time-period files (NMET) that
 you need to use, and provide a filename for each in subgroup 0b.
 - NMET is 0 if no meteorological files are provided
 - NMET is 1 if METFM=1 (multiple file feature is not available)
 - NMET is 1 or more if METFM=0 or 2 (multiple CALMET files or 2DMET files)

     Number of meteorological data file time-periods (NMET)
                                   Default: 0       ! NMET    = 0   !
```

```
 All filenames will be converted to lower case if LCFILES = T
 Otherwise, if LCFILES = F, filenames will be converted to UPPER CASE

    Convert filenames to lower case?  Default: T     ! LCFILES = T !
        T = lower case
        F = UPPER CASE

!END!

------------------------------------------------------------
 NOTE: file/path names can be up to 70 characters in length
------------------------------------------------------------

-------------
Subgroup (0b)
-------------

NMET CALMET Data Files (METFM=0):

Input File      Default File Name
----------      -----------------
   1            MET.DAT            * UTLMET =CALMET.DAT  * *END*


NMET 1-D Data Files (METFM=1):

Input File      Default File Name
----------      -----------------
   1            MET_1D.DAT         * MET1D   = MET_1D.DAT * *END*


NMET 2-D Data Files of Each Type (METFM=2):

Input File      Default File Name
----------      -----------------
   1            RHUMD.DAT          * M2DRHU  = RELHUM.DAT * *END*
   1            TEMP.DAT           * M2DTMP  = TEMP.DAT   * *END*
   1            RHOAIR.DAT         * M2DRHO  = RHOAIR.DAT * *END*


NFILES CALPUFF Data Files:

Input File      Default File Name
----------      -----------------
   1            CALPUFF.DAT        ! MODDAT =..\PFIC19BV.CON  ! !END!


-------------
Note:  provide NMET lines of the form   * UTLMET = name * *END*

                                    or  * MET1D  = name * *END*

                                    or  * M2DRHU = name * *END*
                                (and)   * M2DTMP = name * *END*
                                (and)   * M2DRHO = name * *END*

       and NFILES lines of the form     * MODDAT = name * *END*

       where the * should be replaced with an exclamation point,
       the special delimiter character.


------------------------------------------------------------------------------

INPUT GROUP: 1 -- General run control parameters
--------------

     Starting date:    Year  (ISYR) --    No default   ! ISYR  =  2002 !
                       Month (ISMO) --    No default   ! ISMO  = 1    !
                       Day   (ISDY) --    No default   ! ISDY  = 1    !
                       Hour  (ISHR) --    No default   ! ISHR  = 1    !

     Number of periods to process
                               (NPER) -- No default   ! NPER  = 8760 !
```

```
    Number of species to process from CALPUFF runs
                          (NSPECINP) -- No default    ! NSPECINP = 6 !

    Number of species to write to output file
                          (NSPECOUT) -- No default    ! NSPECOUT = 9 !

    Number of species to compute from those modeled
    (must be no greater than NSPECOUT)
                          (NSPECCMP) -- No default    ! NSPECCMP = 4 !
```

When multiple files are used, a species name may appear in more than one file. Data for this species will be summed (appropriate if the CALPUFF runs use different source groups). If this summing is not appropriate, remove duplicate species from the file(s).

```
    Stop run if duplicate species names
    are found? (MDUPLCT)              Default: 0       ! MDUPLCT  =  0  !
       0 = no  (i.e., duplicate species are summed)
       1 = yes (i.e., run is halted)
```

Data for each species in a CALPUFF data file may also be scaled as they are read. This can be done to alter the emission rate of all sources that were modeled in a particular CALPUFF application. The scaling factor for each species is entered in Subgroup (2d), for each file for which scaling is requested.

```
    Number of CALPUFF data files that will be scaled
    (must be no greater than NFILES)
    (NSCALED)                         Default: 0       ! NSCALED = 1 !
```

Ammonia-Limiting Method Option to recompute the HNO3/NO3 concentration partition prior to performing other actions is controlled by MNITRATE. This option will NOT alter any deposition fluxes contained in the CALPUFF file(s). Three partition selections are provided. The first two are typically used in sequence (POSTUTIL is run more than once). The first selection (MNITRATE=1) computes the partition for the TOTAL (all sources) concentration fields (SO4, NO3, HNO3; NH3), and the second (MNITRATE=2) uses this partition (from the previous application of POSTUTIL) to compute the partition for individual source groups. The third selection (MNITRATE=3) can be used instead in a single POSTUTIL application if a file of background concentrations is provided (BCKGALM in Input Group 0).

Required information for MNITRATE=1 includes:
- species NO3, HNO3, and SO4
- NH3 concentration(s)
- met. data file for RH and T

Required information for MNITRATE=2 includes:
- species NO3 and HNO3 for a source group
- species NO3ALL and HNO3ALL for all source groups, properly partitioned

Required information for MNITRATE=3 includes:
- species NO3, HNO3, and SO4 for a source group
- species NO3, HNO3, SO4 and TNH3 from the background BCKGALM file
- If TNH3 is not in the background BCKGALM file, monthly TNH3 concentrations are used (BCKTNH3)

```
    Recompute the HNO3/NO3 partition for concentrations?
    (MNITRATE)                        Default: 0       ! MNITRATE  =  0  !
       0 = no
       1 = yes, for all sources combined
       2 = yes, for a source group
       3 = yes, ALM application in one step
```

SOURCE OF AMMONIA:

Ammonia may be available as a modeled species in the CALPUFF files, and it may or may not be appropriate to use it for repartitioning NO3/HNO3 (in option MNITRATE=1 or MNITRATE=3). Its use is contolled by NH3TYP. When NH3 is listed as a processed species in Subgroup (2a), as one of the NSPECINP ASPECI entries, and the right option is chosen for NH3TYP,

the NH3 modeled values from the CALPUFF concentration files will be used
in the chemical equilibrium calculation.

NH3TYP also controls when monthly background ammonia values are used. Both
gaseous (NH3) and total (TNH3) ammonia can be provided monthly as
BCKNH3/BCKTNH3.

What is the input source of Ammonia?
(NH3TYP) No Default ! NH3TYP = 3 !

0 = No background will be used.
ONLY NH3 from the concentration
files listed in Subgroup (2a) as
a processed species will be used.
(Cannot be used with MNITRATE=3)

1 = NH3 Monthly averaged background (BCKNH3)
listed below will be added to NH3 from
concentration files listed in Subgroup (2a)

2 = NH3 from background concentration file BCKGALM
will be added to NH3 from concentration files
listed in Subgroup (2a)
(ONLY possible for MNITRATE=3)

3 = NH3 Monthly averaged background (BCKNH3)
listed below will be used alone.

4 = NH3 from background concentration file BCKGALM
will be used alone
(ONLY possible for MNITRATE=3)

NH3TYP	NH3 CONC	NH3 FROM BCKNH3	NH3 FROM BCKGALM
0	X	0	0
1	X	X	0
2	X	0	X
3	0	X	0
4	0	0	X

Default monthly (12 values) background ammonia concentration (ppb)
used for HNO3/NO3 partition:

Gaseous NH3 (BCKNH3) Default: -999
! BCKNH3 = 12*0.5 !

Total TNH3 (BCKTNH3) Default: -999
* BCKTNH3 = 1., 1., 1., 1.1, 1.4, 1.3, 1.3, 1.2, 4*1. *

If a single value is entered, this is used for all 12 months.
Month 1 is JANUARY, Month 12 is DECEMBER.

!END!

INPUT GROUP: 2 -- Species Processing Information

Subgroup (2a)

The following NSPECINP species will be processed:

! ASPECI = SO2 ! !END!
! ASPECI = SO4 ! !END!
! ASPECI = NOX ! !END!
! ASPECI = HNO3 ! !END!
! ASPECI = NO3 ! !END!
! ASPECI = PM10 ! !END!

```
-------------
Subgroup (2b)
-------------

  The following NSPECOUT species will be written:

! ASPECO =          SO2 !         !END!
! ASPECO =          SO4 !         !END!
! ASPECO =          NOX !         !END!
! ASPECO =         HNO3 !         !END!
! ASPECO =          NO3 !         !END!
! ASPECO =          SOA !         !END!
! ASPECO =           EC !         !END!
! ASPECO =         SOIL !         !END!
! ASPECO =          PMC !         !END!

