



Bernie M. Cumbie
Manager, Fossil Plant &
Fuel Operations

July 24, 2006

RECEIVED

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Mr. Jeffery F. Koerner, P.E., North Permitting Administrator
Florida Department of Environmental Protection
Division of Air Resource Management
2600 Blair Stone Road, MS 5500
Tallahassee, Florida 32399

BUREAU OF AIR REGULATION

Re: Crystal River Facility – Title V Permit No. 0170004-011-AV
Units 4 & 5 SCR System Air Construction Permit Application
Request for Additional Information (RAI)

Dear Mr. Koerner,

Regarding the Department's May 18, 2006 RAI related to Progress Energy's April 25, 2006 application to construct SCR systems on Crystal River Units 4 and 5, the following responses (in bold italic type) are provided:

1. Emission Unit Information: The application does not include the emissions unit sections for Units 4 and 5. Provide information for all sections of the emissions unit section.

The requested emissions unit section portion of the FDEP application form is enclosed as Attachment 1.

2. Criteria Pollutants: Provide estimated facility increases (or decreases) emissions for all criteria pollutants.

As noted in the application, there is no expected increase in any of the criteria pollutants, except for a potential increase in emissions of sulfuric acid mist (SAM), as noted below. There will be a decrease in the emissions of nitrogen oxides (NOx) as a result of this project, dependent on the degree to which the Selective Catalytic Reduction (SCR) system is operated.

3. Sulfuric Acid Mist Emissions: The application indicated an increase of SO₃ emissions with this installation of the SCR units. Quantify the estimated SO₃ and H₂SO₄ emissions due to the installation the SCR units.

It is expected that approximately 0.5% of the existing SO₂ in the flue gas stream that flows through the SCR (i.e., 0.25% per catalyst layer) will be converted to SO₃. It's uncertain how much of this SO₃ will be converted to SAM (H₂SO₄), especially in the absence of an FGD downstream. However, in order to provide a conservative estimate for this application, it's assumed that all SO₃ generated could be converted to emissions of SAM.

For the purpose of establishing an emission baseline, against which to compare future SAM emissions once these proposed modifications are complete, SAM testing was conducted on June 20, 2006 using EPA Reference Method 8. The test results, provided in Attachment 2, averaged 18.7 lb/hr. Progress Energy is already committed to installation of an alkali injection system for control of SAM emissions that are anticipated to occur as a result of the entire proposed control project (i.e., including future installation of an FGD system on each unit). However, to provide reasonable

Progress Energy Florida, Inc.
Crystal River Steam Plant
15760 W. Powerline Street
Crystal River, FL 34428

assurance to the Department that SAM emissions will not increase as a result of the SCR project, Progress Energy commits to installation and operation of an alkali injection system concurrent with operation of the SCR system.

4. Process Flow Diagram: Provide a process flow diagram of the entire system (boiler through stack) identifying the process and control equipment, flue gas fans, fuel inputs, CEMS monitoring points, ammonia injection grid, mixing grid, bypass damper locations (if applicable), and ash removal. Identify the approximate exhaust flows, temperatures, and pressure drop for each major component and for any substantial change in these parameters. Will the existing stacks or CEMS be modified due to this project? What will the pressure drop due to the SCR system even when it is not in operation? What is this in terms of energy loss?

A diagram showing the general location of the proposed SCR system is enclosed (Attachment 3). This diagram indicates that the SCR will be installed downstream of the boiler and upstream of the air pre-heater and electrostatic precipitator (ESP). Other than the installation of the SCR system components, the existing process flow and equipment will generally remain the same.

Exhaust flows, temperatures, and pressure drops across the system are not expected to change significantly, with the exception of an additional pressure drop across the SCR. This pressure drop varies with operation and the number of catalyst layers installed, but is generally expected to be between 2 and 5 inches of water.

The existing stacks will not be modified due to this project. The only change to the existing CEMS will be a modification to the range of the NOx analyzer to allow for the accurate measurement of NOx emissions during times when the SCR is in service.

As noted above, the pressure drop across the SCR will be dependant on variables such as bypass operations and the number of catalyst layers installed; however, maximum energy loss is estimated to be approximately 2,250 KW. This estimate represents the additional energy supplied to the ID fans for the estimated pressure drop across the SCR. It includes fan and fan motor inefficiencies.

5. Selective Catalytic Reduction (SCR) System: Identify the following SCR design parameters: general catalyst composition (material); catalyst structure (honeycomb, plate, etc.); approximate catalyst volume (ft³); catalyst operational temperature range (° F); molar ratio of ammonia/NOx; design inlet and outlet NOx emission rates (lb/MMBtu); and design control efficiency. What are the baseline NOx emissions for determining the design control efficiency? Describe the ammonia distribution, flow control, and monitoring systems. What are the general procedures for startup and shutdown of the SCR system? What critical operating parameters and levels must be attained before commencing ammonia injection? Explain how the control system will monitor, adjust, and inject ammonia at a given rate. What are the estimated ammonia injection rates at 50%, 75%, and 100% of the maximum coal-firing rate? What is the target ammonia slip level based on the design criteria NOx reduction? Describe the design and operating techniques used to prevent particulate matter from fouling and masking the catalyst beds. Provide the catalyst vendor's recommendations describing catalyst maintenance procedures and schedule. In response to catalyst deactivation, describe the process of gradually adding catalyst until it is necessary for complete replacement.

The current SCR design parameters are as follows:

- *general catalyst composition: TiO₂ – WO₃ – V₂O₅;*
- *catalyst structure: honeycomb;*
- *approximate catalyst volume: 21,000 to 25,000 total cubic feet per unit;*
- *catalyst operational range: 568 to 715 degrees F;*
- *molar ratio ammonia/NO_x: 5 to 1;*
- *design inlet and outlet NO_x emissions rates: 0.35 lb/MMBtu and 0.035 lb/MMBtu (Note: these emission rates are based on future installation of low-NO_x burners and are not representative of current operations. In addition, actual emission rates may vary substantially from design values based on actual operating conditions.); and*
- *design control efficiency: capable of 90 percent.*

As noted above, the baseline for the design control efficiency is an inlet concentration of 0.35 lb/MMBtu.

The general procedures for startup and shutdown of the SCR system will be in accordance with the manufacturer's recommendations and good operating procedures.

Prior to commencing ammonia injection, the SCR catalyst must be within the recommended operational temperature range and all components of the Ammonia Flow Control Unit (AFCU) must be operating properly.

The AFCU mixes the ammonia gas with heated air to achieve a 3 to 4 percent ammonia concentration and then delivers the mixture to the ammonia injection grid. The AFCU is equipped with an ammonia flow control valve that modulates to control the amount of ammonia gas to be mixed with the dilution air. As the unit's load is varied, the ammonia flow control valve adjusts to maintain an ammonia injection ratio that's constant, given the changing NO_x levels.

The ammonia injection rates will vary, not only with unit load, but other operational parameters such as amount of bypass and need to fully control emissions. The maximum expected ammonia consumption for full control at full load is estimated to be approximately 880 pounds per hour.

The design target for the ammonia slip level is 2 to 5 parts per million.

The following design and operating techniques are currently proposed to prevent particulate matter from fouling and masking the catalyst beds:

- *the ability to bypass the SCR during operating modes of concern, such as startup, shutdown and malfunctions*
- *utilization of a screen to remove large particulate prior to the SCR*
- *sonic horns installed above the catalyst layer to minimize ash accumulation*
- *minimization of oil firing when the SCR is in service*

A final catalyst vendor has not yet been identified; however, vendor recommendations and good operational practices will be used to maintain the catalyst once defined.

Addition and replacement of catalyst material will be handled in the following manner. Initially, two layers of catalyst will be installed. A third layer will be added in the open bay when the catalyst coupon analysis indicates that additional catalyst is needed. All catalyst layers will be monitored by analyzing the test coupon and a layer will be rejuvenated or replaced as needed. Catalyst design life expectancy is approximately 24,000 hours of operation.

6. Bid Specifications: Please provide a copy of the bid specifications for this project.

An excerpt from the requested bid specification document related to the Technical Design Specifications is enclosed as Attachment 4. This information represents preliminary design targets for purposes of obtaining competitive bids and is not currently contracted with any specific vendor.

7. SCR Bypass Duct: Is an SCR bypass duct proposed? Describe the general location and operation of the SCR bypass duct. Under what conditions is it necessary to use the bypass? For each condition, estimate the duration of bypass operation and the number of times per year the bypass is expected to operate under the condition.

As noted above, an SCR bypass system will be included as part of the design of this project.

The general location is noted in the diagram provided in the response to Item 4 above.

The bypass system will be used during startup, shutdown and at other times as operational and maintenance needs dictate; therefore, it is not feasible to estimate the number and/or duration of bypass events.

Should you have any question regarding these responses or need additional information, please contact Dave Meyer at Dave.Meyer@pgnmail.com or (727) 820-5295.

