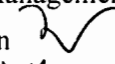



## Memorandum

## Florida Department of Environmental Protection

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To: Joseph Kahn, Division of Air Resource Management  
Through: Trina Vielhauer, Bureau of Air Regulation   
From: Jeff Koerner, New Source Review Section   
Date: May 8, 2009  
Subject: Final Air Permit No. PSD-FL-383B  
Project No. 0170004-022-AC  
Crystal River Power Plant, Units 4 and 5  
Revisions to Pollution Control Project

Progress Energy Florida, Inc. operates the existing Crystal River Power Plant, which is located in the Crystal River Energy Complex in Citrus County, north of Crystal River and west of U.S. Highway 19. The applicant requested the following revisions to Permit No. PSD-FL-383A for the ongoing air pollution control project: include a temporary alternate compliance demonstration for carbon monoxide emissions for Unit 5 until the continuous emissions monitoring system is installed during the outage to tie in the new wet FGD system and stack; correct as-built equipment descriptions for the gypsum storage and handling systems; acknowledge that the limestone crushing operations will be subject to the federal New Source Performance Standards in Subpart OOO, Part 60, Title 40 of the Code of Federal Regulations; and clarify the timeframes for compliance monitoring following completion of construction, startup and shakedown of the air pollution control systems. This project is a minor revision of the original permit, which was subject to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

The attached Final Determination summarizes the publication process, comments received and minor revisions made to the final permit. There are no pending petitions for administrative hearings or extensions of time in which to file a petition for an administrative hearing. I recommend your approval of the attached Final Permit package for this project.

Attachments

TLV/jfk



# Florida Department of Environmental Protection

Bob Martinez Center  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Charlie Crist  
Governor

Jeff Kottkamp  
Lt. Governor

Michael W. Sole  
Secretary

## NOTICE OF FINAL PERMIT

*Sent by Electronic Mail – Received Receipt Requested*

Mr. Larry Hatcher, Plant Manager  
Crystal River Power Plant  
Progress Energy Florida, Inc.  
299 First Avenue, North, CN77  
St. Petersburg, FL 33701

Air Permit No. PSD-FL-383B  
Project No. 0170004-022-AC  
Crystal River Power Plant  
Facility ID No. 0170004  
Units 4 and 5  
Revisions to Pollution Control Project  
Citrus County, Florida

Dear Mr. Hatcher:

Enclosed is the final air construction permit, which authorizes miscellaneous revisions to Permit No. PSD-FL-383A for the ongoing air pollution control project being installed on Units 4 and 5 at the existing Crystal River Power Plant located in Citrus County. The project is subject to the preconstruction requirements for the Prevention of Significant Deterioration (PSD) of Air Quality pursuant to Rule 62-212.400 of the Florida Administrative Code. As noted in the attached Final Determination, only minor changes and clarifications were made to the permit as drafted. This permit is issued pursuant to Chapter 403, Florida Statutes.

Any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

Trina Vielhauer, Chief  
Bureau of Air Regulation

TLV/jfk

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Final Permit package (including the Final Determination and Final Permit) was sent by electronic mail (or a link to these documents made available electronically on a publicly accessible server) with received receipt requested before the close of business on 5/11/09 to the persons listed below.

Mr. Larry Hatcher, Progress Energy, Inc. ([larry.hatcher@pgnmail.com](mailto:larry.hatcher@pgnmail.com))  
Mr. Dave Meyer, Progress Energy, Inc. ([dave.meyer@pgnmail.com](mailto:dave.meyer@pgnmail.com))  
Mr. Benjamin Borsch, Progress Energy, Inc. ([benjamin.borsch@pgnmail.com](mailto:benjamin.borsch@pgnmail.com))  
Mr. Scott Osbourn, Golder Associates ([sosbourn@golder.com](mailto:sosbourn@golder.com))  
Mr. Mike Halpin, DEP Siting ([mike.halpin@dep.state.fl.us](mailto:mike.halpin@dep.state.fl.us))  
Ms. Cindy Zhang-Torres, DEP SWD ([cindy.zhang-torres@dep.state.fl.us](mailto:cindy.zhang-torres@dep.state.fl.us))  
Ms. Katy Forney, EPA Region 4 ([forney.kathleen@epa.gov](mailto:forney.kathleen@epa.gov))  
Ms. Heather Abrams, EPA Region 4 ([abrams.heather@epamail.epa.gov](mailto:abrams.heather@epamail.epa.gov))  
Mr. Dee Morse, NPS ([dee\\_morse@nps.gov](mailto:dee_morse@nps.gov))  
Ms. Vickie Gibson, DEP BAR Reading File ([victoria.gibson@dep.state.fl.us](mailto:victoria.gibson@dep.state.fl.us))

Clerk Stamp

**FILING AND ACKNOWLEDGMENT FILED**, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.



(Clerk)

5/11/09  
(Date)

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## FINAL DETERMINATION

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### PERMITTEE

Progress Energy Florida, Inc.  
Crystal River Power Plant  
299 First Avenue North, CN-77  
St. Petersburg, Florida 33701

### PERMITTING AUTHORITY

Florida Department of Environmental Protection (Department)  
Division of Air Resource Management  
Bureau of Air Regulation, New Source Review Section  
2600 Blair Stone Road, MS #5505  
Tallahassee, Florida 32399-2400

### PROJECT

Air Permit No. PSD-FL-383B  
Project No. 0170004-022-AC  
Crystal River Power Plant

Progress Energy Florida, Inc. operates the existing Crystal River Power Plant, which is located in the Crystal River Energy Complex in Citrus County, north of Crystal River and west of U.S. Highway 19. The applicant requests the following primary revisions to Permit No. PSD-FL-383A for the ongoing air pollution control project: include a temporary alternate compliance demonstration for carbon monoxide emissions for Unit 5 until the continuous emissions monitoring system is installed during the outage to tie in the new wet FGD system and stack; correct as-built equipment descriptions for the gypsum storage and handling systems; acknowledge that the limestone crushing operations will be subject to the federal New Source Performance Standards in Subpart OOO, Part 60, Title 40 of the Code of Federal Regulations; and clarify the timeframes for compliance monitoring following completion of construction, startup and shakedown of the air pollution control systems. This project is a minor revision of the original permit, which was subject to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

### NOTICE AND PUBLICATION

The Department distributed a Notice of Intent to Issue Air Permit package on April 9, 2009. The applicant published the Public Notice in the Citrus County Chronicle on April 21, 2009. The Department received the proof of publication on April 24, 2009.

### COMMENTS

No comments on the Draft Permit were received from the public, the Department's SWD District Office, the EPA Region 4 Office or the Federal Land Manager. On May 1, 2009, the Department received the following comments from the applicant.

As previously explained in the additional information provided, the plant will need a period of time to shakedown the new wet FGD system. The initial shakedown will use the coal meeting the current maximum fuel sulfur levels. However, it will be necessary to also conduct shakedown of the new wet FGD system while using coal with the new higher sulfur content as allowed by the construction permit. During this period, the units will be able to comply with the current sulfur dioxide limit in the Title V permit, but the fuel sulfur level will be higher than allowed by the Title V permit, but in compliance with the new higher sulfur content specified in the construction permit. Therefore, Progress Energy requests clarification to the following sentence in Condition 15 in Section 3A of the air construction permit revision.

"... During the period between certification of the SO<sub>2</sub> CEMS and completing initial shakedown of the FGD system, the units shall comply with the SO<sub>2</sub> emissions standards in the current Title V permit based on

## FINAL DETERMINATION

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compliance by CEMS (Condition B.5a), but may fire a coal fuel blend in compliance with the maximum fuel sulfur level specified in this air construction permit (Condition 6, Subsection 3A) which requires diligent monitoring of the fuel-sulfur content."

*Response:* The Department agrees with this clarification the final permit was revised accordingly.

## CONCLUSION

The final action of the Department is to issue the permit with the minor revisions, corrections and clarifications as described above.



# Florida Department of Environmental Protection

Bob Martinez Center  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Charlie Crist  
Governor

Jeff Kottkamp  
Lt. Governor

Michael W. Sole  
Secretary

## PERMITTEE:

Progress Energy Florida, Inc.  
Crystal River Power Plant  
299 First Avenue North, CN-77  
St. Petersburg, Florida 33701

### Authorized Representative:

Mr. Larry Hatcher, Plant Manager

Air Permit No. PSD-FL-383B  
Project No. 0170004-022-AC  
Facility ID No. 0170004  
Crystal River Power Plant, Units 4 and 5  
Revised Air Pollution Controls Project  
Permit Expires: November 1, 2011

## PLANT LOCATION

The existing Crystal River Power Plant (SIC No. 4911) is located in the Crystal River Energy Complex in Citrus County, north of Crystal River and west of U.S. Highway 19.

## STATEMENT OF BASIS

This permit is a revision of Permit No. PSD-FL-383A, which revised original Permit No. PSD-FL-383. This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.), and Part 60 in Title 40 of the Code of Federal Regulations (CFR). Specifically, this permit is issued in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality. The permittee is authorized to install the proposed equipment and perform the work in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department). This air construction permit supplements all other valid air construction and operation permits.

## CONTENTS

- Section 1. General Information
- Section 2. Administrative Requirements
- Section 3. Emissions Units Specific Conditions
- Section 4. Appendices

Executed in Tallahassee, Florida

  
\_\_\_\_\_  
Joseph Kahn, Director  
Division of Air Resource Management

5/8/09  
\_\_\_\_\_  
Effective Date

## SECTION 1. GENERAL INFORMATION

### FACILITY AND PROJECT DESCRIPTION

The existing Crystal River Power Plant consists of the following: four coal-fired fossil fuel steam generating units with electrostatic precipitators; two natural draft cooling towers; two sets of mechanical draft cooling towers (one set of “helper” cooling towers and a second set of “modular” cooling towers); coal and ash material handling facilities; and relocatable diesel fired generators. The Crystal River Energy Complex includes the nuclear unit and associated facilities permitted under the same Title V air operation permit.

Due to the Environmental Protection Agency’s revised 8-hour ozone standard, the permittee shall install and continuously operate new low-NO<sub>x</sub> burners, new selective catalytic reduction systems, new flue gas desulfurization systems, and new stack configurations for existing Units 4 and 5, except for designed periods of SCR bypass as specified in condition 2.b. The installation and use of these control devices require a demonstration of continuous compliance with new standards for NO<sub>x</sub> and SO<sub>2</sub>.

In conjunction with the proposed new control equipment, the permit also authorizes the following: a new carbon burn-out (CBO<sup>TM</sup>) system to reburn fly ash, a new blend of bituminous/sub-bituminous coal, a trial burn to evaluate coals blends with up to 30% petroleum coke, and a trial burn to evaluate a new fuel additive intended to reduce slagging and improve emissions performance. This permit also establishes the maximum heat input rates for Units 4 and 5. The combination of new fuel blends and control equipment will result in PSD-significant emissions increases of carbon monoxide (CO), particulate matter (PM/PM<sub>10</sub>), sulfuric acid mist (SAM), and volatile organic compounds (VOC). Therefore, the permittee is also required to perform the following work and install the following additional equipment as the Best Available Control Technologies (BACT) for these pollutants: the new low-NO<sub>x</sub> burners (CO, PM/PM<sub>10</sub>, and VOC); modifications to the existing electrostatic precipitators (PM/PM<sub>10</sub> and SAM); and new alkali injection systems (SAM).

This permit affects the following emissions units:

EU No.	New/Existing	Emission Unit Description
001	Existing	Unit 1 Fossil Fuel Steam Generator
002	Existing	Unit 2 Fossil Fuel Steam Generator
003	Existing	Unit 5 Fossil Fuel Steam Generator
004	Existing	Unit 4 Fossil Fuel Steam Generator
016	Existing	Coal and Ash Material Handling Activities for Coal-Fired Steam Generators
023	New	Limestone and Gypsum Material Handling Activities
024	New	CBO Fluidized Bed Combustor
025	New	CBO Feed Fly Ash Silo
026	New	CBO Product Fly Ash Storage Dome and Truck Loadout Silo

### REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants (HAP).
- The facility operates units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.
- The existing facility is subject to Power Plant Site Certification No. PA 77-09.

## **SECTION 1. GENERAL INFORMATION**

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### **RELEVANT DOCUMENTS**

The following relevant documents are not a part of this permit, but helped form the basis for this permitting action: the permit application and additional information received to make it complete; the draft permit package including the Department's Technical Evaluation and Preliminary Determination; publication and comments; the Department's BACT determinations and the Department's Final Determination.

### **CONTENTS**

Section 1. General Information

Section 2. Administrative Requirements

Section 3. Emissions Units Specific Conditions

Subsection A. Unit 4, Unit 5 and CBO Unit – Pollution Control Projects

Subsection B. Material Handling Activities for Limestone and Gypsum

Subsection C. Material Handling Activities for CBO System

Subsection D. Units 4 and 5 – Temporary Trial Period with up to 50% Sub-bituminous Coal

Subsection E. Units 1, 2, 4 and 5 – Temporary Trial Period with Fuel Additive

Subsection F. Units 4 and 5 – Temporary Trial Period with up to 30% Petroleum Coke

Section 4. Appendices

Appendix A. Citation Formats

Appendix B. General Conditions

Appendix C. Common Conditions

Appendix D. Common Testing Requirements

Appendix E. Summary of Final BACT Determinations

Appendix F. Standard Continuous Monitoring Requirements

Appendix G. New Source Performance Standards

## SECTION 2. ADMINISTRATIVE REQUIREMENTS

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1. Permitting Authority: All documents related to PSD applications for permits to construct or modify emissions units shall be submitted to the Department's Bureau of Air Regulation in the Division of Air Resource Management at 2600 Blair Stone Road, MS #5505, Tallahassee, Florida, 32399-2400. Copies of all such applications shall also be submitted to each Compliance Authority.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Air Resource Section of the Department's Southwest District Office at 13051 N. Telecom Parkway, Temple Terrace, FL 33637-0926.
3. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to the applicable requirements of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C. The terms used in this permit have specific meanings as defined in the applicable chapters of the Florida Administrative Code. The permittee shall use the appropriate forms provided in Rule 62-210.900, F.A.C. and follow the applicable permitting procedures as specified in the above regulations. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
4. Source Obligation:
  - (a) Authorization to construct shall expire if construction is not commenced within 18 months after receipt of the permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. This provision does not apply to the time period between construction of the approved phases of a phased construction project except that each phase must commence construction within 18 months of the commencement date established by the Department in the permit.
  - (b) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.
  - (c) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

[Rule 62-212.400(12), F.A.C.]
5. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rule 62-4.030 and Chapters 62-210 and 62-212, F.A.C.]
6. Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. [Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213.420, F.A.C.]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### A. Unit 4, Unit 5 and CBO Unit – Pollution Control Projects

This section of the permit addresses the following emissions units.

EU No.	Emission Unit Description
003	Unit 5 is a fossil fuel-fired electric utility steam generator consisting of a pulverized coal, dry bottom, wall-fired boiler rated at 760 MW, which began commercial operation in 1984. Air pollution control equipment will include: low-NOx burners, selective catalytic reduction (SCR) systems, flue gas desulfurization (FGD) systems, alkali injection, and an electrostatic precipitator (ESP). The flue gas exhausts at 130° F with a volumetric flow rate of 2,205,195 acfm through a stack that is 30.5 feet in diameter and 550 feet tall. Units 4 and 5 share a common chimney with separate internal stack liners.
004	Unit 4 is a fossil fuel-fired, electric utility steam generator consisting of a pulverized coal, dry bottom, wall-fired boiler rated at 760 MW, which began commercial operation in 1982. Air pollution control equipment will include: low-NOx burners, selective catalytic reduction (SCR) systems, flue gas desulfurization (FGD) systems, alkali injection, and an electrostatic precipitator (ESP). The flue gas exhausts at 130° F with a volumetric flow rate of 2,205,195 acfm through a stack that is 30.5 feet in diameter and 550 feet tall. Units 4 and 5 share a common chimney with separate internal stack liners.
016	Material handling activities consist of the existing handling and storage of coal and ash for coal-fired electric utility steam generators.
024	The carbon burn-out (CBO) unit is a fluidized bed combustor that will reburn fly ash generated from Units 4 and 5 to produce low-carbon, low-ammonia fly ash material suitable for commercial use. The CBO unit is included in this subsection because the flue gas exhaust is directed back into the ductwork of Units 4 and 5 prior to the control equipment.

*{Permitting Note: Existing units EU-003, EU-004, and EU-016 are currently subject to the following applicable requirements: Power Plant Site Certification No. PA 77-09; 40 CFR 60, NSPS Subpart D (fossil fuel-fired steam generators); NSPS Subpart Y (coal preparation plants); and Chapter 62-214, F.A.C. (Acid Rain Program). This permit does not affect these previous requirements. In accordance with Rule 62-212.400 (PSD), F.A.C., this project subjects these units to BACT determinations for the following pollutants: CO, PM/PM<sub>10</sub>, SAM, and VOC. Final BACT determinations are presented in Appendix E of this permit. Emissions standards specified in this permit allow these units to avoid PSD preconstruction review for NO<sub>x</sub> and SO<sub>2</sub>.*

#### AUTHORIZED CONSTRUCTION

##### 1. Previous Permits:

- a. *Units 4 and 5:* Except for Permit No. 0170004-013-AC, the conditions of this permit supplement all previously issued air construction and operation permits for Units 4 and 5. Unless otherwise specified, these conditions are in addition to all other applicable permit conditions and regulations including: Power Plant Site Certification No. PA 77-09; 40 CFR 60, NSPS Subpart D (fossil fuel-fired steam generators); and Chapter 62-214, F.A.C. (Phase I and II of the Acid Rain Program). However, this permit supersedes Permit No. 0170004-013-AC for the construction of the selective catalytic reduction systems, which is now on the same construction schedule as the flue gas desulfurization systems.
- b. *Material Handling Activities (EU-016):* The material handling activities for the existing coal-fired electric utility steam generators remain subject to the applicable permit conditions and regulations as specified by Permit No. 0170004-014-AC issued on December 15, 2006. That permit authorized modifications to the existing material handling activities and included the following primary regulations: Power Plant Site Certification No. PA 77-09; Permit No. PSD-FL-139; and 40 CFR 60, NSPS Subpart Y (coal preparation plants). This permit does not add any new requirements.

[Permit Nos. 0170004-013-AC and 0170004-014-AC; Application No. 0170004-016-AC; Rule 62-4.070(3), F.A.C.]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### A. Unit 4, Unit 5 and CBO Unit – Pollution Control Projects

2. Emissions Reduction Projects: For Units 4 and 5, the permittee is required to make the following modifications to assure compliance with the new emissions limits listed below.
  - a. *Low-NO<sub>x</sub> Burners*: The permittee is required to install new low-NO<sub>x</sub> burners manufactured by Babcock & Wilcox (Model No. DRB-42) or equivalent. The preliminary design is for 54 burners per unit. The existing burner inlet system will be modified to allow even airflow distribution to the new burners.
  - b. *SCR Systems*: The permittee is required to install new SCR systems to reduce NO<sub>x</sub> emissions. Each system will consist of the following basic components: an ammonia injection grid, a mixing grid, SCR reactor with catalyst modules, a urea-to-ammonia processing system, associated bulk storage systems, an automated control system, piping, electrical, and other ancillary equipment. As needed, urea will be converted into ammonia, which will be mixed to the proper concentration. Ammonia will be injected ahead of the SCR reactor, which will be installed upstream of the air heater for each unit. The ammonia will combine with NO<sub>x</sub> in the presence of the catalyst in a reduction reaction to form nitrogen and water. The preliminary design is for 90% reduction in NO<sub>x</sub> emissions with a maximum ammonia slip of 2 to 5 ppmv. The design also incorporates dampers and ductwork to provide the capability of bypassing the SCR system. The bypass is most commonly used to gradually heat or cool the catalyst structure to minimize thermal fatigue during startup and shutdown. During catalyst maintenance and repair, the bypass would also allow access to the SCR reactor without requiring the complete shutdown of a unit.
  - c. *FGD Systems*: The permittee is required to install new wet flue gas desulfurization (FGD) systems after the existing ESPs and induced draft fans to reduce SO<sub>2</sub> and other acid gas emissions. A limestone slurry will be injected into the FGD absorbers at design feed rate of approximately 352 gpm. The slurry will consist of approximately 25 to 30% solids and a specific gravity of 1.22. The preliminary design is for a 97% reduction in SO<sub>2</sub> emissions. In addition to the FGD absorbers, the systems will consist of limestone storage and handling, limestone preparation, limestone slurry injection, FGD blowdown, and gypsum dewatering, transfer and storage.
  - d. *Stacks*: In conjunction with the emissions reduction projects, the permittee is authorized to construct a single new 550 feet tall chimney with separate internal stack liners for Units 4 and 5, one per unit. Each stack liner will have an internal diameter of 30.5 feet. The existing stacks will no longer be used. The required continuous emissions monitoring systems (CEMS) will be installed on each new stack liner.

