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BUREAU OF AIR REGULATION

TITLE V OPERATION PERMIT APPLICATION FOR HINES ENERGY COMPLEX POWER BLOCK 2

Prepared for:

Progress Energy Corporation
100 Central Avenue, BB1A-HE44
St. Petersburg, FL 33701

Prepared by:

Golder Associates Inc.
6241 NW 23rd Street, Suite 500
Gainesville, Florida 32653-1500

February 2004
0437512

1050234-008-AV
2/16/04

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4 Copies – FDEP
2 Copies – Progress Energy Corp.
1 Copy – Golder Associates Inc.

Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

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BUREAU OF AIR REGULATION

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit for a proposed project:

- subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or
- where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or
- at an existing federally enforceable state air operation permit (FESOP) or Title V permitted facility.

Air Operation Permit – Use this form to apply for:

- an initial federally enforceable state air operation permit (FESOP); or
- an initial/revised/renewal Title V air operation permit.

Air Construction Permit & Revised/Renewal Title V Air Operation Permit (Concurrent Processing Option) – Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: **Progress Energy Corporation**
2. Site Name: **Hines Energy Complex**
3. Facility Identification Number: **1050234**
4. Facility Location...:
   Street Address or Other Locator: **County Road 555; 2.5 miles South of CR 640**
   City: **Bartow** County: **Polk** Zip Code: **33830**
5. Relocatable Facility? ☐ Yes ☒ No
6. Existing Title V Permitted Facility? ☒ Yes ☐ No

Application Contact

1. Application Contact Name: **Dave Meyer, P.E. , Senior Environmental Specialist**
2. Application Contact Mailing Address...
   Organization/Firm: **Progress Energy Corporation**
   Street Address: **100 Central Avenue, BB1A-HE44**
   City: **St. Petersburg** State: **FL** Zip Code: **33701**
3. Application Contact Telephone Numbers...
   Telephone: **(727) 826-4187** ext. Fax: **(727) 826-4216**
4. Application Contact Email Address: **Dave.Meyer@pgnmail.com**

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	2/16/04
2. Project Number(s):	1050234-008-AV
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

APPLICATION INFORMATION

Purpose of Application

This application for air permit is submitted to obtain: (Check one)

Air Construction Permit

☐ Air construction permit.

Air Operation Permit

☐ Initial Title V air operation permit.

☒ Title V air operation permit revision.

☐ Title V air operation permit renewal.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

☐ Air construction permit and Title V permit revision, incorporating the proposed project.

☐ Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

☐ I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

The current Construction Permit is DEP file No. 1050234-004-AC, PSD-FL-296.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Proc. Fee
014	CT-1; Power Block 2		
015	CT-2; Power Block 2		

Application Processing Fee

Check one: ☐ Attached - Amount: $_____ ☒ Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :

2. Owner/Authorized Representative Mailing Address...
   Organization/Firm:
   Street Address:
   City: State: Zip Code:

3. Owner/Authorized Representative Telephone Numbers...
   Telephone: ( ) - ext. Fax: ( ) -

4. Owner/Authorized Representative Email Address:

5. Owner/Authorized Representative Statement:

   I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.

   Signature Date

APPLICATION INFORMATION

Application Responsible Official Certification

Complete if applying for an initial/revised/renewal Title V permit or concurrent processing of an air construction permit and a revised/renewal Title V permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name:
   Roger Zirkle, Plant Manager

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):
   - ☒ For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.
   - ☐ For a partnership or sole proprietorship, a general partner or the proprietor, respectively.
   - ☐ For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.
   - ☐ The designated representative at an Acid Rain source.

3. Application Responsible Official Mailing Address...
   Organization/Firm: **Progress Energy Corporation**
   Street Address: **100 Central Avenue BB1A-HE44**
   City: **St. Petersburg** State: **FL** Zip Code: **33701-5511**

4. Application Responsible Official Telephone Numbers...
   Telephone: **(863) 519-6103** ext. Fax: **(863) 519-6110**

5. Application Responsible Official Email Address:

6. Application Responsible Official Certification:
   I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.

Paul Crimi — Signature

02/12/04 — Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: **Kennard F. Kosky**
   Registration Number: **14996**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Golder Associates Inc.****
   Street Address: **6241 NW 23rd Street, Suite 500**
   City: **Gainesville** State: **FL** Zip Code: **32653**
3. Professional Engineer Telephone Numbers...
   Telephone: **(352) 336-5600** ext. Fax: **(352) 336-6603**
4. Professional Engineer Email Address: **Ken_Kosky@golder.com**
5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☑, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☐, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here ☐, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☐, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Signature (seal) Date: 2/6/04

* Attach any exception to certification statement.
** Board of Professional Engineers Certificate of Authorization #00001670

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone **17** East (km) **414.4** North (km) **3073.9**		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) **27/47/19** Longitude (DD/MM/SS) **81/52/10**	
3. Governmental Facility Code: **0**	4. Facility Status Code: **C**	5. Facility Major Group SIC Code: **49**	6. Facility SIC(s): **4911**
7. Facility Comment : **Operation of Power Block 1 began in 1999. Power Block 1 is a nominal 470 MW combined cycle unit consisting of 2 CTs, 2 HRSG's, and 1 steam turbine. The CTs fire natural gas with distillate oil as a backup. The HRSGs are unfired. This application is for the addition of Power Block 2, a nominal 530 MW combined cycle application.**			

Facility Contact

1. Facility Contact Name: **Roger Zirkle, Plant Manager**
2. Facility Contact Mailing Address... Organization/Firm: **Hines Energy Complex** Street Address: **7700 County Road 555** City: **Bartow** State: **FL** Zip Code: **33830**
3. Facility Contact Telephone Numbers: Telephone: **(863) 519-6103** ext. Fax: **(863) 519-6110**
4. Facility Contact Email Address:

Facility Primary Responsible Official

Complete if an "application responsible official" is identified in Section I. that is not the facility "primary responsible official."

1. Facility Primary Responsible Official Name:
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: ( ) - ext. Fax: ( ) -
4. Facility Primary Responsible Official Email Address:

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a "major source" and a "synthetic minor source."

1. ☐ Small Business Stationary Source	☐ Unknown
2. ☐ Synthetic Non-Title V Source	
3. ☒ Title V Source	
4. ☒ Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. ☐ Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. ☐ Major Source of Hazardous Air Pollutants (HAPs)	
7. ☐ Synthetic Minor Source of HAPs	
8. ☒ One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. ☐ One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. ☐ One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. ☐ Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment: **Applicable NSPS is 40 CFR Part 60; Subpart GG.**	

FACILITY INFORMATION

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
Particulate Matter - Total (PM)	**A**	
Sulfur Dioxide (SO_2)	**A**	
Nitrogen Oxides (NO_x)	**A**	
Carbon Monoxide (CO)	**A**	
Volatile Organic Compounds (VOC)	**A**	
Sulfuric Acid Mist (SAM)	**B**	

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

1. Pollutant Subject to Emissions Cap	2. Facility Wide Cap [Y or N]? (all units)	3. Emissions Unit ID No.s Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap

7. Facility-Wide or Multi-Unit Emissions Cap Comment:

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☒ Attached, Document ID: **PEF-FI-C1** ☐ Previously Submitted, Date:____
2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☒ Attached, Document ID: **PEF-FI-C2** ☐ Previously Submitted, Date:____
3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) ☐ Attached, Document ID:____ ☒ Previously Submitted, Date:____

Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location: ☐ Attached, Document ID:____ ☒ Not Applicable (existing permitted facility)
2. Description of Proposed Construction or Modification: ☐ Attached, Document ID:____
3. Rule Applicability Analysis: ☐ Attached, Document ID:____
4. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.): ☐ Attached, Document ID:____ ☒ Not Applicable (no exempt units at facility)
5. Fugitive Emissions Identification (Rule 62-212.400(2), F.A.C.): ☐ Attached, Document ID:____ ☒ Not Applicable
6. Preconstruction Air Quality Monitoring and Analysis (Rule 62-212.400(5)(f), F.A.C.): ☐ Attached, Document ID:____ ☒ Not Applicable
7. Ambient Impact Analysis (Rule 62-212.400(5)(d), F.A.C.): ☐ Attached, Document ID:____ ☒ Not Applicable
8. Air Quality Impact since 1977 (Rule 62-212.400(5)(h)5., F.A.C.): ☐ Attached, Document ID:____ ☒ Not Applicable
9. Additional Impact Analyses (Rules 62-212.400(5)(e)1. and 62-212.500(4)(e), F.A.C.): ☐ Attached, Document ID:____ ☒ Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): ☐ Attached, Document ID:____ ☒ Not Applicable

FACILITY INFORMATION

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.):
   ☐ Attached, Document ID:____ ☒ Not Applicable (no exempt units at facility)

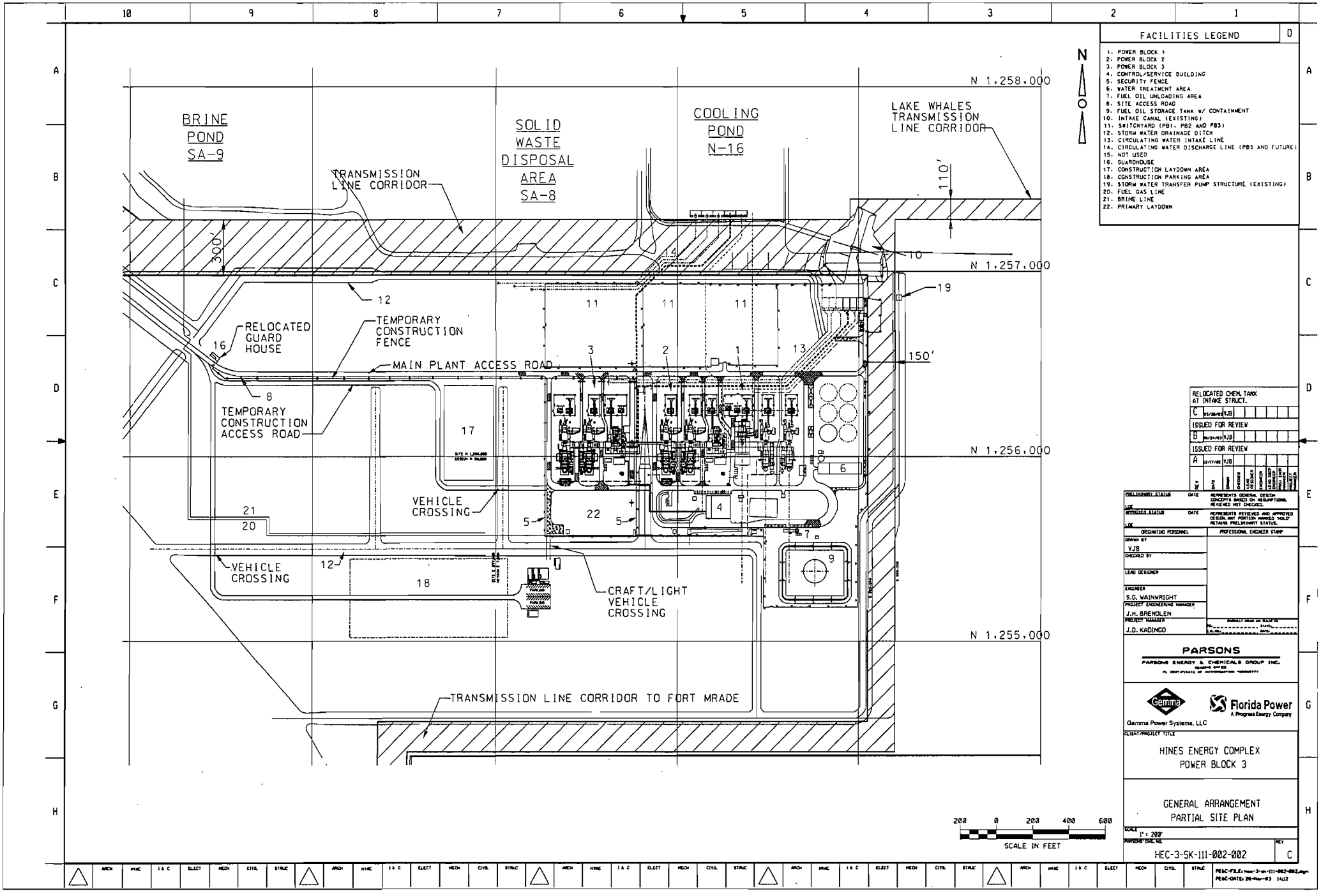
Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities (Required for initial/renewal applications only):
   ☒ Attached, Document ID:**PEF-FI-CV1** ☐ Not Applicable (revision application)
2. Identification of Applicable Requirements (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought):
   ☒ Attached, Document ID:**PEF-FI-CV2**
   ☐ Not Applicable (revision application with no change in applicable requirements)
3. Compliance Report and Plan (Required for all initial/revision/renewal applications):
   ☒ Attached, Document ID:**PEF-FI-CV3**
   Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.
4. List of Equipment/Activities Regulated under Title VI (If applicable, required for initial/renewal applications only):
   ☐ Attached, Document ID:____
   ☐ Equipment/Activities On site but Not Required to be Individually Listed
   ☒ Not Applicable
5. Verification of Risk Management Plan Submission to EPA (If applicable, required for initial/renewal applications only) :
   ☐ Attached, Document ID:____ ☒ Not Applicable
6. Requested Changes to Current Title V Air Operation Permit:
   ☒ Attached, Document ID:**PEF-FI-CV6** ☐ Not Applicable

Additional Requirements Comment

ATTACHMENT PEF-FI-C1

FACILITY PLOT PLAN
(Note: Power Block 3 approved under Permit PSD-FL-330 and under construction)



REV	DATE	DRAWN	DESIGNER	LEAD DESIGNER	ENGINEER	LEAD ENGINEER	PROJECT ENGINEERING MANAGER	PROJECT MANAGER
C	12/28/03	VJB						
B	06/24/03	VJB						
A	12/17/02	VJB						

RELOCATED CHEM. TANK AT INTAKE STRUCT.
ISSUED FOR REVIEW
ISSUED FOR REVIEW

PRELIMINARY STATUS — DATE — REPRESENTS GENERAL DESIGN CONCEPTS BASED ON ASSUMPTIONS. REVIEWED NOT CHECKED.
APPROVED STATUS — DATE — REPRESENTS REVIEWED AND APPROVED DESIGN. ANY PORTION MARKED "HOLD" RETAINS PRELIMINARY STATUS.

ORIGINATING PERSONNEL
DRAWN BY: VJB
CHECKED BY:
LEAD DESIGNER:
ENGINEER: S.G. WAINWRIGHT
PROJECT ENGINEERING MANAGER: J.H. BRENOLEN
PROJECT MANAGER: J.D. KADINGO

PROFESSIONAL ENGINEER STAMP

PARSONS
PARSONS ENERGY & CHEMICALS GROUP INC.

Gemma Power Systems, LLC
Florida Power A Progress Energy Company

CLIENT/PROJECT TITLE
HINES ENERGY COMPLEX
POWER BLOCK 3

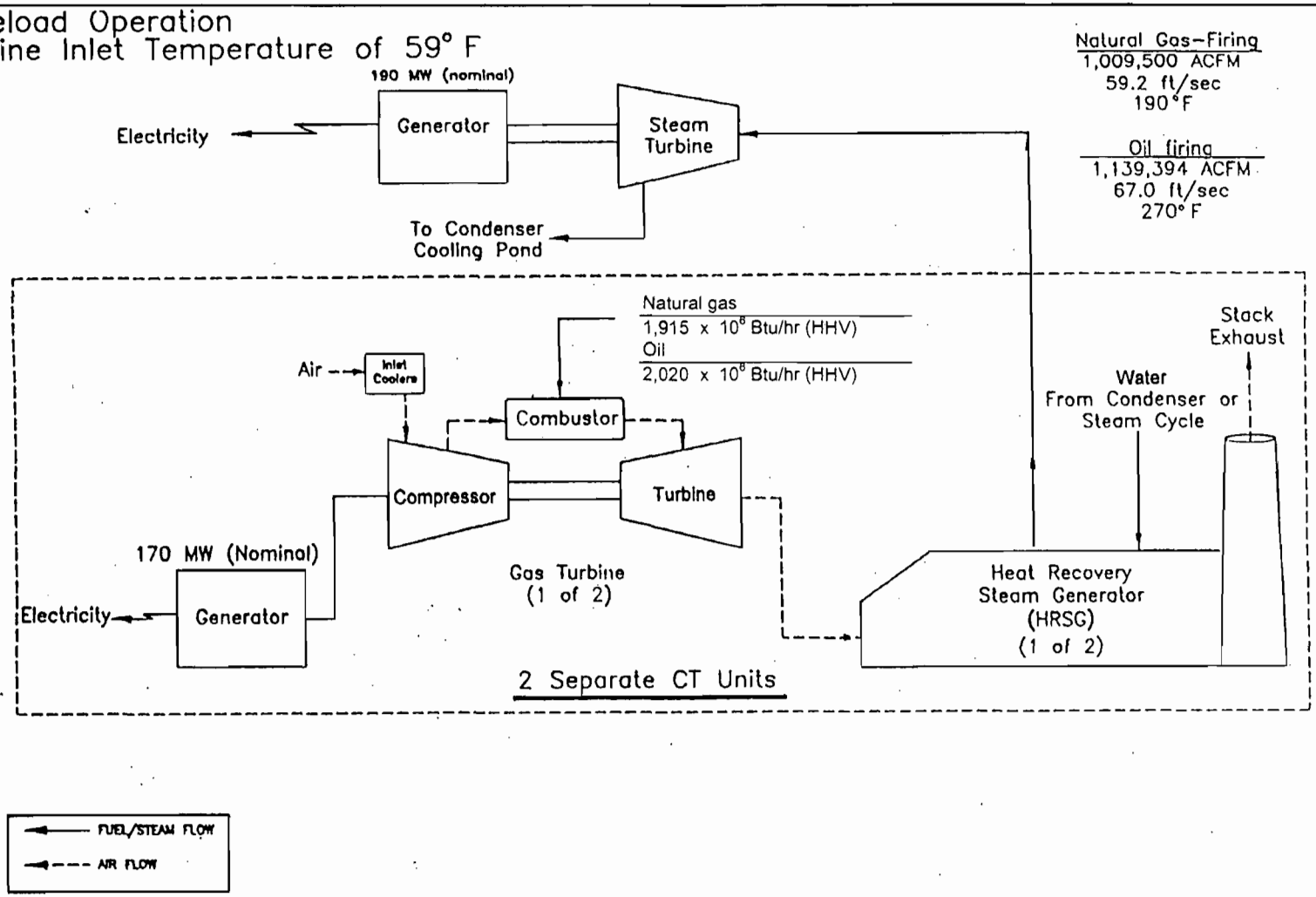
GENERAL ARRANGEMENT
PARTIAL SITE PLAN

SCALE: 1" = 200'
PARSONS DWG NO.: HEC-3-SK-111-002-002
REV: C

ARCH | HVAC | I & C | ELECT | MECH | CIVIL | STRUC
PE&C FILE: hec-3-sk-111-002-002.dgn
PE&C DATE: 28-Nov-03 14:12

ATTACHMENT PEF-FI-C2

PROCESS FLOW DIAGRAM



Florida Power CORPORATION

Hines Energy Complex

FIGURE 2-2
POWER BLOCK 2
PROCESS FLOW DIAGRAM
BASELOAD OPERATION, TURBINE INLET TEMPERATURE OF 59°F

ATTACHMENT PEF-FI-CV1

LIST OF INSIGNIFICANT ACTIVITIES

ATTACHMENT PEF-FI-CV1
LIST OF UNREGULATED AND INSIGNIFICANT ACTIVITIES

The following page lists the unregulated and insignificant activities associated with Hines Power Blocks 1 and 2. The insignificant activities identified in this application are provided for information only and are identified as examples of, but not limited to, the insignificant activities identified by the Division of Air Resources Management (DARM). It is understood that such activities do not have to be included with the Title V Application. The insignificant activities identified herein are consistent, in terms of amounts of emissions and types, with those activities listed in DARM's previous guidance.