Sincerely,

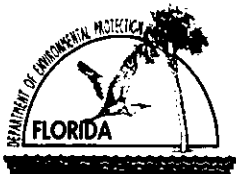


Bernie M. Cumbe
Plant Manager/Responsible Official

Attachments

ATTACHMENT 1

FDEP AIR APPLICATION FORMS



Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

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 FLORIDA, INC.	
2. Site Name: CRYSTAL RIVER POWER PLANT	
3. Facility Identification Number: 0170004	
4. Facility Location...: Street Address or Other Locator: NORTH OF CRYSTAL RIVER, WEST OF U.S. 19 City: CRYSTAL RIVER County: CITRUS Zip Code: 34428	
5. Relocatable Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Existing Title V Permitted Facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Application Contact

1. Application Contact Name: DAVE MEYER, SENIOR ENVIRONMENTAL SPECIALIST	
2. Application Contact Mailing Address... Organization/Firm: PROGRESS ENERGY FLORIDA Street Address: 100 CENTRAL AVE CX1B City: ST. PETERSBURG State: FL Zip Code: 33701	
3. Application Contact Telephone Numbers... Telephone: (727) 820-5295 ext. Fax: (727) 820-5229	
4. Application Contact Email Address: DAVE.MEYER@PGNMAIL.COM	

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	4/25/06
2. Project Number(s):	0170004 - 013-AC
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

Progress Energy Florida (PEF) is currently considering upgrades to further improve the environmental performance of the existing Units 4 and 5 (EU Nos. 004 and 003, respectively) by installing new/upgraded air emission control devices. This application is submitted to address the installation of selective catalytic reduction (SCR) systems on Units 4 and 5, as well as the installation of an alkali injection system. Construction is anticipated to commence in September of 2006, thereby becoming the critical path item for permitting. The additional upgrades under consideration may be addressed in a second application package at a later date.

This application provides additional background on the proposed SCR control equipment installations on Units 4 and 5 (Section 1.2) and a discussion of regulatory applicability (Section 2.0). An air quality modeling analysis was not required for this proposed project.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Proc. Fee
004	FFSG, Unit 4		NA
003	FFSG, Unit 5		NA

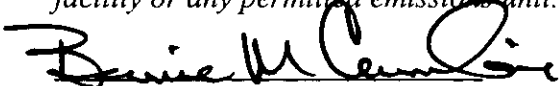

Application Processing Fee

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 :	
BERNIE CUMBIE, PLANT MANAGER	
2. Owner/Authorized Representative Mailing Address...	
Organization/Firm: PROGRESS ENERGY	
Street Address: 100 CENTRAL AVE CN77	
City: ST PETERSBURG State: FLORIDA Zip Code: 33701	
3. Owner/Authorized Representative Telephone Numbers...	
Telephone: (352) 563-4484 ext. Fax: (352) 563-4496	
4. Owner/Authorized Representative Email Address: BERNIE.CUMBIE@PGNMAIL.COM	
5. Owner/Authorized Representative Statement:	
<p><i>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.</i></p>	
 Signature	 Date

APPLICATION INFORMATION

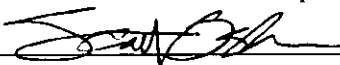
Application Responsible Official Certification

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:			
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable): <input type="checkbox"/> 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. <input type="checkbox"/> For a partnership or sole proprietorship, a general partner or the proprietor, respectively. <input type="checkbox"/> For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official. <input type="checkbox"/> The designated representative at an Acid Rain source.			
3. Application Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:			
4. Application Responsible Official Telephone Numbers... Telephone: () - ext. Fax: () -			
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. _____ Signature _____ Date			

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: SCOTT OSBOURN Registration Number: 57557
2. Professional Engineer Mailing Address... Organization/Firm: Golder Associates Inc.** Street Address: 5100 West Lemon St., Suite 114 City: Tampa State: FL Zip Code: 33609
3. Professional Engineer Telephone Numbers... Telephone: (813) 287-1717 ext.211 Fax: (813) 287-1716
4. Professional Engineer Email Address: SOSBOURN@GOLDER.COM
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(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</i> <i>(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.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/>, 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.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/>, 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 <input type="checkbox"/>, 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.</i> <i>(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 <input type="checkbox"/>, 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.</i> Signature  Date <u>7/24/06</u> (seal)

* Attach any exception to certification statement.

** Board of Professional Engineers Certificate of Authorization #00001670



FACILITY INFORMATION

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone 17 East (km) 334.3 North (km) 3204.5		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) 28/57/34 Longitude (DD/MM/SS) 82/42/01	
3. Governmental Facility Code: 0	4. Facility Status Code: A	5. Facility Major Group SIC Code: 49	6. Facility SIC(s):
7. Facility Comment :			

Facility Contact

1. Facility Contact Name: DAVE MEYER, SENIOR ENVIRONMENTAL SPECIALIST
2. Facility Contact Mailing Address... Organization/Firm: PROGRESS ENERGY Street Address: 100 CENTRAL AVE CX1B City: ST PETERSBURG State: FLORIDA Zip Code: 33701
3. Facility Contact Telephone Numbers: Telephone: (727) 820-5295 ext. Fax: (727) 820-5229
4. Facility Contact Email Address: DAVE.MEYER@PGNMAIL.COM

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 INFORMATION

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. <input type="checkbox"/> Small Business Stationary Source	<input type="checkbox"/> Unknown
2. <input type="checkbox"/> Synthetic Non-Title V Source	
3. <input checked="" type="checkbox"/> Title V Source	
4. <input checked="" type="checkbox"/> Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. <input type="checkbox"/> Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. <input checked="" type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)	
7. <input type="checkbox"/> Synthetic Minor Source of HAPs	
8. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. <input checked="" type="checkbox"/> One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. <input type="checkbox"/> One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. <input type="checkbox"/> Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment: Units are subject to the CAMR rule in 2010.	

FACILITY INFORMATION

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
PM	A	N
PM10	A	N
SO2	A	N
CO	A	N
NOx	A	N
VOC	A	N
SAM	A	N

FACILITY INFORMATION

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) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> 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) <input checked="" type="checkbox"/> Attached, Document ID: Attach 3 <input type="checkbox"/> 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) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: _____

Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable (existing permitted facility)
2. Description of Proposed Construction or Modification: <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report, Section 1.0</u>
3. Rule Applicability Analysis: <input checked="" type="checkbox"/> Attached, Document ID: <u>See Report, Section 2.0</u>
4. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable (no exempt units at facility)
5. Fugitive Emissions Identification (Rule 62-212.400(2), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
6. Preconstruction Air Quality Monitoring and Analysis (Rule 62-212.400(5)(f), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
7. Ambient Impact Analysis (Rule 62-212.400(5)(d), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
8. Air Quality Impact since 1977 (Rule 62-212.400(5)(h)5., F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
9. Additional Impact Analyses (Rules 62-212.400(5)(e)1. and 62-212.500(4)(e), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

EMISSIONS UNIT INFORMATION

Section [1]

EU 003 - FFSG, Unit 5

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.

EMISSIONS UNIT INFORMATION

Section [1]

EU 003 - FFSG, Unit 5

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:

FOSSIL FUEL STEAM GENERATOR-5 (PHASE II ACID RAIN UNIT)

3. Emissions Unit Identification Number: **003**

4. Emissions
Unit Status
Code:
A

5. Commence
Construction
Date:
9/1/06

6. Initial
Startup
Date:

7. Emissions Unit
Major Group
SIC Code:
49

8. Acid Rain Unit?
☒ Yes
☐ No

9. Package Unit:
Manufacturer:

Model Number:

10. Generator Nameplate Rating: **760 MW**

11. Emissions Unit Comment:

PULVERIZED COAL DRY BOTTOM BOILER, WALL-FIRED.

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Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:

Electrostatic Precipitator - High Efficiency (95.0 – 99.9%)

Proposed:

Selective Catalytic reduction (SCR)

Alkali Injection System

2. Control Device or Method Code(s): 010, 139, 032/070

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(Optional for unregulated emissions units.)

1. Maximum Process or Throughput Rate:		
2. Maximum Production Rate:		
3. Maximum Heat Input Rate: 6,665 million Btu/hr		
4. Maximum Incineration Rate:	pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	hours/day weeks/year	days/week hours/year
6. Operating Capacity/Schedule Comment:		

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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: EU 003		2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code: V		6. Stack Height: 600 feet	
		7. Exit Diameter: 25.5 feet	
8. Exit Temperature: 253 °F		9. Actual Volumetric Flow Rate: 2,979,000 acfm	
		10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:			

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D. SEGMENT (PROCESS/FUEL) INFORMATION**Segment Description and Rate:** Segment 1 of 4

1. Segment Description (Process/Fuel Type): Bituminous coal & bituminous coal briquette mixture		
2. Source Classification Code (SCC): 10100202		3. SCC Units: Tons Bituminous Coal Burned
4. Maximum Hourly Rate: 277.7	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 24
10. Segment Comment: Bituminous coal and coal briquette. Based on an average heating value of 12,000 Btu/lb.		