The above information is based on the preliminary design. As necessary, the permittee shall provide the Permitting and Compliance Authorities with updated information should the final design significantly change. [Application No. 0170004-016-AC; Rules 62-4.070(3), 62-4.080 and 62-212.300, F.A.C.]

3. BACT Controls: For Units 4 and 5, the permittee is required to perform the following work as the basis for the BACT determinations.
  - a. *Alkali Injection Systems*: The permittee is required to install new alkali injection systems to reduce SAM emissions. The preliminary design for the alkali injection system is to use ammonia generated from the urea-to-ammonia processing system, which is part of the new SCR system. Ammonia will be injected into the flue gas through a uniform injection grid located after the boiler air heaters and proposed SCR reactor and before the existing ESP. The additional ammonia reacts with SO<sub>3</sub> to form salts (e.g., bisulfates), which will be removed by the ESP. The preliminary design is for an 85% reduction.
  - b. *ESP*: The permittee is authorized to modify the existing ESPs to achieve the new PM/PM<sub>10</sub> emissions

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### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

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#### A. Unit 4, Unit 5 and CBO Unit – Pollution Control Projects

standards. Some of this work may include the following: removing and replacing the precipitator roof; replacing the precipitator internals; replacing and upgrading the discharge electrodes to improve collection efficiency; as necessary, modifying the gas flow path deflectors at the inlet of the precipitator to improve the flow distribution; replacing the rapping system with top-mounted rappers to improve performance; adjusting the plate spacing for improved collection efficiency; and reinforcing the precipitator box to account for increased transient pressures from the new induced draft fans.

*{Permitting Note: The modifications are intended to improve the estimated collection efficiency to more than 99.5%.}*

[Application No. 0170004-016-AC; Rules 62-4.070(3), 62-212.300 and 62-212.400(PSD), F.A.C.]

4. CBO Unit: The permittee is authorized to install a new CBO fluidized bed combustor (Model No. 1500 or equivalent) with a nominal bed area of 1500 ft<sup>2</sup> that will reburn fly ash generated from Units 4 and 5 to produce low-carbon, low-ammonia fly ash material suitable for commercial use as an additive in Portland cement. The CBO unit also includes the following process equipment: hot cyclones to recycle fly ash back to the fluidized bed combustor; a heat recovery heat exchanger; cold cyclones to recover product fly ash; and a fabric filter to recover product fly ash. The flue gas exhaust shall be directed back into the ductwork of Units 4 and 5 prior to the air pollution control equipment such that emissions will be controlled when either unit or both units are in operation. The hot cyclones, cold cyclones and baghouse are considered process equipment and not air pollution control equipment because the equipment is used to separate the ash from the flue gas exhaust. The recovered ash is sold as a byproduct and the flue gas exhaust is directed back into the boiler ductwork for control. Details of the CBO process are provided in Subsection B, which regulates the material handling activities. [Application No. 0170004-016-AC; Rules 62-4.070(3), 62-212.300 and 62-212.400(PSD), F.A.C.]

#### PERFORMANCE REQUIREMENTS

5. Permitted Capacities:

- a. *Units 4 and 5*: The maximum heat input rates to Units 4 and 5 are 7200 MMBtu per hour per unit based on a 24-hour block average (midnight to midnight) and 6800 MMBtu per hour per unit based on a 30-day rolling average. Compliance shall be demonstrated by collecting the fuel feed rate and fuel heating values as monitored by the existing operating data monitoring system.
- b. *CBO Unit*: The maximum heat input rate to the CBO fluidized bed combustor is 95.6 MMBtu per hour based on a 24-hour block average.

[Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-212.300, F.A.C.]

6. Authorized Fuels:

- a. In addition to the currently authorized fuels, this air construction permit authorizes Units 4 and 5 to fire a blend of bituminous coal and sub-bituminous coal of up to 20% sub-bituminous coal upon issuance of this permit. Coal fuel blends shall not exceed a maximum sulfur content of 3.13% by weight.
- b. For startup, the CBO fluidized bed combustor will fire distillate oil with a maximum sulfur content of 0.5% by weight. Once the target operating temperature is achieved, fly ash from the boilers will be combusted.

*{Permitting Note: The current Title V air operation permit authorizes Units 4 and 5 to fire bituminous coal, a bituminous coal and bituminous coal briquette mixture, used oil, No. 2 fuel oil as a startup fuel, and natural gas as a startup and low-load flame stabilization fuel. Recently, the plant successfully tested a blend of approximately 80% bituminous coal with 20% Powder River Basin coal (sub-bituminous coal).}*

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### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### A. Unit 4, Unit 5 and CBO Unit – Pollution Control Projects

[Application No. 0170004-016-AC; Rule 62-4.070(3), F.A.C.]

7. Capacities and Restrictions: None of the emissions units in this subsection are restricted by hours of operation (8760 hours/year). [Application No. 0170004-016-AC; Rule 62-210.200(PTE), F.A.C.]

#### EMISSIONS LIMITATIONS AND PERFORMANCE STANDARDS

8. Standards Based on Stack Tests: Including the emissions from the CBO unit, emissions from each Unit 4 or Unit 5 shall not exceed the following standards based on stack tests.
- a. *Ammonia Slip*: As determined by EPA Method CTM-027 (or equivalent), the ammonia slip shall not exceed 5 ppmv based on a 3-run test average conducted at permitted capacity.
  - b. *PM/PM<sub>10</sub> Emissions*: As determined by EPA Method 5 or 5b, PM emissions shall not exceed 0.030 lb/MMBtu and 216.0 lb/hour based on a 3-run test average conducted at permitted capacity.
  - c. *SAM emissions*: As determined by EPA Method 8 or 8A, SAM emissions shall not exceed 0.009 lb/MMBtu and 64.8 lb/hour based on a 3-run test average conducted at permitted capacity.
  - d. *VOC Emissions*: As determined by EPA Method 25A, VOC emissions shall not exceed 0.004 lb/MMBtu and 28.8 lb/hour based on a 3-run test average conducted at permitted capacity. Optionally, EPA Method 18 may be conducted concurrently in order to deduct non-regulated VOC emissions such as methane and ethane.
  - e. *Opacity*: As determined by EPA Method 9, the stack opacity shall not exceed 10% based on a 6-minute block average, except for one 6-minute period per hour of not more than 20%.

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

9. Standards Based on CEMS: Including the emissions from the CBO unit, emissions from Units 4 and 5 each shall not exceed the following standards based on data collected by the CEMS.
- a. *NO<sub>x</sub> Emissions*: As determined by CEMS data, NO<sub>x</sub> emissions shall not exceed 2,085 tons per year per unit based on a 12-month rolling average for all periods of operation including startup, shutdown and malfunction. [Application No. 0170004-016-AC; Rules 62-4.070(3), 62-4.080 and 62-212.400(12), F.A.C.]
  - b. *SO<sub>2</sub> Emissions*: As determined by CEMS data, SO<sub>2</sub> emissions shall not exceed 0.27 lb/MMBtu of heat input based on a 30-day rolling average for all periods of operation including startup, shutdown and malfunction. As determined by CEMS data, SO<sub>2</sub> emissions shall not exceed 1944.0 lb/hour per unit based on a 24-hour block average excluding startup, shutdown and malfunction of the FGD system. [Application No. 0170004-016-AC; Rules 62-4.070(3), 62-4.080 and 62-212.400(12), F.A.C.]
  - c. *CO Emissions (Interim)*: As determined by CEMS data, CO emissions shall not exceed 0.17 lb/MMBtu of heat input based on a 30-day rolling average excluding periods of startup, shutdown and malfunction. As determined by CEMS data, CO emissions shall not exceed 1156.0 lb/hour based on a 30-day rolling average for all periods of operation including startup, shutdown and malfunction. [Rule 62-212.400 (BACT), F.A.C.]
  - d. *CO Emissions (Final)*: Within 24 months of commencing commercial operation of each unit with the new low-NO<sub>x</sub> burners, the permittee shall submit an application proposing a revised (lower) final BACT standard. The final standard shall be based on actual CO emissions data collected for initial operation after completing installation of the new low-NO<sub>x</sub> burners. There may be separate standards proposed for different fuels. [Rule 62-212.400(BACT), F.A.C.]
10. Circumvention: No person shall circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly. The SCR and FGD

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### A. Unit 4, Unit 5 and CBO Unit – Pollution Control Projects

systems shall operate as necessary to comply with the emissions standards of this permit. The alkali injection system and ESP shall operate in accordance with the automated controls system as determined by subsequent performance and compliance testing. [Rules 62-210.650 and 62-212.400(BACT), F.A.C.]

11. Excess Emissions - Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. All such preventable emissions shall be included in any compliance determinations based on CEMS data. [Rule 62-210.700(4), F.A.C.]
12. Excess Emissions - Allowed: In accordance with Rule 62-210.700(6), F.A.C., excess emissions due to startup, shutdown or malfunction have been considered in establishing the sets of emissions standards of this permit. No other periods of excess emissions are authorized. [Rule 62-210.700(6), F.A.C.]

#### CONTINUOUS EMISSIONS MONITORING REQUIREMENTS

13. Existing CEMS/COMS: For Units 4 and 5, the permittee shall continue to calibrate, operate, and maintain continuous monitoring equipment to measure and record opacity, NO<sub>x</sub> and SO<sub>2</sub> in terms of the applicable standards. The permittee shall either relocate the existing CEMS to the new stack configurations or replace the monitoring systems. Due to the wet stack, the existing COMS shall be relocated or new COMS installed in the ductwork after the ESP and prior to the wet FGD system. Each COMS and CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The monitors shall be installed, operated and maintained in accordance with the existing requirements of 40 CFR 60.45, as well as the provisions of the federal acid rain program. [Rule 62-4.070(3), F.A.C.]
14. CO CEMS Installation: For Units 4 and 5, the permittee shall properly install, calibrate, operate and maintain CEMS to measure and record CO emissions in the terms of the applicable standard. Each CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The permittee shall locate the CEMS by following the procedures contained in the applicable performance specification of 40 CFR Part 60, Appendix B. The permittee shall install each CEMS required by this permit and conduct the appropriate performance specification for each CEMS within 60 calendar days of completing installation of the low-NO<sub>x</sub> burners and achieving permitted capacity as defined in Rule 62-297.310(2), F.A.C., but no later than 180 calendar days after initial startup. As an option for Unit 5 because of construction delays, the permittee may postpone installation of the CO CEMS until the Unit 5 exhaust is tied into the new FGD system and stack. If this option is selected, the permittee shall conduct an initial CO stack test in accordance with EPA Method 10 within 60 days of completing installation of the low-NO<sub>x</sub> burners. The tests shall demonstrate compliance with the numerical portion of the CO emissions standard based on the 3-run test average. In addition, CEMS data collected from similar Unit 4 shall be used as a surrogate to show compliance until the Unit 5 CEMS is installed. Based on the Unit 4 CEMS data, the Compliance Authority may require special compliance tests in accordance with Rule 62-297.310(7)(b), F.A.C. This period of alternate compliance shall not exceed 180 days from completing installation of the low-NO<sub>x</sub> burners. The permittee shall install and certify the CO CEMS within 60 days following the tie-in of the new FGD system and permanent stack. [Rules 62-4.070(3), 62-297.310(7)(b) and 62-212.400(BACT), F.A.C.]
15. Compliance by CEMS: Compliance with the standards for opacity and emissions of CO, NO<sub>x</sub>, and SO<sub>2</sub> shall be demonstrated with data collected from the required continuous monitoring systems. Within 60 days of completing construction on the related air pollution control device for each unit, the permittee shall certify proper operation of each required monitor. The permittee shall comply with the conditions of Appendix F (Standard Continuous Monitoring Requirements) of this permit as the compliance method for the corresponding emissions standards. The permittee shall begin demonstrating compliance with the CO

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### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### A. Unit 4, Unit 5 and CBO Unit – Pollution Control Projects

CEMS emissions standards once a monitor is certified. The permittee shall begin demonstrating compliance with the opacity, NO<sub>x</sub> and SO<sub>2</sub> COMS/CEMS emissions standards after completing the initial shakedown of the associated air pollution control device, but no later than 180 days after certifying the corresponding COMS/CEMS. During the period between certification of the SO<sub>2</sub> CEMS and completing initial shakedown of the FGD system, the units shall comply with the SO<sub>2</sub> emissions standards in the current Title V permit based on compliance by CEMS (Condition B.5a), but may fire a coal fuel blend in compliance with the maximum fuel sulfur level specified in this air construction permit (Condition 6, Subsection 3A). Within 10 days of completing initial shakedown for an air pollution control device, the permittee shall notify the compliance authority of the following: the air pollution control device; the date that shakedown was completed; the monitoring data being collected to demonstrate continuous compliance; and the status of the other air pollution control devices. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

#### PRELIMINARY PERFORMANCE TESTING REQUIREMENTS

16. Preliminary SAM Performance Tests: Within 60 days after completing construction on the pollution control systems, the permittee shall conduct a series of preliminary performance tests on either unit to determine the SAM emissions rate under a variety of operating scenarios. The purpose of the tests is to document the impact of alkali injection on reducing SAM emissions and results in the development of correlation/curves between injection rates, operating conditions and emissions. When collecting data during the preliminary SAM performance tests, the permittee is exempt from the SAM emissions standards of this permit.
- a. For each set of operating conditions being evaluated, the permittee shall conduct at least a 1-hour test run to determine SAM emissions. At least nine test runs shall be conducted to evaluate the effect of SAM emissions on parameters such as: the SO<sub>2</sub> emissions rate prior to the SCR catalyst, the unit load, the flue gas flow rate, the alkali injection rate, the current catalyst oxidation rate, and the operating level of the FGD system.
  - b. Tests shall be conducted with the fuel blends and load rates that are representative of the actual operating ranges intended for Units 4 and 5. Sufficient tests shall be conducted to establish the SAM emissions rates for the following scenarios: bypass of the SCR reactor, SCR reactor in service without alkali injection, and SCR reactor in service under varying operating conditions and levels of alkali injection.
  - c. At least 15 days prior to initiating the performance tests, the permittee shall submit a test notification, preliminary test schedule and test protocol to the Bureau of Air Regulation and the Compliance Authority.
  - d. Within 45 days following the last test run conducted, the permittee shall provide a report summarizing the emissions tests and results. All SAM emissions test data shall be provided with this report.
  - e. Within 45 days following the submittal of the emissions test report and no later than 90 days following the last test run conducted, the permittee shall submit an operating protocol and report summarizing the following: identify each set of operating conditions evaluated; identify each operating parameter evaluated; identify the relative influence of each operating parameter; describe how the automated control system will adjust the alkali injection rate based on the selected parameters; identify the frequency with which operational parameters will be reevaluated and adjusted within the automated control system; provide a description of the algorithm used for the automated control system or a series of related performance curves; and provide details for calculating and estimating the SAM emissions

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### A. Unit 4, Unit 5 and CBO Unit – Pollution Control Projects

rate based on the level of alkali injection and operating conditions. The preliminary performance tests shall be used to set the alkali injection control system and estimate SAM emissions.

- f. The permittee shall operate the alkali injection system in accordance with the operating protocol determined by the performance tests. The permittee may request that additional performance tests be conducted to establish new operating conditions for the alkali injection system due to changes with the fuel blends, the SCR catalyst, or other circumstances.

[Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

#### COMPLIANCE TESTING REQUIREMENTS

17. Common Testing Requirements: All required emissions tests shall be conducted in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. [Rules 62-204.800 and 62-297.100, F.A.C.; and 40 CFR 60, Appendix A]
18. Test Methods: Any required stack tests shall be performed in accordance with the following methods.

EPA Method	Description of Method and Comments
1 - 4	Methods for Determining Traverse Points, Velocity, Flow Rate, Gas Analysis, and Moisture Content These methods shall be performed as necessary to support other methods.
5 or 5b	Method for Determining Particulate Matter Emissions
6C	Method for Determining SO <sub>2</sub> Emissions (Instrumental)
7E	Method for Determining NO <sub>x</sub> Emissions (Instrumental)
8 or 8A	Method for Determining Sulfuric Acid Mist (SAM) Emissions
9	Method for Determining Opacity Observations
10	Method for Determining Carbon Monoxide Emissions (Instrumental) The method shall be based on a continuous sampling train.
18	Method for Determining Gaseous Organic Compound Emissions (Gas Chromatography) Concurrently with EPA Method 25A, EPA Method 18 may be used as an optional method to deduct emissions of methane and ethane from the THC emissions measured by Method 25A.
19	Methods for Determining NO <sub>x</sub> , PM, and SO <sub>2</sub> Mass Emission Rates
25A	Method for Determining Gaseous Organic Concentrations (Flame Ionization)
CTM-027	Procedure for Collection and Analysis of Ammonia in Stationary Source This is an EPA conditional test method with a minimum detection limit of 1 ppm. Other equivalent methods may be used.

The above methods are specified in Appendix A of 40 CFR 60 and are adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [Rules 62-4.070(3), 62-204.800(8) and 62-212.400(BACT), F.A.C.; 40 CFR 60, Appendix A]

19. Compliance Tests: In accordance with the following requirements, the permittee shall have stack tests conducted to demonstrate compliance with the emissions standards specified in this permit for ammonia slip, PM, SAM and VOC.
- a. *Initial Tests*: Within 60 days after completing construction on the pollution control systems, initial compliance tests shall be conducted to determine emissions of ammonia slip, opacity, PM and VOC. Within 120 days after completing construction on the pollution control systems and after completing

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### A. Unit 4, Unit 5 and CBO Unit – Pollution Control Projects

the preliminary SAM performance tests, initial compliance tests shall be conducted to determine SAM emissions. At least one boiler shall be tested with the CBO unit also in operation. If the CBO unit is not yet in service at the time of the initial tests, separate compliance tests to determine PM and SAM emissions shall be conducted on at least one boiler with the CBO unit in operation. All initial tests shall be conducted with the emissions units operating at permitted capacity (within at least 90% of 7200 MMBtu/hour); otherwise, this permit shall be modified to reflect the true maximum capacity of each unit as constructed should the permitted capacity be unattainable. If initial equipment problems prevent operation at permitted capacity, the initial tests may be repeated to demonstrate compliance at permitted capacity. [Rules 62-212.400(BACT) and 62-297.310(7), F.A.C.; 40 CFR 60.8]

- b. *Subsequent Tests:* During each federal fiscal year (October 1<sup>st</sup> to September 30<sup>th</sup>), Units 4 and 5 shall be tested to determine emissions of ammonia slip, opacity, PM, and SAM. During the 12 months prior to renewal of the operation permit, Units 4 and 5 shall be tested to demonstrate compliance with the VOC emission standards. For each pollutant, at least one boiler shall be tested with the CBO unit also in operation. The Department may require the permittee to repeat some or all of the initial stack tests after substantial replacement or repair of any air pollution control or process equipment.
- c. *Test Fuel:* Initial compliance tests shall be conducted with the highest sulfur content representative of the actual coal blends being fired. Within 60 days of determining that the fuel sulfur content of the actual coal blends fired have increased by 0.5% by weight or more from the highest tested sulfur content that demonstrated compliance, the permittee shall conduct new tests to determine emissions of opacity, PM and SAM. For purposes of this condition, the fuel sulfur content shall be based on an average of the as-fired fuel samples for 30 successive operating days. Once initial compliance has been demonstrated at the higher fuel sulfur levels (2.63% to 3.13% sulfur by weight), subsequent tests shall be conducted using a fuel with a sulfur content that is representative of the actual coal blends being fired. [Rules 62-4.070(3), 62-212.400(BACT) and 62-297.310, F.A.C.]
- d. *Test Capacity:* Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Except for the initial tests, if it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit (7200 MMBtu/hour based on a 24-hour average). [Rules 62-212.400(BACT) and 62-297.310, F.A.C.]