Pursuant to Rule 62-210.300(3)(b)1., notice is herein provided that the emissions units listed below are not subject to a permit issued by the Department of Environmental Protection and are exempt from permitting until a final determination is made under the Title V permitting requirements (Rule 62-213 F.A.C.). These units would not have triggered review under Rules 62-212.400 or 62-212.500 or any new source performance standard listed in Rule 62-204.800 F.A.C..

ACTIVITIES

Miscellaneous Buildings H.V.A.C.
C.E.M. Buildings
Laboratory
Maintenance Building
CT Control Room

Sanitary Vents/Stacks
Control Building
Maintenance Building
Laboratory

Miscellaneous Buildings Vent/Exhaust Systems
Lab Building
Maintenance Building

Miscellaneous Maintenance Facilities
Air Compressors
Sandblasting Units
Non-Halogenated Solvent Cleaning Operations
Cleaning, Painting, Welding, Coating Hand Held Tools & Equipment
Products Storage in Sealed Containers
Vacuum Cleaning, Solvent Storage, Office Supplies/Equipment
Miscellaneous Gasoline & Diesel Engine Portable Tools & Equipment

Sumps
Oily Wastewater Separators

Emergency Equipment
CO_2-Based Fire Protection System

Combustion Turbine/Steam Turbine
Battery Backup Systems
Steam vents – blowdown vents
Bearing oil vents
Aqueous ammonia relief valves
Natural gas mercaptan injection

ATTACHMENT PEF-FI-CV2

IDENTIFICATION OF APPLICABLE REQUIREMENTS

PERMITTEE:

Progress Energy Florida
P.O. Box 14042, MAC BB1A
St. Petersburg, FL 33733-4042

Authorized Representative:
Roger Zirkle, Plant Manager – Hines Energy Complex

Hines Energy Complex, Power Block 2
Project No. 1050234-007-AC
Air Permit No. PSD-FL-296A
SIC No. 4911

Expires: June 1, 2004

PROJECT AND LOCATION

This permit authorizes the construction of Power Block 2, a "2-on-1" combined cycle unit with an electrical generating capacity of approximately 530 megawatts (MW), at the existing Hines Energy Complex. The project will consist of two 170 MW gas turbine-electrical generator sets, two unfired heat recovery steam generator (HRSG) sets, and a single 190 MW steam turbine-electrical generator. The existing Hines Energy Complex is located in the southwest portion of Polk County, Florida, approximately 7 miles south-southwest of Bartow and 5 miles west-northwest of Fort Meade. *{Permitting Note: Throughout this permit, the electrical generating capacities represent nominal values.}*

UTM Zone 17; 414.4 km East; 3073.9 km North (Latitude: 27° 47' 19", Longitude: 81° 52' 10")

STATEMENT OF BASIS

This permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). 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 project was processed in accordance with Florida's program for the Prevention of Significant Deterioration (PSD) of Air Quality. 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

Michael Cooke, Director
Division of Air Resources Management

(Date)

FACILITY DESCRIPTION

The existing Hines Energy Complex currently consists of one operating electrical generating unit, Power Block 1. Power Block 1 is a 500 MW combined cycle power generation unit that began operation in 1999. It consists of 2 combustion turbines, 2 HRSGs, and 1 steam turbine. After completion of Power Block 2, the plant will have a total generating capacity of 1030 MW.

NEW AND MODIFIED EMISSIONS UNITS

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

ID	Emission Unit Description
014	Power Block 2, CT 2A (170 MW gas turbine with unfired HRSG)
015	Power Block 2, CT 2B (170 MW gas turbine with unfired HRSG)

{Permitting Note: The Hines Energy Complex, Power Block 2 (Power Block 2, or "the project") consists of 2 gas turbine-electrical generator sets (Units CT 2A and CT 2B), 2 unfired HRSGs, and a single steam-turbine electrical generator.}

REGULATORY CLASSIFICATION

Title III: The existing facility is a major source of hazardous air pollutants (HAPs). This project, however, is not major for HAPs. Based on the available information, this project does not trigger the requirements for a case-by-case determination of the Maximum Available Control Technology (MACT) under Section 112(g) of the Clean Air Act (CAA, or "the Act"). Each Power Block 2 gas turbine is a "stationary combustion turbine located at a major source of HAP emissions" and commenced construction before January 14, 2003. Therefore, the gas turbines will be subject to the existing stationary combustion turbine requirements of 40 CFR 63, Subpart YYYY, when that subpart is promulgated. (See Appendix YYYY.)

Title IV: The facility operates emissions units subject to the acid rain provisions of the Act.

Title V: Because potential emissions of at least one regulated pollutant exceed 100 tons per year, the existing 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 (NOx), particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), and volatile organic compounds (VOC).

PSD: The project is located in an area designated as "attainment" 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 British thermal units (MMBtu) 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.

Siting: The project 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, or "the Department") 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's Southwest District Air Program, Compliance/Enforcement Section, 3804 Coconut Palm Drive, Tampa, Florida 33619-8218.

APPENDICES

The following Appendices are attached as part of this permit.

Appendix AL	Acronym List
Appendix BD	Final BACT Determinations and Emissions Standards
Appendix CF	Citation Format and Definitions
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 Subpart YYYY

REVIEWING AND PROCESSING SCHEDULE

July 24, 2000	Received permit application and fee
August 23, 2000	Department's request for additional information
November 27, 2000	Received response to request for additional information
November 27, 2000	Application complete
January 18, 2001	Distributed Notice of Intent to Issue and supporting documents
January 24, 2001	Notice of Intent to Issue published in the *Lakeland Ledger*
June 7, 2001	Final PSD permit issued
June 10, 2003	Received permit modification request
June 23, 2003	Department's request for additional information regarding the modification request
July 17, 2003	Received response to request for additional information
July 17, 2003	Application for modification complete
July 23, 2003	Distributed Notice of Intent to Issue and supporting documents for modification
July 23, 2003	Notice of Intent to Issue published in the *Lakeland Ledger*

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 and application for modification
- Department's requests for additional information and Office of Siting Coordination sufficiency questions
- Applicant's additional information
- Department's Technical Evaluation and Best Available Control Technology (BACT) Determination
- Department's Intent to Issue packages for permit and modification

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, F.S.; Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C.; and 40 CFR Parts 60, 72, 73, and 75, 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 F.A.C. 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 BACT for emissions units regulated by the project. For good cause, the permittee may request that this PSD 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 unit begins 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. Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the Department's Bureau of Air Regulation with a copy to the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213, F.A.C.]

This section of the permit addresses the following emissions units.

Emission Units 014 and 015

Description: Emission units 014 and 015 each consist of a Siemens Westinghouse 501 FD gas turbine-electrical generator set, an automated gas turbine control system, and an unfired HRSG. In addition, the project also includes a single steam turbine-electrical generator that serves both gas turbine/HRSG systems.

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

Generating Capacity: Both of the gas turbine-electrical generator sets have a generating capacity of 170 MW for gas firing. Exhaust from each gas turbine passes through a separate HRSG. Steam from both HRSGs is delivered to the single steam turbine-electrical generator, which has a generating capacity of 190 MW. The total generating capacity of the "2-on-1" combined cycle unit is approximately 530 MW.

Controls: The efficient combustion of natural gas and restricted firing of low sulfur distillate oil minimizes the emissions of CO, PM/PM10, SAM, SO_2 and VOC. Dry low-NOx (DLN) combustion technology for gas firing and water injection for oil firing reduce NOx emissions. A selective catalytic reduction (SCR) system – in combination with DLN combustion technology for gas firing and a water injection system for oil firing – reduces NOx emissions. The HRSGs are designed and constructed such that an oxidation catalyst can be readily installed if necessary to achieve compliance with CO emission limitations.

Stack Parameters: Each HRSG has a stack that is 125 feet tall and 19 feet in diameter. The Department may require the permittee to perform additional air dispersion modeling should the actual specified stack dimensions change. The following table summarizes the exhaust characteristics for the combined cycle systems. Heat input rate is based on the higher heating value (HHV) of the fuel, assuming 1,030 British thermal units (Btu) per standard cubic feet of natural gas and 19,892 Btu/lb of fuel oil.

Fuel	Heat Input Rate (HHV)	Compressor Inlet Temp	Exhaust Temperature	Exit Velocity	Flow Rate
Gas	1,830 MMBtu/hour	59 °F	190 °F	59.2 ft/sec	1,009,487 acfm
Oil	1,932 MMBtu/hour	59 °F	270 °F	67.0 ft/sec	1,139,394 acfm

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

APPLICABLE STANDARDS AND REGULATIONS

1. BACT Determinations: Determinations of BACT were made for CO, NOx, PM/PM10, sulfuric acid mist (SAM), SO_2, and VOC. See Appendix BD of this permit for a summary of the final BACT determinations. [Rule 62-212.400(BACT), F.A.C.]

2. New Source Performance Standards (NSPS): The Department determines that compliance with the BACT emissions performance and monitoring requirements also assures compliance with the NSPS for gas turbines at 40 CFR part 60, subpart GG. See Appendix GG of this permit for a summary of the applicable NSPS requirements. [Rule 62-204.800(7), F.A.C.]

EQUIPMENT

3. Gas Turbines: The permittee is authorized to install, tune, operate, and maintain two Siemens Westinghouse Model 501 FD gas turbine-electrical generator sets each with a generating capacity of

170 MW. Each gas turbine shall include the Siemens TXP automated gas turbine control system and have dual-fuel capability. The gas turbines will utilize DLN combustors. [Application; Design]

4. Gas Turbine NOx Controls

   a. *DLN Combustion*: The permittee shall operate and maintain the DLN combustion system to control NOx 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, in conjunction with any post-combustion emissions control equipment, to achieve the permitted levels for CO and NOx emissions. 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 NOx emissions from each gas turbine when firing distillate oil. Prior to the initial emissions performance tests required for each gas turbine, the water injection system shall be tuned, in conjunction with any post-combustion emissions control equipment, to achieve the permitted levels for CO and NOx emissions. Thereafter, each system shall be maintained and tuned in accordance with the manufacturer's recommendations.

   c. *SCR System*: The permittee shall install, tune, operate, and maintain a SCR system to control NOx emissions from each gas turbine when firing either natural gas or distillate oil. The SCR system consists of an ammonia 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 NOx emissions and ammonia slip. *{Permitting Note: 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.]

5. HRSGs: The permittee is authorized to install, operate, and maintain two HRSGs. Each HRSG shall be designed to recover heat energy from one of the two gas turbines (CT 2A or CT 2B) and deliver steam to the steam turbine-electrical generator through a common manifold. *{Permitting Note: The two HRSGs deliver steam to a single steam turbine-electrical generator with a generating capacity of 190 MW.}* [Application; Design]

6. CO Controls: The permittee shall design and construct the HRSGs such that an oxidation catalyst can be readily installed if necessary to achieve compliance with the CO emission limitations. [Rule 62-4.070(3), F.A.C.]

PERFORMANCE RESTRICTIONS

7. Permitted Capacity - Gas Turbines: The maximum heat input rate to each gas turbine is 1,915 MMBtu per hour when firing natural gas and 2,020 MMBtu per hour when firing distillate oil (based on a compressor inlet air temperature of 59 °F, the HHV of each fuel, and 100% load). Heat input rates will vary depending upon gas turbine characteristics, ambient conditions, alternate fuels, 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. Methods of Operation: Subject to the restrictions and requirements of this permit, the gas turbines may operate under the following methods of operation.

a. *Hours of Operation*: Subject to the other operational restrictions of this permit, the gas turbines may operate throughout the year (8,760 hours per year).

b. *Authorized Fuels*: Each gas turbine shall fire natural gas as the primary fuel, which shall contain no more than 1.0 grains of sulfur per 100 standard cubic feet of natural gas. As a restricted alternate fuel, each gas turbine may fire No. 2 distillate oil (or a superior grade) containing no more than 0.05% sulfur by weight. Distillate fuel oil consumption of both emissions units shall not exceed 19,703,000 gallons in any consecutive 12 month period. *{Permitting Note: This condition limits annual average fuel oil consumption to the equivalent of approximately 720 hours of operation per year per turbine, based on 59 °F annual average temperature. Fuel oil consumption is not limited per turbine, and the allowable fuel may be used in a single turbine.}*

c. *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 "2-on-1" 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.

d. *Ammonia Injection*: Ammonia injection shall begin as soon as operation of the gas turbine/HRSG system achieves the operating parameters specified by the manufacturer.

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

EMISSIONS STANDARDS

9. Emissions Standards: Emissions from each gas turbine/HRSG shall not exceed the following limits for the listed pollutants at any ambient temperature.

Pollutant	Emission Limit (ppmvd corrected to 15% oxygen)		Averaging Time
	Natural Gas	Fuel Oil	
CO [a]	16	30	24 hour block
NOx [b]	3.5	12	24 hour block
VOC [c]	2	10	3 hours
Ammonia [d]	5	9	3 hours

Pollutant	Fuel Specification and Emission Limit
PM/PM_{10} [e]	Fuel specifications. Visible emissions shall not exceed 10% opacity for each 6-minute block average.
SAM/SO_2 [f]	Fuel specifications.

a. Compliance with the CO standards shall be demonstrated based on data collected by the required CEMS. Compliance with the 24-hour CO CEMS standards shall be determined separately based on the hours of operation for each alternative fuel. *{Permitting Note: A 24-hour compliance average may be based on as little as 1-hour of CEMS data or as much as 24-hours of CEMS data.}*

b. Compliance with the NOx standards shall be demonstrated based on data collected by the required CEMS. NOx mass emission rates are defined as oxides of nitrogen expressed as NO_2. Compliance with the 24-hour NOx CEMS standards shall be determined separately based on the hours of operation

for each alternative fuel. *{Permitting Note: A 24-hour compliance average may be based on as little as 1-hour of CEMS data or as much as 24-hours of CEMS data.}*

c. 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 propane.

d. Subject to the requirements of Condition No. 19 of this section, each SCR system shall be designed and operated for an initial ammonia slip target of less than 5 ppmvd corrected to 15% oxygen when firing natural gas based on the average of three test runs. Compliance with the ammonia slip standard shall be demonstrated by conducting tests in accordance with EPA Method CTC-027.

e. The fuel specifications established in Condition No. 8 of this section combined with the efficient combustion design and operation of each gas turbine represents the BACT determination 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.

f. The fuel sulfur specifications in Condition No. 8 of this section effectively limit the potential emissions of SAM and SO_2 from the gas turbines and represent the BACT determination for these pollutants. Compliance with the fuel sulfur specifications shall be determined by the requirements in Condition No. 25 of this section.

{Permitting Note: The concentration limits and fuel specifications for the control of the above pollutants are equivalent to the following mass emission rates (at 20 °F):

- *CO = 73.6 lb/hr for natural gas firing and 112 lb/hr for distillate fuel oil firing,*
- *NOx = 25.2 lb/hr for natural gas firing and 93.5 lb/hr for distillate fuel oil firing,*
- *VOC = 4.7 lb/hr for natural gas firing and 22 lb/hr for distillate fuel oil firing,*
- *PM_{10} = 7.3 lb/hr for natural gas firing and 64.8 lb/hr for distillate fuel oil firing, and*
- *SO_2 = 5.6 lb/hour for natural gas firing and 105.6 lb/hr for distillate fuel oil firing.*

SAM emissions are estimated to be less than 10% of the SO_2 emissions.} [Rule 62-212.400(BACT), F.A.C.]

STARTUP, SHUTDOWN, AND MALFUNCTION EMISSIONS

10. Operating Procedures: The 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.]

11. 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.]

12. 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.]

13. CEMS Data Exclusion: As provided in this paragraph, NOx and CO emissions data recorded during periods of startup, shutdown, oil-to-gas fuel switches, and documented malfunctions may be excluded from the block average calculated to demonstrate compliance with the emission limits of Condition No. 9 of this section.

    a. Periods of data excluded for startup shall not exceed two hours in any 24-hour block except for cold startups. A "cold startup" is defined as a startup following a complete shutdown lasting a minimum of 48 hours. Periods of data excluded for cold startup shall not exceed four hours in any 24-hour block period.

    b. Periods of data excluded for shutdown shall not exceed two hours in any 24-hour block.

    c. Periods of data excluded for oil-to-gas fuel switches shall not exceed two hours in any 24-hour block.

    d. Periods of data excluded for documented malfunctions shall not exceed two hours in any 24-hour block. A "documented malfunction" means a malfunction that meets the notification requirements specified in Condition No. 26 of this section.

    e. All periods of data excluded for any startup, shutdown, oil-to-gas fuel switch, or documented malfunction shall be consecutive for each episode. Periods of data excluded for all startups, shutdowns, oil-to-gas fuel switches, or documented malfunctions shall not exceed six hours in any 24-hour block period during which a cold startup occurred. For all other 24-hour block periods, periods of data excluded for all startups, shutdowns, oil-to-gas fuel switches, or documented malfunctions shall not exceed four hours.

    f. The permittee shall minimize the duration of data excluded to the extent practicable. Data shall not be excluded if the startup, shutdown, or documented malfunction was caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably have been prevented. Best operating practices shall be used to minimize hourly emissions that occur during episodes of startup, shutdown, oil-to-gas fuel switching, or documented malfunction.

    [Rules 62-212.400(BACT) and 62-210.700, F.A.C.]