Segment Description and Rate: Segment 2 of 4

1. Segment Description (Process/Fuel Type): Distillate fuel oil		
2. Source Classification Code (SCC): 10100501		3. SCC Units: 1000 Gallons Distillate Oil (No. 1 & 2) Burned
4. Maximum Hourly Rate: 48.297	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.73	8. Maximum % Ash: 0.1	9. Million Btu per SCC Unit: 138
10. Segment Comment: Fuel oil used for startup		

EMISSIONS UNIT INFORMATION

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D. SEGMENT (PROCESS/FUEL) INFORMATION**Segment Description and Rate:** Segment 3 of 4

1. Segment Description (Process/Fuel Type): Natural gas as startup and low-load flame stabilization fuel		
2. Source Classification Code (SCC): 10100601		3. SCC Units: Million Cubic Feet Natural Gas Burned
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: Natural gas as startup and low-load flame stabilization fuel		

Segment Description and Rate: Segment 4 of 4

1. Segment Description (Process/Fuel Type): On specification used oil		
2. Source Classification Code (SCC): 10101302		3. SCC Units: 1000 Gallons Waste Oil Burned
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: Used oil specification: Arsenic 5 PPM, Cadmium 2 PPM, Chromium 10 PPM, Lead 100 PPM, Total Halogens 1000 PPM, PCB 50 PPM, 10 million gal/12 month limit for all 4 steam generating units (FFSG 1, 2, 4, & 5)		

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List of Pollutants Emitted by Emissions Unit

[illegible]

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POLLUTANT DETAIL INFORMATION

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Carbon Monoxide - CO

**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 – Carbon Monoxide		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 139 lb/hour 608 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.5 lb/ton Reference: AP-42		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: lb/hr = 0.5 lb/ton * 277.7 TPH = 139 lb/hr TPY = 139 lb/hr * 8760 hr/yr * 1 ton/2000 lb = 608 TPY			
11. Potential Fugitive and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATIONSection [1]
EU 003 - FFSG, Unit 5**POLLUTANT DETAIL INFORMATION**Page [1] of [7]
Carbon Monoxide - CO**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 ____ 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):	

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):	

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):	

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EU 003 - FFSG, Unit 5**POLLUTANT DETAIL INFORMATION**Page [2] of [7]
Nitrogen Oxides - NO_x**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 – Nitrogen Oxides		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 3,332.5 lb/hour 14,596 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.5 lb/MMBtu Reference: Permit, Acid Rain annual limit.		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: lb/hr = 6,665 MMBtu/hr * 0.5 lb/MMBtu = 3,332.5 lb/hr. TPY = 3,332.5 lb/hr * 8760 hrs/yr * 1 ton/2000 lb = 14,596 TPY			
11. Potential Fugitive and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

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POLLUTANT DETAIL INFORMATION

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Nitrogen Oxides - NO_x

**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 3

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.5 lb/MMBtu heat input	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): Acid Rain	

Allowable Emissions Allowable Emissions 2 of 3

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.7 lb/MMBtu heat input	4. Equivalent Allowable Emissions: 4,666 lb/hour 20,435 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): NSPS, Subpart D, 30 Day Rolling Average	

Allowable Emissions Allowable Emissions 3 of 3

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):	

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EU 003 - FFSG, Unit 5**POLLUTANT DETAIL INFORMATION**Page [3] of [7]
SAM**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: Sulfuric Acid Mist – SAM		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 18.7 lb/hour 81.9 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: Reference: Test Data (Reference Method 8)		7. Emissions Method Code: 1	
8.a. Baseline Actual Emissions (if required): 81.9 tons/year		8.b. Baseline 24-month Period: From: 1/2003 To: 12/2004	
9.a. Projected Actual Emissions (if required): 79.8 tons/year		9.b. Projected Monitoring Period: <input checked="" type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Potential emissions based on test data (lb/hr) and 8,760 hr/yr. Projected actual emissions based on test data (lb/hr) and 8,537 hr/yr (highest 2-yr avg baseline of 2003-2004).			
11. Potential Fugitive and Actual Emissions Comment:			

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EU 003 - FFSG, Unit 5**POLLUTANT DETAIL INFORMATION**Page [3] of [7]
SAM**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 ____ 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):	

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):	

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):	

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POLLUTANT DETAIL INFORMATION

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Particulate Matter Total - PM

**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 – Particulate Matter Total		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 667 lb/hour 2,919 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.1 lb/MMBtu Reference: Permit		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: lb/hr = 6,665 MMBtu/hr * 0.1 lb/MMBtu = 666.5 lb/hr TPY = 666.5 lb/hr * 8760 hrs/yr * 1 ton/2000 lb = 2,919 TPY			
11. Potential Fugitive and Actual Emissions Comment:			

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Particulate Matter Total - PM**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 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.1 lb/MMBtu heat input	4. Equivalent Allowable Emissions: 667 lb/hour 2,919 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): 43 nanograms per joule heat input.	

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):	

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):	

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EU 003 - FFSG, Unit 5**POLLUTANT DETAIL INFORMATION**Page [5] of [7]
Particulate Matter - PM₁₀**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: PM₁₀ - Particulate Matter		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 667 lb/hour 2,919 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.1 lb/MMBtu Reference: Permit		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: PM₁₀ is assumed to be equal to PM.			
11. Potential Fugitive and Actual Emissions Comment:			

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EU 003 - FFSG, Unit 5**POLLUTANT DETAIL INFORMATION**Page [5] of [7]
Particulate Matter – PM₁₀**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 ____ 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):	

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):	

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):	

EMISSIONS UNIT INFORMATIONSection [1]
EU 003 - FFSG, Unit 5**POLLUTANT DETAIL INFORMATION**Page [6] of [7]
Sulfur Dioxide – SO₂**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: SO₂ – Sulfur Dioxide		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 7,998 lb/hour 35,031 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 1.2 lb/MMBtu Reference: Permit		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: lb/hr = 6,665 MMBtu/hr * 1.2 lb/MMBtu = 7,998 lb/hr TPY = 7,998 lb/hr * 8760 hr/yr * 1 ton/2000 lb = 3,5031 TPY			
11. Potential Fugitive and Actual Emissions Comment:			

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EU 003 - FFSG, Unit 5**POLLUTANT DETAIL INFORMATION**Page [6] of [7]
Sulfur Dioxide – SO₂**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 3

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 1.2 lb/MMBtu heat input	4. Equivalent Allowable Emissions: 7,998 lb/hour 35,031 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 3

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.68% Sulfur in Fuel	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): When burning coal/briquette mixture; annual average.	

Allowable Emissions Allowable Emissions 3 of 3

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):	

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EU 003 - FFSG, Unit 5**POLLUTANT DETAIL INFORMATION**Page [7] of [7]
Volatile Organic Compounds - VOC**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 – Volatile Organic Compounds		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 16.7 lb/hour 73 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.06 lb/ton Reference: AP-42		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: lb/hr = 0.06 lb/ton * 277.7 TPH = 16.7 lb/hr TPY = 16.7 lb/hr * 8760 hr/yr * 1 ton/2000 lb = 73 TPY			
11. Potential Fugitive and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATIONSection [1]
EU 003 - FFSG, Unit 5**POLLUTANT DETAIL INFORMATION**Page [7] of [7]
Volatile Organic Compounds - VOC**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 ____ 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):	

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):	

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):	

EMISSIONS UNIT INFORMATION

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EU 003 - FFSG, Unit 5

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 1

1. Visible Emissions Subtype: VE20 – Visible Emissions	2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: 20 % Exceptional Conditions: 27 % Maximum Period of Excess Opacity Allowed: 6 min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment: Unit has opacity monitor.	