20. Operational Data for Tests: For each test run, the permittee shall monitor and record the following information: fuel feed rate; heat input rate; sulfur content of fuel; the ammonia injection rate of the SCR control system; the limestone slurry injection rate of the FGD control system; alkali injection rate of the alkali injection system; flue gas oxygen content (%); CO, NO<sub>x</sub>, and SO<sub>2</sub> CEMS emissions data; and opacity data. [Rules 62-297.310 and 62-4.070(3), F.A.C.]

#### RECORDS AND REPORTS

21. Stack Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Compliance Authority on the results of each such test. The required test report shall be filed with the Compliance Authority as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Compliance Authority to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### A. Unit 4, Unit 5 and CBO Unit – Pollution Control Projects

DEP Method 9 test, shall provide the specified in Rule 62-297.310(8), F.A.C. The stack test report shall also indicate all required operational data collected during each test run. [Rule 62-297.310(8), F.A.C.]

22. Malfunction Notifications: If temporarily unable to comply with any condition of the permit due to breakdown of equipment (malfunction) or destruction by hazard of fire, wind or by other cause, the permittee shall immediately (within one working day) notify the Compliance Authority. Notification shall include pertinent information as to the cause of the problem, and what steps are being taken to correct the problem and to prevent its recurrence, and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with Department rules. If requested by the Compliance Authority, the owner or operator shall submit a quarterly written report describing the malfunction. [Rules 62-210.700(6) and 62-4.130, F.A.C.]
23. Fuel Monitoring – Units 4 and 5: Using the existing operating data system, the permittee shall continuously monitor each fuel to determine the heat input rates to Units 4 and 5. The heat input rates shall be calculated from the amounts of fuel fired and the higher heating value (HHV) of each fuel as determined by vendor certifications or the regular sampling and analysis required by the current Title V permit. Data shall be reduced to 1-hour blocks, 24-hour blocks (midnight-to-midnight), and 30-day rolling averages (average of all the 1-hour blocks for 30 operating days). [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]
24. Fuel Monitoring – CBO Unit: During any compliance test and when requested by the Compliance Authority, the permittee shall monitor and record the heat input rate to the CBO Unit from the amount of ash burned and the heating value of the ash. [Rule 62-212.400(BACT), F.A.C.]
25. Control Device – Parametric Monitoring:
  - a. *SCR System*: The permittee shall continuously monitor and record the ammonia injection rate of the SCR control system. Data shall be reduced to 1-hour block averages. [Rule 62-4.070(3), F.A.C.]
  - b. *FGD System*: The permittee shall continuously monitor and record the limestone slurry injection rate of the FGD control system. Data shall be reduced to 1-hour block averages. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]
  - c. *Alkali Injection System*: The permittee shall continuously monitor and record the alkali injection rate of the alkali injection system. Data shall be reduced to 1-hour block averages. Operation of the alkali injection system shall be determined by the automated control system, which shall be set in accordance with the preliminary performance and compliance tests for SAM emissions. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]
  - d. *ESP*: The permittee shall continuously monitor and record the opacity in the ductwork just after the ESP for use as part of the Compliance Assurance Monitoring Plan under Title V. Operation of the ESP shall be based upon COMS data collected during satisfactory PM emissions compliance tests. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### B. Material Handling Activities for Limestone and Gypsum

This section of the permit addresses the following emissions unit.

EU No.	Emission Unit Description
023	Limestone and Gypsum Material Handling Activities

##### *Process Description*

The FGD systems will include limestone storage and handling, limestone preparation, limestone slurry injection, and gypsum dewatering, transfer and storage. The limestone handling system will receive, store, size and transfer limestone to the FGD system's limestone preparation equipment. It will receive limestone delivered to the plant by rear dump trucks unloading into aboveground truck unloading feeders with integral hoppers. The system will consist of: a conveyor to transfer limestone received from truck unloading feeders; unloading and the stacking belt conveyors to transfer limestone to a covered storage pile; a portal scraper reclaim and an emergency reclaim feeder; a reclaim conveyor to transfer limestone from the storage pile to a crusher feed belt conveyor, which transfers limestone to a crusher building for limestone sizing; a plant feed belt conveyors and silo feed belt conveyors to transfer limestone to the day silos.

The plant feed conveyor will be equipped with a diverter gate and will supply limestone to the first limestone day silo (Silo B) directly via a chute and to the other limestone day silos (Silos A & C) using a reversible conveyor. Limestone silos will be equipped with a pulse-jet fabric filter dust collection system. Dust collectors will be provided at each of the truck unloading feeders. A dust collection system will be provided for the crusher building. A water-fog dust suppression system will be provided at the discharge point of the reclaim conveyor and at the tail end of the crusher feed conveyor to suppress the limestone dust formation.

The limestone preparation system includes wet ball mill grinding systems to produce limestone slurry. Filtrate-recycle water from the FGD system will be used to prepare the limestone slurry to conserve make-up water. Fugitive dust emissions are minimized, by enclosures and the addition of water for the slurry.

The gypsum slurry from the FGD system will be delivered by bleed pumps to the dewatering system, which will consist of a filter feed tank, hydro-cyclones, vacuum belt filters, vacuum pumps, filtrate tanks, filtrate pumps, lined piping, and associated valves. The incoming gypsum slurry will contain approximately 18 to 22% suspended solids. Using a series of hydro-cyclones and three horizontal vacuum belt filters, the dewatering system will remove water until the slurry contains approximately 90% solids. Filtrate removed from the slurry will be stored and pumped back to the limestone preparation system or the absorber module. The de-watering system will be located inside a building. Fugitive dust emissions are negligible because the system is enclosed and wet.

A collecting belt conveyor collects dewatered gypsum from the vacuum belt filters in the dewatering system. Under normal operating conditions, this conveyor will feed gypsum onto a system of conveyors, which transfers the gypsum onto a gypsum handling pad or to the future wallboard plant. The gypsum handling pad will be located northeast of the dewatering facility and will be used primarily (until the future adjacent wallboard facility is built) to store the gypsum until it can be transferred offsite for beneficial use or disposal. In addition, the gypsum handling pad may be used to store "off-specification" gypsum if needed. Fugitive dust emissions will be minimal because the dewatered gypsum still contains approximately 10% water.

##### **AUTHORIZED CONSTRUCTION**

1. **Equipment:** The permittee is authorized to construct the following processes to support the FGD system: limestone storage and handling, limestone preparation, limestone slurry injection, and gypsum dewatering, transfer and storage. [Application No. 0170004-016-AC; Rules 62-4.070(3), 62-212.300 and 62-212.400(PSD), F.A.C.]
2. **Air Pollution Control Equipment and Techniques:** To comply with the standards of this permit, the

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### B. Material Handling Activities for Limestone and Gypsum

permittee shall design, install, operate and maintain the following air pollution control equipment.

Process Activity	Emissions Point No.	Control Device	Outlet Dust Loading Specification
Dry Limestone Handling System			
Limestone conveyors (general)	---	covered	---
Limestone reclaim conveyor (discharge)	---	dust suppressant	---
Dump trucks	---	covered	---
Truck unloading feeders w/integral hoppers	EP-1	dust collectors	0.010 grains/dscf
Limestone storage	---	covered pile	---
Limestone crushing and sizing	EP-2	enclosed building w/baghouse	0.010 grains/dscf
Limestone silo feed conveyors	EP-3	dust collectors	0.010 grains/dscf
3 Limestone day silos	EP-4	baghouse	0.010 grains/dscf
Gypsum Dewatering System			
Gypsum dewatering system	---	enclosure/wet	---
Gypsum Handling System			
Gypsum handling system	---	enclosure/wet	---
Gypsum Handling Pad	---	water spray	---

Initial and replacement bags shall be selected based on the above design outlet dust loading specification. As part of the application to revise the Title V air operation permit to incorporate this air construction permit, the permittee shall submit the final design flow rates for each dust collector and baghouse. [Application No. 0170004-016-AC; Rules 62-4.070(3), 62-212.300 and 62-212.400(BACT), F.A.C.]

3. **Fugitive Dust Emissions:** The dry limestone handling and storage operations shall be enclosed to the extent practicable and confined to prevent fugitive dust emissions. During the construction period, fugitive dust emissions shall be minimized by techniques such as covering, confining and/or the application of water or dust suppressants to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

#### EMISSIONS LIMITATIONS AND PERFORMANCE STANDARDS

4. **Capacities:** None of the emissions units in this subsection are restricted by hours of operation (8760 hours/year). *{Permitting Note: For informational purposes, maximum limestone processing rate is estimated at 100 tons per day.}* [Application No. 0170004-016-AC; Rule 62-210.200(PTE), F.A.C.]
5. **Opacity Standard:** As determined by EPA Method 9, visible emissions from each baghouse and dust collector exhaust point shall not exceed 5% opacity based on a 6-minute average. [Application No. 0170004-016-AC; Rule 62-212.400(BACT), F.A.C.]
6. **Circumvention:** The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]
7. **NSPS Subpart OOO Provisions:** The limestone crushing activities are subject to the applicable requirements in NSPS Subpart OOO of 40 CFR 60. See Appendix G of this permit.

#### COMPLIANCE TESTING REQUIREMENTS

8. **Initial Compliance Tests:** Each baghouse exhaust shall be tested to demonstrate initial compliance with the

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### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### B. Material Handling Activities for Limestone and Gypsum

specified opacity standard. The initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the unit. [Rule 62-297.310(7)(a)1, F.A.C.]

9. Annual Compliance Tests: During each federal fiscal year (October 1<sup>st</sup> to September 30<sup>th</sup>), each baghouse exhaust point shall be tested to demonstrate compliance with the specified opacity standard. [Rule 62-297.310(7)(a)4, F.A.C.]
10. Test Notification: At least 15 days prior to the date on which each formal compliance test is to begin, the permittee shall notify the Compliance Authority of: the date, time, and place of the test; and the contact person who will be responsible for coordinating and having the test conducted. [Rule 62-297.310(7)(a)9, F.A.C.]
11. Test Method: Opacity tests shall be conducted in accordance with EPA Method 9, which is described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. Tests shall also comply with the applicable requirements of Rule 62-297.310, F.A.C. summarized in Appendix D (Common Testing Requirements) of this permit. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]
12. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C. The minimum observation period for a visible emissions compliance test shall be 30 minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. The permittee shall record the actual processing rate for the emissions unit being tested. [Rules 62-297.310(4) and (5), F.A.C.]
13. Common Testing Requirements: All required emissions tests shall be conducted in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. The minimum observation period for a visible emissions compliance test shall be 30 minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. The permittee shall record the actual processing rate for the emissions unit being tested. [Rule 62-297.310, F.A.C.]

#### RECORDS AND REPORTS

14. Final Design Notification: Within 90 days of completing the FGD system design, provide the final details for the limestone and gypsum material handling activities including a process flow diagram and all control equipment specifications. It may be necessary to modify this air construction permit. [Application No. 0170004-016-AC; Rule 62-4.070(3), F.A.C.]
15. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Compliance Authority on the results of each such test. The required test report shall be filed with the Compliance Authority as soon as practical, but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Compliance Authority to determine if the test was properly conducted and the test results properly computed. [Rule 62-297.310(8), F.A.C.]
16. Operational Records: The owner or operator shall maintain the following records on site to demonstrate compliance with the specifications and limitations of this subsection.
  - a. Records of the design outlet dust loading specifications for new and replacement fabric filter bags; and
  - b. For each month, record the total limestone processed for the month and the previous 12 months.

All records shall be made available to the Department and Compliance Authority upon request. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### C. Material Handling Activities for CBO System

This section of the permit addresses the following emissions unit.

ID	Emission Unit Description
025	CBO Feed Fly Ash Silo
026	CBO Product Fly Ash Storage Dome and Truck Loadout Silo

##### *Process Description*

Fly ash from Units 4 and 5 will be conveyed pneumatically to the CBO feed fly ash silo (EU-025). The silo will vent through a baghouse prior to discharge to the atmosphere. Fly ash will then be fed from the silo to the fluidized bed combustor (EU-024) for processing. Fly ash from the fluidized bed combustor will be separated from the exhaust gases by hot cyclones and directed to a heat exchanger to cool the product and recover heat. Thermal energy recovered from the CBO process will be used to heat condensate from the Unit 4 and 5 low-pressure feed water systems. The cooled exhaust gas will be routed through a cold cyclone and fabric filter to remove residual product fly ash before being returned to the inlet ductwork of Units 4 and 5 pollution control equipment (SCR, FGD, ESP and alkali injection systems).

Product fly ash separated by the cold cyclone and fabric filter will be sent to a surge bin with a portion of the product fly ash being returned to the fluidized bed combustor for temperature control. The remaining product ash is pneumatically conveyed to the product fly ash storage dome (EU-026) or directly to a truck load-out silo (also EU-026). The product fly ash storage dome will vent through a baghouse prior to discharging to the atmosphere. Particulate emissions captured during the truck load-out process will be routed to the truck load-out silo which will vent through a baghouse. Trucks will travel on paved roads within the plant and exit the plant for delivery offsite. Fugitive particulate matter emissions associated with product fly ash truck traffic will be controlled by maintaining the roads and periodic watering as needed.

#### AUTHORIZED CONSTRUCTION

1. CBO System: The permittee is authorized to construct a carbon burnout system consisting of the following major components: a fluidized bed combustor (EU-024) with hot cyclones to recycle ash back to the fluidized bed combustor, a heat recovery heat exchanger, cold cyclones to recover product ash and a fabric filter to recover product ash; a feed fly ash silo (EU-025, CBO-001); a product fly ash storage dome and a product fly ash truck loadout silo (EU-026). The system is designed for a maximum ash process rate of 75 tons per hour. For the fluidized bed combustor, the hot cyclones, cold cyclones and baghouse are considered process equipment and not air pollution control devices because the equipment is used to separate ash from the flue gas exhaust, which is then directed back into the boiler ductwork for emissions control. [Application No. 0170004-016-AC; Rules 62-4.070(3), 62-212.300 and 62-212.400(PSD), F.A.C.]
2. Air Pollution Control Equipment: To comply with the standards of this permit, the permittee shall design, install, operate, and maintain the following air pollution control equipment.

EU No.	Emissions Unit	Emissions Point No.	Control Device	Flow Rate	Outlet Dust Loading Specification
025	CBO Feed Fly Ash Silo	CBO-001	Baghouse	3040 acfm	0.010 grains/dscf
026	CBO Product Storage Dome	CBO-002	Baghouse	7600 acfm	0.010 grains/dscf
026	CBO Product Truck Loadout	CBO-003	Baghouse	7600 acfm	0.010 grains/dscf

Initial and replacement bags shall be selected based on the above design outlet dust loading specification. [Application No. 0170004-016-AC; Rules 62-4.070(3), 62-212.300 and 62-212.400(BACT), F.A.C.]

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### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

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#### C. Material Handling Activities for CBO System

3. Fugitive Dust Emissions: The CBO system shall be enclosed to the extent practicable and confined to prevent fugitive dust emissions. During the construction period, fugitive dust emissions shall be minimized by techniques such as covering, confining and/or the application of water or dust suppressants to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

#### EMISSIONS LIMITATIONS AND PERFORMANCE STANDARDS

4. Capacities and Restrictions: None of the emissions units in this subsection are restricted by hours of operation (8760 hours/year). The maximum ash processing rate for the CBO system shall not exceed 320,000 tons of product ash during any consecutive 12 months. [Application No. 0170004-016-AC; Rule 62-210.200(PTE), F.A.C.]
5. Opacity Standard: As determined by EPA Method 9, visible emissions from each baghouse exhaust point shall not exceed 5% opacity based on a 6-minute average. [Application No. 0170004-016-AC; Rule 62-212.400(BACT), F.A.C.]
6. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]

#### COMPLIANCE TESTING REQUIREMENTS

7. Initial Compliance Tests: Each baghouse exhaust shall be tested to demonstrate initial compliance with the specified opacity standard. The initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the unit. [Rule 62-297.310(7)(a)1, F.A.C.]
8. Annual Compliance Tests: During each federal fiscal year (October 1<sup>st</sup> to September 30<sup>th</sup>), each baghouse exhaust point shall be tested to demonstrate compliance with the specified opacity standard. [Rule 62-297.310(7)(a)4, F.A.C.]
9. Test Notification: At least 15 days prior to the date on which each formal compliance test is to begin, the permittee shall notify the Compliance Authority of: the date, time, and place of the test; and the contact person who will be responsible for coordinating and having the test conducted. [Rule 62-297.310(7)(a)9, F.A.C.]
10. Test Method: Opacity tests shall be conducted in accordance with EPA Method 9, which is described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. Tests shall also comply with the applicable requirements of Rule 62-297.310, F.A.C. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]
11. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C. The minimum observation period for a visible emissions compliance test shall be thirty (30) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. The permittee shall record the actual ash processing rate for the emissions unit being tested. [Rules 62-297.310(4) and (5), F.A.C.]

#### RECORDS AND REPORTS

12. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Compliance Authority on the results of each such test. The required test report shall be filed with the Compliance Authority as soon as practical, but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Compliance Authority to determine if the test was properly conducted and the test results properly computed. [Rule 62-297.310(8), F.A.C.]

### **SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS**

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#### **C. Material Handling Activities for CBO System**

13. Operational Records: The owner or operator shall maintain the following records on site to demonstrate compliance with the specifications and limitations of this subsection.

- a. Records of the design outlet dust loading specifications for new and replacement fabric filter bags; and
- b. For each month, record the total product ash processed for the month and the previous 12 months.

All records shall be made available to the Department and Compliance Authority upon request. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### D. Units 4 and 5 – Temporary Trial Period with up to 50% Sub-bituminous Coal

This section of the permit addresses a temporary trial period for the following emissions units.

EU No.	Emission Unit Description
004	Unit 4 is a fossil fuel-fired, electric utility steam generator
003	Unit 5 is a fossil fuel-fired, electric utility steam generator

#### TEMPORARY AUTHORIZATION AND RESTRICTIONS

1. **Trial Coal Blend:** For Units 4 and 5, the permittee is temporarily authorized to fire trial coal blends with greater than 20% sub-bituminous coal by weight (including Powder River Basin coal), but not more than 50% sub-bituminous coal by weight. The maximum sulfur content of such coal blends shall not exceed 3.13% by weight. The preliminary schedule is to conduct the trial before installation of the additional control systems. The purpose is to gather operational and emissions data to evaluate overall impacts in support of a future permanent request to fire bituminous/sub-bituminous coal blends. [Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]
2. **Trial Test Burn Duration:** The trial coal blends shall only be fired in existing Units 4 and 5 and shall be fired in a similar manner to the bituminous coal currently in use at the plant. The permittee shall provide at least a one-day advance notice (by phone, fax, or email) to the Compliance Authority prior to the initial firing of any trial coal blend. Once any trial coal blend is fired, the permittee shall complete the trial burn within 90 calendar days. No more than 150,000 tons of the trial coal blends shall be burned during the trial burn period. In addition, all trial burns shall be completed prior to the expiration date of this permit. Within five calendar days of completing the trial burn, the permittee shall notify the Compliance Authority (by phone, fax, or email) that the trial burn has been completed. [Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

#### EMISSIONS LIMITING AND PERFORMANCE STANDARDS

3. **Performance Requirements:** The permittee shall provide the Compliance Authority with a preliminary schedule for conducting the trial burn and performance tests and shall update this schedule as necessary. During the trial burn, the permittee shall comply with all terms and conditions in the current Title V air operation permit. If the trial burn results in operation that is not in accordance with the conditions of the Title V permit or the test protocol, the performance testing will cease as soon as possible. The permittee shall immediately notify the Compliance Authority (by phone, fax, or email) of any non-compliance issue. The trial burn shall not resume until appropriate actions have been taken to correct the problem. [Application No. 0170004-016-AC; Rule 62-4.070(3), F.A.C.]
4. **Fugitive Dust:** The permittee shall take reasonable precautions to prevent fugitive dust emissions from the unloading, storage, and handling of trial coal blends. These shall be the same reasonable precautions specified in the most recent Title V air operation permit to prevent fugitive dust emissions from the unloading, storage, and handling of the coal blends currently in use at the plant. [Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

#### MONITORING AND TESTING

5. **Baseline Emissions:** Baseline emissions shall be determined by the continuous monitoring systems for opacity, NO<sub>x</sub>, and SO<sub>2</sub> emissions when firing bituminous coal at permitted capacity. For each boiler that will fire the trial coal blend, the permittee shall conduct tests at permitted capacity for emissions of CO and PM. Permitted capacity is defined as 90 to 100 percent of the maximum heat input rate allowed by the permit (7200 MMBtu/hour based on a 24-hour average). Test results shall be reported in units of lb/MMBtu and lb/hour. If tests are conducted after installation of the new CO CEMS, baseline CO

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### D. Units 4 and 5 – Temporary Trial Period with up to 50% Sub-bituminous Coal

emissions shall be determined by data collected by the CEMS. If available, existing data may be used for baseline data. [Rule 62-4.070(3), F.A.C.]