-------------
Subgroup (2c)
-------------

  The following NSPECCMP species will be computed by scaling and summing
  one or more of the processed input species.  Identify the name(s) of
  the computed species and provide the scaling factors for each of the
  NSPECINP input species (NSPECCMP groups of NSPECINP+1 lines each):

NOTE: SO4 IS INPUT TO CALPUFF EXPLICITLY

! CSPECCMP =     SOA !
!     SO2  =     0.0 !
!     SO4  =     0.0 !
!     NOX  =     0.0 !
!    HNO3  =     0.0 !
!     NO3  =     0.0 !
!    PM10  =     0.006 !
!END!

! CSPECCMP =      EC !
!     SO2  =     0.0 !
!     SO4  =     0.0 !
!     NOX  =     0.0 !
!    HNO3  =     0.0 !
!     NO3  =     0.0 !
!    PM10  =    0.074 !
!END!

! CSPECCMP =    SOIL !
!     SO2  =     0.0 !
!     SO4  =     0.0 !
!     NOX  =     0.0 !
!    HNO3  =     0.0 !
!     NO3  =     0.0 !
!    PM10  =    0.921 !
!END!

! CSPECCMP =     PMC !
!     SO2  =     0.0 !
!     SO4  =     0.0 !
!     NOX  =     0.0 !
!    HNO3  =     0.0 !
!     NO3  =     0.0 !
!    PM10  =    0.000 !
!END!

-------------
Subgroup (2d)
-------------

  Each species in NSCALED CALPUFF data files may be scaled before being
  processed (e.g., to change the emission rate for all sources modeled
  in the run that produced a data file).  For each file, identify the
  file name and then provide the name(s) of the scaled species and the
  corresponding scaling factors (A,B where x' = Ax+B).
```

```
                A(Default=1.0)       B(Default=0.0)
                --------------       --------------

! MODDAT =..\PFIC19BV.CON  !
!       SO2 =     0.860,                0.0    !
!       SO4 =     0.860,                0.0    !
!       NOX =     0.860,                0.0    !
!      HNO3 =     0.860,                0.0    !
!       NO3 =     0.860,                0.0    !
!      PM10 =     0.860,                0.0    !
!END!
```

APPENDIX C

SAMPLE CALPOST MODEL CONTROL FILE FOR VISIBILITY

```
FPL WCEC UNIT 3 PROJECT - CALPOST FOR VISIBLITY            EPA  8/22/07
METHOD 2, EVERGLADES NP
4-km FL DOMAIN, 2002, ENP RECEPTORS
---------------- Run title (3 lines) ------------------------------------------

                    CALPOST MODEL CONTROL FILE
                    --------------------------

-------------------------------------------------------------------------------

INPUT GROUP: 0 -- Input and Output File Names
--------------

Input Files
-----------

File                        Default File Name
----                        -----------------
Conc/Dep Flux File          MODEL.DAT          ! MODDAT =..\EXAMPLE.CON  !
Relative Humidity File      VISB.DAT           ! VISDAT =..\..\VISB.DAT  !
Background Data File        BACK.DAT           *BACKDAT =   *
Transmissometer or          VSRN.DAT           *VSRDAT =    *
Nephelometer Data File       or
DATSAV Weather Data File     or
Prognostic Weather  File

Output Files
------------

File                        Default File Name
----                        -----------------
List File                   CALPOST.LST        ! PSTLST =EXAMPLEVIS.LST  !

Pathname for Timeseries Files    (blank)       * TSPATH =    *
(activate with exclamation points only if
providing NON-BLANK character string)

Pathname for Plot Files    (blank)             * PLPATH =    *
(activate with exclamation points only if
 providing NON-BLANK character string)

User Character String (U) to augment default filenames
(activate with exclamation points only if
 providing NON-BLANK character string)

Timeseries           TSERIES_ASPEC_ttHR_CONC_TSUNAM.DAT
Peak Value           PEAKVAL_ASPEC_ttHR_CONC_TSUNAM.DAT

                                            * TSUNAM =    *

Top Nth Rank Plot    RANK(ALL)_ASPEC_ttHR_CONC_TUNAM.DAT
                or   RANK(ii)_ASPEC_ttHR_CONC_TUNAM.GRD

                                            * TUNAM =    *

Exceedance Plot       EXCEED_ASPEC_ttHR_CONC_XUNAM.DAT
                  or  EXCEED_ASPEC_ttHR_CONC_XUNAM.GRD

                                            * XUNAM =    *

Echo Plot
(Specific Days)
           yyyy_Mmm_Ddd_hh00(UTCszzzz)_L00_ASPEC_ttHR_CONC.DAT
     or    yyyy_Mmm_Ddd_hh00(UTCszzzz)_L00_ASPEC_ttHR_CONC.GRD


Visibility Plot       DAILY_VISIB_VUNAM.DAT    ! VUNAM =VTEST    !
(Daily Peak Summary)



Auxiliary Output Files
----------------------

File                        Default File Name
```

```
----                          -----------------
Visibility Change             DELVIS.DAT           ! DVISDAT = deciview.dat  !

------------------------------------------------------------------------------
All file names will be converted to lower case if LCFILES = T
Otherwise, if LCFILES = F, file names will be converted to UPPER CASE
         T = lower case               ! LCFILES = T !
         F = UPPER CASE
NOTE: (1) file/path names can be up to 132 characters in length
NOTE: (2) Filenames for ALL PLOT and TIMESERIES FILES are constructed
          using a template that includes a pathname, user-supplied
          character(s), and context-specific strings, where
             ASPEC = Species Name
              CONC = CONC Or WFLX Or DFLX Or TFLX
                tt = Averaging Period (e.g. 03)
                ii = Rank (e.g. 02)
                hh = Hour(ending) in LST
             szzzz = LST time zone shift (EST is -0500)
              yyyy = Year(LST)
                mm = Month(LST)
                dd = day of month (LST)
          are determined internally based on selections made below.
          If a path or user-supplied character(s) are supplied, each
          must contain at least 1 non-blank character.

!END!
------------------------------------------------------------------------------

INPUT GROUP: 1 -- General run control parameters
--------------

    Option to run all periods found
    in the met. file(s)  (METRUN)        Default: 0   ! METRUN =   0  !

        METRUN = 0 - Run period explicitly defined below
        METRUN = 1 - Run all periods in CALPUFF data file(s)

    Starting date:    Year  (ISYR) --    No default   ! ISYR  =  2002  !
    (used only if     Month (ISMO) --    No default   ! ISMO  =  1   !
     METRUN = 0)      Day   (ISDY) --    No default   ! ISDY  =  1   !
                      Hour  (ISHR) --    No default   ! ISHR  =  1   !

    Number of hours to process (NHRS) -- No default   ! NHRS  =  8760  !

    Process every hour of data?(NREP) -- Default: 1   ! NREP  =  1  !
     (1 = every hour processed,
      2 = every 2nd hour processed,
      5 = every 5th hour processed, etc.)

Species & Concentration/Deposition Information
----------------------------------------------

     Species to process (ASPEC)       -- No default   ! ASPEC = VISIB !
     (ASPEC = VISIB for visibility processing)

     Layer/deposition code (ILAYER)   -- Default: 1   ! ILAYER = 1 !
       '1'  for CALPUFF concentrations,
       '-1' for dry deposition fluxes,
       '-2' for wet deposition fluxes,
       '-3' for wet+dry deposition fluxes.

     Scaling factors of the form:     -- Defaults:    ! A =  0.0    !
          X(new) = X(old) * A + B          A = 0.0    ! B =  0.0    !
       (NOT applied if A = B = 0.0)        B = 0.0

     Add Hourly Background Concentrations/Fluxes?
                             (LBACK)  -- Default: F   ! LBACK =  F !

Source information
------------------

  Option to process source contributions:
        0 =  Process only total reported contributions
        1 =  Sum all individual source contributions and process
```

```
        2 =  Run in TRACEBACK mode to identify source
             contributions at a SINGLE receptor
                          (MSOURCE) -- Default: 0    ! MSOURCE =  0  !