Visible Emissions Limitation: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION

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EU 003 - FFSG, Unit 5

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor 1 of 5

1. Parameter Code: EM – Emission	2. Pollutant(s): SO₂
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: TECO/Enviroplan Model Number: 43B Serial Number: 43B-46236-275	
5. Installation Date: 04-APR-94	6. Performance Specification Test Date: 04-DEC-94
7. Continuous Monitor Comment: 40 CFR 75, SO₂	

Continuous Monitoring System: Continuous Monitor 2 of 5

1. Parameter Code: VE – Visible Emissions (opacity)	2. Pollutant(s): PM
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Durag/Enviroplan Model Number: CEMOP-281 Serial Number: 29859	
5. Installation Date: 04-APR-94	6. Performance Specification Test Date: 04-DEC-94
7. Continuous Monitor Comment: 40 CFR 75	

EMISSIONS UNIT INFORMATION

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EU 003 - FFSG, Unit 5

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor 3 of 5

1. Parameter Code: EM – Emission	2. Pollutant(s): NO_x
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: TECO/Enviroplan Model Number: 42 Serial Number: 42-46066-275K	
5. Installation Date: 04-APR-94	6. Performance Specification Test Date: 04-DEC-94
7. Continuous Monitor Comment: 40 CFR 75, NO_x	

Continuous Monitoring System: Continuous Monitor 4 of 5

1. Parameter Code: CO₂ – Carbon Dioxide	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: TECO/Enviroplan Model Number: 41H Serial Number: 41H-45738-274	
5. Installation Date: 04-APR-94	6. Performance Specification Test Date: 04-DEC-94
7. Continuous Monitor Comment: 40 CFR 75	

EMISSIONS UNIT INFORMATION

Section [1]

EU 003 - FFSG, Unit 5

H. CONTINUOUS MONITOR INFORMATION**Complete if this emissions unit is or would be subject to continuous monitoring.****Continuous Monitoring System:** Continuous Monitor 5 of 5

1. Parameter Code: FLOW – Volumetric Flow Rate	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: United Sciences/Envi Model Number: Ultraflow 100 Serial Number: 9303522	
5. Installation Date: 04-APR-94	6. Performance Specification Test Date: 04-DEC-94
7. Continuous Monitor Comment: 40 CFR 75	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

Section [1]

EU 003 - FFSG, Unit 5

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) <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach 3</u> <input type="checkbox"/> 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) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>06/30/04</u>
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) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> 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) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> 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) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach 2</u> Test Date(s)/Pollutant(s) Tested: <u>6/20/06 -- SAM Emissions</u> <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> 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 <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable

EMISSIONS UNIT INFORMATION

Section [1]

EU 003 - FFSG, Unit 5

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(4)(d), F.A.C., and Rule 62-212.500(4)(f), F.A.C.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
2. Compliance Assurance Monitoring <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
3. Alternative Methods of Operation <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
4. Alternative Modes of Operation (Emissions Trading) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
5. Acid Rain Part Application <input type="checkbox"/> Certificate of Representation (EPA Form No. 7610-1) <input type="checkbox"/> Copy Attached, Document ID: _____ <input type="checkbox"/> Acid Rain Part (Form No. 62-210.900(1)(a)) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> New Unit Exemption (Form No. 62-210.900(1)(a)2.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Not Applicable

EMISSIONS UNIT INFORMATION

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EU 003 - FFSG, Unit 5

Additional Requirements Comment

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EMISSIONS UNIT INFORMATION

Section [2]

EU 004 - FFSG, Unit 4

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.

EMISSIONS UNIT INFORMATION

Section [2]

EU 004 - FFSG, Unit 4

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:

FOSSIL FUEL STEAM GENERATOR-4 (PHASE II ACID RAIN UNIT)

3. Emissions Unit Identification Number: **004**

4. Emissions Unit Status Code: A	5. Commence Construction Date: 9/1/06	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code: 49	8. Acid Rain Unit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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9. Package Unit:
Manufacturer:

Model Number:

10. Generator Nameplate Rating: **760 MW**

11. Emissions Unit Comment:

PULVERIZED COAL DRY BOTTOM BOILER, WALL-FIRED.

EMISSIONS UNIT INFORMATION

Section [2]

EU 004 - FFSG, Unit 4

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:

Electrostatic Precipitator - High Efficiency (95.0 – 99.9%)

Proposed:

Selective Catalytic reduction (SCR)

Alkali Injection System

2. Control Device or Method Code(s): 010, 139, 032/070

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(Optional for unregulated emissions units.)

1. Maximum Process or Throughput Rate:		
2. Maximum Production Rate:		
3. Maximum Heat Input Rate:	6,665 million Btu/hr	
4. Maximum Incineration Rate:	pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	hours/day weeks/year	days/week hours/year
6. Operating Capacity/Schedule Comment:		

EMISSIONS UNIT INFORMATION

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EU 004 - FFSG, Unit 4

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: EU 004		2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code: V		6. Stack Height: 600 feet	
		7. Exit Diameter: 25.5 feet	
8. Exit Temperature: 253 °F		9. Actual Volumetric Flow Rate: 2,979,000 acfm	
		10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:			

EMISSIONS UNIT INFORMATION

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EU 004 - FFSG, Unit 4

D. SEGMENT (PROCESS/FUEL) INFORMATION**Segment Description and Rate:** Segment **1** of **4**

1. Segment Description (Process/Fuel Type): Bituminous coal & bituminous coal briquette mixture		
2. Source Classification Code (SCC): 10100202		3. SCC Units: Tons Bituminous Coal Burned
4. Maximum Hourly Rate: 277.7	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 24
10. Segment Comment: Bituminous coal and coal briquette. Based on an average heating value of 12,000 Btu/lb.		

Segment Description and Rate: Segment **2** of **4**

1. Segment Description (Process/Fuel Type): Distillate fuel oil		
2. Source Classification Code (SCC): 10100501		3. SCC Units: 1000 Gallons Distillate Oil (No. 1 & 2) Burned
4. Maximum Hourly Rate: 48.297	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.73	8. Maximum % Ash: 0.1	9. Million Btu per SCC Unit: 138
10. Segment Comment: Fuel oil used for startup		

EMISSIONS UNIT INFORMATION

Section [2]

EU 004 - FFSG, Unit 4

D. SEGMENT (PROCESS/FUEL) INFORMATION**Segment Description and Rate:** Segment 3 of 4

1. Segment Description (Process/Fuel Type): Natural gas as startup and low-load flame stabilization fuel		
2. Source Classification Code (SCC): 10100601		3. SCC Units: Million Cubic Feet Natural Gas Burned
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: Natural gas as startup and low-load flame stabilization fuel		

Segment Description and Rate: Segment 4 of 4

1. Segment Description (Process/Fuel Type): On specification used oil		
2. Source Classification Code (SCC): 10101302		3. SCC Units: 1000 Gallons Waste Oil Burned
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment: Used oil specification: Arsenic 5 PPM, Cadmium 2 PPM, Chromium 10 PPM, Lead 100 PPM, Total Halogens 1000 PPM, PCB 50 PPM, 10 million gal/12 month limit for all 4 steam generating units (FFSG 1, 2, 4, & 5)		

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List of Pollutants Emitted by Emissions Unit

[illegible]

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EU 004 - FFSG, Unit 4**POLLUTANT DETAIL INFORMATION**Page [1] of [7]
Carbon Monoxide - CO**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 – Carbon Monoxide		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 139 lb/hour 608 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.5 lb/ton Reference: AP-42		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: lb/hr = 0.5 lb/ton * 277.7 TPH = 139 lb/hr TPY = 139 lb/hr * 8760 hr/yr * 1 ton/2000 lb = 608 TPY.			
11. Potential Fugitive and Actual Emissions Comment:			

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EU 004 - FFSG, Unit 4**POLLUTANT DETAIL INFORMATION**Page [1] of [7]
Carbon Monoxide - CO**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 ____ 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):	

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):	

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):	

EMISSIONS UNIT INFORMATION

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EU 004 - FFSG, Unit 4

POLLUTANT DETAIL INFORMATION

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Nitrogen Oxides - NO_x

**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 – Nitrogen Oxides		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 3,332.5 lb/hour 14,596 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.5 lb/MMBtu Reference: Permit, Acid Rain annual limit.		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: lb/hr = 6,665 MMBtu/hr * 0.5 lb/MMBtu = 3,332.5 lb/hr. TPY = 3,332.5 lb/hr * 8760 hrs/yr * 1 ton/2000 lb = 14,596 TPY			
11. Potential Fugitive and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATIONSection [2]
EU 004 - FFSG, Unit 4**POLLUTANT DETAIL INFORMATION**Page [2] of [7]
Nitrogen Oxides - NO_x**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 3

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.5 lb/MMBtu heat input	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): Acid Rain	

Allowable Emissions Allowable Emissions 2 of 3

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.7 lb/MMBtu heat input	4. Equivalent Allowable Emissions: 4,666 lb/hour 20,435 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): NSPS, Subpart D, 30 Day Rolling Average	

Allowable Emissions Allowable Emissions 3 of 3

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):	

EMISSIONS UNIT INFORMATION

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POLLUTANT DETAIL INFORMATION

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SAM

**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: Sulfuric Acid Mist – SAM		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 18.7 lb/hour 81.9 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: Reference: Test Data (Reference Method 8)		7. Emissions Method Code: 1	
8.a. Baseline Actual Emissions (if required): 81.9 tons/year		8.b. Baseline 24-month Period: From: 1/2003 To: 12/2004	
9.a. Projected Actual Emissions (if required): 79.2 tons/year		9.b. Projected Monitoring Period: <input checked="" type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Potential emissions based on test data (lb/hr) and 8,760 hr/yr. Projected actual emissions based on test data (lb/hr) and 8,470 hr/yr (highest 2-yr avg baseline of 2003-2004).			
11. Potential Fugitive and Actual Emissions Comment:			

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EU 004 - FFSG, Unit 4**POLLUTANT DETAIL INFORMATION**Page [3] of [7]
SAM**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 ____ 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):	

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):	

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):	

EMISSIONS UNIT INFORMATION

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EU 004 - FFSG, Unit 4

POLLUTANT DETAIL INFORMATION

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Particulate Matter Total - PM

**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 – Particulate Matter Total		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 667 lb/hour 2,919 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.1 lb/MMBtu Reference: Permit		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: lb/hr = 6,665 MMBtu/hr * 0.1 lb/MMBtu = 666.5 lb/hr TPY = 666.5 lb/hr * 8760 hrs/yr * 1 ton/2000 lb = 2,919 TPY			
11. Potential Fugitive and Actual Emissions Comment:			

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EU 004 - FFSG, Unit 4**POLLUTANT DETAIL INFORMATION**Page [4] of [7]
Particulate Matter Total - PM**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 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.1 lb/MMBtu heat input	4. Equivalent Allowable Emissions: 667 lb/hour 2,919 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): 43 nanograms per joule heat input.	