6. Trial Coal Blend Emissions: Emissions from firing the trial coal blend at permitted capacity shall be determined by the continuous monitoring systems for opacity, NO<sub>x</sub>, and SO<sub>2</sub> coal blends. For each boiler that will fire the trial coal blends, the permittee shall conduct tests at permitted capacity for emissions of CO and PM. Permitted capacity is defined as 90 to 100 percent of the maximum heat input rate allowed by the permit (7200 MMBtu/hour based on a 24-hour average). If only one boiler fires the trial coal blend during the trial burn period, that unit shall conduct two series of tests to determine emission levels of PM, SAM, and VOC for the trial coal blend. Test results shall be reported in units of lb/MMBtu and lb/hour. If tests are conducted after installation of the new CO CEMS, baseline CO emissions shall be determined by data collected by the CEMS. The permittee shall obtain a sample of each trial coal blend fired. A proximate and ultimate analysis shall be provided for each sample taken. [Rule 62-4.070(3), F.A.C.]
7. Monitoring: The permittee shall conduct the following monitoring when firing the trial coal blend.
  - a. The permittee shall record the amount and blend ratio of each trial coal blend delivered to the plant. A “certificate of analysis” (including the proximate and ultimate analysis) shall be retained for each delivery of trial coal blend.
  - b. On at least three separate days, the permittee shall take samples of the trial coal blend being fired. A proximate and ultimate analysis shall be provided for each sample taken. Samples taken on different emissions testing days may satisfy this requirement.
  - c. The permittee shall maintain daily records of the boiler operations including: the blend ratio as fired; the fuel mass firing rate; the heat input rate; steam production, temperature and pressure; and the MW generated.
  - d. The permittee shall monitor and record the ESP secondary voltage and secondary current and calculate and record the total ESP secondary power input.
  - e. The permittee shall continuously monitor and record opacity, NO<sub>x</sub>, and SO<sub>2</sub> with the existing CEMS. If the trial burn is conducted after installation of the CO CEMS, CO emissions shall also be continuously monitored.

[Rule 62-4.070(3), F.A.C.]

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

Method	Description of Method and Comments
1 - 4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
5 or 5b	Determination of Particulate Matter (PM) Emissions
8 or 8A	Method for Determining Sulfuric Acid Mist (SAM) Emissions
9	Method for Determining Opacity Observations
10	Method for Determining Carbon Monoxide Emissions (Instrumental) The method shall be based on a continuous sampling train.
18	Method for Determining Gaseous Organic Compound Emissions (Gas Chromatography) Concurrently with EPA Method 25A, EPA Method 18 may be used as an optional method to deduct emissions of methane and ethane from the THC emissions measured by Method 25A.
19	Methods for Determining NO <sub>x</sub> , PM, and SO <sub>2</sub> Mass Emission Rates
25A	Method for Determining Gaseous Organic Concentrations (Flame Ionization)

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

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#### **D. Units 4 and 5 – Temporary Trial Period with up to 50% Sub-bituminous Coal**

Tests shall also be conducted in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]

9. Notifications: The permittee shall provide the Compliance Authority with a written preliminary schedule for conducting any emissions tests (by letter, fax, or email). The preliminary schedule shall be updated as necessary. The permittee shall provide the Compliance Authority with at least 5 days advance notice (by phone, fax, or email) prior to conducting any emissions tests. [Rule 62-4.070(3), F.A.C.]

#### **RECORDS AND REPORTS**

10. Trial Burn Report: Within 60 days of completing the trial burn period, the permittee shall submit a final report summarizing the trial burn to the Bureau of Air Regulation and the Compliance Authority. The trial burn report shall include, but not be limited to, the following information: actual schedule and overall description of the trial burn; summary of trial coal blends evaluated (amounts delivered; blend ratio; and proximate/ultimate analyses); discussion of operational issues with the trial coal blends (coal unloading, coal handling, coal storage, coal firing, fugitive dust, soot blowing, ESP performance and adjustments, ash handling, and ash storage); comparison of baseline operations versus operation with the trial coal blends; evaluation of current equipment compatibility with the trial coal blends; summary of boiler operating data and continuous emissions monitoring data; comparison of baseline emissions with emissions from firing trial coal blends (short-term and long-term); and a discussion of emissions changes as described in Appendix C of 40 CFR 60. [Rules 62-4.070(3), 62-210.200(PTE) and 62-212.400, F.A.C.]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### E. Units 1, 2, 4 and 5 – Temporary Trial Period with Fuel Additive

This section of the permit addresses a temporary trial period for the following emissions units.

EU No.	Emission Unit Description
001	Unit 1 is a fossil fuel-fired, electric utility steam generator
002	Unit 2 is a fossil fuel-fired, electric utility steam generator
003	Unit 5 is a fossil fuel-fired, electric utility steam generator
004	Unit 4 is a fossil fuel-fired, electric utility steam generator

#### TEMPORARY AUTHORIZATION AND RESTRICTIONS

1. Fuel Additive: For Units 1, 2, 4 and 5, the permittee is temporarily authorized to apply a fuel additive (Environmental Energy Services, Inc.) based on calcium nitrate to currently authorized coal blends (bituminous coal, bituminous coal with coal briquettes, bituminous coal with sub-bituminous coal). The preliminary schedule is to conduct the trial before installation of the additional control systems. The purpose of the trial period is to evaluate the impact of the fuel additive on unit performance, slagging, emissions levels, and loss on ignition (LOI). The preliminary design is to spray the fuel additive on the coal prior to combustion. Preliminary estimates are for a rate of 3 to 30 gph (total to all feeders) of 500 to 1000 ppm of active concentrate onto the coal. Various applications rates will be tested. The purpose is to gather operational and emissions data to evaluate overall impacts in support of a future permanent request to use this fuel additive. *{Permitting Note: The vendor expects a 30% reduction in CO emissions, a 30% reduction in PM emissions, a 20% reduction in NOx emissions, and a 10% reduction in opacity.}* [Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]
2. Trial Test Burn Duration: The fuel additive shall only be applied to coal fired in the existing units. The permittee shall provide at least a one-day advance notice (by phone, fax, or email) to the Compliance Authority prior to the initial application of the fuel additive. Once the fuel additive is initially applied, the permittee shall complete all trial burns within 90 calendar days. Within five calendar days of completing the trial burn period, the permittee shall notify the Compliance Authority (by phone, fax, or email) that the trial burn period has been completed. [Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

#### EMISSIONS LIMITING AND PERFORMANCE STANDARDS

3. Performance Requirements: The permittee shall provide the Compliance Authority with a preliminary schedule for conducting trial burns and performance tests and shall update this schedule as necessary. During each trial burn, the permittee shall comply with all terms and conditions in the current Title V air operation permit. If a trial burn results in operation that is not in accordance with the conditions of the Title V permit or the test protocol, the trial burn shall cease as soon as possible. The permittee shall immediately notify the Compliance Authority (by phone, fax, or email) of any non-compliance issue. The trial burn shall not resume until appropriate actions have been taken to correct the problem. [Application No. 0170004-016-AC; Rule 62-4.070(3), F.A.C.]

#### MONITORING AND TESTING

4. Emissions - Baseline: Baseline emissions shall be determined by the continuous monitoring systems for opacity and NO<sub>x</sub>, and SO<sub>2</sub> emissions when firing representative coal fuel blends at permitted capacity. For each boiler that will fire coal with the fuel additive, the permittee shall conduct impaction plate tests at permitted capacity for baseline PM emissions and use a portable analyzer to document baseline CO emissions. Permitted capacity is defined as 90 to 100 percent of the maximum heat input rate allowed by

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### E. Units 1, 2, 4 and 5 – Temporary Trial Period with Fuel Additive

the permit (7200 MMBtu/hour based on a 24-hour average). Test results shall be reported in units of lb/MMBtu and lb/hour. [Rule 62-4.070(3), F.A.C.]

5. Emissions with Fuel Additive: Emissions shall be determined by the continuous monitoring systems for opacity, NO<sub>x</sub>, and SO<sub>2</sub> emissions when firing coal blends with fuel additive at permitted capacity. For each boiler that will fire coal with the fuel additive, the permittee shall conduct impaction plate tests at permitted capacity for baseline emissions of particulate matter (PM) and use a portable analyzer to document baseline CO emissions. Permitted capacity is defined as 90 to 100 percent of the maximum heat input rate allowed by the permit. Test results shall be reported in units of lb/MMBtu and lb/hour. [Rule 62-4.070(3), F.A.C.]
6. Monitoring of Operations: For each trial, the permittee shall conduct the following monitoring: the type, amount, and heat input of fuel fired; the boiler feedwater flow rates, boiler feedwater temperatures to the economizer, flue gas oxygen levels, and electrical outputs; the fuel additive injection rates and fuel additive concentrations; LOI, ash porosity, iron content, and slag viscosity; and continuously monitor and record opacity, NO<sub>x</sub> and SO<sub>2</sub> with the existing COMS and CEMS. For comparison purposes, the permittee shall identify the current corresponding baseline monitoring values for bituminous coal firing or collect baseline data during the trial burn period. [Rule 62-4.070(3), F.A.C.]
7. Notifications: The permittee shall provide the Compliance Authority with a written preliminary schedule for conducting any emissions tests (by letter, fax, or email). The preliminary schedule shall be updated as necessary. The permittee shall provide the Compliance Authority with at least 5 days advance notice (by phone, fax, or email) prior to conducting any emissions tests. [Rule 62-4.070(3), F.A.C.]

#### RECORDS AND REPORTS

8. Trial Burn Report: Within 60 days of completing the trial burn, the permittee shall submit a final report summarizing the trial burn to the Bureau of Air Regulation and the Compliance Authority. The final report shall provide the following: the actual schedule and overall description of the trial burn; any operational issues related to the fuel additive; a comparison of baseline operation versus operation with the fuel additive; an evaluation of equipment compatibility with fuel additive; a summary and comparison of continuous emissions and opacity monitoring data; a summary and comparison of all operational parameters; a summary and comparison of emissions test results; a comparison of continuously monitored emissions; a discussion of the impacts on LOI, ash porosity, iron content, and slag viscosity; and a discussion of emissions changes as described in Appendix C of 40 CFR 60.  
[Rules 62-4.070(3), 62-210.200(PTE) and 62-212.400, F.A.C.]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### F. Units 4 and 5 – Temporary Trial Period with up to 30% Petroleum Coke

This section of the permit addresses a temporary trial period for the following emissions units.

EU No.	Emission Unit Description
003	Unit 5 is a fossil fuel-fired, electric utility steam generator
004	Unit 3 is a fossil fuel-fired, electric utility steam generator

#### TEMPORARY AUTHORIZATION AND RESTRICTIONS

1. **Trial Coal Blend:** Upon commercial operation of all air pollution control equipment (low-NO<sub>x</sub> burners, SCR systems, FGD systems, alkali injection systems, and ESP improvements) and satisfactorily demonstrating compliance with the required initial tests, this air construction permit authorizes Units 4 and 5 to fire a trial coal blend of bituminous coal with up to 30% petroleum coke by weight. The maximum sulfur content of the trial coal blend shall not exceed 3.13% by weight. This permit authorizes a trial period to fire such blends and does not authorize the permanent firing of petroleum coke. The purpose is to gather operational and emissions data to evaluate overall impacts in support of a future permanent request to fire coal blends with petroleum coke. [Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]
2. **Trial Test Burn Duration:** Trial coal blends shall only be fired in existing Units 4 and 5 and shall be fired in a manner similar to bituminous coal. The permittee shall provide at least a one-day advance notice (by phone, fax, or email) to the Compliance Authority prior to the initial firing of the first trial coal blend. Once the first trial coal blend is fired, the permittee shall complete all trial burns within 90 calendar days. No more than a total of 150,000 tons of trial petroleum coke/coal blends shall be fired during the trial burn period. In addition, all trial burns shall be completed prior to the expiration date of this permit. Within five calendar days of completing the trial burn period, the permittee shall notify the Compliance Authority (by phone, fax, or email) that the trial burn period has been completed. [Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

#### EMISSIONS LIMITING AND PERFORMANCE STANDARDS

3. **Performance Requirements:** The permittee shall provide the Compliance Authority with a preliminary schedule for conducting trial burns and performance tests and shall update this schedule as necessary. During each trial burn, the permittee shall comply with all terms and conditions in the current Title V air operation permit. If a trial burn results in operation that is not in accordance with the conditions of the Title V permit or the test protocol, the trial burn shall cease as soon as possible. The permittee shall immediately notify the Compliance Authority (by phone, fax, or email) of any non-compliance issue. The trial burn shall not resume until appropriate actions have been taken to correct the problem. [Application No. 0170004-016-AC; Rule 62-4.070(3), F.A.C.]
4. **Fugitive Dust:** The permittee shall take reasonable precautions to prevent fugitive dust emissions from the unloading, storage, and handling of the trial coal blends. These shall be the same reasonable precautions specified in the current Title V air operation permit to prevent fugitive dust emissions from the unloading, storage, and handling of bituminous coal currently in use at the plant. [Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

#### MONITORING AND TESTING

5. **Baseline Emissions:** Baseline emissions shall be determined by the continuous monitoring systems for opacity and CO, NO<sub>x</sub>, and SO<sub>2</sub> emissions when firing bituminous coal at permitted capacity. For each boiler that will fire a petroleum coke/coal blend, the permittee shall conduct tests at permitted capacity for PM, SAM and VOC emissions. Permitted capacity is defined as 90 to 100 percent of the maximum heat

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### F. Units 4 and 5 – Temporary Trial Period with up to 30% Petroleum Coke

input rate allowed by the permit (7200 MMBtu/hour based on a 24-hour average). Test results shall be reported in units of lb/MMBtu and lb/hour. Compliance tests conducted after completing the construction authorized by this permit may be used for the baseline emissions data. [Rule 62-4.070(3), F.A.C.]

6. Trial Coal Blend Emissions: Emissions shall be determined by the continuous monitoring systems for opacity and CO, NO<sub>x</sub>, and SO<sub>2</sub> emissions when petroleum coke/coal blends at permitted capacity. For each boiler that fires a petroleum coke/coal blend, the permittee shall conduct tests at permitted capacity for PM, SAM and VOC emissions. Permitted capacity is defined as 90 to 100 percent of the maximum heat input rate allowed by the permit (7200 MMBtu/hour based on a 24-hour average). Test results shall be reported in units of lb/MMBtu and lb/hour. During each required emission test, the permittee shall obtain a sample of the petroleum coke/coal blend as fired. A proximate and ultimate analysis shall be provided for each sample taken. If only one boiler fires the trial coal blend during the trial burn period, that unit shall conduct two series of tests to determine emission levels of PM, SAM, and VOC for the trial coal blend. [Rule 62-4.070(3), F.A.C.]
7. Monitoring: When firing trial coal blends, the permittee shall conduct the following monitoring.
  - a. The permittee shall record the amount and blend ratio of each petroleum coke/coal blend delivered to the plant. A “certificate of analysis” (including the proximate and ultimate analysis) shall be retained for each delivery of petroleum coke/coal blend.
  - b. For each petroleum coke/coal blend, the permittee shall take a sample of the blend as fired. A proximate and ultimate analysis shall be provided for each sample taken. Samples taken on different emissions testing days may satisfy this requirement.
  - c. The permittee shall maintain daily records of the boiler operations including: the petroleum coke/blend ratio fired; the fuel mass firing rate; the heat input rate; steam production, temperature and pressure; and the MW generated.
  - d. The permittee shall monitor and record the ESP secondary voltage and secondary current and calculate and record the total ESP secondary power input.
  - e. The permittee shall continuously monitor and record opacity, CO, NO<sub>x</sub>, and SO<sub>2</sub> with existing monitoring systems.

[Rule 62-4.070(3), F.A.C.]

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

Method	Description of Method and Comments
1 - 4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
5 or 5b	Determination of Particulate Matter (PM) Emissions
8 or 8A	Method for Determining Sulfuric Acid Mist (SAM) Emissions
9	Method for Determining Opacity Observations
10	Method for Determining Carbon Monoxide Emissions (Instrumental) The method shall be based on a continuous sampling train.
18	Method for Determining Gaseous Organic Compound Emissions (Gas Chromatography) Concurrently with EPA Method 25A, EPA Method 18 may be used as an optional method to deduct emissions of methane and ethane from the THC emissions measured by Method 25A.
19	Methods for Determining NO <sub>x</sub> , PM, and SO <sub>2</sub> Mass Emission Rates
25A	Method for Determining Gaseous Organic Concentrations (Flame Ionization)

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

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#### F. Units 4 and 5 – Temporary Trial Period with up to 30% Petroleum Coke

Tests shall also be conducted in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]

9. Notifications: The permittee shall provide the Compliance Authority with a written preliminary schedule for conducting any emissions tests (by letter, fax, or email). The preliminary schedule shall be updated as necessary. The permittee shall provide the Compliance Authority with at least 5 days advance notice (by phone, fax, or email) prior to conducting any emissions tests. [Rule 62-4.070(3), F.A.C.]

#### RECORDS AND REPORTS

10. Emissions Tests Reports: The permittee shall prepare and submit reports for all emissions tests in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. For each test run, the report shall also indicate the following: the petroleum coke/blend ratio, the fuel firing rate, the heat input rate, the average ESP secondary power input, the opacity, the CO emission rate, the NOx emission rate, and the SO<sub>2</sub> emission rate. [Rule 62-297.310(8), F.A.C.]
11. Trial Burn Report: Within 60 days of completing the trial burn, the permittee shall submit a final report summarizing the trial burn to the Bureau of Air Regulation and the Compliance Authority. The trial burn report shall include, but not be limited to, the following information: actual schedule and overall description of the trial burn period; summary of petroleum coke/coal blends evaluated (amounts delivered, blend ratio, and proximate/ultimate analyses); discussion of operational issues of petroleum coke/coal (coal unloading, coal handling, coal storage, coal firing, fugitive dust, soot blowing, ESP performance and adjustments, ash handling, and ash storage); comparison of baseline operations versus operation with petroleum coke/coal blend; evaluation of current equipment compatibility with petroleum coke/coal blend; summary of continuous emissions monitoring data; summary of boiler operating data; summary of emissions test results, actual test schedule, and procedures used; comparison of baseline emissions with emissions from firing petroleum coke/coal blend (short-term and long-term); and a discussion of emissions changes as described in Appendix C of 40 CFR 60. [Rules 62-4.070(3), 62-210.200(PTE) and 62-212.400, F.A.C.]

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**SECTION 4. APPENDICES**  
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- Appendix A. Citation Formats
- Appendix B. General Conditions
- Appendix C. Common Conditions
- Appendix D. Common Testing Requirements
- Appendix E. Summary of Final BACT Determinations
- Appendix F. Standard Continuous Monitoring Requirements
- Appendix G. New Source Performance Standards

## SECTION 4. APPENDIX A

### CITATION FORMATS

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*The following examples illustrate the format used in the permit to identify applicable permitting actions and regulations.*

#### REFERENCES TO PREVIOUS PERMITTING ACTIONS

##### Old Permit Numbers

*Example:* Permit No. AC50-123456 or Air Permit No. AO50-123456

*Where:* “AC” identifies the permit as an Air Construction Permit  
“AO” identifies the permit as an Air Operation Permit  
“123456” identifies the specific permit project number

##### New Permit Numbers

*Example:* Permit Nos. 099-2222-001-AC, 099-2222-001-AF, 099-2222-001-AO, or 099-2222-001-AV

*Where:* “099” represents the specific county ID number in which the project is located  
“2222” represents the specific facility ID number  
“001” identifies the specific permit project  
“AC” identifies the permit as an air construction permit  
“AF” identifies the permit as a minor federally enforceable state operation permit  
“AO” identifies the permit as a minor source air operation permit  
“AV” identifies the permit as a Title V Major Source Air Operation Permit

##### PSD Permit Numbers

*Example:* Permit No. PSD-FL-317

*Where:* “PSD” means issued pursuant to the Prevention of Significant Deterioration of Air Quality  
“FL” means that the permit was issued by the State of Florida  
“317” identifies the specific permit project

#### RULE CITATION FORMATS

##### Florida Administrative Code (F.A.C.)

*Example:* [Rule 62-213.205, F.A.C.]