Receptor information
--------------------

  Gridded receptors processed?     (LG) -- Default: F    ! LG  = F  !
  Discrete receptors processed? '  (LD) -- Default: F    ! LD  = T  !
  CTSG Complex terrain receptors processed?
                                   (LCT) -- Default: F   ! LCT = F  !

--Report results by DISCRETE receptor RING?
  (only used when LD = T)      (LDRING) -- Default: F    ! LDRING = F  !

--Select range of DISCRETE receptors (only used when LD = T):

  Select ALL DISCRETE receptors by setting NDRECP flag to -1;
                                OR
  Select SPECIFIC DISCRETE receptors by entering a flag (0,1) for each
     0 = discrete receptor not processed
     1 = discrete receptor processed
  using repeated value notation to select blocks of receptors:
     23*1, 15*0, 12*1
  Flag for all receptors after the last one assigned is set to 0
  (NDRECP) -- Default: -1

  ! NDRECP = -1 !


--Select range of GRIDDED receptors (only used when LG = T):

       X index of LL corner (IBGRID) -- Default: -1      ! IBGRID = -1  !
           (-1 OR 1 <= IBGRID <= NX)

       Y index of LL corner (JBGRID) -- Default: -1      ! JBGRID = -1  !
           (-1 OR 1 <= JBGRID <= NY)

       X index of UR corner (IEGRID) -- Default: -1      ! IEGRID = -1  !
           (-1 OR 1 <= IEGRID <= NX)

       Y index of UR corner (JEGRID) -- Default: -1      ! JEGRID = -1  !
           (-1 OR 1 <= JEGRID <= NY)

  Note: Entire grid is processed if IBGRID=JBGRID=IEGRID=JEGRID=-1


--Specific gridded receptors can also be excluded from CALPOST
  processing by filling a processing grid array with 0s and 1s.  If the
  processing flag for receptor index (i,j) is 1 (ON), that receptor
  will be processed if it lies within the range delineated by IBGRID,
  JBGRID,IEGRID,JEGRID and if LG=T. If it is 0 (OFF), it will not be
  processed in the run.  By default, all array values are set to 1 (ON).

  Number of gridded receptor rows provided in Subgroup (1a) to
  identify specific gridded receptors to process
                          (NGONOFF) -- Default: 0      ! NGONOFF =  0  !

!END!


--------------
Subgroup (1a) -- Specific gridded receptors included/excluded
--------------

    Specific gridded receptors are excluded from CALPOST processing
    by filling a processing grid array with 0s and 1s.  A total of
    NGONOFF lines are read here.  Each line corresponds to one 'row'
    in the sampling grid, starting with the NORTHERNMOST row that
    contains receptors that you wish to exclude, and finishing with
    row 1 to the SOUTH (no intervening rows may be skipped).  Within
    a row, each receptor position is assigned either a 0 or 1,
    starting with the westernmost receptor.
       0 = gridded receptor not processed
       1 = gridded receptor processed
```

```
    Repeated value notation may be used to select blocks of receptors:
       23*1, 15*0, 12*1

    Because all values are initially set to 1, any receptors north of
    the first row entered, or east of the last value provided in a row,
    remain ON.

    (NGXRECP) -- Default: 1


------------------------------------------------------------------------------

INPUT GROUP: 2 -- Visibility Parameters (ASPEC = VISIB)
--------------

    Identify the Base Time Zone for the CALPUFF simulation
                          (BTZONE) -- No default    ! BTZONE =  5.!

    Particle growth curve f(RH) for hygroscopic species
                           (MFRH) -- Default: 2    ! MFRH   =  2  !

         1 =  IWAQM (1998) f(RH) curve (originally used with MVISBK=1)
         2 =  FLAG (2000) f(RH) tabulation
         3 =  EPA (2003) f(RH) tabulation

    Maximum relative humidity (%) used in particle growth curve
                           (RHMAX) -- Default: 98    ! RHMAX  = 95.0 !

    Modeled species to be included in computing the light extinction
     Include SULFATE?          (LVSO4) -- Default: T    ! LVSO4  = T  !
     Include NITRATE?          (LVNO3) -- Default: T    ! LVNO3  = T  !
     Include ORGANIC CARBON?   (LVOC)  -- Default: T    ! LVOC   = T  !
     Include COARSE PARTICLES? (LVPMC) -- Default: T    ! LVPMC  = T  !
     Include FINE PARTICLES?   (LVPMF) -- Default: T    ! LVPMF  = T  !
     Include ELEMENTAL CARBON? (LVEC)  -- Default: T    ! LVEC   = T  !

    And, when ranking for TOP-N, TOP-50, and Exceedance tables,
     Include BACKGROUND?       (LVBK)  -- Default: T    ! LVBK   = F  !

    Species name used for particulates in MODEL.DAT file
                   COARSE    (SPECPMC) -- Default: PMC ! SPECPMC = PMC !
                   FINE      (SPECPMF) -- Default: PMF ! SPECPMF = SOIL !

Extinction Efficiency (1/Mm per ug/m**3)
---------------------------------------
    MODELED particulate species:
               PM  COARSE      (EEPMC) -- Default: 0.6 ! EEPMC  = 0.6 !
               PM  FINE        (EEPMF) -- Default: 1.0 ! EEPMF  = 1.0 !
    BACKGROUND particulate species:
               PM  COARSE    (EEPMCBK) -- Default: 0.6 ! EEPMCBK = 0.6 !
    Other species:
              AMMONIUM SULFATE (EESO4) -- Default: 3.0 ! EESO4  = 3.0 !
              AMMONIUM NITRATE (EENO3) -- Default: 3.0 ! EENO3  = 3.0 !
              ORGANIC CARBON   (EEOC)  -- Default: 4.0 ! EEOC   = 4.0 !
              SOIL             (EESOIL)-- Default: 1.0 ! EESOIL = 1.0 !
              ELEMENTAL CARBON (EEEC)  -- Default: 10. ! EEEC   = 10.0 !

Background Extinction Computation
---------------------------------

    Method used for the 24h-average of percent change of light extinction:
    Hourly ratio of source light extinction / background light extinction
    is averaged?              (LAVER) -- Default: F    ! LAVER = F  !


    Method used for background light extinction
                           (MVISBK) -- Default: 2    ! MVISBK =  2  !

         1 =  Supply single light extinction and hygroscopic fraction
              - Hourly F(RH) adjustment applied to hygroscopic background
                and modeled sulfate and nitrate
         2 =  Compute extinction from speciated PM measurements (A)
              - Hourly F(RH) adjustment applied to observed and modeled sulfate
                and nitrate
```

```
          - F(RH) factor is capped at F(RHMAX)
      3 =  Compute extinction from speciated PM measurements (B)
          - Hourly F(RH) adjustment applied to observed and modeled sulfate
            and nitrate
          - Receptor-hour excluded if RH>RHMAX
          - Receptor-day excluded if fewer than 6 valid receptor-hours
      4 =  Read hourly transmissometer background extinction measurements
          - Hourly F(RH) adjustment applied to modeled sulfate and nitrate
          - Hour excluded if measurement invalid (missing, interference,
            or large RH)
          - Receptor-hour excluded if RH>RHMAX
          - Receptor-day excluded if fewer than 6 valid receptor-hours
      5 =  Read hourly nephelometer background extinction measurements
          - Rayleigh extinction value (BEXTRAY) added to measurement
          - Hourly F(RH) adjustment applied to modeled sulfate and nitrate
          - Hour excluded if measurement invalid (missing, interference,
            or large RH)
          - Receptor-hour excluded if RH>RHMAX
          - Receptor-day excluded if fewer than 6 valid receptor-hours
      6 =  Compute extinction from speciated PM measurements
          - FLAG monthly RH adjustment factor applied to observed and
            modeled sulfate and nitrate
      7 =  Use observed weather or prognostic weather information for
           background extinction during weather events; otherwise, use Method 2
          - Hourly F(RH) adjustment applied to modeled sulfate and nitrate
          - F(RH) factor is capped at F(RHMAX)
          - During observed weather events, compute Bext from visual range
            if using an observed weather data file, or
          - During prognostic weather events, use Bext from the prognostic
            weather file
          - Use Method 2 for hours without a weather event

  Additional inputs used for MVISBK = 1:
  --------------------------------------
   Background light extinction (1/Mm)
                          (BEXTBK) -- No default    ! BEXTBK = 0.0 !
   Percentage of particles affected by relative humidity
                          (RHFRAC) -- No default    ! RHFRAC = 0.0 !