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):	

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):	

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EU 004 - FFSG, Unit 4**POLLUTANT DETAIL INFORMATION**Page [5] of [7]
Particulate Matter – PM₁₀**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: PM₁₀ – Particulate Matter		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 667 lb/hour 2,919 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.1 lb/MMBtu Reference: Permit		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: PM₁₀ is assumed to be equal to PM.			
11. Potential Fugitive and Actual Emissions Comment:			

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EU 004 - FFSG, Unit 4**POLLUTANT DETAIL INFORMATION**Page [5] of [7]
Particulate Matter – PM₁₀**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 ____ 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):	

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):	

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):	

EMISSIONS UNIT INFORMATION

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EU 004 - FFSG, Unit 4

POLLUTANT DETAIL INFORMATION

Page [6] of [7]
Sulfur Dioxide – SO₂

**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: SO₂ – Sulfur Dioxide		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 7,998 lb/hour 35,031 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 1.2 lb/MMBtu Reference: Permit		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: lb/hr = 6,665 MMBtu/hr * 1.2 lb/MMBtu = 7,998 lb/hr TPY = 7,998 lb/hr * 8760 hr/yr * 1 ton/2000 lb = 3,5031 TPY			
11. Potential Fugitive and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

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EU 004 - FFSG, Unit 4

POLLUTANT DETAIL INFORMATION

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Sulfur Dioxide – SO₂

**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 3

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 1.2 lb/MMBtu heat input	4. Equivalent Allowable Emissions: 7,998 lb/hour 35,031 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions 2 of 3

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.68% Sulfur in Fuel	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): When burning coal/briquette mixture; annual average.	

Allowable Emissions Allowable Emissions 3 of 3

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):	

EMISSIONS UNIT INFORMATION

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EU 004 - FFSG, Unit 4

POLLUTANT DETAIL INFORMATION

Page [7] of [7]
Volatile Organic Compounds - VOC

**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 – Volatile Organic Compounds		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 16.7 lb/hour 73 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.06 lb/ton Reference: AP-42		7. Emissions Method Code: 3	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: $\text{lb/hr} = 0.06 \text{ lb/ton} * 277.7 \text{ TPH} = 16.7 \text{ lb/hr}$ $\text{TPY} = 16.7 \text{ lb/hr} * 8760 \text{ hr/yr} * 1 \text{ ton}/2000 \text{ lb} = 73 \text{ TPY}$			
11. Potential Fugitive and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATIONSection [2]
EU 004 - FFSG, Unit 4**POLLUTANT DETAIL INFORMATION**Page [7] of [7]
Volatile Organic Compounds - VOC**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 _____ 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):	

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):	

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):	

EMISSIONS UNIT INFORMATION

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EU 004 - FFSG, Unit 4

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 1

1. Visible Emissions Subtype: VE20 – Visible Emissions	2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: 20 % Exceptional Conditions: 27 % Maximum Period of Excess Opacity Allowed: 6 min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment: Unit has opacity monitor.	

Visible Emissions Limitation: Visible Emissions Limitation ____ of ____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

EMISSIONS UNIT INFORMATION

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H. CONTINUOUS MONITOR INFORMATION**Complete if this emissions unit is or would be subject to continuous monitoring.****Continuous Monitoring System:** Continuous Monitor 1 of 5

1. Parameter Code: EM – Emission	2. Pollutant(s): SO₂
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: TECO/Enviroplan Model Number: 43B Serial Number: 43B-46186-275	
5. Installation Date: 04-APR-94	6. Performance Specification Test Date: 04-DEC-94
7. Continuous Monitor Comment: 40 CFR 75, SO₂	

Continuous Monitoring System: Continuous Monitor 2 of 5

1. Parameter Code: VE – Visible Emissions (opacity)	2. Pollutant(s): PM
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Durag/Enviroplan Model Number: CEMOP-281 Serial Number: 29860	
5. Installation Date: 04-APR-94	6. Performance Specification Test Date: 04-DEC-94
7. Continuous Monitor Comment: 40 CFR 75	

EMISSIONS UNIT INFORMATION

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EU 004 - FFSG, Unit 4

H. CONTINUOUS MONITOR INFORMATION**Complete if this emissions unit is or would be subject to continuous monitoring.****Continuous Monitoring System:** Continuous Monitor **3** of **5**

1. Parameter Code: EM – Emission	2. Pollutant(s): NO_x
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: TECO/Enviroplan Model Number: 42 Serial Number: 42-45957-275K	
5. Installation Date: 04-APR-94	6. Performance Specification Test Date: 04-DEC-94
7. Continuous Monitor Comment: 40 CFR 75, NO_x	

Continuous Monitoring System: Continuous Monitor **4** of **5**

1. Parameter Code: CO₂ – Carbon Dioxide	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: TECO/Enviroplan Model Number: 41H Serial Number: 41H-45740-274	
5. Installation Date: 04-APR-94	6. Performance Specification Test Date: 04-DEC-94
7. Continuous Monitor Comment: 40 CFR 75	

EMISSIONS UNIT INFORMATION

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EU 004 - FFSG, Unit 4

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor 5 of 5

1. Parameter Code: FLOW – Volumetric Flow Rate	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: United Sciences/Envi Model Number: Ultraflow 100 Serial Number: 9303522	
5. Installation Date: 04-APR-94	6. Performance Specification Test Date: 04-DEC-94
7. Continuous Monitor Comment: 40 CFR 75	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

Section [2]

EU 004 - FFSG, Unit 4

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) <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach 3</u> <input type="checkbox"/> 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) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>06/30/04</u>
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) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> 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) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> 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) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records <input checked="" type="checkbox"/> Attached, Document ID: <u>Attach 2</u> Test Date(s)/Pollutant(s) Tested: <u>6/20/06 -- SAM Emissions</u> <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> 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 <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable

EMISSIONS UNIT INFORMATION

Section [2]

EU 004 - FFSG, Unit 4

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(4)(d), F.A.C., and Rule 62-212.500(4)(f), F.A.C.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
2. Compliance Assurance Monitoring <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
3. Alternative Methods of Operation <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
4. Alternative Modes of Operation (Emissions Trading) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
5. Acid Rain Part Application <input type="checkbox"/> Certificate of Representation (EPA Form No. 7610-1) <input type="checkbox"/> Copy Attached, Document ID: _____ <input type="checkbox"/> Acid Rain Part (Form No. 62-210.900(1)(a)) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> New Unit Exemption (Form No. 62-210.900(1)(a)2.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Not Applicable

EMISSIONS UNIT INFORMATION

Section [2]

EU 004 - FFSG, Unit 4

Additional Requirements Comment

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ATTACHMENT 2

EPA REFERENCE METHOD 8 TEST RESULTS

**Sulfuric Acid Mist Engineering Study
Test Report**

**Progress Energy
Crystal River, Unit 4
Crystal River, Florida**

C.E.M. Solutions Project No. 2648

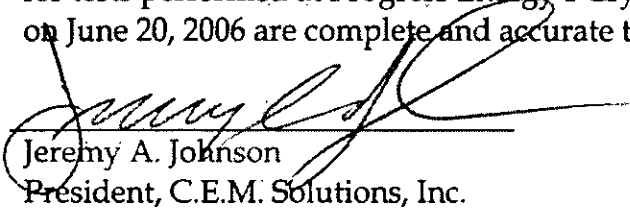
Testing Completed: June 2006

**Client Purchase Order Number: TBD
C.E.M. Solutions, Inc Report Number: 20-2648-04-001**

**C.E.M. Solutions, Inc.
7990 W. Gulf to Lake Hwy.
Crystal River, Florida 34429
Phone: 352-564-0441**

Statement of Validity

I hereby certify the information and data provided in this emissions test report for tests performed at Progress Energy's Crystal River facility, Unit 4, conducted on June 20, 2006 are complete and accurate to the best of my knowledge.



Jeremy A. Johnson

President, C.E.M. Solutions, Inc.