14. CEMS Data Exclusion – 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 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

15. 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 Sources* This is an EPA conditional test method. The minimum detection limit shall be 1 ppm.
7E	*Determination of Nitrogen Oxide Emissions from Stationary Sources (Instrumental Analyzer Procedure)*
9	*Visual Determination of the Opacity of Emissions from Stationary Sources*

Method	Description of Method and Comments
	The test shall be conducted for a minimum of 30 minutes.
10	*Determination of Carbon Monoxide Emissions from Stationary Sources* This method shall be based on a continuous sampling train.
18	*Measurement of Gaseous Organic Compound Emissions by Gas Chromatography* (Optional) EPA Method 18 may be used 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 Total Gaseous Organic Concentration Using a Flame Ionization Analyzer*

Method CTM-027 is published on EPA's Technology Transfer Network Web Site at http://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]

16. Initial Compliance Determinations: Each gas turbine shall be stack tested to demonstrate initial compliance with the emission standards for CO, NOx, 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. Each unit shall be tested when firing natural gas and when firing distillate fuel oil. CEMS data collected during the required Relative Accuracy Test Assessments (RATA) may be used to demonstrate compliance with the initial CO and NOx standards. CO and NOx 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, DLN combustors, etc. [Rule 62-297.310(7)(a)1., F.A.C. and 40 CFR 60.8]

17. Continuous Compliance: The permittee shall demonstrate continuous compliance with the CO and NOx 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. *{Permitting Note: Compliance with the CO emission standards also serves as an indicator of efficient fuel combustion, which reduces emissions of PM/PM10 and VOC.}* [Rule 62-212.400 (BACT), F.A.C.]

18. 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 and ammonia.

    a. *Visible Emissions.* Each unit shall be tested for visible emissions when firing natural gas and when firing distillate fuel oil. Annual emissions testing while firing fuel oil is not required during any federal fiscal year in which less than 5,473,000 gallons of distillate fuel oil is fired in both emission units combined. CO emissions recorded by the CEMS shall be reported for the visible emissions observation period. *{Permitting Note: The fuel limitation for waiving testing while firing distillate fuel oil corresponds to the equivalent of approximately 200 hours of operation per year per turbine.}*

    b. *Ammonia.* Annual testing to determine the ammonia slip shall be conducted while firing natural gas. NOx emissions recorded by the CEMS shall be reported for each ammonia slip test run.

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

19. Additional Ammonia Slip Testing: If the tested ammonia slip rate for a gas turbine exceeds 5 ppmvd corrected to 15% oxygen when firing natural gas during the annual test, the permittee shall:

    a. Begin testing and reporting the ammonia slip for each subsequent calendar quarter;

    b. Before the ammonia slip exceeds 7 ppmvd corrected to 15% oxygen, take corrective actions that result in lowering the ammonia slip to less than 5 ppmvd corrected to 15% oxygen; and

    c. Test and demonstrate that the ammonia slip is no more than 5 ppmvd corrected to 15% oxygen within 15 days after completing the corrective actions.

    Corrective actions may include, but are not limited to, adding catalyst, replacing catalyst, or other SCR system maintenance or repair. After demonstrating that the ammonia slip level is no more than 5 ppmvd corrected to 15% oxygen, testing and reporting shall resume on an annual basis. [Rules 62-4.070(3) and 62-297.310(7)(b), F.A.C.]

CONTINUOUS MONITORING REQUIREMENTS

20. CEMS: The permittee shall install, calibrate, maintain, and operate CEMS to measure and record the emissions of CO and NOx from the combined cycle gas turbine. The CEMS shall be used to demonstrate continuous compliance with the CEMS emission standards specified in this permit. 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. 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 NOx standard (and subject to the specified averaging period), the permittee shall notify the Compliance Authority.

    a. *CO Monitors.* Except as otherwise specified by this condition, the CO monitor 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. The Method 10 analysis shall be based on a continuous sampling train, and the ascarite trap may be omitted or the interference trap of Section 10.1 may be used in lieu of the silica gel and ascarite traps. The CO monitor shall be a dual range monitor. The span for the lower range shall not be greater than 50 ppm. The span for the upper range shall be set at a level that provides for accurate measurement during startups and shutdowns.

    b. *NOx Monitors.* Except as otherwise specified by this condition, the NOx monitor shall be certified pursuant to 40 CFR 75, and shall be operated and maintained in accordance with the applicable requirements of 40 CFR 75, Subparts B and C. Record keeping and reporting shall be conducted pursuant to 40 CFR 75, Subparts F and G. The RATA tests required for the NOx monitor shall be performed using EPA Method 20 or 7E in Appendix A of 40 CFR 60. The NOx monitor shall be a dual range monitor. The span for the lower range shall not be greater than 10 ppm. The span for the upper range shall be set at a level that provides for accurate measurement during startups and shutdowns.

    c. *Diluent Monitors.* The oxygen or carbon dioxide (CO_2) content of the flue gas shall be monitored at the location where CO and NOx 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.

d. *Moisture Correction.* Final results of the CEMS shall be expressed as ppmvd corrected to 15% oxygen. If the CEMS measures concentration on a wet basis, the CEMS 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 permittee 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). If the CEMS measures concentration on a wet basis and the diluent monitor measures CO_2 on a wet basis, then the permittee may develop an algorithm to enable correction of the CEMS results to a dry basis (0% moisture) without determining the corresponding moisture content.

e. *1-Hour Block Averages.* 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. The CEMS shall be designed and operated to sample, analyze, and record data evenly spaced over an hour.

f. *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 available valid hourly average emission rate values for the 24-hour block. For purposes of determining compliance with the 24-hour CEMS emissions standards of this permit, missing (or excluded) data shall not be substituted. Instead, the 24-hour block average shall be determined using the remaining hourly data in the 24-hour block. *{Permitting Note: There may be more than one 24-hour compliance demonstration required for CO and NOx emissions depending on the use of alternate fuels}.* [Rule 62-212.400(BACT), F.A.C.]

g. *Data Exclusion.* Each CEMS shall monitor and record emissions during all operations including episodes of startup, shutdown, malfunction, fuel switches, and DLN tuning. CEMS emissions data recorded during some of these episodes may be excluded from the corresponding CEMS compliance demonstration subject to the provisions of Condition Nos. 13 and 14 of this section.

h. *Availability.* Monitor availability for the CEMS shall be 95% or greater in any calendar quarter. The quarterly permit 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.

{Permitting Note: Compliance with these requirements assures compliance with the other applicable CEM system requirements such as: NSPS Subpart GG; Rule 62-297.520, F.A.C.; 40 CFR 60.7(a)(5) and 40 CFR 60.13; 40 CFR 60, Appendix B - Performance Specifications; and 40 CFR 60, Appendix F - Quality Assurance Procedures.} [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

21. Water Injection Monitoring Requirements: In accordance with the manufacturer's specifications, the permittee shall install, calibrate, operate and maintain a monitoring system to continuously measure and record the water-to-fuel ratio when firing distillate oil. The permittee shall document the water-to-fuel ratio required to meet permitted emissions levels over the range of load conditions allowed by this permit. The

NOx CEMS is used to demonstrate compliance with the NOx emissions standards. During NOx CEMS downtimes or malfunctions, the permittee shall monitor the water-to-fuel ratio and operate at a level that is consistent with the documented flow rate for the gas turbine load condition. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

22. 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. The permittee shall document 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 NOx emissions recorded by the CEM system with ammonia flow rates recorded using the ammonia flow meter. During NOx monitor downtimes or malfunctions, the permittee shall operate at the ammonia flow rate that is 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

23. Monitoring of Operation: To demonstrate compliance with the fuel consumption limits of Condition No. 8 of this section, the permittee shall record the distillate fuel oil consumption on a rolling 12-month basis. [Rules 62-4.070(3) and 62-212.400, F.A.C., and BACT]

24. Frequency of Recordkeeping: Condition No. 20 of this section requires the calculation of one or more 24-hour block average emission rates for each operating day. Within 24 hours of the conclusion of each operating day, the permittee shall complete the calculations and record the results for that operating day. [Rule 62-4.070(3), F.A.C.]

25. 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. 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, D3246-81 or more recent versions.

    b. Compliance with the distillate 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 D129-91, ASTM D1552-90, ASTM D2622-94, or ASTM D4294-90. More recent versions of these methods may be used. For each subsequent fuel delivery, the permittee shall either (1) maintain a permanent file of the certified fuel sulfur analysis from the fuel vendor, or (2) take and analyze a sample according to the above procedures and maintain a permanent file of the results of the analysis. 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.]

26. Malfunction Notification: Within one working day of a malfunction for which CEMS data is excluded pursuant to Condition No. 13 of this section, the permittee shall notify the Compliance Authority by telephone, facsimile transmittal, or electronic mail. The notification shall include a preliminary report of: the nature, extent, and duration of the emissions; the probable cause of the emissions; and the actions taken to correct the problem. If requested by the Compliance Authority, the permittee shall submit written

quarterly reports summarizing the malfunctions in lieu of the individual malfunction notifications otherwise required. [Rule 62-210.700, F.A.C.]

27. Semiannual NSPS Excess Emissions Report: In accordance with 40 CFR 60.7(c), the permittee shall semiannually submit a report to the Compliance Authority summarizing any emissions in excess of the NSPS standards. All reports shall be postmarked by the 30th day following the end of each six-month period. Written reports of excess emissions shall include the information specified in 40 CFR 60.7(c)(1) through (c)(4). For purposes of reporting emissions in excess of NSPS Subpart GG, excess emissions from the gas turbine are defined as: any CEMS hourly average value exceeding the NSPS NOx emission standard identified in Appendix GG (i.e., 112.5 ppmvd corrected to 15% oxygen for both natural gas and fuel oil); and any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds the NSPS standard identified in Appendix GG (i.e., sulfur in excess of 0.8% by weight). An example of an acceptable report format is provided in Appendix XS. [40 CFR 60.7(c)]

28. Quarterly Data Exclusion and Monitor Availability Report: The permittee shall quarterly submit a report to the Compliance Authority summarizing all periods of valid hourly CO and NOx emissions data excluded from the 24-hour block average compliance determinations pursuant to Condition Nos. 13 and 14 of this section. In addition, the quarterly report shall summarize the CEMS availability for the previous quarter. All reports shall be postmarked by the 30th day following the end of each calendar quarter. An example of an acceptable report format for monitoring systems availability is provided in Appendix XS. [Rules 62-4.130, 62-204.800, 62-210.700(6), F.A.C.; and 40 CFR 60.7(c) and (d)]

ATTACHMENT PEF-FI-CV3

COMPLIANCE REPORT AND PLAN

Department of Environmental Protection

Division of Air Resource Management

STATEMENT OF COMPLIANCE - TITLE V SOURCE

REASON FOR SUBMISSION (Check one to indicate why this statement of compliance is being submitted)

☐ **Annual Requirement** ☐ **Transfer of Permit** ☐ **Permanent Facility Shutdown**

REPORTING PERIOD*	REPORT DEADLINE**
01/01 through **12/31** of **2003** (year)	Within 60 days after end of calendar year

*The statement of compliance must cover all conditions that were in effect during the indicated reporting period, including any conditions that were added, deleted, or changed through permit revision.

**See Rule 62-213.440(3)(a)2., F.A.C.

Facility Owner/Company Name: **Progress Energy Corporation**

Site Name: **Hines Energy Complex** Facility ID No. **1050234** County: **Polk**

COMPLIANCE STATEMENT (Check only one of the following three options)

X **A.** This facility was in compliance with all terms and conditions of the Title V Air Operation Permit and, if applicable, the Acid Rain Part, and there were no reportable incidents of deviations from applicable requirements associated with any malfunction or breakdown of process, fuel burning or emission control equipment, or monitoring systems during the reporting period identified above.

____ **B.** This facility was in compliance with all terms and conditions of the Title V Air Operation Permit and, if applicable, the Acid Rain Part; however, there were one or more reportable incidents of deviations from applicable requirements associated with malfunctions or breakdowns of process, fuel burning or emission control equipment, or monitoring systems during the reporting period identified above, which were reported to the Department. For each incident of deviation, the following information is included:

1. Date of report previously submitted identifying the incident of deviation.
2. Description of the incident.

____ **C.** This facility was in compliance with all terms and conditions of the Title V Air Operation Permit and, if applicable, the Acid Rain Part, EXCEPT those identified in the pages attached to this report and any reportable incidents of deviations from applicable requirements associated with malfunctions or breakdowns of process, fuel burning or emission control equipment, or monitoring systems during the reporting period identified above, which were reported to the Department. For each item of noncompliance, the following information is included:

1. Emissions unit identification number.
2. Specific permit condition number (note whether the permit condition has been added, deleted, or changed during certification period).
3. Description of the requirement of the permit condition.
4. Basis for the determination of noncompliance (for monitored parameters, indicate whether monitoring was continuous, i.e., recorded at least every 15 minutes, or intermittent).
5. Beginning and ending dates of periods of noncompliance.
6. Identification of the probable cause of noncompliance and description of corrective action or preventative measures implemented.
7. Dates of any reports previously submitted identifying this incident of noncompliance.

For each incident of deviation, as described in paragraph **B.** above, the following information is included:

1. Date of report previously submitted identifying the incident of deviation.
2. Description of the incident.

STATEMENT OF COMPLIANCE - TITLE V SOURCE

RESPONSIBLE OFFICIAL CERTIFICATION

I, the undersigned, am a responsible official (Title V air permit application or responsible official notification form on file with the Department) of the Title V source for which this document is being submitted. With respect to all matters other than Acid Rain program requirements, I hereby certify, based on the information and belief formed after reasonable inquiry, that the statements made and data contained in this document are true, accurate, and complete.

Paul Crimi — 2/12/04

(Signature of Title V Source Responsible Official) *(Date)*

Name: Paul Crimi Title: GM, Florida CT Ops

DESIGNATED REPRESENTATIVE CERTIFICATION (only applicable to Acid Rain source)

I, the undersigned, am authorized to make this submission on behalf of the owners and operators of the Acid Rain source or Acid Rain units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

J. Michael Kennedy — 2/12/04

(Signature of Acid Rain Source Designated Representative) *(Date)*

Name: J. Michael Kennedy Title: Permitting & Compliance Mgr.

{Note: Attachments, if required, are created by a responsible official or designated representative, as appropriate, and should consist of the information specified and any supporting records. Additional information may also be attached by a responsible official or designated representative when elaboration is required for clarity. This report is to be submitted to both the compliance authority (DEP district or local air program) and the U.S. Environmental Protection Agency(EPA) (U.S. EPA Region 4, Air and EPCRA Enforcement Branch, 61 Forsyth Street, Atlanta GA 30303).}

ATTACHMENT PEF-FI-CV6

REQUESTED CHANGES TO CURRENT TITLE V AIR OPERATION PERMIT

ATTACHMENT PEF-FI-CV6

REQUESTED CHANGES TO CURRENT TITLE V AIR OPERATION PERMIT

We are requesting increased startup times and would appreciate that section 13 be incorporated into the Title V permit as follows:

13. CEMS Data Exclusion: As provided in this paragraph, NOx and CO emissions data recorded during periods of startup, shutdown, oil-to-gas fuel switches, and documented malfunctions may be excluded from the block average calculated to demonstrate compliance with the emission limits of Condition No. 9 of this section.

    a. Periods of data excluded for startup shall not exceed two hours in any 24-hour block except for cold and warm startups. A "cold startup" is defined as a startup following a complete shutdown lasting a minimum of 48 hours. Periods of data excluded for cold startup shall not exceed 6 hours in any 24-hour block period. A "warm startup" is defined as a startup following a complete shutdown lasting 8 to 48 hours. Periods of data excluded for warm startup shall not exceed 3 hours in any 24-hour block period.

    b. Periods of data excluded for shutdown shall not exceed two hours in any 24-hour block.

    c. Periods of data excluded for oil-to-gas fuel switches shall not exceed two hours in any 24-hour block.

    d. Periods of data excluded for documented malfunctions shall not exceed two hours in any 24-hour block. A "documented malfunction" means a malfunction that meets the notification requirements specified in Condition No. 26 of this section.

    e. All periods of data excluded for any startup, shutdown, oil-to-gas fuel switch, or documented malfunction shall be consecutive for each episode. Periods of data excluded for all startups, shutdowns, oil-to-gas fuel switches, or documented malfunctions shall not exceed 8 hours in any 24-hour block period during which a cold startup occurred. Periods of data excluded for all startups, shutdowns, oil-to-gas fuel switches, or documented malfunctions shall not exceed 5 hours in any 24-hour block period during which a warm startup occurred. For all other 24-hour block periods, periods of data excluded for all startups, shutdowns, oil-to-gas fuel switches, or documented malfunctions shall not exceed 4 hours.

    f. The permittee shall minimize the duration of data excluded to the extent practicable. Data shall not be excluded if the startup, shutdown, or documented malfunction was caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure which may reasonably have been prevented. Best operating practices shall be used to minimize hourly emissions that occur during episodes of startup, shutdown, oil-to-gas fuel switching, or documented malfunction.

    [Rules 62-212.400(BACT) and 62-210.700, F.A.C.]

Reason:

The control logic for the Siemens Westinghouse single steam turbine-electrical generator has a set startup ramp rate and hold points. The ramp rate and hold points are in place to control the thermal stress of the turbine casting. In addition the steam turbine must be warmed up at a slow rate so the rotating turbine does not expand faster than the shell – keeping the rotating rotor from hitting the stationary shell. The ramp rate and hold points are fixed in the Siemens Westinghouse software and cannot be changed by the operators.

The startup ramp rate and hold points on the Westinghouse single steam turbine-electrical generator require that the combustion turbines limit the heat to the Heat Recovery Stream Generator during startup. The holding of the combustion turbines at low load causes the higher emissions during startup.

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

☒ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

☒ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

☐ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:
CT-1; Power Block 2

3. Emissions Unit Identification Number: **014**

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C			**49**	☒ Yes ☐ No

9. Package Unit:
Manufacturer: **Siemens Westinghouse** Model Number: **501 FD**

10. Generator Nameplate Rating: **170** MW

11. Emissions Unit Comment:
Siemens Westinghouse 501 FD combustion turbine firing natural gas with distillate oil back-up.

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:
   Dry Low NO_x combustion - natural gas firing.

   Selective Catalytic Reduction (SCR) – natural gas firing/distillate oil firing.

   Water Injection – distillate oil firing.