*Means:* Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

##### Code of Federal Regulations (CFR)

*Example:* [40 CFR 60.7]

*Means:* Title 40, Part 60, Section 7

#### GLOSSARY OF COMMON TERMS

° F: degrees Fahrenheit

acfm: actual cubic feet per minute

ARMS: Air Resource Management System  
(Department’s database)

BACT: best available control technology

Btu: British thermal units

CAM: compliance assurance monitoring

CEMS: continuous emissions monitoring system

cfm: cubic feet per minute

CFR: Code of Federal Regulations

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## SECTION 4. APPENDIX A

### CITATION FORMATS

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<b>CO:</b> carbon monoxide	<b>MW:</b> megawatt
<b>COMS:</b> continuous opacity monitoring system	<b>NESHAP:</b> National Emissions Standards for Hazardous Air Pollutants
<b>DEP:</b> Department of Environmental Protection	<b>NO<sub>x</sub>:</b> nitrogen oxides
<b>Department:</b> Department of Environmental Protection	<b>NSPS:</b> New Source Performance Standards
<b>dscfm:</b> dry standard cubic feet per minute	<b>O&amp;M:</b> operation and maintenance
<b>EPA:</b> Environmental Protection Agency	<b>O<sub>2</sub>:</b> oxygen
<b>ESP:</b> electrostatic precipitator (control system for reducing particulate matter)	<b>Pb:</b> lead
<b>EU:</b> emissions unit	<b>PM:</b> particulate matter
<b>F.A.C.:</b> Florida Administrative Code	<b>PM<sub>10</sub>:</b> particulate matter with a mean aerodynamic diameter of 10 microns or less
<b>F.D.:</b> forced draft	<b>PSD:</b> prevention of significant deterioration
<b>F.S.:</b> Florida Statutes	<b>psi:</b> pounds per square inch
<b>FGR:</b> flue gas recirculation	<b>PTE:</b> potential to emit
<b>Fl:</b> fluoride	<b>RACT:</b> reasonably available control technology
<b>ft<sup>2</sup>:</b> square feet	<b>RATA:</b> relative accuracy test audit
<b>ft<sup>3</sup>:</b> cubic feet	<b>SAM:</b> sulfuric acid mist
<b>gpm:</b> gallons per minute	<b>scf:</b> standard cubic feet
<b>gr:</b> grains	<b>scfm:</b> standard cubic feet per minute
<b>HAP:</b> hazardous air pollutant	<b>SIC:</b> standard industrial classification code
<b>Hg:</b> mercury	<b>SNCR:</b> selective non-catalytic reduction (control system used for reducing emissions of nitrogen oxides)
<b>I.D.:</b> induced draft	<b>SO<sub>2</sub>:</b> sulfur dioxide
<b>ID:</b> identification	<b>TPH:</b> tons per hour
<b>kPa:</b> kilopascals	<b>TPY:</b> tons per year
<b>lb:</b> pound	<b>UTM:</b> Universal Transverse Mercator coordinate system
<b>MACT:</b> maximum achievable technology	<b>VE:</b> visible emissions
<b>MMBtu:</b> million British thermal units	<b>VOC:</b> volatile organic compounds
<b>MSDS:</b> material safety data sheets	

**SECTION 4. APPENDIX B**  
**GENERAL CONDITIONS**

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The permittee shall comply with the following general conditions from Rule 624.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of F.S. and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
  - a. Have access to and copy and records that must be kept under the conditions of the permit;
  - b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
  - c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

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

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
  - a. A description of and cause of non-compliance; and
  - b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

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

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

**SECTION 4. APPENDIX B**  
**GENERAL CONDITIONS**

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

10. The permittee agrees to comply with changes in Department rules and F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F.S. or Department rules.
11. This permit is transferable only upon Department approval in accordance with F.A.C. Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
12. This permit or a copy thereof shall be kept at the work site of the permitted activity.
13. This permit also constitutes:
  - a. Determination of Best Available Control Technology;
  - b. Determination of Prevention of Significant Deterioration; and
  - c. Compliance with New Source Performance Standards.
14. The permittee shall comply with the following:
  - a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
  - b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
  - c. Records of monitoring information shall include:
    - 1) The date, exact place, and time of sampling or measurements;
    - 2) The person responsible for performing the sampling or measurements;
    - 3) The dates analyses were performed;
    - 4) The person responsible for performing the analyses;
    - 5) The analytical techniques or methods used; and
    - 6) The results of such analyses.
15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

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**SECTION 4. APPENDIX C**  
**COMMON CONDITIONS**

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

**EMISSIONS AND CONTROLS**

1. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]
2. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]
3. Excess Emissions Allowed: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]
4. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]
5. Excess Emissions - Notification: In case of excess emissions resulting from malfunctions, the permittee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]
6. VOC or OS Emissions: No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds (VOC) or organic solvents (OS) without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]
7. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and 62-210.200(Definitions), F.A.C.]
8. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20% opacity. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1, F.A.C.]
9. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

**RECORDS AND REPORTS**

10. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rule 62-213.440(1)(b)2, F.A.C.]
11. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(3), F.A.C.]

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**SECTION 4. APPENDIX D**  
**COMMON TESTING REQUIREMENTS**

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

**GENERAL COMPLIANCE TESTING REQUIREMENTS**

1. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]
2. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. [Rule 62-297.310(2), F.A.C.]
3. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]
4. Applicable Test Procedures [Rule 62-297.310(4), F.A.C.]
  - a. *Required Sampling Time*.
    - (1) Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes.
    - (2) Opacity Compliance Tests. When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:
      - (a) For batch, cyclical processes, or other operations which are normally completed within less than the minimum observation period and do not recur within that time, the period of observation shall be equal to the duration of the batch cycle or operation completion time.
      - (b) The observation period for special opacity tests that are conducted to provide data to establish a surrogate standard pursuant to Rule 62-297.310(5)(k), F.A.C., Waiver of Compliance Test Requirements, shall be established as necessary to properly establish the relationship between a proposed surrogate standard and an existing mass emission limiting standard.
      - (c) The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.
  - b. *Minimum Sample Volume*. Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet.
  - c. *Calibration of Sampling Equipment*. Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C.
  - d. *Calibration of Sampling Equipment*. Calibration of the sampling train equipment shall be conducted in accordance

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**SECTION 4. APPENDIX D**  
**COMMON TESTING REQUIREMENTS**

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with the schedule shown in Table 297.310-1.

- e. *Allowed Modification to EPA Method 5.* When EPA Method 5 is required, the following modification is allowed: the heated filter may be separated from the impingers by a flexible tube.

5. Determination of Process Variables [Rule 62-297.310(5), F.A.C.]

- a. *Required Equipment.* The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
- b. *Accuracy of Equipment.* Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

6. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C. Sampling facilities include sampling ports, work platforms, access to work platforms, electrical power, and sampling equipment support. All stack sampling facilities must also comply with all applicable Occupational Safety and Health Administration (OSHA) Safety and Health Standards described in 29 CFR Part 1910, Subparts D and E. [Rule 62-297.310(6), F.A.C.]

- a. *Permanent Test Facilities.* The owner or operator of an emissions unit for which a compliance test, other than a visible emissions test, is required on at least an annual basis, shall install and maintain permanent stack sampling facilities.
- b. *Temporary Test Facilities.* The owner or operator of an emissions unit that is not required to conduct a compliance test on at least an annual basis may use permanent or temporary stack sampling facilities. If the owner chooses to use temporary sampling facilities on an emissions unit, and the Department elects to test the unit, such temporary facilities shall be installed on the emissions unit within 5 days of a request by the Department and remain on the emissions unit until the test is completed.
- c. *Sampling Ports.*
  - (1) All sampling ports shall have a minimum inside diameter of 3 inches.
  - (2) The ports shall be capable of being sealed when not in use.
  - (3) The sampling ports shall be located in the stack at least 2 stack diameters or equivalent diameters downstream and at least 0.5 stack diameter or equivalent diameter upstream from any fan, bend, constriction or other flow disturbance.
  - (4) For emissions units for which a complete application to construct has been filed prior to December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 15 feet or less. For stacks with a larger diameter, four sampling ports, each 90 degrees apart, shall be installed. For emissions units for which a complete application to construct is filed on or after December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 10 feet or less. For stacks with larger diameters, four sampling ports, each 90 degrees apart, shall be installed. On horizontal circular ducts, the ports shall be located so that the probe can enter the stack vertically, horizontally or at a 45 degree angle.
  - (5) On rectangular ducts, the cross sectional area shall be divided into the number of equal areas in accordance with EPA Method 1. Sampling ports shall be provided which allow access to each sampling point. The ports shall be located so that the probe can be inserted perpendicular to the gas flow.
- d. *Work Platforms.*
  - (1) Minimum size of the working platform shall be 24 square feet in area. Platforms shall be at least 3 feet wide.
  - (2) On circular stacks with 2 sampling ports, the platform shall extend at least 110 degrees around the stack.
  - (3) On circular stacks with more than two sampling ports, the work platform shall extend 360 degrees around the stack.
  - (4) All platforms shall be equipped with an adequate safety rail (ropes are not acceptable), toe board, and hinged floor-opening cover if ladder access is used to reach the platform. The safety rail directly in line with the

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**SECTION 4. APPENDIX D**  
**COMMON TESTING REQUIREMENTS**

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sampling ports shall be removable so that no obstruction exists in an area 14 inches below each sample port and 6 inches on either side of the sampling port.

e. *Access to Work Platform.*

- (1) Ladders to the work platform exceeding 15 feet in length shall have safety cages or fall arresters with a minimum of 3 compatible safety belts available for use by sampling personnel.
- (2) Walkways over free-fall areas shall be equipped with safety rails and toe boards.

f. *Electrical Power.*

- (1) A minimum of two 120-volt AC, 20-amp outlets shall be provided at the sampling platform within 20 feet of each sampling port.
- (2) If extension cords are used to provide the electrical power, they shall be kept on the plant's property and be available immediately upon request by sampling personnel.

g. *Sampling Equipment Support.*

- (1) A three-quarter inch eyebolt and an angle bracket shall be attached directly above each port on vertical stacks and above each row of sampling ports on the sides of horizontal ducts.
  - (a) The bracket shall be a standard 3 inch × 3 inch × one-quarter inch equal-legs bracket which is 1 and one-half inches wide. A hole that is one-half inch in diameter shall be drilled through the exact center of the horizontal portion of the bracket. The horizontal portion of the bracket shall be located 14 inches above the centerline of the sampling port.
  - (b) A three-eighth inch bolt which protrudes 2 inches from the stack may be substituted for the required bracket. The bolt shall be located 15 and one-half inches above the centerline of the sampling port.
  - (c) The three-quarter inch eyebolt shall be capable of supporting a 500 pound working load. For stacks that are less than 12 feet in diameter, the eyebolt shall be located 48 inches above the horizontal portion of the angle bracket. For stacks that are greater than or equal to 12 feet in diameter, the eyebolt shall be located 60 inches above the horizontal portion of the angle bracket. If the eyebolt is more than 120 inches above the platform, a length of chain shall be attached to it to bring the free end of the chain to within safe reach from the platform.
- (2) A complete monorail or dual rail arrangement may be substituted for the eyebolt and bracket.
- (3) When the sample ports are located in the top of a horizontal duct, a frame shall be provided above the port to allow the sample probe to be secured during the test.

7. Frequency of Compliance Tests. The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required. [Rule 62297.310(7), F.A.C.]

a. *General Compliance Testing.*

1. The owner or operator of a new or modified emissions unit that is subject to an emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining an operation permit for such emissions unit.
2. For excess emission limitations for particulate matter specified in Rule 62-210.700, F.A.C., a compliance test shall be conducted annually while the emissions unit is operating under soot blowing conditions in each federal fiscal year during which soot blowing is part of normal emissions unit operation, except that such test shall not be required in any federal fiscal year in which a fossil fuel steam generator does not burn liquid and/or solid fuel for more than 400 hours other than during startup.
3. The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to sub-subparagraph 62-210.300(2)(a)3.b., c., or d., F.A.C., the Department shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:
  - (a) Did not operate; or

**SECTION 4. APPENDIX D**  
**COMMON TESTING REQUIREMENTS**

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- (b) In the case of a fuel burning emissions unit, burned liquid and/or solid fuel for a total of no more than 400 hours,
- 4. During each federal fiscal year (October 1 – September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:
  - (a) Visible emissions, if there is an applicable standard;
  - (b) Each of the following pollutants, if there is an applicable standard, and if the emissions unit emits or has the potential to emit: 5 tons per year or more of lead or lead compounds measured as elemental lead; 30 tons per year or more of acrylonitrile; or 100 tons per year or more of any other regulated air pollutant; and
  - (c) Each NESHAP pollutant, if there is an applicable emission standard.
- 5. An annual compliance test for particulate matter emissions shall not be required for any fuel burning emissions unit that, in a federal fiscal year, does not burn liquid and/or solid fuel, other than during startup, for a total of more than 400 hours.
- 6. For fossil fuel steam generators on a semi-annual particulate matter emission compliance testing schedule, a compliance test shall not be required for any six-month period in which liquid and/or solid fuel is not burned for more than 200 hours other than during startup.
- 7. For emissions units electing to conduct particulate matter emission compliance testing quarterly pursuant to paragraph 62-296.405(2)(a), F.A.C., a compliance test shall not be required for any quarter in which liquid and/or solid fuel is not burned for more than 100 hours other than during startup.
- 8. Any combustion turbine that does not operate for more than 400 hours per year shall conduct a visible emissions compliance test once per each five-year period, coinciding with the term of its air operation permit.
- 9. The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.
- 10. An annual compliance test conducted for visible emissions shall not be required for units exempted from air permitting pursuant to subsection 62-210.300(3), F.A.C.; units determined to be insignificant pursuant to subparagraph 62-213.300(2)(a)1., F.A.C., or paragraph 62-213.430(6)(b), F.A.C.; or units permitted under the General Permit provisions in paragraph 62-210.300(4)(a) or Rule 62-213.300, F.A.C., unless the general permit specifically requires such testing.
- b. *Special Compliance Tests.* When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department.
- c. *Waiver of Compliance Test Requirements.* If the owner or operator of an emissions unit that is subject to a compliance test requirement demonstrates to the Department, pursuant to the procedure established in Rule 62-297.620, F.A.C., that the compliance of the emissions unit with an applicable weight emission limiting standard can be adequately determined by means other than the designated test procedure, such as specifying a surrogate standard of no visible emissions for particulate matter sources equipped with a bag house or specifying a fuel analysis for sulfur dioxide emissions, the Department shall waive the compliance test requirements for such emissions units and order that the alternate means of determining compliance be used, provided, however, the provisions of paragraph 62-297.310(7)(b), F.A.C., shall apply.

**RECORDS AND REPORTS**

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

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

**SECTION 4. APPENDIX D**  
**COMMON TESTING REQUIREMENTS**

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

**SECTION 4. APPENDIX E**  
**SUMMARY OF FINAL BACT DETERMINATIONS**

**PROJECT DESCRIPTION**

Progress Energy Florida, Inc. operates the existing Crystal River Power Plant, which is located north of Crystal River and west of U.S. 19 in Citrus County, Florida. The plant consists of four coal-fired steam generating units, natural draft cooling towers, helper mechanical draft cooling towers, coal and ash handling facilities, and relocatable diesel-fired generators. The following changes will occur as a result of this project.

- To provide full flexibility in implementing the federal cap and trade program for NO<sub>x</sub> and SO<sub>2</sub> emissions under CAIR, the plant will install new low-NO<sub>x</sub> burners, new SCR systems, new FGD systems, and new stack configurations for Units 4 and 5.
- In conjunction with the proposed control equipment, the new control equipment will allow the flexibility to fire additional fuel blends (sub-bituminous coal and petroleum coke) and recognize the actual maximum heat input rates for Units 4 and 5 as 7200 MMBtu per hour.
- The plant will install a new CBO system that will reburn fly ash generated at this plant to recover the remaining heating value in this material and minimize the onsite landfilling of fly ash.
- The plant will conduct a trial burn to evaluate a new fuel additive intended to reduce slagging and improve emissions performance.

The combination of new fuel blends and control equipment will result in PSD-significant emissions increases of CO, PM/PM<sub>10</sub>, SAM, and VOC. The Department's preliminary determinations of the Best Available Control Technologies (BACT) for these pollutants are based on: the design of the new low-NO<sub>x</sub> burners and good combustion practices (CO, PM/PM<sub>10</sub>, and VOC); modifications to the existing ESPs (PM/PM<sub>10</sub> and SAM); and new alkali injection systems (SAM).

**FINAL BACT DETERMINATIONS**

In accordance with Rule 62-212.400(6), F.A.C., the Department establishes the following standards as BACT for CO, PM/PM, SAM, and VOC emissions.

**Unit 4 (EU-004), Unit 5 (EU-003) and CBO Fluidized Bed Combustor (EU-024)<sup>f</sup>**

Pollutant	BACT Standard <sup>g</sup>	Averaging Period	Compliance Method
Ammonia Slip	5 ppmv	3-run test average	CTM-027 (or equivalent)
CO <sup>a</sup> (Interim)	0.17 lb/MMBtu excluding SU/SD/M 1156.0 lb/hour including SU/SD/M	30-day rolling average	CEMS Data
Opacity <sup>b</sup>	10% opacity, except for one 6-minute block per hour up to 20% opacity	6-minute block	EPA Method 9
PM/PM <sub>10</sub> <sup>c</sup>	0.030 lb/MMBtu and 216.0 lb/hour	3-run test average	EPA Methods 5 or 5b
SAM <sup>d</sup>	0.009 lb/MMBtu and 64.8 lb/hour	3-run test average	EPA Methods 8 or 8A
VOC <sup>e</sup>	0.004 lb/MMBtu and 28.8 lb/hour	3-run test average	EPA Method 25A

**Notes:**

- Within 24 months of commencing commercial operation of each unit with the new low-NO<sub>x</sub> burners, the permittee shall submit an application proposing a revised (lower) final BACT standard. The final standard shall be based on actual CO emissions data collected for initial operation after completing installation of the new low-NO<sub>x</sub> burners. There may be separate standards proposed for different fuels.
- Due to concerns regarding moisture interference from the wet stack conditions caused by the FGD system, COMS were not required on the new stack.
- The Department notes that this control strategy directly reduces PM/PM<sub>10</sub> emissions as well as the formation of PM<sub>2.5</sub> in the environment when combined with the other proposed control systems (SCR systems designed for low ammonia slip; alkali injection to reduce sulfuric acid mist emissions; and FGD systems to minimize precursors known to contribute to formation of PM<sub>2.5</sub>). The permittee shall continuously monitor and record the opacity in the ductwork just

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**SECTION 4. APPENDIX E**  
**SUMMARY OF FINAL BACT DETERMINATIONS**

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after the ESP for use as part of the Compliance Assurance Monitoring Plan under Title V. Operation of the ESP shall be based upon COMS data collected during satisfactory PM emissions compliance tests.

- d. Operation of the alkali injection system shall be determined by the automated control system, which shall be set in accordance with the preliminary performance and compliance tests for SAM emissions.
- e. Concurrently with EPA Method 25A, EPA Method 18 may be used as an optional method to deduct emissions of methane and ethane from the THC emissions measured by Method 25A.
- f. The CBO fluidized bed combustor is also subject to the following applicable NSPS Subpart Dc provisions for boilers: the firing of fuel with no more than 0.5% sulfur by weight percent based on a certification from the fuel supplier (applies at all times, including periods of startup, shutdown, and malfunction); and no more than 20% opacity based on a 6-minute average, except for one 6-minute period per hour of not more than 27% opacity (applies at all times, except during periods of startup, shutdown, or malfunction). Since the flue gas exhaust from the CBO unit is directed back into the boiler ductwork for control, the CBO unit will achieve the same standards as Units 4 and 5, which are more stringent than the applicable NSPS.
- g. "SU" means startup; "SD" means shutdown; and "M" means malfunction.