Project Background

Name of Source Owner: Progress Energy

Address of Owner: One Power Plaza
263 13th Avenue South
St. Petersburg, FL 33701

Source Identification: Oris Code: 628
Facility ID: 0170004
Emissions Unit: 004

Location of Source: Citrus County, Florida

Type of Operation: SIC Code: 4911

Tests Performed: Method 1 - Traverse Points
Method 3A - Determination of Oxygen and Carbon Dioxide
Method 8 - Determination of Sulfuric Acid and Sulfur Dioxide

Test Supervisor: Mr. Jeremy Johnson

Date Tests Conducted: June 20, 2006

Site Test Coordinator: Mr. James T. Long

C.E.M. Solutions, Inc Test Personnel

Project Field Manager: Mr. Jeremy A. Johnson

Test Engineer: Mr. Joseph Conti

Test Technician: Mr. Charles Horton

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Appendices

Appendix A: Facility Operating Data

Appendix B: USEPA Test Method Data Summaries and Supporting Field Data

Appendix C: Reference Method Quality Assurance/Quality Control Calibrations

Appendix D: Mathematical Equations

1.0 Introduction

Progress Energy, Florida (PEF) retained C.E.M. Solutions, Inc. to perform source emissions testing on Unit 4's boiler exhaust stack located at its facility in Crystal River, Florida.

The test program was conducted in order to compile air emissions data for engineering purposes.

Target pollutants include:

- Sulfuric Acid Mist (H_2SO_4), including SO_3

James T. Long of Progress Energy's Environmental Services Section coordinated plant operations throughout the test program.

All testing was conducted in accordance with test methods promulgated by the USEPA.

Sulfuric acid emissions, for the three test runs, averaged 18.7 pounds per hour (lb/hr).

The test program and results are presented and discussed in this report.

2.0 Facility Description

Crystal River, Unit 4 is a fossil fuel steam generator consisting of a dry bottom wall-fired boiler, rated at 760 MW, 6665 mmBtu/hr. Primary fuel is bituminous coal or a bituminous coal and bituminous coal briquette mixture. Number 2 fuel oil and natural gas may be burned as a startup fuel and for low load flame stabilization.

2.1 Process Equipment

Fossil Fuel Steam Generator, Unit 4 is a pulverized coal, dry bottom, wall-fired boiler. Emissions are controlled from the unit with a high efficiency electrostatic precipitator, manufactured by Combustion Engineering.

Emissions are exhausted through a brick and mortar 600 ft. stack.

3.0 Test Program/Operating Conditions

Emissions tests were completed on Unit 4, at Crystal River, on June 20, 2006.

Sulfuric Acid Mist Testing (H_2SO_4) was conducted utilizing USEPA Test Method 8 of Title 40 of the Code of Federal Regulations, Part 60 (40CFR60), Appendix A.

Plant operating data was collected and provided by facility personnel during the entire test program. Data provided include, but was not limited to:

- Fuel flow rate (Klbs/hr)

Fuel analysis was completed by Progress Energy.

During the test program, Unit 4's heat input averaged 6,845 mmBtu/hr while operating on 100 percent solid fuel, which correlates to 103 percent of the maximum heat input (6,665 mmBtu/hr).

Unit 4 fuel flow and fuel analysis reports are located in Appendix A.

4.0 Test Methods

All testing was performed in accordance with methods approved by the USEPA and FDEP. The following discusses the methods, as well as quality assurance and sample handling procedures.

Result summaries of each EPA test and completed forms are located in Appendix B.

Completed QA/QC procedures for each test method are located in Appendix C.

Table 1 summarizes the EPA test methods utilized:

Table 1: Summary of EPA Test Methods
Progress Energy
Crystal River Plant
Unit 4

USEPA Method	Description
1	Sample and Velocity Traverses for Stationary Sources
2	Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot)
3A	Gas Analysis for Determining Dry Molecular Weight (O ₂ /CO ₂ gas analysis) Instrumental Method
4	Moisture Content in Stack Gases
8	Sulfur Acid (including sulfuric acid mist and SO ₃)

4.1 Sample and Velocity Traverses

Sample and velocity traverse points used during the test program were determined utilizing EPA Method 1.

The stack diameter of Unit 4's exhaust stack is 28.29' (339.5"). The sample location for the stack is 10.7 diameters (302.75') downstream from the nearest disturbance and 6.9 diameters upstream (195.25') from the stack exit. 4 ports located 90 degrees from each other were used at the sample location.

4.2 Stack Gas Velocity and Volumetric Flow Rate

Method 2 was used to determine the volumetric flow rate of the stack effluent gas.

Stack differential pressure and temperature readings were taken with an S type pitot tube and Type K temperature sensor at each sample traverse point.

Method 2 data was recorded on the Method 8 isokinetic field data sheets.

4.2.1 Method 2 Quality Assurance/Quality Control Procedures

The S type pitot tube was inspected visually and measured to meet the design specifications of EPA Method 2, for a pitot coefficient of 0.84.

The inclined manometer and each leg of the pitot tube was leak checked before and immediately after each test run.

Thermocouple sensors were calibrated prior to the test program and a post test check was performed after testing was completed.

The inclined manometer was leveled and zeroed before each test run.

4.3 Determining Sample Gas Dry Molecular Weight

Stack gas dry molecular weight was determined utilizing Method 3A.

Gas samples were taken continuously at a sample point located at least 1 meter from the inner wall.

All reference method analyzers used meet or exceed applicable performance specifications detailed in the appropriate method.

Gas samples were continuously extracted from the stack by a gas sample probe. Samples were then transported to a gas sample conditioner via a heated sample line operating at 250°F or above. The gas sample conditioner lowers the dew point of the sample gas to approximately 5°C through minimum interference heat exchangers. The dry, cool sample is then sent to the gas analyzers, located in the environmentally controlled test trailer for analysis by the reference method analyzers.

Instrument outputs were recorded continuously with a Windows compatible personal computer, compiled into 15 second averages, and stored in a database for future reference.

Instrument ranges and calibration gases were chosen in accordance with the EPA method and are located in Appendix C with the QA/QC procedures.

4.3.1 Method 3A Quality Assurance/Quality Control Procedures

All sampling, analytical, and Quality Assurance/Quality Control (QA/QC) procedures outlined in the EPA method were followed.

All test equipment was calibrated before or during use in the field.

Interference checks and response time checks were performed on each instrumental analyzer, as applicable, before field use.

In the field, each analyzer and the entire instrument measurement system was checked for system bias before and following each test run using the calibration gases listed in the EPA method.

4.4 Moisture Content Determination

Moisture content of the stack gas was determined by Method 4.

Stack gas was sampled at each traverse point, passed through pre-weighed impingers and then through a calibrated dry gas meter. Moisture is removed from the sample gas in the pre-weighed impingers, which are submerged in an ice bath, and later analyzed for moisture weight gain. Moisture is determined based upon the amount of moisture weight gain and sample gas collected.

4.4.1 Method 4 Quality Assurance/Quality Control Procedures

The moisture sampling train was leak checked prior to each test run at approximately 15" Hg and immediately after each run at a vacuum higher than the highest vacuum recorded during the respective test run. Results are recorded on the moisture field data sheets.

Weighing to determine moisture content was conducted with a balance having an accuracy of 0.1 grams.

Gas temperature at the exit of the impingers was maintained at less than 68 degrees Fahrenheit.

4.5 Determination of Sulfur Acid Mist

Sulfur Acid Mist content of the stack gas was determined by USEPA Method 8.

The stack gas was extracted isokinetically from the stack at each traverse point. The gas is pulled from the stack through a glass tapered nozzle and glass lined sample probe, heated to approximately 250 °F, and then sent through an impinger train iced down and maintained for a train exit gas temperature of ≤68 °F. Sample gas was measured by a dry gas metering system.