2. Control Device or Method Code(s): **025, 065, 028**

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:	
2. Maximum Production Rate:	
3. Maximum Heat Input Rate: **1,915** million Btu/hr	
4. Maximum Incineration Rate: pounds/hr tons/day	
5. Requested Maximum Operating Schedule: hours/day weeks/year	days/week **8,760** hours/year
6. Operating Capacity/Schedule Comment: **Heat input is higher heating value (HHV) with natural gas; heat input at 59°F turbine inlet temperature; MW nominal rating.**	

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **Stack Exhaust**		2. Emission Point Type Code:
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: **Exhausts through a single stack.**		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: **V**	6. Stack Height: **125** feet	7. Exit Diameter: **19** feet
8. Exit Temperature: **190**°F	9. Actual Volumetric Flow Rate: **1,009,487** acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet
13. Emission Point UTM Coordinates... Zone: **17** East (km): **414.4** North (km): **3073.9**		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)
15. Emission Point Comment: **Temperature and flow for natural gas at 59°F turbine inlet.**		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type): **Natural Gas**		
2. Source Classification Code (SCC): **2-01-002-01**	3. SCC Units: **Million Cubic Feet**	
4. Maximum Hourly Rate: **1.92**	5. Maximum Annual Rate: **15,564**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: **1,030**
10. Segment Comment: **Based on 1,030 BTU/CF (HHV); maximum hourly at 20°F; annual at 59°F; turbine inlet temperatures.**		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type): **Distillate Fuel Oil**		
2. Source Classification Code (SCC): **2-01-001-01**	3. SCC Units: **Thousand Gallons Used**	
4. Maximum Hourly Rate: **14.9**	5. Maximum Annual Rate: **19,703**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **0.05**	8. Maximum % Ash:	9. Million Btu per SCC Unit: **141.2**
10. Segment Comment: **BTU based on HHV of 141.2 MMBtu/1,000 gallons. Aggregate fuel usage of 19,703,000 gallons per year for Power Block 2. Fuel oil consumption is not limited per turbine, and the allowable fuel may be used in a single turbine.**		

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM			EL
SO_2			EL
NO_x	026	065	EL
CO			EL
VOC			EL
SAM			EL

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **64.8** lb/hour **52.7** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference: **PSD-FL-296A**	7. Emissions Method Code: **2**
8. Calculation of Emissions: **See Section 2.0 and Appendix A in PSD Application.**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Max lb/hr for oil firing at 20°F turbine inlet; TPY with 8,040 hr/yr-gas; equivalent of 720 hr/yr/CT-oil.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **10% Opacity**	4. Equivalent Allowable Emissions: **8.5** lb/hour **37.2** tons/year
5. Method of Compliance: **EPA Method 9.**	
6. Allowable Emissions Comment (Description of Operating Method): **Gas firing: PSD-FL-296A.**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **10% Opacity**	4. Equivalent Allowable Emissions: **64.8** lb/hour **23.3** tons/year
5. Method of Compliance: **EPA Method 9.**	
6. Allowable Emissions Comment (Description of Operating Method): **Oil firing: PSD-FL-296A, 720 hr/yr/CT**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **SO_2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **105.6** lb/hour **60.5** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference: **PSD-FL-296A**	7. Emissions Method Code: **2**
8. Calculation of Emissions:	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Max lb/hr for oil firing at 20°F turbine inlet; TPY with 8,040 hr/yr-gas; equivalent of 720 hr/yr/CT-oil.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **Natural Gas – 1 grain S/100 scf**	4. Equivalent Allowable Emissions: **5.6** lb/hour **24.5** tons/year
5. Method of Compliance: **Fuel Sampling - Vendor**	
6. Allowable Emissions Comment (Description of Operating Method): **Gas firing: PSD-FL-296A**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.05% Sulfur oil**	4. Equivalent Allowable Emissions: **105.6** lb/hour **38.0** tons/year
5. Method of Compliance: **Fuel Sampling - Vendor.**	
6. Allowable Emissions Comment (Description of Operating Method): **Oil firing: PSD-FL-296A, 720 hr/yr/CT.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **NO_x**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **93.5** lb/hour **143.4** tons/year	4. Synthetically Limited? ☒ Yes ☐ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference: **PSD-FL-296A**	7. Emissions Method Code: **2**
8. Calculation of Emissions:	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Max lb/hr for oil firing at 20°F turbine inlet; TPY with 8,040 hr/yr-gas; equivalent of 720 hr/yr/CT-oil.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **3.5 ppmvd at 15% O_2**	4. Equivalent Allowable Emissions: **25.2** lb/hour **110.4** tons/year
5. Method of Compliance: **CEM; part 75; 24-hour block average**	
6. Allowable Emissions Comment (Description of Operating Method): **Gas firing: PSD-FL-296A**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **15 ppmvd @ 15% O_2**	4. Equivalent Allowable Emissions: **116.9** lb/hour **42.1** tons/year
5. Method of Compliance: **CEM Part 75; 24-hour block average.**	
6. Allowable Emissions Comment (Description of Operating Method): **Oil firing: PSD-FL-296A, 720 hr/yr/CT**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **CO**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **112** lb/hour **336.2** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference: **PSD-FL-296**	7. Emissions Method Code: **2**
8. Calculation of Emissions:	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Max lb/hr for oil firing; TPY with 8,040 hr/yr-gas and 720 hr/yr/CT-oil.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **16 ppmvd @ 15% O_2**	4. Equivalent Allowable Emissions: **73.6** lb/hour **322** tons/year
5. Method of Compliance: **CEM 24-hour block average.**	
6. Allowable Emissions Comment (Description of Operating Method): **Gas firing: PSD-FL-296A.**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **30 ppmvd @ 15% O_2**	4. Equivalent Allowable Emissions: **112** lb/hour **40.3** tons/year
5. Method of Compliance: **EPA Method 10; Initial and Annual at Base Load. CEM 24-hour block average.**	
6. Allowable Emissions Comment (Description of Operating Method): **Oil firing: PSD-FL-296A, 720 hr/yr/CT.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **VOC**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **22** lb/hour **26.8** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference: **PSD-FL-296A**	7. Emissions Method Code: **2**
8. Calculation of Emissions:	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Max lb/hr for oil firing at 20°F turbine inlet; TPY with 8,040 hr/yr-gas (100% and 60% loads); equivalent of 720 hr/yr/CT-oil.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **2 ppmvd at 15% O_2**	4. Equivalent Allowable Emissions: **4.7** lb/hour **20.6** tons/year
5. Method of Compliance: **EPA Method 25A. Initial test.**	
6. Allowable Emissions Comment (Description of Operating Method): **Gas firing: PSD-FL-296A.**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **10 ppmvd at 15% O_2**	4. Equivalent Allowable Emissions: **22** lb/hour **7.92** tons/year
5. Method of Compliance: **EPA Method 25A. Initial test.**	
6. Allowable Emissions Comment (Description of Operating Method): **Oil firing: PSD-FL-296A, 720 hr/yr/CT.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **SAM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **< 11** lb/hour **< 8** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference: **PSD-FL-296A**	7. Emissions Method Code: **2**
8. Calculation of Emissions:	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Max lb/hr for oil firing at 20°F turbine inlet; TPY with 8,040 hr/yr-gas; equivalent of 720 hr/yr/CT-oil. Emissions are estimated.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **Natural Gas – 1 grain/100 scf**	4. Equivalent Allowable Emissions: **< 0.60** lb/hour **< 3** tons/year
5. Method of Compliance: **Fuel Sampling - Vendor**	
6. Allowable Emissions Comment (Description of Operating Method): **Gas firing: PSD-FL-296A. Emissions are estimated.**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.05% Sulfur oil**	4. Equivalent Allowable Emissions: **< 11** lb/hour **< 5.5** tons/year
5. Method of Compliance: **Fuel Sampling - Vendor**	
6. Allowable Emissions Comment (Description of Operating Method): **Oil firing: PSD-FL-296A. Emissions are estimated.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 2

1. Visible Emissions Subtype: **VE10**	2. Basis for Allowable Opacity: ☐ Rule ☒ Other
3. Allowable Opacity: Normal Conditions: **10** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **EPA Method 9**	
5. Visible Emissions Comment: **Gas and Oil Firing**	

Visible Emissions Limitation: Visible Emissions Limitation 2 of 2

1. Visible Emissions Subtype: **VE99**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: **100** % Maximum Period of Excess Opacity Allowed: **60** min/hour	
4. Method of Compliance: **None**	
5. Visible Emissions Comment: **FDEP Rule 62-210.700(2); allowed for 2 hours (120 minutes) per 24 hours for startup, shutdown, and malfunction.**	

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 1 of 3

1. Parameter Code: **EM**	2. Pollutant(s): **O_2**
3. CMS Requirement: ☒ Rule ☐ Other	
4. Monitor Information... Manufacturer: **TECO** Model Number: **1420C** Serial Number: **2750**	
5. Installation Date:	6. Performance Specification Test Date: **Dec 2003**
7. Continuous Monitor Comment: **See NO_x.**	

Continuous Monitoring System: Continuous Monitor 2 of 3

1. Parameter Code: **EM**	2. Pollutant(s): **NO_x**
3. CMS Requirement: ☒ Rule ☐ Other	
4. Monitor Information... Manufacturer: **TECO** Model Number: **42CHL** Serial Number: **75518-380 & 74691-373**	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: **Required by 40 CFR 60; Subpart GG; S.60.334; oil firing. Request NO_x CEM in lieu of WTF monitoring. 40 CFR 75. PSD-FL-296A.**	

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 3 of 3

1. Parameter Code: **EM**	2. Pollutant(s): **CO**
3. CMS Requirement:	☐ Rule ☒ Other
4. Monitor Information... Manufacturer: **TECO** Model Number: **48C**	Serial Number: **73424-373**
5. Installation Date:	6. Performance Specification Test Date: **Dec 2003**
7. Continuous Monitor Comment: **PSD-FL-296A.**	

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **PEF-FI-C2** ☐ Previously Submitted, Date ____

2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **PEF-EU1-I2** ☐ Previously Submitted, Date ____

3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **PEF-EU1-I3** ☐ Previously Submitted, Date ____

4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **PEF-EU1-I4** ☐ Previously Submitted, Date ____
   ☐ Not Applicable (construction application)

5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **PEF-EU1-I4** ☐ Previously Submitted, Date ____
   ☐ Not Applicable

6. Compliance Demonstration Reports/Records
   ☒ Attached, Document ID: **PEF-EU1-I6**
   Test Date(s)/Pollutant(s) Tested: ____
   ____
   ☐ Previously Submitted, Date: ____
   Test Date(s)/Pollutant(s) Tested: ____
   ____
   ☐ To be Submitted, Date (if known):_____
   Test Date(s)/Pollutant(s) Tested: ____
   ☐ Not Applicable

   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute
   ☐ Attached, Document ID: ____ ☒ Not Applicable

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e))
   ☐ Attached, Document ID: _____ ☒ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.)
   ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only)
   ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements
   ☒ Attached, Document ID: **PEF-EU1-IV1** ☐ Not Applicable
2. Compliance Assurance Monitoring
   ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Alternative Methods of Operation
   ☒ Attached, Document ID: **PEF-EU1-IV3** ☐ Not Applicable
4. Alternative Modes of Operation (Emissions Trading)
   ☐ Attached, Document ID: _____ ☒ Not Applicable
5. Acid Rain Part Application
   ☒ Certificate of Representation (EPA Form No. 7610-1)
      ☒ Copy Attached, Document ID: **PEF-EU1-IV5**
   ☐ Acid Rain Part (Form No. 62-210.900(1)(a))
      ☐ Attached, Document ID: _____
      ☐ Previously Submitted, Date: _____
   ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
      ☐ Attached, Document ID: _____
      ☐ Previously Submitted, Date: _____
   ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.)
      ☐ Attached, Document ID: _____
      ☐ Previously Submitted, Date: _____
   ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
      ☐ Attached, Document ID: _____
      ☐ Previously Submitted, Date: _____
   ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
      ☐ Attached, Document ID: _____
      ☐ Previously Submitted, Date: _____
   ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
      ☐ Attached, Document ID: _____
      ☐ Previously Submitted, Date: _____
   ☐ Not Applicable

Additional Requirements Comment

ATTACHMENT PEF-EU1-I2

FUEL ANALYSIS OR SPECIFICATION

Progress Energy

COPY

October 9, 2003

CERTIFIED MAIL

Mr. Joel Smolen
Florida Department of Environmental Protection
Southwest District Office
3804 Coconut Palm Drive
Tampa, FL 33619-8218

Re: Initial Distillate Oil Sulfur Analysis – Units 2A and 2B
Hines Energy Complex Power Block 2
Bartow, Polk County, Florida
Air Permit No. PSD-FL-296A

Dear Mr. Smolen:

In accordance with Specific Condition No. 25.b. of Air Permit No. PSD-FL-296A, Hines Energy Complex Power Block 2 (PB2) respectfully submits the initial distillate oil sulfur analysis performed on the fuel oil tank that will serve PB2 Units 2A and 2B. This analysis demonstrates initial compliance with the required sulfur requirements for the fuel oil on-site that will be used to supply PB2 Units 2A and 2B. As required, the sulfur content of any subsequent fuel oil deliveries will be verified by a certified analysis from the vendor or from additional sampling and analysis.

If you have any questions concerning the contents of this submittal, please contact Mr. John J. (Jamie) Hunter of Progress Energy – Florida at (727) 826-4363.

Sincerely,

Roger Zirkle
Plant Manager
Hines Energy Complex

c: Mr. Gerald Kissel – FL DEP SW District Tampa Office

Progress Energy Florida, Inc.
Hines Energy Complex
7700 County Road 555
Bartow, FL 33830

SGS

Analyst's Report

(Page 1 of 3)

Client : GEMMA POWER
Product : Diesel
Client Ref : SGS TAMPA

Report No : 23962
SGS File No : 713637

LIMS No : 23962 - 63542
Sample Description : Sampled on 15-Jul-2003.
Sample Label : DRAWN
07/15/03 08:10
HINES ENERGY FACILITY

Lab No : P08301470

METHOD	TEST	RESULT	
ASTM D 381	Existent gum		
	Existent Gum	<1	mg/100mL
ASTM D 2622	Sulfur by X-ray	0.0051	wt%
ASTM D 664	Total Acid Number	0.03	mgKOH/g
ASTM D 974	Strong Acid Number	zero	mgKOH/g
ASTM D 2622	Sulfur by X-ray	51	ppm-wt
ASTM D 4052	Density at 15 °C	0.8036	kg/L
ASTM D 5291	Carbon	85.9	wt %
ASTM D 5291	Hydrogen	14.1	wt %
ASTM D 4629	Nitrogen by Chemiluminescence Detection	5	ppm-wt
ASTM D 5191	DVPE	<0.25	psi
ASTM D 2709	Water and sediment by centrifuge	0.000	vol%
ASTM D 4052	API Gravity	44.5	°
ASTM D 4052	Spec Gravity @ 60/60 °F	0.8040	
ASTM D 6217	Particulate Contamination in Middle Distillate Fuels		
	Sample volume used in the test	1.00	L
	Particulate Contamination	0.6	mg/L
	Total # of Filtrations	1	
ASTM D 4929	Organic Chloride	2	ppm-wt
ASTM D 482	Ash from petroleum products		
	Ash	<0.001	mass %
GFAAS	Lead	<10	ppb-wt
ASTM D 95	Water by distillation	0.00	vol %
ASTM D 93A	Flashpoint, PMCC	144	°F
ASTM D 445	Kinematic Viscosity at 40°C	1.520	cSt
ASTM D 611	Aniline Point	148.5	°F
ASTM D 4530	Micro-Carbon Residue, 10% Bottoms	<0.1	wt%
ASTM D 240	Net Heat of Combustion	17803	Btu/lb
ASTM D 240	Gross Heat of Combustion	19093	Btu/lb
ASTM D 4052	Density at 60°F	6.694	lb/USGal
ASTM D 86	Distillation, °F, %Recovered, @760 mm Hg		

Precision parameters apply in the determination of above test results. Also refer to ASTM D 3244-77/83, IP 367 and appendix E of IP standard methods for analysis and testing for utilization of test data to determine conformance with specifications.

Date printed: 18-Jul-2003

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SGS Control Services Inc.
Oil, Gas & Chemicals Services 151 James Drive West St. Rose LA 70087
TEL: (504) 469-6401 FAX: (504) 463-3301

SGS

Analyst's Report

LIMS No : 23962 - 63542 Lab No : P08301470 (Cont.)

Sample Description : Sampled on 15-Jul-2003.
Sample Label : DRAWN
07/15/03 08:10
HINES ENERGY FACILITY

METHOD	TEST	RESULT	
	IBP	346.1	°F
	5%	376.5	°F
	10%	383.0	°F
	20%	396.1	°F
	30%	404.9	°F
	40%	413.2	°F
	50%	420.7	°F
	60%	428.8	°F
	70%	438.9	°F
	80%	451.3	°F
	90%	470.4	°F
	95%	491.2	°F
	END	513.0	°F
	Recovery	97.1	%
	Residue	1.7	%
	Loss	1.2	%
ASTM D 445	Kinematic Viscosity at 40°F	3.027	cSt
IP 21	Diesel Index	66	
ICP	Barium	<0.1	ppm-wt
ICP	Phosphorus	<0.1	ppm-wt
ICP	Magnesium	<0.1	ppm-wt
ICP	Manganese	<0.1	ppm-wt
ASTM D3605	Vanadium by AAS	<0.1	mg/kg
ASTM D3605	Sodium by AAS	<0.1	mg/kg
ASTM D3605	Calcium by AAS	<0.1	mg/kg
ASTM D3605	Lead by AAS	<0.1	mg/kg
ASTM D3605	Potassium by AAS	<0.1	mg/kg

Analyst : ....

Date : 07/18/2003

Date printed: 18-Jul-2003

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Analyst's Report

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Precision parameters apply to the determination of these test results. Also refer to ASTM D [illegible], D [illegible] and [illegible] standard methods for analysis and testing for [illegible] to determine conformance with specifications.

Date printed: [illegible]

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ATTACHMENT PEF-EU1-I3

DETAILED DESCRIPTION OF CONTROL EQUIPMENT

ATTACHMENT PEF-EU1-I3

DESCRIPTION OF CONTROL EQUIPMENT

Dry Low NOx (DLN) Combustion: Power Block 2 maintains a DLN combustion system to control NOx emissions from each gas turbine when firing natural gas. Prior to the initial emissions performance tests required by each gas turbine, the DLN combustors and automated gas turbine control system were tuned in accordance with Siemens Westinghouse requirements, in conjunction with the selective catalytic reduction emissions control equipment, to achieve the permitted levels for CO and NOx emissions. Thereafter, each system shall be maintained and tuned in accordance with Siemens Westinghouse recommendations.

Water Injection: Power Block 2 maintains a water injection system to deduce NOx emissions from each gas turbine when firing distillate oil. Prior to the initial emissions performance tests required by each gas turbine, the water injection systems were tuned in accordance with Siemens Westinghouse requirements, in conjunction with the selective catalytic reduction emissions control equipment, to achieve the permitted levels for CO and NOx emissions. Thereafter, each system shall be maintained and tuned in accordance with Siemens Westinghouse recommendations.

In accordance with Siemens Westinghouse specifications, a monitoring system is maintained to continuously measure and record the water-to-fuel ratio when firing distillate oil

SCR System: Power Block 2 maintains a SCR system to control NOx emissions from each gas turbine when firing either natural gas or distillate oil. The SCR system consists of the following components:

- Ammonia injection grid
- Catalyst
- Ammonia storage
- Monitoring equipment
- Control system
- Electrical system
- Piping
- And other ancillary equipment

The SCR is designed and constructed according to achieve the permitted level of NOx emissions and ammonia slip.

Ammonia injection is initiated as soon as the operation of the gas turbine/HRSG system achieves the operating parameters specified by the manufacture. In accordance with the SCR manufacture specifications, a ammonia flow meter is maintained to measure and record the ammonia injection rate to the SCR system.