**Limestone/Gypsum Material Storage and Handling (EU-023)**

Limestone is the reactant for the FGD systems, which will produce gypsum as a byproduct. The following control equipment and techniques are determined to be BACT for minimizing dust emissions from the related material handling and storage activities.

- To the extent practical, all limestone conveyors will be enclosed to confine dust emissions.
- The initial storage of limestone will be in a covered storage pile.
- The portal scraper reclaimers and an emergency reclaim feeder will be located inside a limestone storage building.
- Limestone will be crushed and sized inside a crusher building, which will include a dust collection system.
- The three (possibly four) limestone silos will be equipped with pulse-jet fabric filter dust collection systems.
- Insertable dust collectors will be installed at each of the truck unloading feeders and at each of the loading points of the silo feed conveyors.
- A water-surfactant blend dust suppression system will be provided at the discharge point of the transfer conveyor and at the head end of the unloading conveyor to treat the limestone before it is loaded onto the belt of the stacking conveyor.
- Wet ball mill grinding systems will produce the limestone slurry for the FGD system. Fugitive dust emissions will be minimized by the addition of water for the slurry.
- The dewatering system will be located inside a building. Fugitive dust emissions will be negligible because the system is enclosed and wet.
- Fugitive dust emissions from dewatered gypsum will be minimal because it still contains 10% water. Gypsum storage piles will be watered as necessary to prevent fugitive dust.
- Bags for all dust collection systems shall be selected based on the above design outlet dust loading specification of no more than 0.010 grains per acf of exhaust. All replacement filter bags and cartridges shall meet this design specification.
- Visible emissions from each dust collector and fabric filter shall not exceed 5% opacity.

**CBO Feed Ash Silo (EU-025) and Product Ash Storage (EU-026)**

Fly ash from Units 4 and 5 will be conveyed pneumatically to the CBO feed fly ash silo (EU025). Ash will be fed from this silo to the fluidized bed combustor (EU-024) for processing. Exhaust from the feed fly ash silo will vent through a baghouse prior to discharge to the atmosphere. Product ash will be pneumatically conveyed to storage (EU026) in either the product fly ash storage dome or directly to a truck load-out silo, which will each vent to a separate baghouse. In addition, particulate emissions captured during the truck load-out process will be routed to the truck load-out silo for control

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**SECTION 4. APPENDIX E**  
**SUMMARY OF FINAL BACT DETERMINATIONS**

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by the baghouse. The following control equipment and techniques are determined to be BACT for minimizing dust emissions from the related material handling and storage activities.

- Dust emissions from the transfer of ash will be controlled by full enclosure throughout the CBO process.
- Bags for all dust collection systems shall be selected based on the above design outlet dust loading specification of no more than 0.010 grains per acf of exhaust. All replacement filter bags and cartridges shall meet this design specification.
- Visible emissions from each dust collector and fabric filter shall not exceed 5% opacity.
- Trucks will travel on paved roads within the plant and exit the plant for delivery offsite. Fugitive particulate matter emissions associated with product fly ash truck traffic will be controlled by maintaining the roads and periodic watering as needed.

The Department's technical review and rationale for the BACT determinations are presented in Technical Evaluation and Preliminary Determination issued concurrently with the draft permit for the original project.

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**SECTION 4. APPENDIX F**  
**STANDARD CONTINUOUS MONITORING REQUIREMENTS**

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Unit 4 (EU-004) and Unit 5 (EU-003) are subject to the following requirements for continuous emissions monitoring systems (CEMS).

**CEMS OPERATION PLAN**

1. CEMS Operation Plan: The permittee shall create and implement a facility-wide plan for the proper installation, calibration, maintenance, and operation of each CEMS required by this permit. The permittee shall submit the CEMS Operation Plan to the Bureau of Air Monitoring and Mobile Sources for approval at least 60 days prior to CEMS installation. The CEMS Operation Plan shall become effective 60 days after submittal or upon its approval. If the CEMS Operation Plan is not approved, the permittee shall submit a new or revised plan for approval. [Rule 62-4.070(3), F.A.C.]

*{Permitting Note: The Department maintains both guidelines for developing a CEMS Operation Plan and example language that can be used as the basis for the facility-wide plan required by this permit. Contact the Emissions Monitoring Section of the Bureau of Air Monitoring and Mobile Sources at 850/488-0114.}*

**MONITORS, PERFORMANCE SPECIFICATIONS AND QUALITY ASSURANCE**

2. Existing CEMS: Existing Units 4 and 5 have CEMS currently installed. The permittee shall also continue to meet the applicable performance specifications and quality assurance procedures for these systems. [Rule 62-4.070(3), F.A.C.]
3. Span Values and Dual Range Monitors: The permittee shall set appropriate span values for the CEMS based on the emissions standards and range of operation. If necessary, the permittee shall install dual range monitors in accordance with the CEMS Operation Plan. [Rule 62-4.070(3), F.A.C.]
4. Moisture Correction: If necessary, the permittee shall install a system to determine the moisture content of the exhaust gas and develop an algorithm to enable correction of the monitoring results to a dry basis (0% moisture). [Rule 62-4.070(3), F.A.C.]
5. Continuous Flow Monitor: For compliance with mass emission flow rate standards, the permittee shall install a continuous flow monitor to determine the stack exhaust flow rate. The flow monitor shall be certified pursuant to 40 CFR Part 60, Appendix B, Performance Specification 6. Alternatively, the permittee may install a fuel flow monitor and use an appropriate F-Factor computational approach to calculate stack exhaust flow rate. [Rules 62-212.400 and 62-4.070(3), F.A.C.]  
  
*{Permitting Note: The CEMS Operation Plan will contain additional CEMS-specific details and procedures for installation.}* [Rule 62-4.070(3), F.A.C.]
6. Performance Specifications: The permittee shall evaluate the "acceptability" of each CEMS by conducting the appropriate performance specification. CEMS determined to be "unacceptable" shall not be considered "installed" for purposes of meeting the timelines of this permit. For carbon monoxide, use Performance Specification 4 or 4A (as appropriate) in Appendix B of 40 CFR 60. [Rule 62-4.070(3), F.A.C.]
7. Quality Assurance: The permittee shall follow the quality assurance procedures of 40 CFR Part 60, Appendix F. For carbon monoxide, the required relative accuracy test assessment (RATA) tests shall be performed using EPA Method 10 in Appendix A of 40 CFR Part 60. [Rule 62-4.070(3), F.A.C.]

**CALCULATION APPROACH FOR SIP COMPLIANCE**

8. CEMS for Compliance: Once adherence to the applicable performance specification for each CEMS is demonstrated, the permittee shall use the CEMS to demonstrate compliance with the applicable emission standards as specified by this permit. [Rules 62-4.070(3) and 62-212.400, F.A.C.]
9. CEMS Data: Each CEMS shall monitor and record emissions during all operations and whenever emissions are being generated, including during episodes of startups, shutdowns, and malfunctions. All data shall be used, except for invalid measurements taken during monitor system breakdowns, repairs, calibration checks, zero adjustments, and span adjustments. [Rule 62-4.070(3), F.A.C.]
10. Operating Hours and Operating Days: For purposes of this Appendix, the following definitions shall apply. An hour is the 60-minute period beginning at the top of each hour. Any hour during which an emissions unit is in operation for

**SECTION 4. APPENDIX F**  
**STANDARD CONTINUOUS MONITORING REQUIREMENTS**

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more than 15 minutes is an operating hour for that emission unit. A day is the 24-hour period from midnight to midnight. Any day with at least one operating hour for an emissions unit is an operating day for that emission unit. [Rule 62-4.070(3), F.A.C.]

11. Valid Hourly Averages: Each CEMS shall be designed and operated to sample, analyze, and record data evenly spaced over the hour at a minimum of one measurement per minute. All valid measurements collected during an hour shall be used to calculate a 1-hour block average that begins at the top of each hour.

- a. Hours that are not operating hours are not valid hours.
- b. For each operating hour, the 1-hour block average shall be computed from at least two data points separated by a minimum of 15 minutes. If less than two such data points are available, there is insufficient data, the 1-hour block average is not valid, and the hour is considered as "monitor unavailable."

[Rule 62-4.070(3), F.A.C.]

12. Calculation Approaches: The permittee shall implement the calculation approach specified by this permit for each CEMS, as follows:

- a. *24-hour Block Average*. Compliance shall be determined after each 24-hour block by calculating the arithmetic average of all valid hourly averages occurring within that block averaging period.
- b. *30-day Rolling Average*. Compliance shall be determined after each operating day by calculating the arithmetic average of all valid hourly averages occurring within that day and the prior 29 operating days.
- c. *12-month Rolling Average*. Compliance shall be determined after each operating month by calculating the arithmetic average of all valid hourly averages occurring within that day and the prior 29 operating days.

[Rule 62-4.070(3), F.A.C.]

13. Minimum Valid Hours: At least one valid hourly average shall be used to calculate the emissions over any block averaging period specified by this permit. One valid hourly average shall be sufficient to calculate the emissions over any block averaging period. [Rule 62-4.070(3), F.A.C.]

14. Data Exclusion for SIP Compliance: As per the procedures in this condition, limited amounts of CEMS emissions data may be excluded from the corresponding compliance demonstration, provided that best operational practices to minimize emissions are adhered to and the duration of data excluded is minimized. As provided by the authority in Rule 62-210.700(5), F.A.C., the following conditions replace the provisions in Rule 62-210.700(1), F.A.C.

- a. *Excess Emissions*. For purposes of SIP-based limits, some data collected during periods of SIP-based excess emissions (startup, shutdown, and malfunction) may be excluded from compliance calculations. The maximum duration of excluded data is 2 hours in any 24-hour period, unless some other duration is specified by permit.
- b. *Limiting Data Exclusion*. If the compliance calculation using all valid CEMS emission data (as defined in this Appendix) indicates that the emission unit is in compliance, then no CEMS data shall be excluded from the compliance demonstration.
- c. *Event Driven Exclusion*. The underlying event (startup, shutdown, or malfunction) must precede the data exclusion. If there is no underlying event, then no data may be excluded.
- d. *Continuous Exclusion*. Data shall be excluded on a continuous basis per event. Data from discontinuous periods shall not be excluded for the same underlying event.
- e. *Reporting Excluded Data*. These procedures for excluding SIP-based excess emissions from compliance calculations are not necessarily the same procedures used for "excess emissions" as defined by federal rules. Semiannual reports required by this permit shall indicate the duration of data excluded from SIP compliance calculations as well as the number of excess emissions as defined in the applicable federal rules.

15. Acid Rain CEMS: For CEMS that are also subject to the acid rain program, the data substitution and bias adjustment procedures from 40 CFR part 75 shall only be applied to data submitted to the EPA. Compliance with SIP-based emission standards shall be determined using unadjusted data and using the calculation procedures of this Appendix. [Rule 62-4.070(3), F.A.C.]

**SECTION 4. APPENDIX F**  
**STANDARD CONTINUOUS MONITORING REQUIREMENTS**

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**MONITOR AVAILABILITY**

16. Monitor Availability: Monitor availability shall be calculated on a quarterly basis for each emission unit as the number of valid hourly averages obtained by the CEMS, divided by the number of operating hours, times 100%. The monitor availability calculation shall not include periods of time where the monitor was functioning properly, but was unable to collect data while conducting a mandated quality assurance/quality control activity such as calibration error tests, RATA, calibration gas audit, or relative accuracy audits (RAA). Monitor availability for each CEMS shall be 95% or greater in any calendar quarter. Monitor availability shall be reported in the quarterly excess emissions report. In the event 95% availability is not achieved, the permittee shall provide the Department with a report identifying the problems in achieving 95% availability and a plan of corrective actions that will be taken to achieve 95% availability. The permittee shall implement the reported corrective actions within the next calendar quarter. Failure to take corrective actions or continued failure to achieve the minimum monitor availability shall be violations of this permit. [Rule 62-4.070(3), F.A.C.]

**CALCULATING AND REPORTING ANNUAL EMISSIONS**

17. CEMS for Calculating Annual Emissions: As defined by this Appendix, all valid data shall be used when calculating annual emissions.
- a. Annual emissions shall include data collected during startup, shutdown, and malfunction periods.
  - b. Annual emissions shall include data collected during periods when the emission unit is not operating but emissions are being generated (for example, firing fuel to warm up a process for some period of time prior to the emission unit's "official" startup).
  - c. Annual emissions shall not include data from periods of time where the monitor was functioning properly but was unable to collect data while conducting a mandated quality assurance/quality control activity such as calibration error tests, RATA, calibration gas audit, or RAA. These periods of time shall be considered "missing data" for purposes of calculating annual emissions.
  - d. Annual emissions shall not include data from periods of time when emissions are in excess of the calibrated span of the CEMS. These periods of time shall be considered "missing data" for purposes of calculating annual emissions.
- [Rule 62-4.070(3), F.A.C.]
18. Accounting for Missing Data: All valid measurements collected during each hour shall be used to calculate a 1-hour block average that begins at the top of each hour. For each hour, the 1-hour block average shall be computed from at least two data points separated by a minimum of 15 minutes. If less than two such data points are available, the permittee shall account for emissions during that hour using site-specific data to generate a reasonable estimate of the 1-hour block average. [Rule 62-4.070(3), F.A.C.]
19. Emissions Calculation: Hourly emissions shall be calculated for each hour as the product of the 1-hour block average and the duration of pollutant emissions during that hour. Annual emissions shall be calculated as the sum of all hourly emissions occurring during the year. [Rule 62-4.070(3), F.A.C.]
20. Acid Rain CEMS: For CEMS that are also subject to the acid rain program, the data substitution and bias adjustment procedures from 40 CFR part 75 shall only be applied to data submitted to the U.S. EPA. Annual emissions shall be determined using unadjusted data and using the calculation procedures of this Appendix. [Rule 62-4.070(3), F.A.C.]
21. Reporting Annual Emissions: The permittee shall use data from each required CEMS when calculating annual emissions for purposes of computing actual emissions, baseline actual emissions, and net emissions increase, as defined at Rule 62-210.200, F.A.C., and for purposes of computing emissions pursuant to the reporting requirements of Rules 62-210.370(3) and 62-212.300(1)(e), F.A.C. The owner or operator shall follow the procedures in Appendix E (Standard CEMS Requirements) for calculating annual emissions. [Rule 62-4.070(3), F.A.C.]

**SECTION 4. APPENDIX G**  
**NEW SOURCE PERFORMANCE STANDARDS**

**40 CFR 60, NSPS SUBPART A - GENERAL PROVISIONS**

The following emissions units are subject to applicable New Source Performance Standards (NSPS) in 40 CFR 60, which are adopted by reference in Rule 62-204.800(8), F.A.C.

EU No.	Description
023	Limestone and Gypsum Material Handling Activities
024	The CBO Unit is a fluidized bed combustor that will reburn fly ash generated from Units 4 and 5 to produce low-carbon, low-ammonia fly ash material suitable for commercial use. Flue gas exhaust from CBO Unit is directed back into the ductwork of Units 4 and 5 prior to the control equipment.

The affected emission units are subject to the applicable General Provisions in Subpart A of the New Source Performance Standards including: §60.1 (Applicability); §60.2 (Definitions); §60.3 (Units and Abbreviations); §60.4 (Address); §60.5 (Determination of Construction or Modification); §60.6 (Review of Plans); §60.7 (Notification and Record Keeping); §60.8 (Performance Tests); §60.9 (Availability of Information); §60.10 (State Authority); §60.11 (Compliance with Standards and Maintenance Requirements); §60.12 (Circumvention); §60.13 (Monitoring Requirements); §60.14 (Modification); §60.15 (Reconstruction); §60.16 (Priority List); §60.17 (Incorporations by Reference); §60.18 (General Control Device Requirements); §60.19 (General Notification and Reporting Requirements). The General Provisions are not included in this permit, but can be obtained from the Department upon request.

**40 CFR 60, SUBPART Dc - STANDARDS OF PERFORMANCE FOR SMALL INDUSTRIAL-COMMERCIAL-INSTITUTIONAL STEAM GENERATING UNITS**

The following emissions units are subject to applicable New Source Performance Standards (NSPS) in 40 CFR 60, which are adopted by reference in Rule 62-204.800(8), F.A.C.

EU No.	Description
024	The CBO Unit is a fluidized bed combustor that will reburn fly ash generated from Units 4 and 5 to produce low-carbon, low-ammonia fly ash material suitable for commercial use. Flue gas exhaust from CBO Unit is directed back into the ductwork of Units 4 and 5 prior to the control equipment.

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- 60.41c Definitions.
- 60.42c Standard for sulfur dioxide.
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- 60.44c Compliance and performance test methods and procedures for sulfur dioxide.
- 60.45c Compliance and performance test methods and procedures for particulate matter.
- 60.46c Emission monitoring for sulfur dioxide.
- 60.47c Emission monitoring for particulate matter.
- 60.48c Reporting and recordkeeping requirements.

**§ 60.40c Applicability and Delegation of Authority.**

- (a) Except as provided in paragraph (d) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million Btu per hour (Btu/hr)) or less, but greater than or equal to 2.9 MW (10 million Btu/hr).
- (b) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, §

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NEW SOURCE PERFORMANCE STANDARDS

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60.48c(a)(4) shall be retained by the Administrator and not transferred to a State.

- (c) Not applicable.
- (d) Not applicable.
- (e) Not applicable.
- (f) Not applicable.
- (g) Not applicable.

**§ 60.41c Definitions.**

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

*Annual capacity factor* means the ratio between the actual heat input to a steam generating unit from an individual fuel or combination of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam generating unit been operated for 8,760 hours during that 12-month period at the maximum design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility during a period of 12 consecutive calendar months.

*Coal* means all solid fuels classified as anthracite, bituminous, sub-bituminous, or lignite by the American Society of Testing and Materials in ASTM D388-77, 90, 91, 95, or 98a, Standard Specification for Classification of Coals by Rank (IBR--see Sec. 60.17), coal refuse, and petroleum coke. Coal-derived synthetic fuels derived from coal for the purposes of creating useful heat, including but not limited to solvent refined coal, gasified coal, coal-oil mixtures, and coal-water mixtures, are also included in this definition for the purposes of this subpart.

*Coal refuse* means any by-product of coal mining or coal cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (kJ/kg) (6,000 Btu per pound (Btu/lb)) on a dry basis.

*Cogeneration steam generating unit* means a steam generating unit that simultaneously produces both electrical (or mechanical) and thermal energy from the same primary energy source.

*Combined cycle system* means a system in which a separate source (such as a stationary gas turbine, internal combustion engine, or kiln) provides exhaust gas to a steam generating unit.

*Combustion research* means the experimental firing of any fuel or combination of fuels in a steam generating unit for the purpose of conducting research and development of more efficient combustion or more effective prevention or control of air pollutant emissions from combustion, provided that, during these periods of research and development, the heat generated is not used for any purpose other than preheating combustion air for use by that steam generating unit (i.e., the heat generated is released to the atmosphere without being used for space heating, process heating, driving pumps, preheating combustion air for other units, generating electricity, or any other purpose).

*Conventional technology* means wet flue gas desulfurization technology, dry flue gas desulfurization technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

*Distillate oil* means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-78, 89, 90, 92, 96, or 98, "Standard Specification for Fuel Oils" (incorporated by reference -- see § 60.17).

*Dry flue gas desulfurization technology* means a sulfur dioxide (SO<sub>2</sub>) control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline reagents used in dry flue gas desulfurization systems include, but are not limited to, lime and sodium compounds.

*Duct burner* means a device that combusts fuel and that is placed in the exhaust duct from another source (such as a stationary gas turbine, internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases

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before the exhaust gases enter a steam generating unit.

*Emerging technology* means any SO<sub>2</sub> control system that is not defined as a conventional technology under this section, and for which the owner or operator of the affected facility has received approval from the Administrator to operate as an emerging technology under § 60.48c(a)(4).

*Federally enforceable* means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR Parts 60 and 61, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

*Fluidized bed combustion technology* means a device wherein fuel is distributed onto a bed (or series of beds) of limestone aggregate (or other sorbent materials) for combustion; and these materials are forced upward in the device by the flow of combustion air and the gaseous products of combustion. Fluidized bed combustion technology includes, but is not limited to, bubbling bed units and circulating bed units.

*Fuel pretreatment* means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.

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

*Heat transfer medium* means any material that is used to transfer heat from one point to another point.

*Maximum design heat input capacity* means the ability of a steam generating unit to combust a stated maximum amount of fuel (or combination of fuels) on a steady state basis as determined by the physical design and characteristics of the steam generating unit.