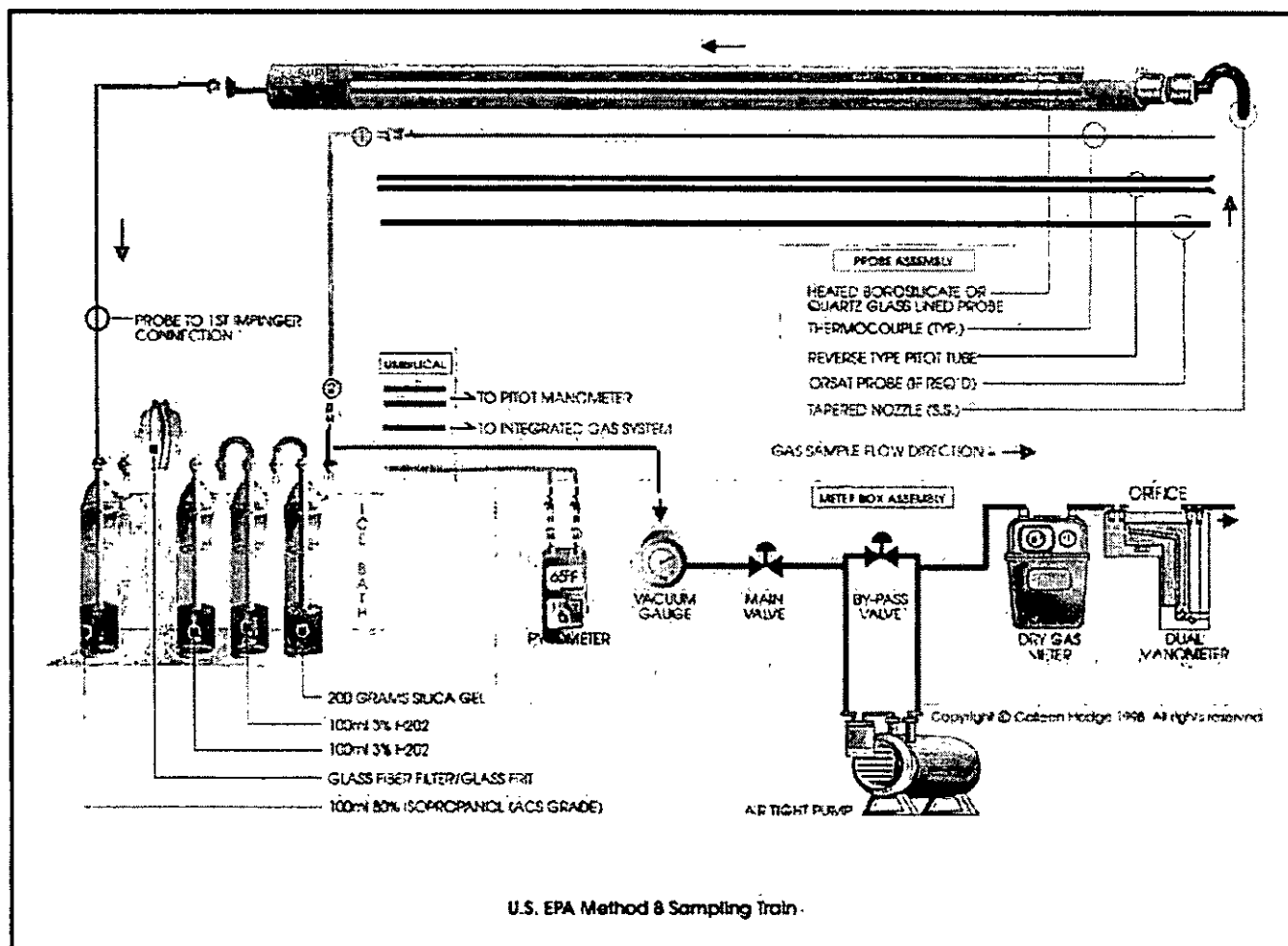
The impinger train is comprised of four Greenburg-Smith impingers. The first and third impingers have the standard tip, while the second and fourth are modified by replacing the standard tip with a ½" ID glass tube located approximately ½" from the bottom of the impinger.

The first impinger is loaded with 100 ml of 80 percent ACS grade isopropanol. A glass filter and filter housing is located between the first and third impinger. The second and third impingers contain 100 ml each of 3% H₂O₂ (hydrogen peroxide). A known, pre-weighed amount of indicating silica gel is contained in the fourth impinger.

Sulfuric Acid is trapped in the first impinger and on the filter and housing between the first and second impinger. Sulfur dioxide is captured in the third and fourth impinger (not applicable for this test since the target component was sulfuric acid). The sulfuric acid and sulfur dioxide fractions are, in most cases, measured separately by the barium-thorin titration method, but for this engineering study the samples were measured by an Ion Chromatograph to increase analytical detection limits.

Figure 1 contains a diagram of the Method 8 sampling train.

Figure 1: Method 8 Sample Train Diagram
Progress Energy
Crystal River Plant
Unit 4



4.5.1 Sampling Train Operation/Test Run Durations

During each sampling run, isokinetic sampling was maintained between 90 and 110 percent isokinetic as summarized in Table 2. The temperature of the sample probe was maintained to $248^{\circ}\text{F} \pm 25^{\circ}\text{F}$. The sampling rate did not exceed 1.0 cfm.

Table 2: Method 8 Isokinetics Summary
Progress Energy
Crystal River Plant
Unit 4

Unit	% Isokinetic				
	Run 1	Run 2	Run 3	Average(s)	Tolerance
4	98.2	100.9	102.9	100.7	90-110

Dry gas meter volume, velocity head, DGM orifice pressure and various temperature readings were taken at each traverse point for each test run.

A total of three sixty-minute test runs were completed.

Immediately following each test run a leak check of the sampling train was performed.

After draining the impinger ice bath, with the probe disconnected, the impinger train was purged by drawing clean ambient air through the system for 15 minutes at the average flow rate used for sampling.

4.5.2 Sample recovery

The contents of the first impinger were transferred to a clean 250ml graduated cylinder. The probe, first impinger, all connecting glassware before the filter, and front half of the filter holder were rinsed with 80 percent isopropanol. The rinses were added to the graduated cylinder and diluted to 225 ml with 80 % isopropanol and transferred to a one liter, leak free polyethylene storage bottle. The graduated cylinder was rinsed with 25 ml of 80 % isopropanol and transferred to the storage bottle. The filter was added to the storage bottle and mixed.

A portion of the 80 % isopropanol was transferred to a storage container for blank analysis.

Since sulfur dioxide was not measured, the rest of the train contained DI water and was not recovered.

The sample container for each test run and the blanks were packed and shipped to the laboratory for analysis.

4.5.3 Sample Analysis

Laboratory analysis was completed by Resolution Analytics, Inc. located in Sanford, NC.

The analytical report can be viewed in Appendix B.

4.5.4 Method 8 Quality Assurance/Quality Control Procedures

The probe nozzles were inspected and measured across three different diameters to determine the appropriate nozzle diameter.

Before and after each test run, the manometer was leveled and zeroed. Leak checks of the sampling train were conducted before and immediately after each test run.

The dry gas meter was fully calibrated within six months prior to the test program using a set of EPA critical orifices. Post test program dry meter checks were completed to verify the accuracy of the meter's Y_i .

5.0 H₂SO₄ Test Results

The test program results are presented below. Supporting fuel analysis reports, field data, and equations are presented in Appendix A, B and C, respectively.

Summaries of the test results are presented in Table 3.

The three-run average sulfuric acid emissions during the test program was 18.7 pounds per hour (lb/hr).

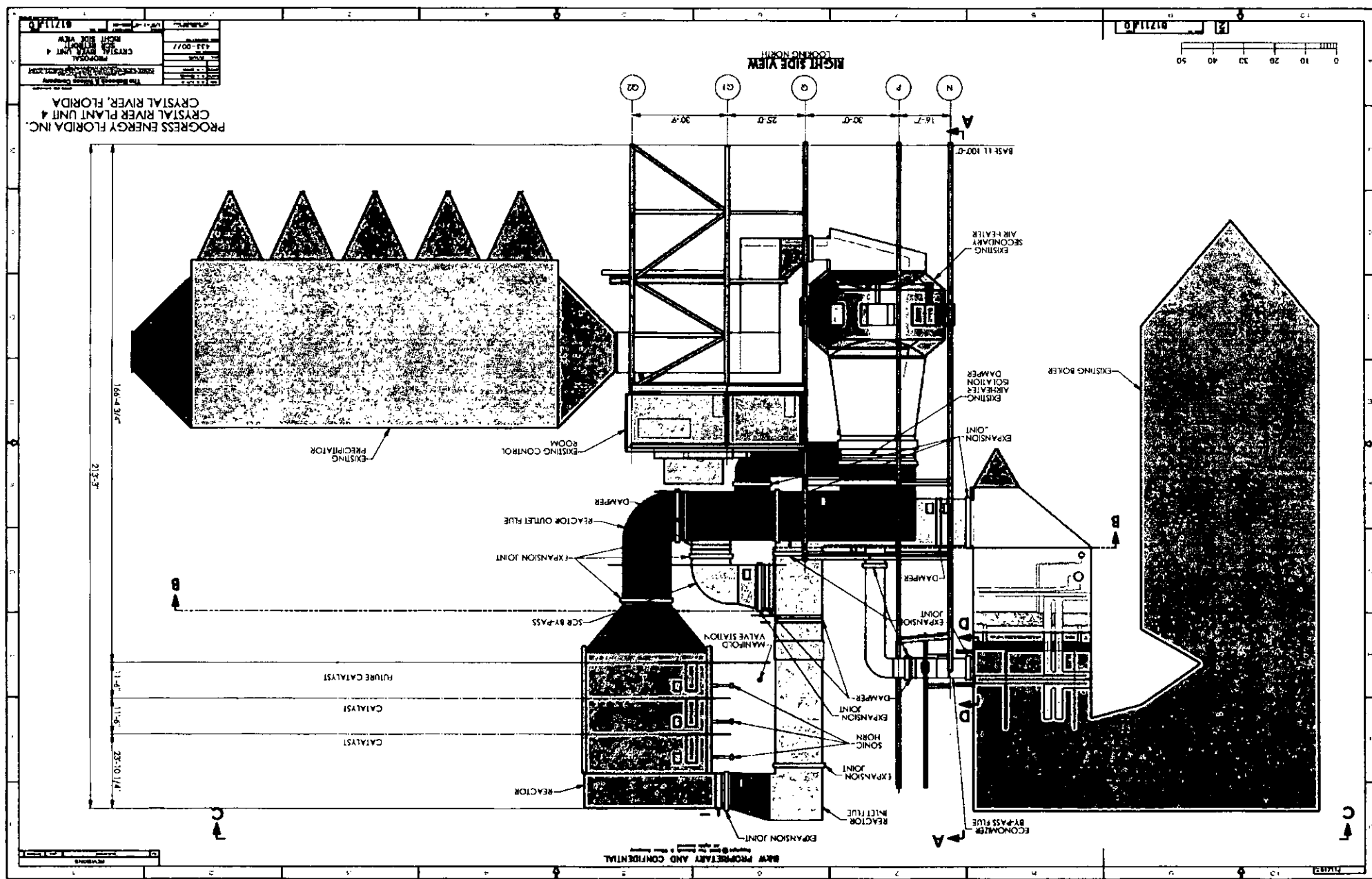
Table 3: Method 8 Results Summary
Progress Energy
Crystal River Plant
Unit 4