If the ammonia slip rate for a gas turbine exceeds 5 ppmnd corrected to 15% oxygen when firing natural gas during the annual test, the following will occur:

- Begin testing and reporting the ammonia slip for each subsequent calendar quarter

- Before the ammonia slip exceeds 7 ppmvd corrected to 15% oxygen, take corrective action that result in lowering the ammonia slip to less than 5 ppmvd corrected to 15% oxygen; and
- Test and demonstrate that the ammonia slip is no more than 5 ppmvd corrected to 15% oxygen within 15 days after completing the corrective action.

Corrective actions may include, but are not limited to, adding catalyst, replacing catalyst, or other SCR system maintenance or repair. After demonstrating that the ammonia slip level is no more than 5 ppmvd corrected to 15% oxygen, testing and reporting will resume on an annual basis.

ATTACHMENT PEF-EU1-I4

PROCEDURES FOR STARTUP AND SHUTDOWN & OPERATION AND MAINTENANCE PLAN

ATTACHMENT PEF-EU1-I4

PROCEDURES OF STARTUP & SHUTDOWN AND OPERATION & MAINTENANCE PLAN

The following description of procedures for startup, shutdown, operation, and maintenance are Siemens Westinghouse's general recommendations for 501F CTs. The procedures followed by Progress Energy Corporation's Hines Energy Complex for Unit 2 may vary from the procedures specified herein.

FUEL GAS SYSTEM

SYSTEM DESCRIPTION

The Fuel Gas System controls the flow of gas into the Combustion System for all operating modes of the turbine. Overfuel and overspeed protection is designed into the system. A functional Double-Block-and-Bleed Valve arrangement isolates the gas turbine from the fuel gas supply when the unit is not operating.

The Fuel Gas System is designed to operate with natural gas. Fuel quality must be in accordance with Siemens Westinghouse Fuel Specifications. Fuel gas is supplied from the purchaser's pressure regulating station to the boundary of the Fuel Gas System located just outside of the Turbine Enclosure.

For a schematic of the system, refer to the table of contents for the Piping and Instrument Diagram.

SYSTEM COMPONENTS

The Fuel Gas Filter Separators for the Main and Pilot Gas supply are located outside of the Turbine Enclosure. The balance of the system components is located in the Fuel Gas Piping Assembly between the Fuel Gas Filter Separators and the gas turbine mounted Fuel Gas Manifolds.

Fuel Gas Filter Separators:
Main: MBP10AT001,
Pilot: MBP30AT001 (Heated Gas)

The separators consist of a pressure vessel with a drain section and a filter section. A Differential Pressure-Indicating Switch is provided for local indication and remote monitoring by the Control System of the filter pressure drop. Level Switches monitor fluid levels and provide alarm signal to the control room.

Overspeed Trip Valve: MBP10AA003/FV36102
Pilot Overspeed Trip Valve:
MBP30AA003/FV36113 (Heated Gas)

These pneumatically operated, diaphragm /spring balanced high speed Butterfly Valves are used to isolate the plant fuel gas supply whenever the CT is shutdown. The valves are fail-safe; i.e., they will close at loss of pneumatic air. The valves are ANSI leakage Class V category.

Vent Valve: MBP40AA003/FV36106

This valve is a pneumatically actuated ball valve, air to close-fail open.

This valve functions in a Double-Block-and-Bleed arrangement with the Overspeed Trip Valves and throttle valves. Collectively, these valves isolate fuel gas from the turbine when the unit is not operating. Any gas-trapped fuel gas from the gas piping assemblies downstream of the Overspeed Trip Valves is vented to the atmosphere.

Pilot Stage Isolation Valve:
MBP30AA005/FV36117 (Heated only)

This pneumatically operated Butterfly Valve allows isolation of the Pilot Fuel Header from the heated main fuel gas flow during normal operation. The valve is fail-open and is commanded closed in 10 seconds after the pilot Overspeed Trip Valve is selected open during turbine Start-Up. The Pilot Stage Isolation Valve opens at turbine shutdown to allow venting of the fuel gas from the Pilot Header.

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Starting Pressure Regulating Valve, MBP10AA105/PCV36103

This valve is a self-contained pilot-operated pressure regulator, which controls the fuel gas pressure upstream of the throttle valves to a fixed setpoint for ignition. The regulated pressure is indicated by a locally mounted pressure gauge, MBP10CP503/PI36103.

Main Pressure Control Valve, MBP10AA105/PV36111

This pneumatically actuated segmented Ball-Valve fails-closes on loss of air pressure. The valve is equipped with a Positioner and I/P Transducer, MBX76AA183/PC36111, which controls the valve in response to a signal from the Control System. This valve is ramped open after ignition and initial acceleration of the turbine.

Thermocouples:
MBP10CT003/TE36112,
MBP30CT003/TE36116 (Heated only)

These instruments provide signal to the Control System for the fuel gas temperature upstream of the Throttle Valves.

Flowmeter Orifices:
Pilot Stage: MBP30BP003/FE36121,
Stage A: MBP21BP003/FE36131,
Stage B: MBP22BP003/FE36141,
Stage C: MBP23BP003/FE36151

These orifice plate-type flowmeters monitor the fuel gas flow through the Pilot, A, B, and C Stages of the Combustion System. The flow signals are input to the Control System. Differential Pressure Transmitters are located on the Fuel Gas Transmitter Panel.

Throttle Valves:
Pilot Stage, MBP30AA103/FV36122,
Stage A, MBP21AA103/FV361328,
Stage B, MBP22AA103/FV36142,
Stage C, MBP23AA103/FV36152

These hydraulically actuated valves control the fuel gas flow through the Pilot, A, B, and C Stages of the Combustion System in response to signals from the Control System. The valve actuators are double-acting hydraulic pistons with Integral servo-valve controllers and Position Feedback Sensors. A filter is provided in the Hydraulic Liquid Supply Line on each actuator.

Fuel Gas Manifolds

The Fuel Gas Manifolds are ring-shaped piping assemblies which surround the compressor casing adjacent to the Combustor Section. Three manifolds are provided; one for each stage of the Combustion System. Each manifold distributes fuel gas to the piping connections on the 14 fuel nozzles. The manifolds are connected to the fuel nozzles with rigid pipe and are flexibly supported to allow for thermal expansion.

Fuel Gas Flow and Control Panel

This panel, containing the components described below, is located on the inside of the Turbine Enclosure wall, adjacent to the fuel gas piping.

Solenoid Valves:
MBX76AA085/FY36102
MBX76AA083/FY35601 (Heated Gas)

These three-way normally closed Solenoid Valves, controls the actuating air to the fuel gas Overspeed Trip Valves. The Econopac Instrument Air Header supplies air to the Solenoid Valves. To open the Overspeed Trip Valves, the Solenoid Valve must be energized, and air pressure must be available from the Overspeed Trip Pilot Valve Assembly. Loss of electrical power to the Solenoid Valves or loss of oil pressure in the mechanical Overspeed

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Trip System will close the Overspeed Trip Valves. A check valve is mounted in parallel with the Solenoid Valves to allow air to exhaust from the Overspeed Trip Valve actuator even if the Solenoid Valves remains energized. A switch located on the panel allows manual stroking of the Overspeed Trip Valve for maintenance purposes. The Overspeed Trip Valves cannot be opened unless Overspeed Trip oil pressure is present.

CAUTION

The Overspeed Trip Valve should not be manually opened unless the fuel gas supply has been isolated and tagged out upstream of the valve. Failure to do so will result in fuel gas discharge to atmosphere through the vent valve.

Solenoid Valve, MBX76AA087/FY36107

This three-way normally closed Solenoid Valve controls the actuating air to the Vent Valve.

Solenoid Valve, MBX76AA089/FY36117 (Heated only)

This three-way normally closed Solenoid Valve controls the actuating air to the Pilot Stage Isolation Valve.

Pressure Transmitters:
MBP10CP003/PT36111,
MBP10CP001/PT36115

These instruments provide signal to the Control System for the fuel gas pressure upstream of the Stage A, Stage B, Stage C, and Pilot Throttle Valves.

Flow Transmitters:
Pilot Stage: MBP30CF003/FT36121,
Stage A: MBP21CF003/FT36131,
Stage B: MBP22CF003/FT36141,
Stage C: MBP23CF003/FT36151

These instruments monitor the pressure drop across flow orifices located in the Pilot Stage, Stage A, Stage B, and Stage C Fuel Gas Piping, respectively. The signals are input to the turbine Control System for calculation of fuel gas flows.

Differential Pressure Transmitters:
MBP30CP003/PDT36123,
MBP21CP003/PDT36133,
MBP22CP003/PDT36142,
MBP23CP003/PDT36152

These instruments monitor the pressure drop across the Pilot Stage, Stage A, Stage B, and Stage C throttle valves, respectively. The signals are input to the Control System to cross check the fuel gas flow calculations and trim the control signals to the throttle valves.

Overfuel Protection Panel Differential Pressure Transmitters:
MBP10CP110/PDT36110,
MBP10CP111/PDT36111,
MBP10CP112/PDT36112,
MBP10CP113/PDT36113

These devices are located in the Turbine Pipe Rack, and sense the Differential Pressure between each Fuel Gas Manifold and the combustor shell. The transmitters detect an overfuel condition at ignition. If a high differential pressure is indicated, the start-up sequence will be aborted and an alarm will occur. This action only operates during the ignition sequence.

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FUEL OIL SYSTEM W501D, W501F AND W501G DLN

SYSTEM DESCRIPTION

The Fuel Oil System provides pressurized fuel oil to the CT Combustors. The system consists of a Pump Inlet Duplex Filter, Fuel Oil Pump suction and discharge monitoring devices. It additionally includes a Pump Discharge Pressure Regulator (Bypass Valve), Overspeed Trip Stop Valve, Drain Valve, three Throttle Valves, and three flow dividers. The Fuel Oil System is located on the Fuel Oil Pump Skid outside the Turbine Enclosure and the Fuel Oil/Water Injection Skid inside the Turbine Enclosure. Fuel pressure is regulated by controlling the rate of flow return back to the oil storage tank. Fuel Oil Pump discharge is split into three paths (Pilot, Stage A and Stage B) which feed the DLN Combustors. Each path includes a Throttle Valve and Flow Divider to assure correct and consistent flow distribution to each of the sixteen baskets. Water is injected into the fuel oil near the nozzles for NO_x control.

SYSTEM COMPONENTS

Fuel Oil Pump Skid

The Fuel Oil Pump Skid contains the high-pressure Pump, Duplex Suction Filters, Fuel Oil Overspeed Trip Valve, and all Fuel Oil Pressure Regulator equipment.

Fuel Oil Filter

The Fuel Oil Filter is a duplex model with a full flow transfer valve to permit changing filter cartridges during oil fired operation. A Differential Pressure-Indicating Switch (MBN10CP083) monitors the differential across the filter and alarms on high differential indicating the need to change cartridges.

Fuel Oil Pump

The Fuel Oil Pump is a horizontally oriented, positive displacement screw pump with one drive rotor and two idler screws. Pump discharge pressure is controlled by regulating the output of the pump. Higher flow yields less pressure. The pump suction and discharge pressures are monitored for pump and system protection.

Fuel Oil Relief Valve

This spring-loaded Pilot/Relief Valve protects the fuel pump from excessive backpressure.

Pump Suction Pressure Switches, MBN10CP085/ PS36204A, MBN10CP087/PS36204B

These Pressure Switches monitor the pump suction pressure. They will change state on falling pump suction pressure. A Pressure Gauge (MBN10CP507/ PI36204) is provided for field personnel use.

Pump Discharge Pressure Transmitter, MBN11CP003/ PT36206

This Pressure Transmitter monitors the pump discharge pressure. This measurement is critical during oil operation. A Pressure Gauge (MBN11CP503/ PI36206) is provided for field personnel use.

Pump Discharge Pressure Regulating Valve, MBN11AA103/ PCV36206

The Pump Discharge Pressure (PDP) Regulating Valve is a globe-type valve that controls pump discharge pressure by circulating the discharge flow back to the oil storage tank. The valve is hydraulically actuated to provide the quick solid

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response required for DLN Combustor control. There is a 15-micron filter on the Hydraulic Actuator with a Differential Pressure Switch (MBX34CP083/ PDS34412). The actuator consists of a single acting cylinder with an integral position feedback device (MBN11CG103/ ZT36206) and an actuator mounted servo valve. The valve is positioned by TXP command signal MBX34AA183/ PC36206.

Fuel Oil Overspeed Trip (OST) Valve, MBN10AA003/ FV36207

The OST Valve is a high-speed air actuated, fail/closed valve directly controlled by Solenoid Valve MBX77AA083/ FY36207 located on the Fuel Oil Pump Skid control panel. This valve is opened by energizing the MBX77AA083/ FY36207 after pump startup to allow ignition flow through the throttle valves. The valve is shut during operation by de-energizing solenoid MBX77AA083/ FY36207. A Position Limit Switch (MBN10CG083/ ZS36207C) is used to indicate closed valve position.

Fuel Oil/Water Injection Skid (FO/WI)

The FO/WI Skid contains the throttling valves, flow dividers, multifunction valves, and volume compensators for the Fuel Oil System. Fuel Oil Skid components include:

Thermocouple, MBN10CT003/ TE36212

This Type-K Thermocouple monitors fuel oil temperature and transmits back to the TXP Controller.

Fuel Oil Drain Valve, MBN30AA003/ FV36210

The Fuel Oil Drain Valve is a pneumatically operated valve located between the Fuel Oil OST Valve and the Fuel Oil Throttle Valves and serves to relieve the pressure between the shutoff valves. Valve actuation occurs when Solenoid Valve MBX77AA085/ FY36211 is energized.

Fuel Oil Pilot Throttle Valve, MBN21AA103/ FV36251

The Fuel Oil Pilot Throttle Valve is a hydraulically actuated globe valve. It includes a 15-micron inlet filter on the Hydraulic Actuator with Differential Pressure Switch, MBX31CP083/ PDS34414. The actuator consists of a single acting cylinder with integral position feedback device, MBN21CG003/ ZT36251. It additionally supports an actuator mounted Servo-Control Valve. Fuel Oil Pilot Throttle Valve positioning is accommodated by TXP command signals to MBX31AA183/ FC36251.

Fuel Oil Stage A Throttle Valve, MBN22AA103/ FV36261

The Fuel Oil Stage A Throttle Valve is a hydraulically actuated globe valve. It includes a 15-micron inlet filter on the Hydraulic Actuator with Differential Pressure Switch, MBX32CP083/ PDS34415. The actuator consists of a single acting cylinder with integral position feedback device, MBN22CG003/ ZT36261. It additionally supports an actuator mounted servo-control valve. Fuel Oil Stage A Throttle Valve positioning is accommodated by TXP command signals to MBX32AA183/ FC36261.

Fuel Oil Stage B Throttle Valve, MBN23AA103/ FV36271

The Fuel Oil Stage B Throttle Valve is a hydraulically actuated globe valve. It includes a 15-micron inlet filter on the Hydraulic Actuator with Differential Pressure Switch, MBX33CP083/ PDS34416. The actuator consists of a single acting cylinder with integral position feedback device,

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MBN23CG003/ ZT36271. It additionally supports an actuator mounted Servo-Control Valve.

Pressure Transmitters, MBX31CP083/ PDS34414, MBX32CP083/ PDS34415, and MBX33CP083/ PDS34416

These Differential Pressure Transmitters monitor pressure differential across each throttle valve. Differential pressure input signals are used by the TXP for calculating throttle valve positioning requirements. Each transmitter is mounted on the FO/WI Control Panel. Sensing lines connect the transmitters to their respective pressure sensing taps located immediately upstream and downstream of each throttle valve.

Flow Divider and Speed Pickups, MBN21CS003/ SE36253, MBN22CS003/ SE36263, and MBN23CS003/ SE36273

Three Flow Dividers are provided for each fuel oil stage. The flow dividers are linear multi-stage commonly shafted gear pumps. Their purpose is to ascertain the delivery of consistent fuel oil flow to each combustor basket. The Flow Divider itself is free spinning, powered only fuel oil pressure, during normal operation, after initially rotated with starting motor Flow Divider composition consisting of redundant speed pickups. These devices generate a speed reference signal that is derived by sensing the passage of teeth affixed along the outer circumference of the rotating speed wheel.

SYSTEM OPERATION

Note

Reference the released project specific Engine Controls Settings Specification document for the latest instrumentation settings, fuel fractions, purge procedures, injection ratios, and fuel flow rates that apply.

SYSTEM START-UP

DLN Ignition Sequence

The Ignition Sequence automatically sequences the CT from initial rotation to successful ignition and initial acceleration. Upon receiving a start request from the operator, the Starting Package starts initial rotation of the CT. There are several Starting Sequence Control Logic Tests that occur with initial rotation through acceleration to lightoff speed. Any control anomalies during this period will cause an alarm and trip the unit. After successfully achieving *Light Off* speed, the Control System will initiate ignition. At this point, the Control System energizes the igniters, opens the Overspeed Trip Valve, and configures the Pilot MFV Fuel and Nozzle Valves for fuel flow to the turbine. The igniters will remain energized for a period of time depending on the fuel selected. For fuel oil, flame must be detected within 30 seconds for successful ignition. If ignition is not complete when the igniters are de-energized, an alarm will occur and the CT will trip. After three (3) consecutive ignition aborts have occurred, no further start attempts should be made until the Combustor Shell, Exhaust Cylinder, and Exhaust Stack are cleared of any liquid fuel. Drains are to be closed before another start is attempted. Once ignition is obtained, the CT must accelerate to 1400 Rpm within 2.5 minutes or an alarm and trip will occur. During initial acceleration, the Control System must continually detect flame or an alarm and trip will occur. See Ignition Sequence Overview section of functional logic drawings for site-specific control details.

STEADY STATE OPERATION

Fuel Oil Flow Control

When the Oil System is enabled (Control System receives a request to start on fuel oil by the operator), the Fuel Oil Forwarding Pumps will

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immediately start and run as long as turbine speed remains above 400 Rpm. After the Fuel Forwarding Pumps have been started, adequate pressure must be obtained at the Main Fuel Oil Pump suction within 15 seconds or an alarm will occur and the CT will trip. Once pump suction pressure has been maintained for 5 seconds, the Main Fuel Pump will start. Suction pressure at the main pump must recover within 3 seconds or an alarm will sound and the main pump will trip off-line. One of two suction switches MBN10CP085 / (PS36204A or MBN10CP087 /PS36204B) is required for pump start. Two of two switches (MBN10CP085 /PS36204A and MBN10CP087 /PS36204B) are required to trip the main pump on falling suction pressure. If discharge pressure falls below limits for more than 5 seconds after the main pump is running, as measured by MBN11CP003/PT36206, an alarm will occur.

As part of the ignition sequence, prior to initiating forward fuel to the turbine, the Control System opens the Overspeed Trip Valve, closes the drain/vent valve on the FO/WI Skid, configures the pilot multifunctional valve, and verifies all pre-start permissive conditions. The flow divider motor starts and remains running for a brief period after which nominal oil flow will maintain the flow divider rotation.