  Additional inputs used for MVISBK = 6:
  --------------------------------------
   Extinction coefficients for hygroscopic species (modeled and
   background) are computed using a monthly RH adjustment factor
   in place of an hourly RH factor (VISB.DAT file is NOT needed).
   Enter the 12 monthly factors here (RHFAC).  Month 1 is January.

   (RHFAC)  -- No default      ! RHFAC = 0.0, 0.0, 0.0, 0.0,
                                         0.0, 0.0, 0.0, 0.0,
                                         0.0, 0.0, 0.0, 0.0 !

USED MVISBK = 6, DAILY EXTINCTIONS CALCULATED FROM MONTHLY F(RH) FROM TABLE A-2
IN "GUIDANCE FOR ESTIMATING NATURAL VISIBLITY CONDITIONS UNDER THE REGIONAL
HAZE RULE (EPA, 2003)".

  Additional inputs used for MVISBK = 7:
  --------------------------------------
   The weather data file (DATSAV abbreviated space-delimited) that
   is identified as VSRN.DAT may contain data for more than one
   station.  Identify the stations that are needed in the order in
   which they will be used to obtain valid weather and visual range.
   The first station that contains valid data for an hour will be
   used.  Enter up to MXWSTA (set in PARAMS file) integer station IDs
   of up to 6 digits each as variable IDWSTA, and enter the corresponding
   time zone for each, as variable TZONE (= UTC-LST).

   A prognostic weather data file with Bext for weather events may be used
   in place of the observed weather file.  Identify this as the VSRN.DAT
   file and use a station ID of IDWSTA = 999999, and TZONE = 0.

   NOTE:  TZONE identifies the time zone used in the dataset.  The
          DATSAV abbreviated space-delimited data usually are prepared
          with UTC time rather than local time, so TZONE is typically
          set to zero.

   (IDWSTA)    -- No default
```

```
     ! IDWSTA = 690230 ,80020 ,80140 !
      (TZONE)     -- No default
     ! TZONE  = 0.0 ,0.0 ,0.0 !


     Additional inputs used for MVISBK = 2,3,6,7:
     --------------------------------------------
      Background extinction coefficients are computed from monthly
      CONCENTRATIONS of ammonium sulfate (BKSO4), ammonium nitrate (BKNO3),
      coarse particulates (BKPMC), organic carbon (BKOC), soil (BKSOIL), and
      elemental carbon (BKEC).  Month 1 is January.
      (ug/m**3)

EXTINCTIONS FOR THE ENP ARE PROVIDED IN THE FLAG DOCUMENT (12/00)
NON-HYGROSCOPIC - 8.5
HYGROSCOPIC -  0.9/3 = 0.3
USED MVISBK = 6, DAILY EXTINCTIONS CALCULATED FROM MONTHLY RH FACTORS PROVIDED

      (BKSO4)   -- No default      ! BKSO4 = 0.3, 0.3, 0.3, 0.3,
                                             0.3, 0.3, 0.3, 0.3,
                                             0.3, 0.3, 0.3, 0.3 !
      (BKNO3)   -- No default      ! BKNO3 = 0.0, 0.0, 0.0, 0.0,
                                             0.0, 0.0, 0.0, 0.0,
                                             0.0, 0.0, 0.0, 0.0 !
      (BKPMC)   -- No default      ! BKPMC = 0.0, 0.0, 0.0, 0.0,
                                             0.0, 0.0, 0.0, 0.0,
                                             0.0, 0.0, 0.0, 0.0 !
      (BKOC)    -- No default      ! BKOC  = 0.0, 0.0, 0.0, 0.0,
                                             0.0, 0.0, 0.0, 0.0,
                                             0.0, 0.0, 0.0, 0.0 !
      (BKSOIL)  -- No default      ! BKSOIL= 8.5, 8.5, 8.5, 8.5,
                                             8.5, 8.5, 8.5, 8.5,
                                             8.5, 8.5, 8.5, 8.5 !
      (BKEC)    -- No default      ! BKEC  = 0.0, 0.0, 0.0, 0.0,
                                             0.0, 0.0, 0.0, 0.0,
                                             0.0, 0.0, 0.0, 0.0 !

     Additional inputs used for MVISBK = 2,3,5,6,7:
     ----------------------------------------------
      Extinction due to Rayleigh scattering is added (1/Mm)
                              (BEXTRAY) -- Default: 10.0 ! BEXTRAY = 10.0 !

RAYLEIGH SCATTERING TAKEN FROM TABLE A2 OF THE "REVISED IMPROVE ALGORITHM FOR ESTIMATING
LIGHT EXTINCTION FROM PARTICLE SPECIATION DATA".

!END!
-------------------------------------------------------------------------------

INPUT GROUP: 3 -- Output options
--------------

Documentation
-------------

     Documentation records contained in the header of the
     CALPUFF output file may be written to the list file.
     Print documentation image?
                                 (LDOC) -- Default: F   !  LDOC =  F  !

Output Units
------------
     Units for All Output        (IPRTU) -- Default: 1   ! IPRTU =  1   !
                       for            for
                  Concentration    Deposition
        1 =          g/m**3          g/m**2/s
        2 =         mg/m**3         mg/m**2/s
        3 =         ug/m**3         ug/m**2/s
        4 =         ng/m**3         ng/m**2/s
        5 =       Odour Units

     Visibility: extinction expressed in 1/Mega-meters (IPRTU is ignored)


Averaging time(s) reported
--------------------------
```

```
    1-hr averages            (L1HR) -- Default: T   !   L1HR = F  !

    3-hr averages            (L3HR) -- Default: T   !   L3HR = F  !

    24-hr averages          (L24HR) -- Default: T   !  L24HR = T  !

    Run-length averages     (LRUNL) -- Default: T   !  LRUNL = F  !

    User-specified averaging time in hours - results for
    an averaging time of NAVG hours are reported for
    NAVG greater than 0:
                             (NAVG) -- Default: 0   !   NAVG =  0  !


Types of tabulations reported
-----------------------------

   1) Visibility: daily visibility tabulations are always reported
                  for the selected receptors when ASPEC = VISIB.
                  In addition, any of the other tabulations listed
                  below may be chosen to characterize the light
                  extinction coefficients.
                  [List file or Plot/Analysis File]


   2) Top 50 table for each averaging time selected
      [List file only]
                             (LT50) -- Default: T   !   LT50 = T  !

   3) Top 'N' table for each averaging time selected
      [List file or Plot file]
                            (LTOPN) -- Default: F   !  LTOPN = F  !

        -- Number of 'Top-N' values at each receptor
           selected (NTOP must be <= 4)
                            (NTOP) -- Default: 4   ! NTOP =  2   !

        -- Specific ranks of 'Top-N' values reported
           (NTOP values must be entered)
                   (ITOP(4) array) -- Default:     ! ITOP =  1,2  !
                                      1,2,3,4


   4) Threshold exceedance counts for each receptor and each averaging
      time selected
      [List file or Plot file]
                           (LEXCD) -- Default: F   !  LEXCD = F  !

        -- Identify the threshold for each averaging time by assigning a
           non-negative value (output units).

                                   -- Default: -1.0
           Threshold for  1-hr averages   (THRESH1) !  THRESH1 = -1.0  !
           Threshold for  3-hr averages   (THRESH3) !  THRESH3 = -1.0  !
           Threshold for 24-hr averages  (THRESH24) ! THRESH24 = -1.0  !
           Threshold for NAVG-hr averages (THRESHN) !  THRESHN = -1.0  !


        -- Counts for the shortest averaging period selected can be
           tallied daily, and receptors that experience more than NCOUNT
           counts over any NDAY period will be reported.  This type of
           exceedance violation output is triggered only if NDAY > 0.