METHOD 8 - DETERMINATION OF SULFURIC ACID MIST EMISSIONS - RESULTS

Plant Name	Progress Energy, Crystal River Plant	Date	06/20/06
Sampling Location	Unit 4 Stack	Project #	2648
Operator	J. Conti	Stack Type	Circular

Historical Data					
Run Number	MB-1	MB-2	MB-3	Average	
Run Start Time	13:17	15:56	17:56		hh:mm
Run Stop Time	14:17	16:56	18:56		hh:mm
Meter Calibration Factor (M)	1.011	1.011	1.011		
Pilot Tube Coefficient (C _p)	0.840	0.840	0.840		
Actual Nozzle Diameter (D _n)	0.192	0.192	0.192		in.
Stack Test Data					
Initial Meter Volume (V _i)	511.477	566.324	618.078		scf
Final Meter Volume (V _f)	551.915	608.215	660.325		scf
Total Meter Volume (V _t)	40.438	41.891	42.247	41.525	scf
Total Sampling Time (t)	60.0	60.0	60.0	60.0	min
Average Meter Temperature (T _m)	102.5	105.0	105.8	104.4	F
Average Stack Temperature (T _s)	300.6	302.0	301.2	301.3	F
Barometric Pressure (P _b)	29.65	29.65	29.59	29.63	in Hg
Stack Static Pressure (P _{st})	0.00	-0.75	-0.75	-0.50	in H ₂ O
Absolute Stack Pressure (P _a)	29.65	29.59	29.53	29.59	in Hg
Average Orifice Pressure Drop (ΔP)	1.46	1.56	1.54	1.52	in H ₂ O
Absolute Meter Pressure (P _m)	29.76	29.76	29.70	29.74	in Hg
Avg Square Root Pilot Pressure (ΔP _p)	1.26	1.29	1.29	1.28	in H ₂ O
Moisture Content Data					
Impingers 1-3 Water Volume Gain (V _w)	36.6	67.1	67.1	56.9	ml
Impinger 4 Silica Gel Weight Gain (W _g)	29.1	23.0	38.0	30.0	g
Total Water Volume Collected (V _w)	65.8	90.1	105.2	87.0	ml
Standard Water Vapor Volume (V _{wv})	3.095	4.243	4.950	4.096	scf
Standard Meter Volume (V _{smv})	38.167	39.372	39.567	39.035	scf
Calculated Stack Moisture (B _{sm})	7.5	9.7	11.1	9.4	%
Saturated Stack Moisture (B _{ss})	100.00	100.0	100.0	100.0	%
Reported Stack Moisture Content (B _r)	7.5	9.7	11.1	9.4	%
Gas Analysis Data					
Carbon Dioxide Percentage (%CO ₂)	12.7	12.9	12.7	12.8	%
Oxygen Percentage (%O ₂)	6.6	6.5	6.6	6.6	%
Carbon Monoxide Percentage (%CO)	0.0	0.0	0.0	0.0	%
Nitrogen Percentage (%N ₂)	80.7	80.6	80.7	80.7	%
Dry Gas Molecular Weight (M _d)	30.30	30.32	30.30	30.31	lb/lb-mole
Wet Stack Gas Molecular Weight (M _w)	29.37	29.13	28.93	29.14	lb/lb-mole
Calculated Fuel Factor (F _b)	1.126	1.116	1.126	1.123	
Fuel Factor (F _b)	0	0	0	0	dscf/MMBtu
Percent Excess Air (%EA)	0.4	0.4	0.4	0.4	%
Volumetric Flow Rate Data					
Average Stack Gas Velocity (V _g)	84.40	87.16	87.28	86.28	ft/sec
Stack Cross-Sectional Area (A _s)	628.65	628.65	628.65		sq ft
Actual Stack Flow Rate (Q _{as})	3183549	3287524	3291914	3254329	scfm
Wet Standard Stack Flow Rate (Q _{ws})	131405	135193	135247	133948	scfm
Dry Standard Stack Flow Rate (Q _{ds})	2025814	2034019	2003459	2021097	scfm
Dry Standard Stack Flow Rate (Q _{ds})	121548855	122041118	120207512	121265828	scfm
Percent of Isokinetic Rate (I _r)	98.2	100.9	102.9	100.7	%
Emission Rate Data					
Mass of H ₂ SO ₄ in Catch (m)	2.38	2.75	3.06	2.73	mg
H ₂ SO ₄ Emission Rate (E)	0.00000014	0.00000015	0.00000017	0.00000015	lb/dscf
(E)	16.7	18.8	20.5	18.7	lb/hr
(H ₂ SO ₄ and H ₂ O) Heat Input (H _i)	6877	6842	6816	6845	MMBtu/hr

ATTACHMENT 3
SCR PROCESS FLOW DIAGRAM



ATTACHMENT 4
SCR BID SPECIFICATIONS

APPENDIX 9.1
TECHNICAL DESIGN INFORMATION
for
CATALYST MODULES

	SCR Design Basis		Pre-WFGD SCR Operation
Boiler Load	Maximum	Minimum	Maximum
Boiler Heat Input (MMBTU/hr)	6800	1800	6800
Fuel Type	Bituminous Coal (Highland No. 9)		Pre-WFGD SCR Operation Fuels (Note 2)
Gas Flow – Wet (lb/hr)	6,691,692	2,557,099	6,622,322
Gas Flow – Wet (Nm ³ /hr)	2,291,779	885,524	2,245,688
Flue Gas Composition:			
CO ₂ (vol. %, wet)	14.1	9.8	14.8
H ₂ O (vol. %, wet)	9.7	7.3	7.9
N ₂ (vol. %, wet)	73.3	74.5	74.5
O ₂ (vol. %, wet)	2.67	8.2	2.7
SO ₂ (ppmvd @ actual O ₂)	2867	1915	566
SO ₃ (ppmvd @ actual O ₂)	28.7	19.5	5.8
HCl (ppmvd @ actual O ₂)	209	141	79
Flue Gas Molecular Weight – Wet (lb/lb mole)	29.51	29.23	29.72
Inlet NOx (ppmvd@ 3% O ₂)	254	251	298
Inlet NOx (lb/MM BTU heat input)	0.35	0.35	0.41
Particulate Loading (gr/dscf)	3.6	2.4	5.8
Flue Gas Temperature (°F)	690 - 715	620	690 - 715
Flue Gas Pressure (inwg)	-9	-3	-9
Required NOx Reduction (%) – Base	90	90	90 or Bidder to State
Required Outlet NOx (lb/10 ⁶ BTU heat input)	0.035	0.035	0.041 or Bidder to State
Required NH ₃ Slip (ppmvd @ 3% O ₂)	≤2	≤2	≤2
Number of Reactors	1	1	1
Reactor Orientation	Vertical Gas Flow		Vertical Gas Flow
Catalyst Design Life	24,000 hours		24,000 hours
Reagent	Ammonia (NH ₃) mixture, from urea		
Maximum Catalyst Pressure Drop	Bidder to State		Bidder to State
Ammonia Consumption (lb/hr pure NH ₃)	Bidder to State		Bidder to State

Velocity Distribution (%RMS)	15		15
NH ₃ : NO _x distribution (%RMS)	5		5
Temperature distribution (± °F)	30		30

Notes:

- 1) Sonic Horns will be installed to keep the catalyst clean.
- 2) Flue gas composition for the "Pre-WFGD SCR Operation case is based on Kanawha Eagle Coal. Guarantees for this case are to be made for the range of fuels found in the "Pre-WFGD SCR Operation Fuels Table."
- 3) **Maximum load flue gas conditions are based on 18% excess air at the economizer outlet.** **Rev 3**