Several valves modulate the flow of oil into the engine: Fuel Oil Throttle Valves (one for each fuel stage) and control the flow of oil directly into the engine's Combustion System. The pump discharge pressure regulating valve (located on the pump skid) controls system discharge pressure to the FO/WI Control Skid. Prior to ignition, the Pump Discharge Pressure Regulating Valve is pre-positioned to a preset system discharge pressure of 350 PSI (24.13 BAR). At ignition, the Pilot Valve is placed in open loop control until ignition is obtained. After ignition, the Pilot Valve will open based on load demand. If the Pilot Throttle Valve demand exceeds 80%, the Fuel Oil Pump System discharge pressure will increase by repositioning the Pump Discharge Pressure Regulating Valve so that the Pilot Throttle Valve position remains below 78%.

Distillate Fuel Fractions

From Startup to 1600 Rpm, the CT will operate using only the Pilot Stage with both the A and B Stages off. At 1600 Rpm, the A Stage is gradually ramped in with respect to engine speed by the Control System. Once the engine reaches 3600 Rpm, Pilot and Stage A will operate through a preset proportion of the total fuel flow. After the generator breaker closes, fuel control becomes a function of nominal load. Nominal load reference is obtained by dividing the actual load by the base load at the measured CT inlet air temperature. Stage B is brought on when the nominal load reference is greater than approximately 25%. Final fractions are based on site-specific Combustion System's tuning requirements.

Water Injection/Purge System

Just prior to each fuel interface connection to each nozzle (3 places per basket), water is induced into the fuel line for water injection (NO_x Control at base load operation) and for purging of the fuel nozzles after shutdown. NO_x Control water to fuel injection ratios typically range from 0.3 to 0.7 (lb of water/lb of fuel) or 136.1 to 317.5 (grams of water/grams of fuel) for current DLN Systems. Injection ratios vary based on site-specific emission requirements. Water purge rates (after fuel oil shutdown) range from 10 GPM (37.85 LPM) (Pilot) to 20 GPM (75.7 LPM) for Stages A and B. Each Multifunctional Valve (MFV) contains a common internal drain manifold used by the water injection system to purge back each fuel line clear of oil after forward purging of the nozzles has been completed. The resultant oily/water waste from the MFV Internal Drain Manifold is routed to a waste storage system via the piping on the FO/WI Control Skid.

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FUEL OIL SYSTEM W501D, W501F AND W501G DLN

Refer to the DLN Water Injection System Description, 21T9715, and the Water Purge Sequence Specification, 21T9864, for more details.

SYSTEM SHUTDOWN

Normal Shutdown

A Normal Shutdown while operating on oil first begins with reducing the load to approximately 28%. At that point the Control System begins shutdown of Stage B by first closing the associated throttle valve and then the MFV Nozzle Valves, terminating the flow of oil to that stage. At the same moment the nozzle and throttle valves close, the MFV Drain Valves open momentarily to vent fuel pressure between the throttle and MFV Nozzle Valves. As the drain valves close, the Control System immediately closes the MFV Fuel Valves (providing double block isolation protection of the flow divider) and starts the forward water purge to the nozzles. After completing the nozzle purge, the Control System opens the MFV Nozzle and Drain Valves to purge back all of the fuel lines associated with that stage into the oily waste system. Final shutdown configuration of Stage B continues after completing the back purge, with the Control System closing all Stage B MFV Valves. The turbine continues to unload using the two remaining fuel stages, Stage A and Pilot. At approximately 5% load, the generator breakers will open, removing the remaining load from the turbine. The turbine will continue to run under no load for an additional 5 minutes before the Control System terminates all fuel flow to the two remaining stages. On shutdown, water purging commences immediately, similarly as described for Stage B. See the site-specific project Engine Control Settings Specification document for the latest fuel fractions, purge procedures, injection ratios, and fuel flow rates that apply.

Fuel Transfers

When a fuel transfer is requested by the operator, the Control System looks at the Fuel System requested to satisfy certain operating permissives or the transfer will abort. Once the permissives have been satisfied, the Control System will initiate a transfer by increasing fuel flow to the system requested while decreasing fuel to the system in operation. The fuel demands for both fuel oil and gas have been linearized so that a certain fuel demand achieves the same results on gas or fuel oil. The linearization of the fuels minimizes load swings when transferring from one type of fuel to another.

Transfer from Gas to Fuel Oil

When fuel transfer to oil is requested, the Control System first starts a sequence of checking permissives that begins with removing load control from the Exhaust Temperature Controller, taking the unit off base load to a load range of 19 to 22%. Next, the water system must be configured and ready to support transfer. Finally, the Fuel Oil System, which includes all of the Oil System Start-up Permissives, is enabled. If any of the three conditions in the above sequence fail, or the permissives for the startup of the Fuel Oil System fail, the transfer will abort. Once all permissives, are satisfied, the Control System transfers each stage of gas to oil in the order of Stage A, B, and then Pilot. Prior to transfer, each stage receives a short water pre-purge prior to receiving oil. Fuel transfers for the 501G are performed using the same logic, with the exception that the transfers can be performed at base load or at a reduced load.

Transfer from Fuel Oil to Gas

Transfers from oil to gas will be performed using logic similar to the transfer from gas to oil. The exception is that the stages will transfer in reverse. After all permissives have been satisfied, the Pilot

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will transfer first followed by Stage B, then A. Water purge will be performed on each Fuel Oil Stage immediately after shutdown of that stage.

FUEL OIL FLOW DIVIDER FLUSHING

Due to the high sensitivity of Fuel Oil Flow Dividers to oxidation and other contamination, monthly flushing of the Flow Dividers is standard practice to keep wetted surfaces covered with fuel oil and to push out any accumulations of water as well as to exercise the flow divider parts in preventing them from binding up. To achieve this, the DLN units have incorporated a Standard Flush Sequence that can be performed while on gas or with the unit on standby, without the need to transfer to fuel oil operation. The following is a description of the Automated Flush features that will be standard supply in the controls logic on DLN units.

Water Purge Sequences

Water Purge Sequences are to be applied manually via the operator panel in instances when the turbine is not running should any oil leak past the MFV Backpurge Valves. While the unit is operating the shell pressure will preclude any leakage from reaching the engine and no purging is necessary. Do not perform water purges above 35% load while on gas.

Initiate Flow Divider Flush Sequence

There is a button on the Fuel Oil Control Screen that allows the operator to initiate the Flushing Sequence for Flow Dividers. It is operator initiated and will not function during transfers from gas to oil or oil to gas. The flush will not function if operating on fuel oil. Operator initiation should occur once per month whether operating on fuel gas or if the unit is on standby.

Systems Preparation for Flushing Sequence

Preparation of various systems may be needed before the Flushing Sequence is started is consists of the following:

1. The Fuel Oil Forwarding System and the complete CT Fuel Oil System are functioning as evidenced by fuel oil main pump suction pressure switches.

2. The Hydraulic Oil System must be functioning as initiated by operator.

3. The Main Fuel Oil Pump will not be operated during this sequence and the motive force for the fuel oil will be the Fuel Oil Forwarding Pump. This is in order to limit the fuel oil pressure so as to not inadvertently push oil past the Multi- Functional Valve (MFV) into the CT that can occur at fuel oil pressures above 100 psig. Reference Service Bulletin PH-37114 that details the limits of operation for the MFV Valve.

4. The oily waste drain tank should be verified so as to not be at full level and have available volume to hold approximately 200 gallons of waste oil.

5. The Main Fuel Oil Pump Manual Bypass valve must be opened to all fuel oil flow from Forwarding System to the FO/WI Skid.

6. The entire Water Injection System must be functional including the Forwarding System if flushing the unit while not running.

Logic Automatic Permissives

Automatic Permissives included in the logic include the following:

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1. Flush disabled if fuel oil pressure to the FO/WI Skid exceeds 95 psig in order to prevent inadvertently putting oil into the CT.
2. Flush disabled if running on fuel oil.
3. Flush disabled if a fuel transfer is ongoing.
4. Flush disabled if Hydraulic Supply pressure is low.
5. Flush disabled if main Fuel Oil Pump is operating
6. Flush disabled if any of MFV Drain Valve is not in open position.
7. Flush disabled if any MFV Nozzle Valve is open.
8. Flush disable if any oil shutdown water purge is in progress.
    a. Flush disabled if Disc Cavity #2 temperature is greater than 150 F for nonrunning conditions.
    b. Flush disabled if Generator Breaker is open for running condition on gas.

Initiating Flush Sequence

Once the Flush Sequence is initiated by the operator, via pushing the Control Screen Flush Button a systematic sequence of opening individual FO Throttle Valves will start with the Pilot Valve. Initially all MFVs are positioned to have the inlet "Fuel"/Block Valve open, the "Drain" Valve open and the"Nozzle"/Backpurge Valve close. Then the respective Throttle Valves cycle open per the sequences noted below. The respective Flow Divider Motor gets pulsed for 15 seconds when each Throttle Valve opens. The MFVs remain in their flushing position until the flush is complete which is 200 seconds after the button is pushed.

Water Purge Non-Operating Unit

If the unit is not operating it is required to perform a Water Purge immediately after the FO TV closes. Forward and Backpurge Sequences are to be applied as outlined below and are to be applied manually via the control panel. To achieve this the operator will hit the button once for the initial purge followed by pushing it again to achieve the second purge after the first is finished. The Water Injection Pump will start on its own and will run for 3 minutes after the purge and automatically shuts off. The respective Water Purge Sequence will follow each stage flushing in the same manner as well. A unit flushed while in operation does not require the water purges.

Applicable Water Purge Sequences and Rates

After each Main Fuel Oil Stage is shut off, the following Purge Sequence will occur for that stage:

1. Purge through the nozzles for 15 seconds
2. Purge through the drain for 15 seconds
3. Purge through the nozzles for 15 seconds
4. Purge through the drain for 15 seconds

After the Pilot is shut off, the following Purge Sequence will occur (W501 Frames only):

1. Purge Pilot Stage forward through the nozzles for 15 seconds

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2. Purge Pilot Tubing back through the drain for 15 seconds

After the Pilot is shut off, the following Purge Sequence will occur (W251 Frames only):

1. Purge Pilot stage forward through the nozzles for 30 seconds at 3 GPM

2. Purge Pilot Tubing back through the drain for 15 seconds

Purge Flow Rates

W501 Purge Flow

- Pilot: 10 GPM
- A: 17 GPM
- B: 17 GPM

W251 Purge Flow

- Pilot: 10 GPM (3 GPM if operating on fuel gas)
- A: 10 GPM
- B: 10 GPM

Completing the Flush

At the conclusion of the flush, all Fuel Oil TVs, MFVs and Water Injection TVs are returned to normal state. This is followed by the operator to shutoff the Fuel Oil Forwarding Pump as desired and close the Manual Bypass Valve around the Main Fuel Oil Pump. The Water Injection Pump is also shutoff along with its Forwarding System if it was operated.

ALARMS/TRIPS

Turbine Trip

In the event of a trip while operating on oil, the Overspeed Trip Valve and all MFV internal valves will close immediately, terminating fuel flow into the engine. Once the system is down, the Control System will initiate a Water Purge to each of the three fuel oil stages. A final back purge through the MFV Drain will be performed upon completion of the Forward Nozzle Purge for each stage.

Fuel Oil Gauge

The Gauge Panel is mounted on the FO/WI Skid. This assembly accommodates centralized monitoring of fuel oil pressures necessary for ignition and system troubleshooting as well as Water Injection Flow Transmitters. These transmitters monitor the water flow necessary during normal system operation.

The panel houses Pressure Gauges MBN21CP503/ PI36256, MBN22CP503/ PI36266, and MBN23CP503/ PI36276 that are used for monitoring Flow Divider discharge pressure. As the Flow Divider directs its fuel oil discharge to each oil feed tube, Fuel Oil Pressure Gauges sense the delivery of system oil pressure at the nozzles.

Multifunctional Valve (MFV) Manifold

Each Flow Divider on the FO/WI Skid has its own dedicated Multifunctional Valve Manifold. The MFV uses three (3) independently controlled, hydraulic actuated valve circuits that provide fuel, drain, and nozzle isolation functions for each fuel oil feed to the CT. The fuel isolation function prevents combustion products or purge water from entering the flow divider when not in use. Drain isolation provides a flow path to a customer-provided Waste Drain System for Backpurge and Flow Divider Flush Operations. Nozzle isolation prevents the flow of fuel oil to the CT during flow divider flushing and provides a second valve block of the flow divider from combustion gases when operating on gas.

PS36254 – MBX35CP083 (Pilot), PS36264 – MBX36CP083 (Stage A), PS36274 –

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MBX37CP083 (Stage B) - Multifunctional Valve (MFV), Fuel Valve Hydraulic Pressure

Senses hydraulic pressure to the Fuel Valve Circuit within the MFV. A set condition (switch closed) indicates the Fuel Valves are closed.

MBX35CP087 / PS36256 – (Pilot), MBX36CP087/ PS36266 – (Stage A), MBX37CP087 PS36276 – (Stage B) - Multifunctional Valve (MFV), Nozzle Back Purge Valve Hydraulic Pressure

Senses hydraulic pressure to the Nozzle Valve Circuit within the MFV. A set condition (switch closed) indicates the nozzle valves are open.

MBX35CP085 /PS36255 – (Pilot), MBX36CP085 /PS36265 – (Stage A), MBX37CP085 /PS36275 – (Stage B) - Multifunctional Valve (MFV), Drain Valve Hydraulic Pressure

Senses hydraulic pressure to the Drain Valve Circuit within the MFV. A set condition (switch closed) indicates the drain valves are open.

MBN30CF501 /FG36280 –, (MBN30CF501 /FG15565, 501D only) MFV Manifold Drain Sight Glass

Installed in the MFV Drain Piping, provides the operator with a local indication of drain system fluid flow from the respective MFV.

Volume Compensator

Varying lengths of straight tube sections are applied to compensate for unequal lengths of tubing going to the various fuel oil nozzles. They are specifically sized to make all fluid volumes to each nozzle the same and provide simultaneous oil supply to each nozzle at ignition and stage initiation.

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ATTACHMENT PEF-EU1-I6

COMPLIANCE DEMONSTRATION REPORTS

December 23, 2003

Mr. Joseph Kahn
Bureau Chief
Florida Department of Environmental Protection
Bureau of Air Monitoring and Mobile Sources
2600 Blair Stone Road, MS-5510
Tallahassee, Florida 32399-2400

Re: Submittal of NSPS/BACT Compliance and CO CEMS Certification Test Report
Hines Energy Complex Power Block 2
Bartow, Polk County, Florida
Air Permit No. PSD-FL-296A

Dear Mr. Kahn:

As required by Air Permit No. PSD-FL-296A, Emissions Unit Specific Condition Nos. 16 and 20, and Appendix SC, Standard Condition No. 18, Hines Energy Complex Power Block 2 (PB2) respectfully submits two (2) copies of this NSPS/BACT compliance and CO CEMS certification test report for Unit Nos. 2A and 2B.

In accordance with the above referenced air permit, within 60 days after achieving the maximum production rate at which the facility will be operated, but not later than 180 days after initial startup, compliance demonstration tests shall be completed. Initial startup occurred on August 11, 2003 (Unit 2A) and maximum production was first achieved on October 23, 2003, which resulted in a regulatory testing deadline of December 22, 2003. The compliance demonstration tests were completed on November 12, 2003.

Moreover, the above referenced permit requires that the subject report(s) be submitted within 45 days after the completion of the last [compliance] sampling run. The test completion date of November 12, 2003 results in a regulatory report submittal deadline of **December 27, 2003**. This report is being submitted within 45 days after completing testing.

As part of this report submittal, also included are "manufacturer performance curves" as provided by Siemens Westinghouse. These performance curves are required by Specific Condition No. 7 of the above referenced air permit and depict power output versus heat input at three different turbine inlet [i.e., ambient] operating temperatures, for the purpose of making site specific corrections for heat input and power output. This submittal is also required within 45 days after completing compliance testing.

If you have any questions concerning the contents of this submittal, please contact Mr. John J. (Jamie) Hunter of Progress Energy – Florida at (727) 826-4363.

I, the undersigned, am the responsible official as defined in Chapter 62-210.200, F.A.C., of the Title V source for which this document is being submitted. I hereby certify, based on the information and belief formed after reasonable inquiry, that the statements made and data contained in this document are true, accurate, and complete.

Sincerely,

Roger Zirkle
Plant Manager
Hines Energy Complex

Enclosure

cc: Mr. Gerald Kissel – FL DEP SW District Tampa Office

bcc: Jamie Hunter (w/o enclosure)
Dave Meyer
Matt Lydon (w/o enclosure)
Randy Melton (w/o enclosure)
Gus Schaefer
Marla Russell
Jeff Stephens (w/o enclosure)
Teresa Williams (w/o enclosure)
Treana Woodard
Robert Bivens – RMB Consulting & Research, Inc. (w/o enclosure)

Address for: Robert Bivens
Staff Engineer II
RMB Consulting & Research, Inc.
5104 Bur Oak Circle
Raleigh, North Carolina 27612

December 23, 2003

Mr. Gerald Kissel
Air Program Administrator – Southwest District Office
Florida Department of Environmental Protection
Air Resource Management
3804 Coconut Palm Drive
Tampa, Florida 33619-8218

Re: Submittal of NSPS/BACT Compliance and CO CEMS Certification Test Report
Hines Energy Complex Power Block 2
Bartow, Polk County, Florida
Air Permit No. PSD-FL-296A

Dear Mr. Kahn:

As required by Air Permit No. PSD-FL-296A, Emissions Unit Specific Condition Nos. 16 and 20, and Appendix SC, Standard Condition No. 18, Hines Energy Complex Power Block 2 (PB2) respectfully submits two (2) copies of this NSPS/BACT compliance and CO CEMS certification test report for Unit Nos. 2A and 2B.

In accordance with the above referenced air permit, within 60 days after achieving the maximum production rate at which the facility will be operated, but not later than 180 days after initial startup, compliance demonstration tests shall be completed. Initial startup occurred on August 11, 2003 (Unit 2A) and maximum production was first achieved on October 23, 2003, which resulted in a regulatory testing deadline of December 22, 2003. The compliance demonstration tests were completed on November 12, 2003.

Moreover, the above referenced permit requires that the subject report(s) be submitted within 45 days after the completion of the last [compliance] sampling run. The test completion date of November 12, 2003 results in a regulatory report submittal deadline of **December 27, 2003**. This report is being submitted within 45 days after completing testing.

As part of this report submittal, also included are "manufacturer performance curves" as provided by Siemens Westinghouse. These performance curves are required by Specific Condition No. 7 of the above referenced air permit and depict power output versus heat input at three different turbine inlet [i.e., ambient] operating temperatures, for the purpose of making site specific corrections for heat input and power output. This submittal is also required within 45 days after completing compliance testing.

If you have any questions concerning the contents of this submittal, please contact Mr. John J. (Jamie) Hunter of Progress Energy – Florida at (727) 826-4363.

I, the undersigned, am the responsible official as defined in Chapter 62-210.200, F.A.C., of the Title V source for which this document is being submitted. I hereby certify, based on the information and belief formed after reasonable inquiry, that the statements made and data contained in this document are true, accurate, and complete.