           Accumulation period(Days)
                            (NDAY) -- Default: 0   !    NDAY =  0  !
           Number of exceedances allowed
                          (NCOUNT) -- Default: 1   !  NCOUNT =  1  !


   5) Selected day table(s)

      Echo Option -- Many records are written each averaging period
      selected and output is grouped by day
      [List file or Plot file]
```

```
                        (LECHO) -- Default: F    !  LECHO = F  !

      Timeseries Option -- Averages at all selected receptors for
      each selected averaging period are written to timeseries files.
      Each file contains one averaging period, and all receptors are
      written to a single record each averaging time.
      [TSERIES_ASPEC_ttHR_CONC_TSUNAM.DAT files]
                        (LTIME) -- Default: F    !  LTIME = F  !

      Peak Value Option -- Averages at all selected receptors for
      each selected averaging period are screened and the peak value
      each period is written to timeseries files.
      Each file contains one averaging period.
      [PEAKVAL_ASPEC_ttHR_CONC_TSUNAM.DAT files]
                        (LPEAK) -- Default: F    !  LPEAK = F  !

        -- Days selected for output
                    (IECHO(366)) -- Default: 366*0
           ! IECHO  = 366*0  !
           (366 values must be entered)

Plot output options
-------------------

     Plot files can be created for the Top-N, Exceedance, and Echo
     tables selected above.  Two formats for these files are available,
     DATA and GRID.  In the DATA format, results at all receptors are
     listed along with the receptor location [x,y,val1,val2,...].
     In the GRID format, results at only gridded receptors are written,
     using a compact representation.  The gridded values are written in
     rows (x varies), starting with the most southern row of the grid.
     The GRID format is given the .GRD extension, and includes headers
     compatible with the SURFER(R) plotting software.

     A plotting and analysis file can also be created for the daily
     peak visibility summary output, in DATA format only.

     Generate Plot file output in addition to writing tables
     to List file?
                              (LPLT) -- Default: F    ! LPLT  = F !

     Use GRID format rather than DATA format,
     when available?
                              (LGRD) -- Default: F    ! LGRD  = F !


Auxiliary Output Files (for subsequent analyses)
------------------------------------------------

      Visibility

      A separate output file may be requested that contains the change
      in visibility at each selected receptor when ASPEC = VISIB.  This
      file can be processed to construct visibility measures that are
      not available in CALPOST.

      Output file with the visibility change at each receptor?
                           (MDVIS) -- Default: 0    ! MDVIS  = 0 !

           0 =  Do Not create file
           1 =  Create file of DAILY (24 hour) Delta-Deciview
           2 =  Create file of DAILY (24 hour) Extinction Change (%)
           3 =  Create file of HOURLY Delta-Deciview
           4 =  Create file of HOURLY Extinction Change (%)


Additional Debug Output
-----------------------

   Output selected information to List file
    for debugging?
                           (LDEBUG) -- Default: F  ! LDEBUG  = F !

   Output hourly extinction information to REPORT.HRV?
```

```
   (Visibility Method 7)
                              (LVEXTHR) -- Default: F   ! LVEXTHR = F !

!END!
```

APPENDIX D

SAMPLE CALPOST MODEL CONTROL FILE FOR NITROGEN DEPOSITION

```
FPL WCEC UNIT 3 PROJECT - CALPOST N DEPOSITION IMPACTS   EPA   8/22/07
EVERGLADES NP
4-km FL DOMAIN, 2002, ENP RECEPTORS
---------------- Run title (3 lines) ------------------------------------------

                    CALPOST MODEL CONTROL FILE
                    --------------------------

------------------------------------------------------------------------------

INPUT GROUP: 0 -- Input and Output File Names
--------------

Input Files
-----------

File                        Default File Name
----                        -----------------
Conc/Dep Flux File          MODEL.DAT          ! MODDAT =..\EXAMPLE.DEP  !
Relative Humidity File      VISB.DAT           * VISDAT =   *
Background Data File        BACK.DAT           *BACKDAT =   *
Transmissometer or          VSRN.DAT           *VSRDAT =    *
Nephelometer Data File       or
DATSAV Weather Data File     or
Prognostic Weather  File

Output Files
------------

File                        Default File Name
----                        -----------------
List File                   CALPOST.LST        ! PSTLST =EXAMPLENDEP.LST  !

Pathname for Timeseries Files   (blank)        * TSPATH =    *
(activate with exclamation points only if
providing NON-BLANK character string)

Pathname for Plot Files   (blank)              * PLPATH =    *
(activate with exclamation points only if
 providing NON-BLANK character string)

User Character String (U) to augment default filenames
(activate with exclamation points only if
 providing NON-BLANK character string)

Timeseries          TSERIES_ASPEC_ttHR_CONC_TSUNAM.DAT
Peak Value          PEAKVAL_ASPEC_ttHR_CONC_TSUNAM.DAT

                                               * TSUNAM =    *

Top Nth Rank Plot   RANK(ALL)_ASPEC_ttHR_CONC_TUNAM.DAT
               or   RANK(ii)_ASPEC_ttHR_CONC_TUNAM.GRD

                                               * TUNAM =    *

Exceedance Plot      EXCEED_ASPEC_ttHR_CONC_XUNAM.DAT
                or   EXCEED_ASPEC_ttHR_CONC_XUNAM.GRD
```

```
                                                  * XUNAM =    *

Echo Plot
(Specific Days)
          yyyy_Mmm_Ddd_hh00(UTCszzzz)_L00_ASPEC_ttHR_CONC.DAT
     or   yyyy_Mmm_Ddd_hh00(UTCszzzz)_L00_ASPEC_ttHR_CONC.GRD


Visibility Plot      DAILY_VISIB_VUNAM.DAT    ! VUNAM =VTEST    !
(Daily Peak Summary)



Auxiliary Output Files
----------------------

File                        Default File Name
----                        -----------------
Visibility Change           DELVIS.DAT           * DVISDAT = deciview.dat   *


-------------------------------------------------------------------------------
All file names will be converted to lower case if LCFILES = T
Otherwise, if LCFILES = F, file names will be converted to UPPER CASE
         T = lower case               ! LCFILES = T !
         F = UPPER CASE
NOTE: (1) file/path names can be up to 132 characters in length
NOTE: (2) Filenames for ALL PLOT and TIMESERIES FILES are constructed
          using a template that includes a pathname, user-supplied
          character(s), and context-specific strings, where
             ASPEC = Species Name
              CONC = CONC Or WFLX Or DFLX Or TFLX
                tt = Averaging Period (e.g. 03)
                ii = Rank (e.g. 02)
                hh = Hour(ending) in LST
             szzzz = LST time zone shift (EST is -0500)
              yyyy = Year(LST)
                mm = Month(LST)
                dd = day of month (LST)
          are determined internally based on selections made below.
          If a path or user-supplied character(s) are supplied, each
          must contain at least 1 non-blank character.

!END!
-------------------------------------------------------------------------------

INPUT GROUP: 1 -- General run control parameters
--------------

     Option to run all periods found
     in the met. file(s)  (METRUN)        Default: 0    ! METRUN =    0   !

         METRUN = 0 - Run period explicitly defined below
         METRUN = 1 - Run all periods in CALPUFF data file(s)

     Starting date:    Year  (ISYR) --    No default    ! ISYR  =  2002    !
```

```
     (used only if     Month (ISMO) --    No default   ! ISMO  =  1   !
      METRUN = 0)      Day   (ISDY) --    No default   ! ISDY  =  1   !
                       Hour  (ISHR) --    No default   ! ISHR  =  1   !

     Number of hours to process (NHRS) -- No default   ! NHRS  =  8760  !

     Process every hour of data?(NREP) -- Default: 1   ! NREP  =  1   !
      (1 = every hour processed,
       2 = every 2nd hour processed,
       5 = every 5th hour processed, etc.)

Species & Concentration/Deposition Information
----------------------------------------------

      Species to process (ASPEC)       -- No default   ! ASPEC = N !
      (ASPEC = VISIB for visibility processing)

      Layer/deposition code (ILAYER)   -- Default: 1   ! ILAYER = -3 !
        '1'  for CALPUFF concentrations,
        '-1' for dry deposition fluxes,
        '-2' for wet deposition fluxes,
        '-3' for wet+dry deposition fluxes.