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

*Noncontinental area* means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

*Oil* means crude oil or petroleum, or a liquid fuel derived from crude oil or petroleum, including distillate oil and residual oil.

*Potential sulfur dioxide emission rate* means the theoretical SO<sub>2</sub> emissions (nanograms per joule [ng/J], or pounds per million Btu [lb/million Btu] heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.

*Process heater* means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

*Residual oil* means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society for Testing and Materials in ASTM D39678, 89, 90, 92, 96, or 98, "Standard Specification for Fuel Oils" (incorporated by reference -- see § 60.17).

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

*Steam generating unit operating day* means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

*Wet flue gas desulfurization technology* means an SO<sub>2</sub> control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material. This definition includes

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devices where the liquid material is subsequently converted to another form. Alkaline reagents used in wet flue gas desulfurization systems include, but are not limited to, lime, limestone, and sodium compounds.

*Wet scrubber system* means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of particulate matter (PM) or SO<sub>2</sub>.

*Wood* means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including but not limited to sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

**§ 60.42c Standard for Sulfur Dioxide.**

- (a) Not applicable.
- (b) Not applicable.
- (c) Not applicable.
- (d) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of 215 ng/J (0.50 lb/million Btu) heat input; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater than 0.5 weightpercent sulfur. The percent reduction requirements are not applicable to affected facilities under this paragraph.  
  
*{Permitting Note: The permit restricts fuel oil for startup to a maximum sulfur content of 0.5% by weight. Flue gases from the CBO unit are directed back into the ductwork for Units 4 and 5 to meet an SO<sub>2</sub> standard of 0.27 lb/MMBtu of heat input. Compliance with this NSPS Subpart Dc requirement is assured by compliance with the permit conditions.}*
- (e) Not applicable.
- (f) Not applicable.
- (g) Not applicable.
- (h) Not applicable.
- (i) The SO<sub>2</sub> emission limits, fuel oil sulfur limits, and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.
- (j) Only the heat input supplied to the affected facility from the combustion of coal and oil is counted under this section. No credit is provided for the heat input to the affected facility from wood or other fuels or for heat derived from exhaust gases from other sources, such as stationary gas turbines, internal combustion engines, and kilns.

**§ 60.43c Standard for Particulate Matter.**

- (a) Not applicable.
- (b) Not applicable.
- (c) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.
- (d) The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction.
- (e) Not applicable.

**§ 60.44c Compliance and Performance Test Methods and Procedures for Sulfur Dioxide.**

- (a) Not applicable.

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- (b) Not applicable.
- (c) Not applicable.
- (d) Not applicable.
- (e) Not applicable.
- (f) Not applicable.
- (g) For oil-fired affected facilities where the owner or operator seeks to demonstrate compliance with the fuel oil sulfur limits under § 60.42c based on shipment fuel sampling, the initial performance test shall consist of sampling and analyzing the oil in the initial tank of oil to be fired in the steam generating unit to demonstrate that the oil contains 0.5 weight percent sulfur or less. Thereafter, the owner or operator of the affected facility shall sample the oil in the fuel tank after each new shipment of oil is received, as described under § 60.46c(d)(2).
- (h) Not applicable.
- (i) Not applicable.
- (j) Not applicable.

**§ 60.45c Compliance and Performance Test Methods and Procedures for Particulate Matter.**

- (a) The owner or operator of an affected facility subject to the PM and/or opacity standards under Sec. 60.43c shall conduct an initial performance test as required under Sec. 60.8, and shall conduct subsequent performance tests as requested by the Administrator, to determine compliance with the standards using the following procedures and reference methods, except as specified in paragraph (c) and (d) of this section.
- (b) Not applicable.
- (c) Units that burn only oil containing no more than 0.5 weight percent sulfur or liquid or gaseous fuels with potential sulfur dioxide emission rates of 230 ng/J (0.54 lb/MMBtu) heat input or less are not required to conduct emissions monitoring if they maintain fuel supplier certifications of the sulfur content of the fuels burned.
- (d) Not applicable.

**§ 60.46c Emission Monitoring for Sulfur Dioxide**

- (a) Not applicable.
- (b) Not applicable.
- (c) Not applicable.
- (d) Not applicable.
- (e) The monitoring requirements of paragraphs (a) and (d) of this section shall not apply to affected facilities subject to § 60.42c(h)(1), (2), or (3) where the owner or operator of the affected facility seeks to demonstrate compliance with the SO<sub>2</sub> standards based on fuel supplier certification, as described under § 60.48c(f) (1), (2), or (3), as applicable.
- (f) Not applicable.

**§ 60.47c Emission Monitoring for Particulate Matter.**

- (a) The owner or operator of an affected facility combusting coal, oil, gas, or wood that is subject to the opacity standards under Sec. 60.43c shall install, calibrate, maintain, and operate a COMS for measuring the opacity of the emissions discharged to the atmosphere and record the output of the system, except as specified in paragraphs (c) and (d) of this section.
- (b) Not applicable.
- (c) Units that burn only oil that contains no more than 0.5 weight percent sulfur or liquid or gaseous fuels with potential sulfur dioxide emission rates of 230 ng/J (0.54 lb/MMBtu) heat input or less are not required to conduct PM emissions monitoring if they maintain fuel supplier certifications of the sulfur content of the fuels burned.

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(d) Not applicable.

**§ 60.48c Reporting and Recordkeeping Requirements.**

- (a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by § 60.7 of this part. This notification shall include:
- (1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.
  - (2) Not applicable.
  - (3) Not applicable.
  - (4) Not applicable.
- (b) The owner or operator of each affected facility subject to the SO<sub>2</sub> emission limits of § 60.42c, or the PM or opacity limits of § 60.43c, shall submit to the Administrator the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the CEMS and/or COMS using the applicable performance specifications in appendix B.
- (c) The owner or operator of each coal-fired, residual oil-fired, or wood-fired affected facility subject to the opacity limits under § 60.43c(c) shall submit excess emission reports for any excess emissions from the affected facility which occur during the reporting period.
- (d) The owner or operator of each affected facility subject to the SO<sub>2</sub> emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.42c shall submit reports to the Administrator.
- (e) The owner or operator of each affected facility subject to the SO<sub>2</sub> emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.43c shall keep records and submit reports as required under paragraph (d) of this section, including the following information, as applicable.
- (1) Calendar dates covered in the reporting period.
  - (2) Each 30-day average SO<sub>2</sub> emission rate (ng/J or lb/million Btu), or 30-day average sulfur content (weight percent), calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.
  - (3) Each 30-day average percent of potential SO<sub>2</sub> emission rate calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.
  - (4) Identification of any steam generating unit operating days for which SO<sub>2</sub> or diluent (oxygen or carbon dioxide) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and a description of corrective actions taken.
  - (5) Identification of any times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and a description of corrective actions taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit.
  - (6) Identification of the F factor used in calculations, method of determination, and type of fuel combusted.
  - (7) Identification of whether averages have been obtained based on CEMS rather than manual sampling methods.
  - (8) If a CEMS is used, identification of any times when the pollutant concentration exceeded the full span of the CEMS.
  - (9) If a CEMS is used, description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specifications 2 or 3 (appendix B).
  - (10) If a CEMS is used, results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.
  - (11) If fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification as

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described under paragraph (f)(1), (2), or (3) of this section, as applicable. In addition to records of fuel supplier certifications, the report shall include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period.

(f) Fuel supplier certification shall include the following information:

(1) For distillate oil:

- (i) The name of the oil supplier; and
- (ii) A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in § 60.41c.

(2) For residual oil:

- (i) The name of the oil supplier;
- (ii) The location of the oil when the sample was drawn for analysis to determine the sulfur content of the oil, specifically including whether the oil was sampled as delivered to the affected facility, or whether the sample was drawn from oil in storage at the oil supplier's or oil refiner's facility, or other location;
- (iii) The sulfur content of the oil from which the shipment came (or of the shipment itself); and
- (iv) The method used to determine the sulfur content of the oil.

(3) Not applicable.

(g) The owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day. The owner or operator of an affected facility that only burns very low sulfur fuel oil or other liquid or gaseous fuels with potential sulfur dioxide emissions rate of 140 ng/J (0.32 lb/MMBtu) heat input or less shall record and maintain records of the fuels combusted during each calendar month.

(h) Not applicable.

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

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

**40 CFR PART 60, SUBPART OOO - STANDARDS OF PERFORMANCE FOR NONMETALLIC MINERAL PROCESSING PLANTS**

The following emissions units are subject to applicable New Source Performance Standards (NSPS) in 40 CFR 60, which are adopted by reference in Rule 62-204.800(8), F.A.C.

EU No.	Description
023	Limestone and Gypsum Material Handling Activities

**§ 60.670 Applicability and designation of affected facility.**

(a)

- (1) Except as provided in paragraphs (a)(2), (b), (c), and (d) of this section, the provisions of this subpart are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station. Also, crushers and grinding mills at hot mix asphalt facilities that reduce the size of nonmetallic minerals embedded in recycled asphalt pavement and subsequent affected facilities up to, but not including, the first storage silo or bin are subject to the provisions of this subpart.

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- (2) The provisions of this subpart do not apply to the following operations: All facilities located in underground mines; and stand-alone screening operations at plants without crushers or grinding mills.
- (b) An affected facility that is subject to the provisions of subpart F or I or that follows in the plant process any facility subject to the provisions of subparts F or I of this part is not subject to the provisions of this subpart.
- (c) Facilities at the following plants are not subject to the provisions of this subpart:
- (1) Fixed sand and gravel plants and crushed stone plants with capacities, as defined in §60.671, of 23 megagrams per hour (25 tons per hour) or less;
  - (2) Portable sand and gravel plants and crushed stone plants with capacities, as defined in §60.671, of 136 megagrams per hour (150 tons per hour) or less; and
  - (3) Common clay plants and pumice plants with capacities, as defined in §60.671, of 9 megagrams per hour (10 tons per hour) or less.
- (d)
- (1) When an existing facility is replaced by a piece of equipment of equal or smaller size, as defined in §60.671, having the same function as the existing facility, the new facility is exempt from the provisions of §§60.672, 60.674, and 60.675 except as provided for in paragraph (d)(3) of this section.
  - (2) An owner or operator complying with paragraph (d)(1) of this section shall submit the information required in §60.676(a).
  - (3) An owner or operator replacing all existing facilities in a production line with new facilities does not qualify for the exemption described in paragraph (d)(1) of this section and must comply with the provisions of §§60.672, 60.674 and 60.675.
- (e) An affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after August 31, 1983 is subject to the requirements of this part.
- (f) Table 1 of this subpart specifies the provisions of subpart A of this part 60 that apply and those that do not apply to owners and operators of affected facilities subject to this subpart.

**Table 1—Applicability of Subpart A to Subpart 000**

<b>Subpart A reference</b>	<b>Applies to Subpart 000</b>	<b>Comment</b>
60.1, Applicability	Yes	
60.2, Definitions	Yes	
60.3, Units and abbreviations	Yes	
60.4, Address:		
(a)	Yes	
(b)	Yes	
60.5, Determination of construction or modification	Yes	
60.6, Review of plans	Yes	

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<b>Subpart A reference</b>	<b>Applies to Subpart OOO</b>	<b>Comment</b>
60.7, Notification and recordkeeping	Yes	Except in (a)(2) report of anticipated date of initial startup is not required (§60.676(h)).
60.8, Performance tests	Yes	Except in (d), after 30 days notice for an initially scheduled performance test, any rescheduled performance test requires 7 days notice, not 30 days (§60.675(g)).
60.9, Availability of information	Yes	
60.10, State authority	Yes	
60.11, Compliance with standards and maintenance requirements	Yes	Except in (b) under certain conditions (§§60.675 (c)(3) and (c)(4)), Method 9 observation may be reduced from 3 hours to 1 hour. Some affected facilities exempted from Method 9 tests (§60.675(h)).
60.12, Circumvention	Yes	
60.13, Monitoring requirements	Yes	
60.14, Modification	Yes	
60.15, Reconstruction	Yes	
60.16, Priority list	Yes	
60.17, Incorporations by reference	Yes	
60.18, General control device	No	Flares will not be used to comply with the emission limits.
60.19, General notification and reporting requirements	Yes	

**§ 60.671 Definitions.**

All terms used in this subpart, but not specifically defined in this section, shall have the meaning given them in the Act and in subpart A of this part.

*Bagging operation* means the mechanical process by which bags are filled with nonmetallic minerals.

*Belt conveyor* means a conveying device that transports material from one location to another by means of an endless belt that is carried on a series of idlers and routed around a pulley at each end.

*Bucket elevator* means a conveying device of nonmetallic minerals consisting of a head and foot assembly which supports and drives an endless single or double strand chain or belt to which buckets are attached.

*Building* means any frame structure with a roof.

*Capacity* means the cumulative rated capacity of all initial crushers that are part of the plant.

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*Capture system* means the equipment (including enclosures, hoods, ducts, fans, dampers, etc.) used to capture and transport particulate matter generated by one or more process operations to a control device.

*Control device* means the air pollution control equipment used to reduce particulate matter emissions released to the atmosphere from one or more process operations at a nonmetallic mineral processing plant.

*Conveying system* means a device for transporting materials from one piece of equipment or location to another location within a plant. Conveying systems include but are not limited to the following: Feeders, belt conveyors, bucket elevators and pneumatic systems.

*Crusher* means a machine used to crush any nonmetallic minerals, and includes, but is not limited to, the following types: jaw, gyratory, cone, roll, rod mill, hammermill, and impactor.

*Enclosed truck or railcar loading station* means that portion of a nonmetallic mineral processing plant where nonmetallic minerals are loaded by an enclosed conveying system into enclosed trucks or railcars.

*Fixed plant* means any nonmetallic mineral processing plant at which the processing equipment specified in §60.670(a) is attached by a cable, chain, turnbuckle, bolt or other means (except electrical connections) to any anchor, slab, or structure including bedrock.

*Fugitive emission* means particulate matter that is not collected by a capture system and is released to the atmosphere at the point of generation.

*Grinding mill* means a machine used for the wet or dry fine crushing of any nonmetallic mineral. Grinding mills include, but are not limited to, the following types: hammer, roller, rod, pebble and ball, and fluid energy. The grinding mill includes the air conveying system, air separator, or air classifier, where such systems are used.

*Initial crusher* means any crusher into which nonmetallic minerals can be fed without prior crushing in the plant.

*Nonmetallic mineral* means any of the following minerals or any mixture of which the majority is any of the following minerals:

- (a) Crushed and Broken Stone, including Limestone, Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell.
- (b) Sand and Gravel.
- (c) Clay including Kaolin, Fireclay, Bentonite, Fuller's Earth, Ball Clay, and Common Clay.
- (d) Rock Salt.
- (e) Gypsum.
- (f) Sodium Compounds, including Sodium Carbonate, Sodium Chloride, and Sodium Sulfate.
- (g) Pumice.
- (h) Gilsonite.
- (i) Talc and Pyrophyllite.
- (j) Boron, including Borax, Kernite, and Colemanite.
- (k) Barite.
- (l) Fluorospars.
- (m) Feldspar.
- (n) Diatomite.
- (o) Perlite.
- (p) Vermiculite.
- (q) Mica.

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(r) Kyanite, including Andalusite, Sillimanite, Topaz, and Dumortierite.

*Nonmetallic mineral processing plant* means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including lime plants, power plants, steel mills, asphalt concrete plants, portland cement plants, or any other facility processing nonmetallic minerals except as provided in §60.670 (b) and (c).

*Portable plant* means any nonmetallic mineral processing plant that is mounted on any chassis or skids and may be moved by the application of a lifting or pulling force. In addition, there shall be no cable, chain, turnbuckle, bolt or other means (except electrical connections) by which any piece of equipment is attached or clamped to any anchor, slab, or structure, including bedrock that must be removed prior to the application of a lifting or pulling force for the purpose of transporting the unit.

*Production line* means all affected facilities (crushers, grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins, and enclosed truck and railcar loading stations) which are directly connected or are connected together by a conveying system.

*Screening operation* means a device for separating material according to size by passing undersize material through one or more mesh surfaces (screens) in series, and retaining oversize material on the mesh surfaces (screens).

*Size* means the rated capacity in tons per hour of a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station; the total surface area of the top screen of a screening operation; the width of a conveyor belt; and the rated capacity in tons of a storage bin.

*Stack emission* means the particulate matter that is released to the atmosphere from a capture system.

*Storage bin* means a facility for storage (including surge bins) or nonmetallic minerals prior to further processing or loading.

*Transfer point* means a point in a conveying operation where the nonmetallic mineral is transferred to or from a belt conveyor except where the nonmetallic mineral is being transferred to a stockpile.

*Truck dumping* means the unloading of nonmetallic minerals from movable vehicles designed to transport nonmetallic minerals from one location to another. Movable vehicles include but are not limited to: trucks, front end loaders, skip hoists, and railcars.

*Vent* means an opening through which there is mechanically induced air flow for the purpose of exhausting from a building air carrying particulate matter emissions from one or more affected facilities.

*Wet mining operation* means a mining or dredging operation designed and operated to extract any nonmetallic mineral regulated under this subpart from deposits existing at or below the water table, where the nonmetallic mineral is saturated with water.

*Wet screening operation* means a screening operation at a nonmetallic mineral processing plant which removes unwanted material or which separates marketable fines from the product by a washing process which is designed and operated at all times such that the product is saturated with water.

**§ 60.672 Standard for particulate matter.**

- (a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any stack emissions which:
- (1) Contain particulate matter in excess of 0.05 g/dscm (0.022 gr/dscf); and
  - (2) Exhibit greater than 7 percent opacity, unless the stack emissions are discharged from an affected facility using a wet scrubbing control device. Facilities using a wet scrubber must comply with the reporting provisions of §60.676 (c), (d), and (e).
- (b) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under §60.11 of this part, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any fugitive emissions which exhibit greater than 10 percent opacity, except as provided in paragraphs (c), (d), and (e) of this section.

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- (c) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under §60.11 of this part, no owner or operator shall cause to be discharged into the atmosphere from any crusher, at which a capture system is not used, fugitive emissions which exhibit greater than 15 percent opacity.
- (d) Truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from the requirements of this section.
- (e) If any transfer point on a conveyor belt or any other affected facility is enclosed in a building, then each enclosed affected facility must comply with the emission limits in paragraphs (a), (b) and (c) of this section, or the building enclosing the affected facility or facilities must comply with the following emission limits:
  - (1) No owner or operator shall cause to be discharged into the atmosphere from any building enclosing any transfer point on a conveyor belt or any other affected facility any visible fugitive emissions except emissions from a vent as defined in §60.671.
  - (2) No owner or operator shall cause to be discharged into the atmosphere from any vent of any building enclosing any transfer point on a conveyor belt or any other affected facility emissions which exceed the stack emissions limits in paragraph (a) of this section.
- (f) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under §60.11 of this part, no owner or operator shall cause to be discharged into the atmosphere from any baghouse that controls emissions from only an individual, enclosed storage bin, stack emissions which exhibit greater than 7 percent opacity.
- (g) Owners or operators of multiple storage bins with combined stack emissions shall comply with the emission limits in paragraph (a)(1) and (a)(2) of this section.
- (h) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, no owner or operator shall cause to be discharged into the atmosphere any visible emissions from:
  - (1) Wet screening operations and subsequent screening operations, bucket elevators, and belt conveyors that process saturated material in the production line up to the next crusher, grinding mill or storage bin.
  - (2) Screening operations, bucket elevators, and belt conveyors in the production line downstream of wet mining operations, where such screening operations, bucket elevators, and belt conveyors process saturated materials up to the first crusher, grinding mill, or storage bin in the production line.

**§ 60.673 Reconstruction.**

- (a) The cost of replacement of ore-contact surfaces on processing equipment shall not be considered in calculating either the "fixed capital cost of the new components" or the "fixed capital cost that would be required to construct a comparable new facility" under §60.15. Ore-contact surfaces are crushing surfaces; screen meshes, bars, and plates; conveyor belts; and elevator buckets.
- (b) Under §60.15, the "fixed capital cost of the new components" includes the fixed capital cost of all depreciable components (except components specified in paragraph (a) of this section) which are or will be replaced pursuant to all continuous programs of component replacement commenced within any 2-year period following August 31, 1983.