Sincerely,

Roger Zirkle
Plant Manager
Hines Energy Complex

Enclosure

cc: Mr. Joseph Kahn – FL DEP Tallahassee Office

bcc: Jamie Hunter (w/o enclosure)
Dave Meyer
Matt Lydon (w/o enclosure)
Randy Melton (w/o enclosure)
Gus Schaefer
Marla Russell
Jeff Stephens (w/o enclosure)
Teresa Williams (w/o enclosure)
Treana Woodard
Robert Bivens – RMB Consulting & Research, Inc. (w/o enclosure)

Address for: Robert Bivens
Staff Engineer II
RMB Consulting & Research, Inc.
5104 Bur Oak Circle
Raleigh, North Carolina 27612

NSPS/BACT INITIAL COMPLIANCE and CO CEMS CERTIFICATION REPORT

for

Progress Energy – Hines Energy Complex
Units 2A and 2B
Bartow, Polk County, Florida

December 2003

Prepared By:

RMB Consulting and Research, Inc.
5104 Bur Oak Circle
Raleigh, North Carolina 27612
(919) 510-5102

NSPS/BACT INITIAL COMPLIANCE and CO CEMS CERTIFICATION REPORT

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December 2003

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CERTIFICATION STATEMENT

Section IV, Appendix SC, Standard Condition No. 18-21. of Air Permit No. PSD-FL-296A requires "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."

I certify that, to the best of my knowledge and belief, that all data required and provided are true and correct, with respect to the test procedures used.

_____

Robert J. Bivens
Staff Engineer II
Responsible for Test Protocol and Report Authorship, Project Oversight, and Quality Assurance
RMB Consulting & Research, Inc.

EXECUTIVE SUMMARY

The Hines Energy Complex has recently completed construction on two (2) combined-cycle turbine units (Power Block 2 – Units 2A and 2B) at its Bartow, Florida facility. As a result, the two units are subject to air emissions testing and reporting requirements as set forth by the United States Environmental Protection Agency in Title 40 of the Code of Federal Regulations Part 60 (40 CFR Part 60) for New Source Performance Standard Subpart GG and Best Available Control Technology.

The purpose of this test program was to determine the compliance status with specific air emission permit limits as contained in Air Permit No. PSD-FL-296A, issued by the Florida Department of Environmental Protection. Emissions testing was performed for NO_x, CO, VOC, ammonia, and visible emissions on both units while firing both natural gas and No. 2 fuel oil at high load.

In addition, the Florida Department of Environmental Protection has required that the facility install, certify, and operate a CO continuous emissions monitoring system on both units.

The following report shows that compliance was demonstrated on both units, for each of the required pollutants, at each fuel and load condition as required by the current air permit. The CO monitors installed on each unit were also successfully certified.

1.0 INTRODUCTION

Progress Energy's Hines Energy Complex – Power Block 2 (Hines PB2) has recently completed construction on two (2) combined-cycle turbine units (Units 2A and 2B) at its Bartow, Florida facility. As a result, the two units are subject to air emissions testing and reporting requirements as set forth by the United States Environmental Protection Agency (US EPA) in Title 40 of the Code of Federal Regulations Part 60 (40 CFR Part 60) for New Source Performance Standard (NSPS) Subpart GG and Best Available Control Technology (BACT). These requirements are administered by the Florida Department of Environmental Protection (FL DEP).

In addition, FL DEP has required that the facility install, certify, and operate a carbon monoxide (CO) continuous emissions monitoring system (CEMS) on both units.

The purpose of the test program was to determine compliance with specific air emission permit limits and CO monitoring requirements as contained in FL DEP Air Permit No. PSD-FL-296A. This report outlines the procedures that were followed, the test methods that were used, and any approved deviations from either the specific conditions and limitations as listed in the above referenced air permit, or from the test methods themselves.

For this test program, all emissions testing was performed by Trigon Engineering Consultants, Inc. (Trigon). Regarding the CO CEMS, the cylinder gas audit (CGA) and 7-day calibration drift test were completed by Spectrum Systems personnel. Overall project oversight, testing supervision, test protocol development, and final report generation was or is being provided by RMB Consulting & Research, Inc. (RMB). RMB personnel were also present for the entire duration of the test program. Contact information for this test program can be found in Appendix 10 of this report.

2.0 BACKGROUND

Testing was performed on the respective stack outlet (i.e., downstream of the heat recovery steam generator (HRSG)) of Units 2A and 2B. Air Permit No. PSD-FL-296A, Section III, Condition No. 16 outlines the specific compliance testing requirements for Units 2A and 2B.

Condition No. 20.a of the above referenced permit outlines the CO CEMS certification testing requirements. Section 7.0 of this report details the results for CO CEMS testing portion of the test program.

Compliance testing for oxides of nitrogen (NO_x), oxygen (O_2), CO, volatile organic compounds (VOCs), ammonia slip (NH_3 slip) and visible emissions (VE) was required for both units. Per the above referenced air permit, the testing of emissions was to be conducted with each respective unit operating at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. For both Units 2A and 2B, this was specifically defined in the test protocol as at least 90 percent of 170 MW, or at least 153 MW. Testing was performed while separately firing natural gas and No. 2 fuel oil on each unit, while the appropriate fuel-specific control technologies were in normal operational mode. Units 2A and 2B were also tested consecutively, and not simultaneously.

Note also that a NO_x CEMS certification was also performed concurrently on each unit along with the CO CEMS certification testing and compliance testing programs. The results of the NO_x CEMS certification testing have been submitted as a separate report, under separate cover. Due to the concurrent nature of testing, FL DEP previously approved that the data assimilated during the NO_x and CO relative accuracy test audits (RATAs) could also be used as the NO_x and CO compliance testing data (i.e., RATA Runs 1-3 = Compliance Run 1, RATA Runs 4-6 = Compliance Run 2, RATA Runs 7-9 = Compliance Run 3). The RATAs were conducted while combusting natural gas only.

These pollutants, the prescribed load/fuel conditions, and their respective emission limitations are described in Table 2-1. This table also describes the applicable test methods that were used to test for each pollutant as well as the approved run times of each reference method (RM).

Table 2-1. Initial Compliance Test Matrix – Units 2A and 2B

Pollutant	Method	Fuel	Load Level	# of Runs	Duration	Permit Limit[1]
NO_x	7E	Gas	≥ 153 MW	9	21 min/run	3.5 ppm @ 15% O_2
		Oil	≥ 153 MW	3	60 min/run	12 ppm @ 15% O_2
O_2	3A	Gas	≥ 153 MW	9	21 min/run	N/A
		Oil	≥ 153 MW	3	60 min/run	N/A
NH_3 Slip	CTM-027[2]	Gas	≥ 153 MW	3	60 min/run	5 ppm @ 15% O_2
		Oil	≥ 153 MW	3	60 min/run	9 ppm @ 15% O_2
CO	10	Gas	≥ 153 MW	9	21 min/run	16 ppm @ 15% O_2
		Oil	≥ 153 MW	3	60 min/run	30 ppm @ 15% O_2
VOC	25A	Gas	≥ 153 MW	3	60 min/run	2 ppm @ 15% O_2
		Oil	≥ 153 MW	3	60 min/run	10 ppm @ 15% O_2
VE	9	Gas	≥ 153 MW	1	30 min/run	10 % per 6-minute block
		Oil	≥ 153 MW	1	30 min/run	10 % per 6-minute block

[1]Permitted ppm limits expressed as ppm dry.
[2]Moisture determinations were made simultaneously (using RM 4 procedures) in order to convert VOC ppmw to ppmd.

With the exception of the VE testing, all pollutants were concurrently sampled. Where necessary, the VE test runs were performed separately, due to the schedule availability of the VE reader, as well as limited daylight hours. In the event where the VE test runs were performed separately, those runs were performed under the same testing and load conditions as that of the pollutant test runs. In discussions with FL DEP during the test program, they were in agreement with this request.

3.0 SUMMARY OF COMPLIANCE TESTING RESULTS

Compliance was demonstrated for each of the required pollutants at each fuel and load condition as required by the current air permit. Tables 3-1 through 3-4 summarize the results (based upon the 3-run averages) of this testing program. Appendix 1 of this report contains the more detailed and comprehensive run-by-run results.

Table 3-1. Summary of Initial Compliance Testing Results – Unit 2A Natural Gas

Load Level (MW)	Heat Input (mmBtu/hr)[1]	NH_3 Injection Rate (lb/hr)	Pollutant	Test Result	Permit Limit[2,3]	Compliance Indicated?
163.1	1824.7	194.8	NO_x ppm	2.98	3.5	Yes
			CO ppm	0.74	16	Yes
			VOC ppm	0.47	2	Yes
			NH_3 ppm	3.73	5	Yes
			VE %	0	10	Yes

[1]Heat input based upon a gross calorific (GCV) value of 1,036 Btu/scf during testing.
[2]Permit limits (in ppm) and test results are corrected to 15% O_2.
[3]VE % permit limits and test results are based upon 6-minute block averages.

Table 3-2. Summary of Initial Compliance Testing Results – Unit 2B Natural Gas

Load Level (MW)	Heat Input (mmBtu/hr)[1]	NH_3 Injection Rate (lb/hr)	Pollutant	Test Result	Permit Limit[2,3]	Compliance Indicated?
166.7	1832.6	190.8	NO_x ppm	3.20	3.5	Yes
			CO ppm	0.76	16	Yes
			VOC ppm	0.80	2	Yes
			NH_3 ppm	2.92	5	Yes
			VE %	0	10	Yes

[1]Heat input based upon a GCV value of 1,036 Btu/scf during testing.
[2]Permit limits (in ppm) and test results are corrected to 15% O_2.
[3]VE % permit limits and test results are based upon 6-minute block averages.

Table 3-3. Summary of Initial Compliance Testing Results – Unit 2A No. 2 Fuel Oil

Load Level (MW)	Heat Input (mmBtu/hr)[1]	NH_3 Injection Rate (lb/hr)	Pollutant	Test Result	Permit Limit[2,3]	Compliance Indicated?
158.3	1653.7	431.0	NO_x ppm	8.88	**12**	**Yes**
			CO ppm	0.99	**30**	**Yes**
			VOC ppm	0.29	**10**	**Yes**
			NH_3 ppm	2.52	**9**	**Yes**
			VE %	0	**10**	**Yes**

[1]Heat input based upon a GCV value of 19,093 Btu/lb and a density of 6.69 lb/gal during testing.
[2]Permit limits (in ppm) and test results are corrected to 15% O_2.
[3]VE % permit limits and test results are based upon 6-minute block averages.

Table 3-4. Summary of Initial Compliance Testing Results – Unit 2B No. 2 Fuel Oil

Load Level (MW)	Heat Input (mmBtu/hr)[1]	NH_3 Injection Rate (lb/hr)	Pollutant	Test Result	Permit Limit[2,3]	Compliance Indicated?
161.3	1659.9	552.3	NO_x ppm	10.51	**12**	**Yes**
			CO ppm	0.63	**30**	**Yes**
			VOC ppm	0.03	**10**	**Yes**
			NH_3 ppm	2.23	**9**	**Yes**
			VE %	0	**10**	**Yes**

[1]Heat input based upon a GCV value of 19,093 Btu/lb and a density of 6.69 lb/gal during testing.
[2]Permit limits (in ppm) and test results are corrected to 15% O_2.
[3]VE % permit limits and test results are based upon 6-minute block averages.

NOTE

As specifically defined in the previously submitted test protocol, all testing was performed at greater than 90 percent of 170 MW, which corresponds to at least 153 MW. Note that the 170 MW value is the "rated" load of each unit, and may differ based upon the ambient conditions and fuel characteristics in evidence at the time of testing. As such, all testing was "virtually" performed at 100 % of the maximum achievable load (and subsequent, resultant heat input levels) for each respective day and test condition.

ATTACHMENT PEF-EU1-IV1

IDENTIFICATION OF APPLICABLE REQUIREMENTS

Title V Core List Effective: 03/01/02

[**Note:** The Title V Core List is meant to simplify the completion of the "List of Applicable Regulations" for DEP Form No. 62-210.900(1), Application for Air Permit - Long Form. The Title V Core List is a list of rules to which all Title V Sources are presumptively subject. The Title V Core List may be referenced in its entirety, or with specific exceptions. The Department may periodically update the Title V Core List.]

Federal: ***(description)***

40 CFR 61, Subpart M: NESHAP for Asbestos.

40 CFR 82: Protection of Stratospheric Ozone.
40 CFR 82, Subpart B: Servicing of Motor Vehicle Air Conditioners (MVAC).
40 CFR 82, Subpart F: Recycling and Emissions Reduction.

State: ***(description)***

CHAPTER 62-4, F.A.C.: PERMITS, effective 06-01-01

62-4.030, F.A.C.: General Prohibition.
62-4.040, F.A.C.: Exemptions.
62-4.050, F.A.C.: Procedure to Obtain Permits; Application.
62-4.060, F.A.C.: Consultation.
62-4.070, F.A.C.: Standards for Issuing or Denying Permits; Issuance; Denial.
62-4.080, F.A.C.: Modification of Permit Conditions.
62-4.090, F.A.C.: Renewals.
62-4.100, F.A.C.: Suspension and Revocation.
62-4.110, F.A.C.: Financial Responsibility.
62-4.120, F.A.C.: Transfer of Permits.
62-4.130, F.A.C.: Plant Operation - Problems.
62-4.150, F.A.C.: Review.
62-4.160, F.A.C.: Permit Conditions.
62-4.210, F.A.C.: Construction Permits.
62-4.220, F.A.C.: Operation Permit for New Sources.

CHAPTER 62-210, F.A.C.: STATIONARY SOURCES - GENERAL REQUIREMENTS, effective 06-21-01

62-210.300, F.A.C.: Permits Required.
62-210.300(1), F.A.C.: Air Construction Permits.
62-210.300(2), F.A.C.: Air Operation Permits.
62-210.300(3), F.A.C.: Exemptions.
62-210.300(5), F.A.C.: Notification of Startup.
62-210.300(6), F.A.C.: Emissions Unit Reclassification.
62-210.300(7), F.A.C.: Transfer of Air Permits.

62-210.350, F.A.C.: Public Notice and Comment.
62-210.350(1), F.A.C.: Public Notice of Proposed Agency Action.
62-210.350(2), F.A.C.: Additional Public Notice Requirements for Emissions Units Subject to Prevention of Significant Deterioration or Nonattainment-Area Preconstruction Review.
62-210.350(3), F.A.C.: Additional Public Notice Requirements for Sources Subject to Operation Permits for Title V Sources.

62-210.360, F.A.C.: Administrative Permit Corrections.
62-210.370(3), F.A.C.: Annual Operating Report for Air Pollutant Emitting Facility.
62-210.400, F.A.C.: Emission Estimates.
62-210.650, F.A.C.: Circumvention.
62-210.700, F.A.C.: Excess Emissions.

62-210.900, F.A.C.: Forms and Instructions.
62-210.900(1), F.A.C.: Application for Air Permit – Title V Source, Form and Instructions.
62-210.900(5), F.A.C.: Annual Operating Report for Air Pollutant Emitting Facility, Form and Instructions.
62-210.900(7), F.A.C.: Application for Transfer of Air Permit – Title V and Non-Title V Source.

CHAPTER 62-212, F.A.C.: STATIONARY SOURCES - PRECONSTRUCTION REVIEW, effective 08-17-00

CHAPTER 62-213, F.A.C.: OPERATION PERMITS FOR MAJOR SOURCES OF AIR POLLUTION, effective 04-16-01

62-213.205, F.A.C.: Annual Emissions Fee.
62-213.400, F.A.C.: Permits and Permit Revisions Required.
62-213.410, F.A.C.: Changes Without Permit Revision.
62-213.412, F.A.C.: Immediate Implementation Pending Revision Process.
62-213.415, F.A.C.: Trading of Emissions Within a Source.
62-213.420, F.A.C.: Permit Applications.
62-213.430, F.A.C.: Permit Issuance, Renewal, and Revision.
62-213.440, F.A.C.: Permit Content.
62-213.450, F.A.C.: Permit Review by EPA and Affected States
62-213.460, F.A.C.: Permit Shield.

62-213.900, F.A.C.: Forms and Instructions.
62-213.900(1), F.A.C.: Major Air Pollution Source Annual Emissions Fee Form.
62-213.900(7), F.A.C.: Statement of Compliance Form.

CHAPTER 62-296, F.A.C.: STATIONARY SOURCES - EMISSION STANDARDS, effective 03-02-99

62-296.320(4)(c), F.A.C.: Unconfined Emissions of Particulate Matter.

62-296.320(2), F.A.C.: Objectionable Odor Prohibited.

CHAPTER 62-297, F.A.C.: STATIONARY SOURCES - EMISSIONS MONITORING, effective 03-02-99

62-297.310, F.A.C.: General Test Requirements.
62-297.330, F.A.C.: Applicable Test Procedures.
62-297.340, F.A.C.: Frequency of Compliance Tests.
62-297.345, F.A.C.: Stack Sampling Facilities Provided by the Owner of an Emissions Unit.
62-297.350, F.A.C.: Determination of Process Variables.
62-297.570, F.A.C.: Test Report.
62-297.620, F.A.C.: Exceptions and Approval of Alternate Procedures and Requirements.

Miscellaneous:

CHAPTER 28-106, F.A.C.: Decisions Determining Substantial Interests
CHAPTER 62-110, F.A.C.: Exception to the Uniform Rules of Procedure, effective 07-01-98
CHAPTER 62-256, F.A.C.: Open Burning and Frost Protection Fires, effective 11-30-94
CHAPTER 62-257, F.A.C.: Asbestos Notification and Fee, effective 02-09-99
CHAPTER 62-281, F.A.C.: Motor Vehicle Air Conditioning Refrigerant Recovery and Recycling, effective 09-10-96

ATTACHMENT PEF-EU1-IV3

ALTERNATIVE METHODS OF OPERATION

ATTACHMENT PEF-EU1-IV3
ALTERNATIVE METHODS OF OPERATION

Each gas turbine fires natural gas as the primary fuel and distillate oil as a restricted alternative fuel.

Fuel usage while burning natural gas at the site shall not contain more than 1.0 grains of Sulfur per 100 standard cubic feet of natural gas. Fuel usage of both emission units while burning fuel oil at the site, shall not exceed 19,703,000 gallons (LHV) per year during any consecutive 12 month period.

Fuel Oil Operation

The maximum heat input rate, based on the higher heating value (HHV) of No. 2 fuel oil at ambient conditions of 59°F temperature, 100% load, and 14.7 psi pressure will not exceed 21,020 MMBtu/hr when firing No. 2 or superior grade of distillate fuel oil.

The amount of fuel oil burned at this site (in BTU's) will not exceed the amount of natural gas burned at this site (in BTU's) during any consecutive 12-month period **[Rule 62-210.200, F.A.C. (BACT)]**.

Natural Gas Operation

The maximum heat input rate, based on the lower heating value (LHV) of natural gas at ambient conditions of 59°F temperature, 100% load, and 14.7 psi pressure will not exceed 1,915 MMBtu/hr when firing natural gas.