      Scaling factors of the form:     -- Defaults:    ! A =  0.0    !
            X(new) = X(old) * A + B     \    A = 0.0   ! B =  0.0    !
        (NOT applied if A = B = 0.0)         B = 0.0

      Add Hourly Background Concentrations/Fluxes?
                              (LBACK)  -- Default: F   ! LBACK =  F !

Source information
------------------

  Option to process source contributions:
         0 =  Process only total reported contributions
         1 =  Sum all individual source contributions and process
         2 =  Run in TRACEBACK mode to identify source
              contributions at a SINGLE receptor
                            (MSOURCE) -- Default: 0   ! MSOURCE =  0  !

Receptor information
--------------------

  Gridded receptors processed?     (LG) -- Default: F   ! LG  = F  !
  Discrete receptors processed?    (LD) -- Default: F   ! LD  = T  !
  CTSG Complex terrain receptors processed?
                                  (LCT) -- Default: F   ! LCT = F  !

--Report results by DISCRETE receptor RING?
  (only used when LD = T)      (LDRING) -- Default: F   ! LDRING = F  !

--Select range of DISCRETE receptors (only used when LD = T):

  Select ALL DISCRETE receptors by setting NDRECP flag to -1;
                               OR
  Select SPECIFIC DISCRETE receptors by entering a flag (0,1) for each
     0 = discrete receptor not processed
```

```
    1 = discrete receptor processed
  using repeated value notation to select blocks of receptors:
    23*1, 15*0, 12*1
  Flag for all receptors after the last one assigned is set to 0
  (NDRECP) -- Default: -1

  ! NDRECP = -1 !


--Select range of GRIDDED receptors (only used when LG = T):

      X index of LL corner (IBGRID) -- Default: -1     ! IBGRID = -1  !
          (-1 OR 1 <= IBGRID <= NX)

      Y index of LL corner (JBGRID) -- Default: -1     ! JBGRID = -1  !
          (-1 OR 1 <= JBGRID <= NY)

      X index of UR corner (IEGRID) -- Default: -1     ! IEGRID = -1  !
          (-1 OR 1 <= IEGRID <= NX)

      Y index of UR corner (JEGRID) -- Default: -1     ! JEGRID = -1  !
          (-1 OR 1 <= JEGRID <= NY)

  Note: Entire grid is processed if IBGRID=JBGRID=IEGRID=JEGRID=-1


--Specific gridded receptors can also be excluded from CALPOST
  processing by filling a processing grid array with 0s and 1s.  If the
  processing flag for receptor index (i,j) is 1 (ON), that receptor
  will be processed if it lies within the range delineated by IBGRID,
  JBGRID,IEGRID,JEGRID and if LG=T. If it is 0 (OFF), it will not be
  processed in the run.  By default, all array values are set to 1 (ON).

  Number of gridded receptor rows provided in Subgroup (1a) to
  identify specific gridded receptors to process
                          (NGONOFF) -- Default: 0      ! NGONOFF =  0  !

!END!


--------------
Subgroup (1a) -- Specific gridded receptors included/excluded
--------------

    Specific gridded receptors are excluded from CALPOST processing
    by filling a processing grid array with 0s and 1s.  A total of
    NGONOFF lines are read here.  Each line corresponds to one 'row'
    in the sampling grid, starting with the NORTHERNMOST row that
    contains receptors that you wish to exclude, and finishing with
    row 1 to the SOUTH (no intervening rows may be skipped).  Within
    a row, each receptor position is assigned either a 0 or 1,
    starting with the westernmost receptor.
       0 = gridded receptor not processed
       1 = gridded receptor processed

    Repeated value notation may be used to select blocks of receptors:
       23*1, 15*0, 12*1
```

```
    Because all values are initially set to 1, any receptors north of
    the first row entered, or east of the last value provided in a row,
    remain ON.

    (NGXRECP) -- Default: 1

------------------------------------------------------------------------------

INPUT GROUP: 2 -- Visibility Parameters (ASPEC = VISIB)
--------------

    Identify the Base Time Zone for the CALPUFF simulation
                              (BTZONE) -- No default   ! BTZONE =  5.!

    Particle growth curve f(RH) for hygroscopic species
                               (MFRH) -- Default: 2   ! MFRH   =  2  !

        1 =  IWAQM (1998) f(RH) curve (originally used with MVISBK=1)
        2 =  FLAG (2000) f(RH) tabulation
        3 =  EPA (2003) f(RH) tabulation

    Maximum relative humidity (%) used in particle growth curve
                               (RHMAX) -- Default: 98   ! RHMAX  = 95.0 !

    Modeled species to be included in computing the light extinction
     Include SULFATE?          (LVSO4) -- Default: T   ! LVSO4  = T  !
     Include NITRATE?          (LVNO3) -- Default: T   ! LVNO3  = T  !
     Include ORGANIC CARBON?   (LVOC)  -- Default: T   ! LVOC   = T  !
     Include COARSE PARTICLES? (LVPMC) -- Default: T   ! LVPMC  = T  !
     Include FINE PARTICLES?   (LVPMF) -- Default: T   ! LVPMF  = T  !
     Include ELEMENTAL CARBON? (LVEC)  -- Default: T   ! LVEC   = T  !

    And, when ranking for TOP-N, TOP-50, and Exceedance tables,
     Include BACKGROUND?       (LVBK)  -- Default: T   ! LVBK   = F  !

    Species name used for particulates in MODEL.DAT file
                  COARSE    (SPECPMC) -- Default: PMC ! SPECPMC = PMC !
                  FINE      (SPECPMF) -- Default: PMF ! SPECPMF = SOIL !

Extinction Efficiency (1/Mm per ug/m**3)
----------------------------------------
    MODELED particulate species:
              PM  COARSE      (EEPMC) -- Default: 0.6 ! EEPMC  = 0.6 !
              PM  FINE        (EEPMF) -- Default: 1.0 ! EEPMF  = 1.0 !
    BACKGROUND particulate species:
              PM  COARSE    (EEPMCBK) -- Default: 0.6 ! EEPMCBK = 0.6 !
    Other species:
             AMMONIUM SULFATE (EESO4) -- Default: 3.0 ! EESO4  = 3.0 !
             AMMONIUM NITRATE (EENO3) -- Default: 3.0 ! EENO3  = 3.0 !
             ORGANIC CARBON   (EEOC)  -- Default: 4.0 ! EEOC   = 4.0 !
             SOIL             (EESOIL)-- Default: 1.0 ! EESOIL = 1.0 !
             ELEMENTAL CARBON (EEEC)  -- Default: 10. ! EEEC   = 10.0 !

Background Extinction Computation
---------------------------------
```

Method used for the 24h-average of percent change of light extinction:
Hourly ratio of source light extinction / background light extinction
is averaged? (LAVER) -- Default: F ! LAVER = F !

Method used for background light extinction
(MVISBK) -- Default: 2 ! MVISBK = 2 !

1 = Supply single light extinction and hygroscopic fraction
- Hourly F(RH) adjustment applied to hygroscopic background and modeled sulfate and nitrate

2 = Compute extinction from speciated PM measurements (A)
- Hourly F(RH) adjustment applied to observed and modeled sulfate and nitrate
- F(RH) factor is capped at F(RHMAX)

3 = Compute extinction from speciated PM measurements (B)
- Hourly F(RH) adjustment applied to observed and modeled sulfate and nitrate
- Receptor-hour excluded if RH>RHMAX
- Receptor-day excluded if fewer than 6 valid receptor-hours

4 = Read hourly transmissometer background extinction measurements
- Hourly F(RH) adjustment applied to modeled sulfate and nitrate
- Hour excluded if measurement invalid (missing, interference, or large RH)
- Receptor-hour excluded if RH>RHMAX
- Receptor-day excluded if fewer than 6 valid receptor-hours

5 = Read hourly nephelometer background extinction measurements
- Rayleigh extinction value (BEXTRAY) added to measurement
- Hourly F(RH) adjustment applied to modeled sulfate and nitrate
- Hour excluded if measurement invalid (missing, interference, or large RH)
- Receptor-hour excluded if RH>RHMAX
- Receptor-day excluded if fewer than 6 valid receptor-hours

6 = Compute extinction from speciated PM measurements
- FLAG monthly RH adjustment factor applied to observed and modeled sulfate and nitrate

7 = Use observed weather or prognostic weather information for background extinction during weather events; otherwise, use Method 2
- Hourly F(RH) adjustment applied to modeled sulfate and nitrate
- F(RH) factor is capped at F(RHMAX)
- During observed weather events, compute Bext from visual range if using an observed weather data file, or
- During prognostic weather events, use Bext from the prognostic weather file
- Use Method 2 for hours without a weather event

Additional inputs used for MVISBK = 1:

Background light extinction (1/Mm)
(BEXTBK) -- No default ! BEXTBK = 0.0 !
Percentage of particles affected by relative humidity
(RHFRAC) -- No default ! RHFRAC = 0.0 !

Additional inputs used for MVISBK = 6:

```
      Extinction coefficients for hygroscopic species (modeled and
      background) are computed using a monthly RH adjustment factor
      in place of an hourly RH factor (VISB.DAT file is NOT needed).
      Enter the 12 monthly factors here (RHFAC).  Month 1 is January.

      (RHFAC)  -- No default      ! RHFAC = 0.0, 0.0, 0.0, 0.0,
                                            0.0, 0.0, 0.0, 0.0,
                                            0.0, 0.0, 0.0, 0.0 !

USED MVISBK = 6, DAILY EXTINCTIONS CALCULATED FROM MONTHLY F(RH) FROM TABLE A-2
IN "GUIDANCE FOR ESTIMATING NATURAL VISIBLITY CONDITIONS UNDER THE REGIONAL
HAZE RULE (EPA, 2003)".

    Additional inputs used for MVISBK = 7:
    --------------------------------------
      The weather data file (DATSAV abbreviated space-delimited) that
      is identified as VSRN.DAT may contain data for more than one
      station.  Identify the stations that are needed in the order in
      which they will be used to obtain valid weather and visual range.
      The first station that contains valid data for an hour will be
      used.  Enter up to MXWSTA (set in PARAMS file) integer station IDs
      of up to 6 digits each as variable IDWSTA, and enter the corresponding
      time zone for each, as variable TZONE (= UTC-LST).

      A prognostic weather data file with Bext for weather events may be used
      in place of the observed weather file.  Identify this as the VSRN.DAT
      file and use a station ID of IDWSTA = 999999, and TZONE = 0.

      NOTE:  TZONE identifies the time zone used in the dataset.  The
             DATSAV abbreviated space-delimited data usually are prepared
             with UTC time rather than local time, so TZONE is typically
             set to zero.

      (IDWSTA)    -- No default
     ! IDWSTA = 690230 ,80020 ,80140 !
      (TZONE)     -- No default
     ! TZONE  = 0.0 ,0.0 ,0.0 !

    Additional inputs used for MVISBK = 2,3,6,7:
    --------------------------------------------
      Background extinction coefficients are computed from monthly
      CONCENTRATIONS of ammonium sulfate (BKSO4), ammonium nitrate (BKNO3),
      coarse particulates (BKPMC), organic carbon (BKOC), soil (BKSOIL), and
      elemental carbon (BKEC).  Month 1 is January.
      (ug/m**3)

EXTINCTIONS FOR THE ENP ARE PROVIDED IN THE FLAG DOCUMENT (12/00)
NON-HYGROSCOPIC - 8.5
HYGROSCOPIC -  0.9/3 = 0.3
USED MVISBK = 6, DAILY EXTINCTIONS CALCULATED FROM MONTHLY RH FACTORS PROVIDED

      (BKSO4)  -- No default      ! BKSO4 = 0.3, 0.3, 0.3, 0.3,
                                            0.3, 0.3, 0.3, 0.3,
                                            0.3, 0.3, 0.3, 0.3 !
      (BKNO3)  -- No default      ! BKNO3 = 0.0, 0.0, 0.0, 0.0,
                                            0.0, 0.0, 0.0, 0.0,
```

```
                                          0.0, 0.0, 0.0, 0.0 !
     (BKPMC)   -- No default      ! BKPMC = 0.0, 0.0, 0.0, 0.0,
                                          0.0, 0.0, 0.0, 0.0,
                                          0.0, 0.0, 0.0, 0.0 !
     (BKOC)    -- No default      ! BKOC  = 0.0, 0.0, 0.0, 0.0,
                                          0.0, 0.0, 0.0, 0.0,
                                          0.0, 0.0, 0.0, 0.0 !
     (BKSOIL)  -- No default      ! BKSOIL= 8.5, 8.5, 8.5, 8.5,
                                          8.5, 8.5, 8.5, 8.5,
                                          8.5, 8.5, 8.5, 8.5 !
     (BKEC)    -- No default      ! BKEC  = 0.0, 0.0, 0.0, 0.0,
                                          0.0, 0.0, 0.0, 0.0,
                                          0.0, 0.0, 0.0, 0.0 !

    Additional inputs used for MVISBK = 2,3,5,6,7:
    ----------------------------------------------
     Extinction due to Rayleigh scattering is added (1/Mm)
                             (BEXTRAY) -- Default: 10.0 ! BEXTRAY = 10.0 !

RAYLEIGH SCATTERING TAKEN FROM TABLE A2 OF THE "REVISED IMPROVE ALGORITHM FOR
ESTIMATING
LIGHT EXTINCTION FROM PARTICLE SPECIATION DATA".

!END!
--------------------------------------------------------------------------------

INPUT GROUP: 3 -- Output options
--------------

Documentation
-------------

    Documentation records contained in the header of the
    CALPUFF output file may be written to the list file.
    Print documentation image?
                                (LDOC) -- Default: F   !  LDOC =  F  !

Output Units
------------
    Units for All Output        (IPRTU) -- Default: 1   ! IPRTU =  1   !
                      for           for
                Concentration    Deposition
       1 =          g/m**3         g/m**2/s
       2 =         mg/m**3        mg/m**2/s
       3 =         ug/m**3        ug/m**2/s
       4 =         ng/m**3        ng/m**2/s
       5 =       Odour Units

    Visibility: extinction expressed in 1/Mega-meters (IPRTU is ignored)


Averaging time(s) reported
--------------------------

    1-hr averages            (L1HR) -- Default: T   !   L1HR = F  !

    3-hr averages            (L3HR) -- Default: T   !   L3HR = F  !
```

```
   24-hr averages          (L24HR) -- Default: T    !  L24HR = F  !

   Run-length averages     (LRUNL) -- Default: T    !  LRUNL = T  !

   User-specified averaging time in hours - results for
   an averaging time of NAVG hours are reported for
   NAVG greater than 0:
                           (NAVG) -- Default: 0    !   NAVG =  0  !


Types of tabulations reported
-----------------------------

   1) Visibility: daily visibility tabulations are always reported
                  for the selected receptors when ASPEC = VISIB.
                  In addition, any of the other tabulations listed
                  below may be chosen to characterize the light
                  extinction coefficients.
                  [List file or Plot/Analysis File]


   2) Top 50 table for each averaging time selected
      [List file only]
                           (LT50) -- Default: T    !   LT50 = F  !

   3) Top 'N' table for each averaging time selected
      [List file or Plot file]
                          (LTOPN) -- Default: F    !  LTOPN = T  !

        -- Number of 'Top-N' values at each receptor
           selected (NTOP must be <= 4)
                           (NTOP) -- Default: 4    ! NTOP =  1   !

        -- Specific ranks of 'Top-N' values reported
           (NTOP values must be entered)
                  (ITOP(4) array) -- Default:      ! ITOP =  1  !
                                     1,2,3,4


   4) Threshold exceedance counts for each receptor and each averaging
      time selected
      [List file or Plot file]
                          (LEXCD) -- Default: F    !  LEXCD = F  .!

        -- Identify the threshold for each averaging time by assigning a
           non-negative value (output units).

                                   -- Default: -1.0
           Threshold for  1-hr averages   (THRESH1) !  THRESH1 = -1.0  !
           Threshold for  3-hr averages   (THRESH3) !  THRESH3 = -1.0  !
           Threshold for 24-hr averages  (THRESH24) ! THRESH24 = -1.0  !
           Threshold for NAVG-hr averages (THRESHN) !  THRESHN = -1.0  !