Heat input rates will vary depending upon gas turbine characteristics, ambient conditions, fuels and evaporative cooling.

ATTACHMENT PEF-EU1-IV5

ACID RAIN PART APPLICATION

Florida Power
A Progress Energy Company

May 15, 2002

U. S. Environmental Protection Agency
Acid Rain Program (6204J)
Attention: Designated Representative
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: Revised Certificate of Representation Form
Hines Energy Complex (ORIS Code: 7302)
Notification of Addition of Power Block 2

Dear Sir/Madam:

Pursuant to 40 CFR 72.24, please find enclosed a revised Certificate of Representation form for the Hines Energy Complex to provide notification of additional units (2a and 2b) at the facility.

Please feel free to contact me at (727) 826-4363 if you have any questions or need additional information.

Sincerely,

Jamie Hunter
Lead Environmental Specialist

jjh/JJH033

enclosure

c(w/enc): Mr. Scott Sheplak, FDEP - Tallahassee
Hamilton Oven, FDEP - Tallahassee

P.O. Box 14042
St. Petersburg, FL 33733

bc(w/enc): Mike Kennedy (BB1A)
Vicky Will (HE&EC)
Jennifer Stenger (BB1A)
Randy Melton (BB1A)
Dave Meyer (BB1C)
Gus Schaefer (HE44)

ESS File(w/enc): Hines Air Correspondence

Address: Mr. Hamilton Oven, P.E., Administrator
Office of Siting Coordination
Florida Department of Environmental Protection
2600 Blair Stone Road (Mail Station 48)
Tallahassee, Florida 32399-2400

Mr. Scott Sheplak, P.E.
Administrator, Title V Section
Division of Air Resources
Florida Department of Environmental Protection
2600 Blair Stone Road, MS #5505
Tallahassee, Florida 32399-2400

United States
Environmental Protection Agency
Acid Rain Program

OMB No. 2060-0258

Certificate of Representation

For more information, see instructions and refer to 40 CFR 72.24

This submission is: ☐ New ☒ Revised (revised submissions must be completed in full; see instructions)

This submission includes combustion or process sources under 40 CFR part 74 ☐

STEP 1
Identify the source by plant name, State, and ORIS code.

Plant Name	Hines Energy Complex	State FL	ORIS Code 7302

STEP 2
Enter requested information for the designated representative.

Name	J. Michael Kennedy
Address	Florida Power P.O. Box 14042, BB1A St. Petersburg, FL 33733
Phone Number	(727) 826-4334
Fax Number	(727) 826-4216
E-mail address (if available)	j-michael.kennedy@pgnmail.com

STEP 3
Enter requested information for the alternate designated representative, if applicable.

Name	Victoria K. Will
Phone Number	(919) 362-3580
Fax Number	(919) 362-3266
E-mail address (if available)	vicky.will@pgnmail.com

STEP 4
Complete Step 5, read the certifications, and sign and date. For a designated representative of a combustion or process source under 40 CFR part 74, the references in the certifications to "affected unit" or "affected units" also apply to the combustion or process source under 40 CFR part 74 and the references to "affected source" also apply to the source at which the combustion or process source is located.

I certify that I was selected as the designated representative or alternate designated representative, as applicable, by an agreement binding on the owners and operators of the affected source and each affected unit at the source.

I certify that I have given notice of the agreement, selecting me as the 'designated representative' for the affected source and each affected unit at the source identified in this certificate of representation, in a newspaper of general circulation in the area where the source is located or in a State publication designed to give general public notice.

I certify that I have all necessary authority to carry out my duties and responsibilities under the Acid Rain Program on behalf of the owners and operators of the affected source and of each affected unit at the source and that each such owner and operator shall be fully bound by my actions, inactions, or submissions.

I certify that I shall abide by any fiduciary responsibilities imposed by the agreement by which I was selected as designated representative or alternate designated representative, as applicable.

I certify that the owners and operators of the affected source and of each affected unit at the source shall be bound by any order issued to me by the Administrator, the permitting authority, or a court regarding the source or unit.

Where there are multiple holders of a legal or equitable title to, or a leasehold interest in, an affected unit, or where a utility or industrial customer purchases power from an affected unit under life-of-the-unit, firm power contractual arrangements, I certify that:

I have given a written notice of my selection as the designated representative or alternate designated representative, as applicable, and of the agreement by which I was selected to each owner and operator of the affected source and of each affected unit at the source; and

Allowances and the proceeds of transactions involving allowances will be deemed to be held or distributed in proportion to each holder's legal, equitable, leasehold, or contractual reservation or entitlement or, if such multiple holders have expressly provided for a different distribution of allowances by contract, that allowances and the proceeds of transactions involving allowances will be deemed to be held or distributed in accordance with the contract.

The agreement by which I was selected as the alternate designated representative, if applicable, includes a procedure for the owners and operators of the source and affected units at the source to authorize the alternate designated representative to act in lieu of the designated representative

Plant Name (from Step 1) **Hines Energy Complex**

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Signature (designated representative)	Date 5/14/02
Signature (alternate designated representative)	Date 5/14/02

STEP 5
Provide the name of every owner and operator of the source and identify each affected unit (or combustion or process source) they own and/or operate.

Name **Florida Power**					X Owner	X Operator
ID# 1a	ID# 1b	ID# 2a	ID# 2b	ID#	ID#	ID#
ID#	ID#	ID#	ID#	ID#	ID#	ID#

Name					☐ Owner	Operator
ID#	ID#	ID#	ID#	ID#	ID#	ID#
ID#	ID#	ID#	ID#	ID#	ID#	ID#

Name					☐ Owner	☐ Operator
ID#	ID#	ID#	ID#	ID#	ID#	ID#
ID#	ID#	ID#	ID#	ID#	ID#	ID#

Name					☐ Owner	☐ Operator
ID#	ID#	ID#	ID#	ID#	ID#	ID#
ID#	ID#	ID#	ID#	ID#	ID#	ID#

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

   ☒ The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

   ☐ The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

   ☒ This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

   ☐ This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

   ☐ This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:
   CT-2; Power Block 2

3. Emissions Unit Identification Number: **015**

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
C			**49**	☒ Yes ☐ No

9. Package Unit:
   Manufacturer: **Siemens Westinghouse** Model Number: **501 FD**

10. Generator Nameplate Rating: **170** MW

11. Emissions Unit Comment:
    Siemens Westinghouse 501 FD combustion turbine firing natural gas with distillate oil back-up.

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:
   Dry Low NO_x combustion - natural gas firing.

   Selective Catalytic Reduction (SCR) – natural gas firing/distillate oil firing.

   Water Injection – distillate oil firing.

2. Control Device or Method Code(s): **025, 065, 028**

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:	
2. Maximum Production Rate:	
3. Maximum Heat Input Rate: **1,915** million Btu/hr	
4. Maximum Incineration Rate: pounds/hr tons/day	
5. Requested Maximum Operating Schedule: hours/day weeks/year	days/week **8,760** hours/year
6. Operating Capacity/Schedule Comment: **Heat input is higher heating value (HHV) with natural gas; heat input at 59°F turbine inlet temperature; MW nominal rating.**	

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **Stack Exhaust**		2. Emission Point Type Code:
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: **Exhausts through a single stack.**		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: **V**	6. Stack Height: **125** feet	7. Exit Diameter: **19** feet
8. Exit Temperature: **190°F**	9. Actual Volumetric Flow Rate: **1,009,487** acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet
13. Emission Point UTM Coordinates... Zone: **17** East (km): **414.4** North (km): **3073.9**		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)
15. Emission Point Comment: **Temperature and flow for natural gas at 59°F turbine inlet.**		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type): **Natural Gas**		
2. Source Classification Code (SCC): **2-01-002-01**	3. SCC Units: **Million Cubic Feet**	
4. Maximum Hourly Rate: **1.92**	5. Maximum Annual Rate: **15,564**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: **1,030**
10. Segment Comment: **Based on 1,030 BTU/CF (HHV); maximum hourly at 20°F; annual at 59°F; turbine inlet temperatures.**		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type): **Distillate Fuel Oil**		
2. Source Classification Code (SCC): **2-01-001-01**	3. SCC Units: **Thousand Gallons Used**	
4. Maximum Hourly Rate: **14.9**	5. Maximum Annual Rate: **19,703**	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: **0.05**	8. Maximum % Ash:	9. Million Btu per SCC Unit: **141.2**
10. Segment Comment: **BTU based on HHV of 141.2 MMBtu/1,000 gallons. Aggregate fuel usage of 19,703,000 gallons per year for Power Block 2. Fuel oil consumption is not limited per turbine, and the allowable fuel may be used in a single turbine.**		

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM			EL
SO_2			EL
NO_x	026	065	EL
CO			EL
VOC			EL
SAM			EL

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **64.8** lb/hour **52.7** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference: **PSD-FL-296A**	7. Emissions Method Code: **2**
8. Calculation of Emissions: **See Section 2.0 and Appendix A in PSD Application.**	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Max lb/hr for oil firing at 20°F turbine inlet; TPY with 8,040 hr/yr-gas; equivalent of 720 hr/yr/CT-oil.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **10% Opacity**	4. Equivalent Allowable Emissions: **8.5** lb/hour **37.2** tons/year
5. Method of Compliance: **EPA Method 9.**	
6. Allowable Emissions Comment (Description of Operating Method): **Gas firing: PSD-FL-296A.**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **10% Opacity**	4. Equivalent Allowable Emissions: **64.8** lb/hour **23.3** tons/year
5. Method of Compliance: **EPA Method 9.**	
6. Allowable Emissions Comment (Description of Operating Method): **Oil firing: PSD-FL-296A, 720 hr/yr/CT**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **SO_2**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **105.6** lb/hour **60.5** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference: **PSD-FL-296A**	7. Emissions Method Code: **2**
8. Calculation of Emissions:	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Max lb/hr for oil firing at 20°F turbine inlet; TPY with 8,040 hr/yr-gas; equivalent of 720 hr/yr/CT-oil.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **Natural Gas – 1 grain S/100 scf**	4. Equivalent Allowable Emissions: **5.6** lb/hour **24.5** tons/year
5. Method of Compliance: **Fuel Sampling - Vendor**	
6. Allowable Emissions Comment (Description of Operating Method): **Gas firing: PSD-FL-296A**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.05% Sulfur oil**	4. Equivalent Allowable Emissions: **105.6** lb/hour **38.0** tons/year
5. Method of Compliance: **Fuel Sampling - Vendor.**	
6. Allowable Emissions Comment (Description of Operating Method): **Oil firing: PSD-FL-296A, 720 hr/yr/CT.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **NO_x**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **93.5** lb/hour **143.4** tons/year	4. Synthetically Limited? ☒ Yes ☐ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference: **PSD-FL-296A**	7. Emissions Method Code: **2**
8. Calculation of Emissions:	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Max lb/hr for oil firing at 20°F turbine inlet; TPY with 8,040 hr/yr-gas; equivalent of 720 hr/yr/CT-oil.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **3.5 ppmvd at 15% O_2**	4. Equivalent Allowable Emissions: **25.2** lb/hour **110.4** tons/year
5. Method of Compliance: **CEM; part 75; 24-hour block average**	
6. Allowable Emissions Comment (Description of Operating Method): **Gas firing: PSD-FL-296A**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **15 ppmvd @ 15% O_2**	4. Equivalent Allowable Emissions: **116.9** lb/hour **42.1** tons/year
5. Method of Compliance: **CEM Part 75; 24-hour block average.**	
6. Allowable Emissions Comment (Description of Operating Method): **Oil firing: PSD-FL-296A, 720 hr/yr/CT**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **CO**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **112** lb/hour **336.2** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference: **PSD-FL-296**	7. Emissions Method Code: **2**
8. Calculation of Emissions:	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Max lb/hr for oil firing; TPY with 8,040 hr/yr-gas and 720 hr/yr/CT-oil.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **16 ppmvd @ 15% O_2**	4. Equivalent Allowable Emissions: **73.6** lb/hour **322** tons/year
5. Method of Compliance: **CEM 24-hour block average.**	
6. Allowable Emissions Comment (Description of Operating Method): **Gas firing: PSD-FL-296A.**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **30 ppmvd @ 15% O_2**	4. Equivalent Allowable Emissions: **112** lb/hour **40.3** tons/year
5. Method of Compliance: **EPA Method 10; Initial and Annual at Base Load. CEM 24-hour block average.**	
6. Allowable Emissions Comment (Description of Operating Method): **Oil firing: PSD-FL-296A, 720 hr/yr/CT.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **VOC**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **22** lb/hour **26.8** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference: **PSD-FL-296A**	7. Emissions Method Code: **2**
8. Calculation of Emissions:	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Max lb/hr for oil firing at 20°F turbine inlet; TPY with 8,040 hr/yr-gas (100% and 60% loads); equivalent of 720 hr/yr/CT-oil.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **2 ppmvd at 15% O_2**	4. Equivalent Allowable Emissions: **4.7** lb/hour **20.6** tons/year
5. Method of Compliance: **EPA Method 25A. Initial test.**	
6. Allowable Emissions Comment (Description of Operating Method): **Gas firing: PSD-FL-296A.**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **10 ppmvd at 15% O_2**	4. Equivalent Allowable Emissions: **22** lb/hour **7.92** tons/year
5. Method of Compliance: **EPA Method 25A. Initial test.**	
6. Allowable Emissions Comment (Description of Operating Method): **Oil firing: PSD-FL-296A, 720 hr/yr/CT.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL/ESTIMATED FUGITIVE EMISSIONS

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: **SAM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **< 11** lb/hour **< 8** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference: **PSD-FL-296A**	7. Emissions Method Code: **2**
8. Calculation of Emissions:	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: **Max lb/hr for oil firing at 20°F turbine inlet; TPY with 8,040 hr/yr-gas; equivalent of 720 hr/yr/CT-oil. Emissions are estimated.**	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **Natural Gas – 1 grain/100 scf**	4. Equivalent Allowable Emissions: **< 0.60** lb/hour **< 3** tons/year
5. Method of Compliance: **Fuel Sampling - Vendor**	
6. Allowable Emissions Comment (Description of Operating Method): **Gas firing: PSD-FL-296A. Emissions are estimated.**	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: **OTHER**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: **0.05% Sulfur oil**	4. Equivalent Allowable Emissions: **< 11** lb/hour **< 5.5** tons/year
5. Method of Compliance: **Fuel Sampling - Vendor**	
6. Allowable Emissions Comment (Description of Operating Method): **Oil firing: PSD-FL-296A. Emissions are estimated.**	

Allowable Emissions Allowable Emissions _____ of _____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 2

1. Visible Emissions Subtype: **VE10**	2. Basis for Allowable Opacity: ☐ Rule ☒ Other
3. Allowable Opacity: Normal Conditions: **10** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **EPA Method 9**	
5. Visible Emissions Comment: **Gas and Oil Firing**	

Visible Emissions Limitation: Visible Emissions Limitation 2 of 2

1. Visible Emissions Subtype: **VE99**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: **100** % Maximum Period of Excess Opacity Allowed: **60** min/hour	
4. Method of Compliance: **None**	
5. Visible Emissions Comment: **FDEP Rule 62-210.700(2); allowed for 2 hours (120 minutes) per 24 hours for startup, shutdown, and malfunction.**	

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor **1** of **3**

1. Parameter Code: **EM**	2. Pollutant(s): **O_2**
3. CMS Requirement:	☒ Rule ☐ Other
4. Monitor Information... Manufacturer: **TECO** Model Number: **1420C**	Serial Number: **2755**
5. Installation Date:	6. Performance Specification Test Date: **Dec 2003**
7. Continuous Monitor Comment: **See NO_x.**	

Continuous Monitoring System: Continuous Monitor **2** of **3**

1. Parameter Code: **EM**	2. Pollutant(s): **NO_x**
3. CMS Requirement:	☒ Rule ☐ Other
4. Monitor Information... Manufacturer: **TECO** Model Number: **42CHL**	Serial Number: **75519-380 & 74692-377**
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: **Required by 40 CFR 60; Subpart GG; S.60.334; oil firing. Request NO_x CEM in lieu of WTF monitoring. 40 CFR 75. PSD-FL-296A.**	

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 3 of 3

1. Parameter Code: **EM**	2. Pollutant(s): **CO**
3. CMS Requirement:	☐ Rule ☒ Other
4. Monitor Information... Manufacturer: **TECO** Model Number: **48C**	Serial Number: **73424-373**
5. Installation Date:	6. Performance Specification Test Date: **Dec 2003**
7. Continuous Monitor Comment: **PSD-FL-296A.**	

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **PEF-FI-C2** ☐ Previously Submitted, Date ____

2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **PEF-EU1-I2** ☐ Previously Submitted, Date ____

3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **PEF-EU1-I3** ☐ Previously Submitted, Date ____

4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **PEF-EU1-I4** ☐ Previously Submitted, Date ____
   ☐ Not Applicable (construction application)

5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **PEF-EU1-I4** ☐ Previously Submitted, Date ____
   ☐ Not Applicable

6. Compliance Demonstration Reports/Records
   ☒ Attached, Document ID: **PEF-EU1-I6**
   Test Date(s)/Pollutant(s) Tested: ____
   ____
   ☐ Previously Submitted, Date: ____
   Test Date(s)/Pollutant(s) Tested: ____
   ____
   ☐ To be Submitted, Date (if known):____
   Test Date(s)/Pollutant(s) Tested: ____
   ☐ Not Applicable

   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute
   ☐ Attached, Document ID: ____ ☒ Not Applicable

EMISSIONS UNIT INFORMATION
Section [2] of [2]
CT-2 – Power Block 2

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e))
   ☐ Attached, Document ID: _____ ☒ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.)
   ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only)
   ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements
   ☒ Attached, Document ID: **PEF-EU1-IV1** ☐ Not Applicable
2. Compliance Assurance Monitoring
   ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Alternative Methods of Operation
   ☒ Attached, Document ID: **PEF-EU1-IV3** ☐ Not Applicable
4. Alternative Modes of Operation (Emissions Trading)
   ☐ Attached, Document ID: _____ ☒ Not Applicable
5. Acid Rain Part Application
   ☒ Certificate of Representation (EPA Form No. 7610-1)
      ☐ Copy Attached, Document ID: **PEF-EU1-IV5**
   ☐ Acid Rain Part (Form No. 62-210.900(1)(a))
      ☐ Attached, Document ID: _____
      ☐ Previously Submitted, Date: _____
   ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
      ☐ Attached, Document ID: _____
      ☐ Previously Submitted, Date: _____
   ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.)
      ☐ Attached, Document ID: _____
      ☐ Previously Submitted, Date: _____
   ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
      ☐ Attached, Document ID: _____
      ☐ Previously Submitted, Date: _____
   ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
      ☐ Attached, Document ID: _____
      ☐ Previously Submitted, Date: _____
   ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
      ☐ Attached, Document ID: _____
      ☐ Previously Submitted, Date: _____
   ☐ Not Applicable

Additional Requirements Comment