        -- Counts for the shortest averaging period selected can be
           tallied daily, and receptors that experience more than NCOUNT
```

```
        counts over any NDAY period will be reported.  This type of
        exceedance violation output is triggered only if NDAY > 0.

        Accumulation period(Days)
                          (NDAY) -- Default: 0    !    NDAY =  0   !
        Number of exceedances allowed
                        (NCOUNT) -- Default: 1    !  NCOUNT =  1   !
```

5) Selected day table(s)

```
    Echo Option -- Many records are written each averaging period
    selected and output is grouped by day
    [List file or Plot file]
                          (LECHO) -- Default: F    !  LECHO = F   !

    Timeseries Option -- Averages at all selected receptors for
    each selected averaging period are written to timeseries files.
    Each file contains one averaging period, and all receptors are
    written to a single record each averaging time.
    [TSERIES_ASPEC_ttHR_CONC_TSUNAM.DAT files]
                          (LTIME) -- Default: F    !  LTIME = F   !

    Peak Value Option -- Averages at all selected receptors for
    each selected averaging period are screened and the peak value
    each period is written to timeseries files.
    Each file contains one averaging period.
    [PEAKVAL_ASPEC_ttHR_CONC_TSUNAM.DAT files]
                          (LPEAK) -- Default: F    !  LPEAK = F   !

      -- Days selected for output
                     (IECHO(366)) -- Default: 366*0
        ! IECHO  = 366*0  !
        (366 values must be entered)
```

Plot output options

```
    Plot files can be created for the Top-N, Exceedance, and Echo
    tables selected above.  Two formats for these files are available,
    DATA and GRID.  In the DATA format, results at all receptors are
    listed along with the receptor location [x,y,val1,val2,...].
    In the GRID format, results at only gridded receptors are written,
    using a compact representation.  The gridded values are written in
    rows (x varies), starting with the most southern row of the grid.
    The GRID format is given the .GRD extension, and includes headers
    compatible with the SURFER(R) plotting software.

    A plotting and analysis file can also be created for the daily
    peak visibility summary output, in DATA format only.

    Generate Plot file output in addition to writing tables
    to List file?
                                  (LPLT) -- Default: F    ! LPLT  = F !

    Use GRID format rather than DATA format,
    when available?
```

```
                                (LGRD) -- Default: F    ! LGRD   = F !

Auxiliary Output Files (for subsequent analyses)
------------------------------------------------

      Visibility

      A separate output file may be requested that contains the change
      in visibility at each selected receptor when ASPEC = VISIB.  This
      file can be processed to construct visibility measures that are
      not available in CALPOST.

      Output file with the visibility change at each receptor?
                               (MDVIS) -- Default: 0    ! MDVIS  = 0 !

           0 =  Do Not create file
           1 =  Create file of DAILY (24 hour) Delta-Deciview
           2 =  Create file of DAILY (24 hour) Extinction Change (%)
           3 =  Create file of HOURLY Delta-Deciview
           4 =  Create file of HOURLY Extinction Change (%)

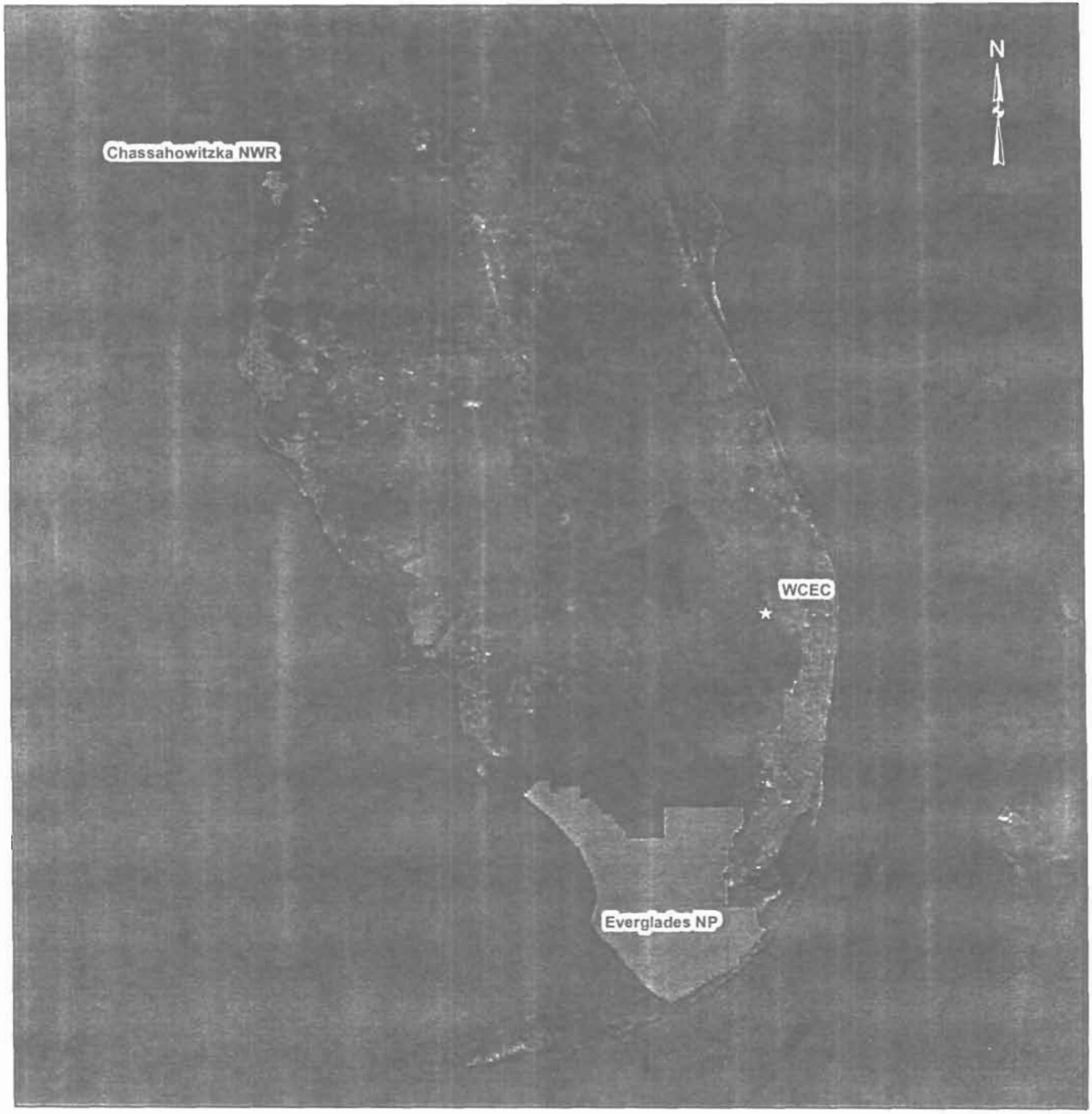

Additional Debug Output
-----------------------

   Output selected information to List file
    for debugging?
                              (LDEBUG) -- Default: F   ! LDEBUG  = F !

   Output hourly extinction information to REPORT.HRV?
    (Visibility Method 7)
                             (LVEXTHR) -- Default: F   ! LVEXTHR = F !

!END!
```

BEST AVAILABLE COPY



LEGEND

☆ WCEC

National Parks and Wildlife Refuges

REFERENCE

1. WCEC Golder Associates Inc. 2. Aerial Photography - Aerials Express 1/15/2006 via ESRI ArcGIS Online Imagery 3. National Parks ESRI Data and Maps Media Kit

Projection: Transverse Mercator Datum: NAD 83 Coordinate System: UTM Zone 17

50 0 50 Kilometers

PROJECT

WEST COUNTY ENERGY CENTER UNIT 3
MODELING PROTOCOL

TITLE

AREA MAP

Golder Associates
Gainesville, Florida

PROJECT No. 073-89586-0203			SCALE AS SHOWN	REV. 0
DESIGN	SM	08/23/2007		
GIS	RL	08/23/2007		
CHECK	SM	08/23/2007		
REVIEW	SM	08/23/2007		

FIGURE 1