**§ 60.674 Monitoring of operations.**

The owner or operator of any affected facility subject to the provisions of this subpart which uses a wet scrubber to control emissions shall install, calibrate, maintain and operate the following monitoring devices:

- (a) A device for the continuous measurement of the pressure loss of the gas stream through the scrubber. The monitoring device must be certified by the manufacturer to be accurate within  $\pm 250$  pascals  $\pm 1$  inch water gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions.

**SECTION 4. APPENDIX G**  
**NEW SOURCE PERFORMANCE STANDARDS**

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- (b) A device for the continuous measurement of the scrubbing liquid flow rate to the wet scrubber. The monitoring device must be certified by the manufacturer to be accurate within  $\pm 5$  percent of design scrubbing liquid flow rate and must be calibrated on an annual basis in accordance with manufacturer's instructions.

**§ 60.675 Test methods and procedures.**

- (a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b). Acceptable alternative methods and procedures are given in paragraph (e) of this section.
- (b) The owner or operator shall determine compliance with the particulate matter standards in §60.672(a) as follows:
- (1) Method 5 or Method 17 shall be used to determine the particulate matter concentration. The sample volume shall be at least 1.70 dscm (60 dscf). For Method 5, if the gas stream being sampled is at ambient temperature, the sampling probe and filter may be operated without heaters. If the gas stream is above ambient temperature, the sampling probe and filter may be operated at a temperature high enough, but no higher than 121 °C (250 °F), to prevent water condensation on the filter.
  - (2) Method 9 and the procedures in §60.11 shall be used to determine opacity.
- (c)
- (1) In determining compliance with the particulate matter standards in §60.672 (b) and (c), the owner or operator shall use Method 9 and the procedures in §60.11, with the following additions:
    - (i) The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet).
    - (ii) The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources (e.g., road dust). The required observer position relative to the sun (Method 9, Section 2.1) must be followed.
    - (iii) For affected facilities using wet dust suppression for particulate matter control, a visible mist is sometimes generated by the spray. The water mist must not be confused with particulate matter emissions and is not to be considered a visible emission. When a water mist of this nature is present, the observation of emissions is to be made at a point in the plume where the mist is no longer visible.
  - (2) In determining compliance with the opacity of stack emissions from any baghouse that controls emissions only from an individual enclosed storage bin under §60.672(f) of this subpart, using Method 9, the duration of the Method 9 observations shall be 1 hour (ten 6-minute averages).
  - (3) When determining compliance with the fugitive emissions standard for any affected facility described under §60.672(b) of this subpart, the duration of the Method 9 observations may be reduced from 3 hours (thirty 6 minute averages) to 1 hour (ten 6-minute averages) only if the following conditions apply:
    - (i) There are no individual readings greater than 10 percent opacity; and
    - (ii) There are no more than 3 readings of 10 percent for the 1-hour period.
  - (4) When determining compliance with the fugitive emissions standard for any crusher at which a capture system is not used as described under §60.672(c) of this subpart, the duration of the Method 9 observations may be reduced from 3 hours (thirty 6-minute averages) to 1 hour (ten 6-minute averages) only if the following conditions apply:
    - (i) There are no individual readings greater than 15 percent opacity; and
    - (ii) There are no more than 3 readings of 15 percent for the 1-hour period.
- (d) In determining compliance with §60.672(e), the owner or operator shall use Method 22 to determine fugitive emissions. The performance test shall be conducted while all affected facilities inside the building are operating. The performance test for each building shall be at least 75 minutes in duration, with each side of the building and the roof being observed for at least 15 minutes.

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**SECTION 4. APPENDIX G**  
**NEW SOURCE PERFORMANCE STANDARDS**

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- (e) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:
  - (1) For the method and procedure of paragraph (c) of this section, if emissions from two or more facilities continuously interfere so that the opacity of fugitive emissions from an individual affected facility cannot be read, either of the following procedures may be used:
    - (i) Use for the combined emission stream the highest fugitive opacity standard applicable to any of the individual affected facilities contributing to the emissions stream.
    - (ii) Separate the emissions so that the opacity of emissions from each affected facility can be read.
- (f) To comply with §60.676(d), the owner or operator shall record the measurements as required in §60.676(c) using the monitoring devices in §60.674 (a) and (b) during each particulate matter run and shall determine the averages.
- (g) If, after 30 days notice for an initially scheduled performance test, there is a delay (due to operational problems, etc.) in conducting any rescheduled performance test required in this section, the owner or operator of an affected facility shall submit a notice to the Administrator at least 7 days prior to any rescheduled performance test.
- (h) Initial Method 9 performance tests under §60.11 of this part and §60.675 of this subpart are not required for:
  - (1) Wet screening operations and subsequent screening operations, bucket elevators, and belt conveyors that process saturated material in the production line up to, but not including the next crusher, grinding mill or storage bin.
  - (2) Screening operations, bucket elevators, and belt conveyors in the production line downstream of wet mining operations, that process saturated materials up to the first crusher, grinding mill, or storage bin in the production line.

**§ 60.676 Reporting and recordkeeping.**

- (a) Each owner or operator seeking to comply with §60.670(d) shall submit to the Administrator the following information about the existing facility being replaced and the replacement piece of equipment.
  - (1) For a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station:
    - (i) The rated capacity in megagrams or tons per hour of the existing facility being replaced and
    - (ii) The rated capacity in tons per hour of the replacement equipment.
  - (2) For a screening operation:
    - (i) The total surface area of the top screen of the existing screening operation being replaced and
    - (ii) The total surface area of the top screen of the replacement screening operation.
  - (3) For a conveyor belt:
    - (i) The width of the existing belt being replaced and
    - (ii) The width of the replacement conveyor belt.
  - (4) For a storage bin:
    - (i) The rated capacity in megagrams or tons of the existing storage bin being replaced and
    - (ii) The rated capacity in megagrams or tons of replacement storage bins.
- (b) [Reserved]
- (c) During the initial performance test of a wet scrubber, and daily thereafter, the owner or operator shall record the measurements of both the change in pressure of the gas stream across the scrubber and the scrubbing liquid flow rate.
- (d) After the initial performance test of a wet scrubber, the owner or operator shall submit semiannual reports to the Administrator of occurrences when the measurements of the scrubber pressure loss (or gain) and liquid flow rate differ by more than  $\pm 30$  percent from the averaged determined during the most recent performance test.

**SECTION 4. APPENDIX G**  
**NEW SOURCE PERFORMANCE STANDARDS**

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- (e) The reports required under paragraph (d) shall be postmarked within 30 days following end of the second and fourth calendar quarters.
- (f) The owner or operator of any affected facility shall submit written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in §60.672 of this subpart, including reports of opacity observations made using Method 9 to demonstrate compliance with §60.672(b), (c), and (f), and reports of observations using Method 22 to demonstrate compliance with §60.672(e).
- (g) The owner or operator of any screening operation, bucket elevator, or belt conveyor that processes saturated material and is subject to §60.672(h) and subsequently processes unsaturated materials, shall submit a report of this change within 30 days following such change. This screening operation, bucket elevator, or belt conveyor is then subject to the 10 percent opacity limit in §60.672(b) and the emission test requirements of §60.11 and this subpart. Likewise a screening operation, bucket elevator, or belt conveyor that processes unsaturated material but subsequently processes saturated material shall submit a report of this change within 30 days following such change. This screening operation, bucket elevator, or belt conveyor is then subject to the no visible emission limit in §60.672(h).
- (h) The subpart A requirement under §60.7(a)(2) for notification of the anticipated date of initial startup of an affected facility shall be waived for owners or operators of affected facilities regulated under this subpart.
- (i) A notification of the actual date of initial startup of each affected facility shall be submitted to the Administrator.
  - (1) For a combination of affected facilities in a production line that begin actual initial startup on the same day, a single notification of startup may be submitted by the owner or operator to the Administrator. The notification shall be postmarked within 15 days after such date and shall include a description of each affected facility, equipment manufacturer, and serial number of the equipment, if available.
  - (2) For portable aggregate processing plants, the notification of the actual date of initial startup shall include both the home office and the current address or location of the portable plant.
- (j) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected facilities within the State will be relieved of the obligation to comply with the reporting requirements of this section, provided that they comply with requirements established by the State.

## Livingston, Sylvia

---

**From:** Livingston, Sylvia  
**Sent:** Monday, May 11, 2009 10:48 AM  
**To:** 'larry.hatcher@pgnmail.com'  
**Cc:** 'dave.meyer@pgnmail.com'; 'benjamin.borsch@pgnmail.com'; 'sosbourn@golder.com'; Halpin, Mike; Zhang-Torres; 'forney.kathleen@epa.gov'; 'abrams.heather@epamail.epa.gov'; 'dee\_morse@nps.gov'; Gibson, Victoria; Koerner, Jeff; Walker, Elizabeth (AIR)  
**Subject:** Progress Energy - CRYSTAL RIVER POWER PLANT; 0170004-022-AC/ PSD-FL-383B  
**Attachments:** 0170004-022-AC\_Signatures.pdf

Dear Sir/ Madam:

Attached is the official **Notice of Final Permit** for the project referenced below. Click on the link displayed below to access the permit project documents and send a "reply" message verifying receipt of the document(s) provided in the link; this may be done by selecting "Reply" on the menu bar of your e-mail software, noting that you can view the documents, and then selecting "Send".

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**Click on the following link to access the documents:**

[http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf\\_permit\\_zip\\_files/0170004.022.AC.F\\_pdf.zip](http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf_permit_zip_files/0170004.022.AC.F_pdf.zip)

**Owner/Company Name:** FLORIDA POWER CORPORATION D/B/A PROGRESS

**Facility Name:** CRYSTAL RIVER POWER PLANT

**Project Number:** 0170004-022-AC / PSD-FL-383B

**Permit Status:** FINAL

**Permit Activity:** CONSTRUCTION

**Facility County:** CITRUS

**Processor:** Jeff Koerner

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Access these documents by clicking on the link provided above, or search for other project documents using the "*Air Permit Documents Search*" website at <http://www.dep.state.fl.us/air/eproducts/apds/default.asp>.

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Sylvia Livingston  
Bureau of Air Regulation  
Division of Air Resource Management (DARM)  
850/921-9506  
[sylvia.livingston@dep.state.fl.us](mailto:sylvia.livingston@dep.state.fl.us)

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

## Livingston, Sylvia

---

**From:** Hatcher, Larry [Larry.Hatcher@pgnmail.com]  
**Sent:** Tuesday, May 12, 2009 9:07 AM  
**To:** Livingston, Sylvia  
**Subject:** RE: Progress Energy - CRYSTAL RIVER POWER PLANT; 0170004-022-AC/ PSD-FL-383B

I have received these documents.

Thanks!

Larry

---

**From:** Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]

**Sent:** Monday, May 11, 2009 10:48 AM

**To:** Hatcher, Larry

**Cc:** Meyer, Dave; Borsch, Benjamin; sosbourn@golder.com; Halpin, Mike; Zhang-Torres; forney.kathleen@epa.gov; abrams.heather@epamail.epa.gov; dee\_morse@nps.gov; Gibson, Victoria; Koerner, Jeff; Walker, Elizabeth (AIR)

**Subject:** Progress Energy - CRYSTAL RIVER POWER PLANT; 0170004-022-AC/ PSD-FL-383B

Dear Sir/ Madam:

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**Owner/Company Name:** FLORIDA POWER CORPORATION D/B/A PROGRESS

**Facility Name:** CRYSTAL RIVER POWER PLANT

**Project Number:** 0170004-022-AC / PSD-FL-383B

**Permit Status:** FINAL

**Permit Activity:** CONSTRUCTION

**Facility County:** CITRUS

**Processor:** Jeff Koerner

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<http://www.dep.state.fl.us/air/eproducts/apds/default.asp> .

Project documents that are addressed in this email may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible, and verify that they are accessible. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record. If you have any problems opening the documents or would like further information, please contact the Florida Department of Environmental Protection, Bureau of Air Regulation at (850)488-0114.

## Livingston, Sylvia

---

**From:** Meyer, Dave [Dave.Meyer@pgnmail.com]  
**Sent:** Monday, May 11, 2009 3:07 PM  
**To:** Livingston, Sylvia  
**Subject:** RE: Progress Energy - CRYSTAL RIVER POWER PLANT: 0170004-022-AC/ PSD-FL-383B

Hi Sylvia,

Thanks very much for your e-mail below... I was able to access the documents. Thanks again, Dave Meyer 727-820-5295

---

**From:** Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]  
**Sent:** Monday, May 11, 2009 10:48 AM  
**To:** Hatcher, Larry  
**Cc:** Meyer, Dave; Borsch, Benjamin; sosbourn@golder.com; Halpin, Mike; Zhang-Torres; forney.kathleen@epa.gov; abrams.heather@epamail.epa.gov; dee\_morse@nps.gov; Gibson, Victoria; Koerner, Jeff; Walker, Elizabeth (AIR)  
**Subject:** Progress Energy - CRYSTAL RIVER POWER PLANT; 0170004-022-AC/ PSD-FL-383B

Dear Sir/ Madam:

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**Owner/Company Name:** FLORIDA POWER CORPORATION D/B/A PROGRESS

**Facility Name:** CRYSTAL RIVER POWER PLANT

**Project Number:** 0170004-022-AC / PSD-FL-383B

**Permit Status:** FINAL

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## Livingston, Sylvia

---

**From:** Borsch, Benjamin [Benjamin.Borsch@pgnmail.com]  
**Sent:** Monday, May 11, 2009 12:07 PM  
**To:** Livingston, Sylvia  
**Subject:** RE: Progress Energy - CRYSTAL RIVER POWER PLANT; 0170004-022-AC/ PSD-FL-383B

I have received the subject documents and am able to view them.

Thank you.

*Benjamin M. H. Borsch, PE*  
Lead Technical Specialist - Project Development

---

**From:** Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]  
**Sent:** Monday, May 11, 2009 10:48 AM  
**To:** Hatcher, Larry  
**Cc:** Meyer, Dave; Borsch, Benjamin; sosbourn@golder.com; Halpin, Mike; Zhang-Torres; forney.kathleen@epa.gov; abrams.heather@epamail.epa.gov; dee\_morse@nps.gov; Gibson, Victoria; Koerner, Jeff; Walker, Elizabeth (AIR)  
**Subject:** Progress Energy - CRYSTAL RIVER POWER PLANT; 0170004-022-AC/ PSD-FL-383B

Dear Sir/ Madam:

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**Owner/Company Name:** FLORIDA POWER CORPORATION D/B/A PROGRESS  
**Facility Name:** CRYSTAL RIVER POWER PLANT  
**Project Number:** 0170004-022-AC / PSD-FL-383B  
**Permit Status:** FINAL  
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**Facility County:** CITRUS  
**Processor:** Jeff Koerner

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## Livingston, Sylvia

---

**From:** Osbourn, Scott [Scott\_Osbourn@golder.com]  
**To:** Livingston, Sylvia  
**Sent:** Monday, May 11, 2009 10:55 AM  
**Subject:** Read: Progress Energy - CRYSTAL RIVER POWER PLANT; 0170004-022-AC/ PSD-FL-383B

Your message

**To:** [Scott\\_Osbourn@golder.com](mailto:Scott_Osbourn@golder.com)  
**Subject:**

was read on 5/11/2009 10:55 AM.



# Progress Energy

April 29, 2009

Mr. Jeffrey F. Koerner, Administrator  
New Source Review Section  
Air Quality Division  
Florida Department of Environmental Protection  
2600 Blair Stone Road, MS 5000  
Tallahassee, Florida 32399-2400

RECEIVED

MAY 01 2009

Re: **Comments on Draft Permit**  
Progress Energy Florida, Crystal River Power Plant  
Project No. 01700004-022-AC (PSD-FL-383B)

BUREAU OF AIR REGULATION

Dear Mr. Koerner:

This letter is written provides comments from Progress Energy (Progress) on the subject draft permit and notice of intent to issue. Progress Energy published notice of the department's intent to issue on April 21, 2009.

Progress had requested that Condition 15 of Section 3.A be modified to allow for the necessary time required to complete the commissioning, start up and tuning of the Flue Gas Desulfurization System (FGD). In our letter dated February 25, 2009 responding to the department's request for additional information, Progress requested that the following sentence be inserted into condition 15.

During the period between certification of the SO<sub>2</sub> CEMS and the completion of initial shakedown of the FGD, the unit will comply with SO<sub>2</sub> emissions limits set forth in existing Title V permit condition B.5.a.(2) {Permit #017004-015-AV}.

In the draft permit, the department wrote:

During the period between certification of the SO<sub>2</sub> CEMS and the completion of initial shakedown of the FGD, the unit will comply with SO<sub>2</sub> emissions limits set forth in current Title V permit, which requires diligent monitoring of the fuel sulfur content.

Progress appreciates the department's effort to accommodate this issue. However, the current Title V permit contains two interlocking conditions, specifying an emissions limit (1.2 lb SO<sub>2</sub>/mmBtu – condition B.5.a) and a coal sulfur specification (0.68% sulfur in the coal – Condition B.5.b). These interlocking conditions were based on the existing situation prior to installation of the FGD, with no SO<sub>2</sub> emission controls. During the period under consideration, the FGD will be in operation, although it may not yet be up to its full removal potential. In addition, as part of the FGD shakedown, Progress would like to utilize some alternate coals to prove out the FGD operation. Accordingly, Progress requests that the commitment to maintain compliance with the limits contained in the current Title V permit be imposed as an emissions limit, verified by the CEMS, but with flexibility from the fuel sulfur standard, recognizing that the FGD will provide removal of SO<sub>2</sub> during this period.

Progress request that the subject sentence be changed to read as follows:

During the period between certification of the SO<sub>2</sub> CEMS and the completion of initial shakedown of the FGD, the unit will comply with SO<sub>2</sub> emissions limits set forth in the current Title V permit condition B.5.a.

PEF appreciates your consideration of this issue. For additional information or to discuss any issues regarding this application, please contact Mr. David Meyer in our St. Petersburg office by telephone at (727) 820-5295 or via email at [dave.meyer@pgnmail.com](mailto:dave.meyer@pgnmail.com).

Sincerely,

Larry E. Hatcher  
Plant Manager

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



# Florida Department of Environmental Protection

Bob Martinez Center  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Charlie Crist  
Governor

Jeff Kottkamp  
Lt. Governor

Michael W. Sole  
Secretary

January 28, 2009

*Electronic Mail – Received Receipt Requested*

Mr. Larry Hatcher, Plant Manager  
Progress Energy Florida, Crystal River Power Plant  
299 First Avenue, North, CN77  
St. Petersburg, FL 33701

Re: **Request for Additional Information**  
Progress Energy Florida, Crystal River Power Plant  
Project No. 0170004-022-AC (PSD-FL-383B)  
Miscellaneous Permit Revisions

Dear Mr. Hatcher:

On December 30, 2008, we received your application and sufficient fee for an application to revise original air construction Permit No. PSD-FL-383 (Project No. 0170004-016-AC), which authorized the installation of new burners, new selective catalytic reduction systems, new flue gas desulfurization (FGD) systems, and new stacks for the existing coal-fired Units 4 and 5 at the Crystal River Power Plant. The existing facility is located in Citrus County, north of Crystal River and west of U.S. Highway 19. The application is subject to general preconstruction review pursuant to rule 62-212.300 of the Florida Administrative Code (F.A.C.) and preconstruction review for the Prevention of Significant Deterioration (PSD) of Air Quality pursuant to Rule 62-212.400, F.A.C. The application is incomplete. In order to continue processing your application, please provide the additional information requested below. Should your response to any of the requested items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

## **Installation of the Carbon Monoxide (CO) Continuous Emissions Monitoring Systems (CEMS)**

Construction was delayed substantially from the preliminary schedule. Low-NOx burners (LNB) were installed on Unit 4 in December of 2008. The CO CEMS has also been installed. The permit requires certification of the CO CEMS within 60 calendar days of achieving permitted capacity, but no later than 180 calendar days after initial startup. The permit also requires initial stack tests for volatile organic compounds (VOC) to be conducted within 60 days of installing the LNB. The installation of LNB on Unit 5 is scheduled for May of 2009. However, the outage to tie in the flue gas desulfurization (FGD) system is not scheduled until October of 2009. The permanent CO CEMS is intended to be installed on the new stack after the FGD system. Therefore, there will be a 5-month delay to install the CO CEMS on Unit 5; otherwise a temporary CEMS must be installed.

- (1) Does the above discussion properly summarize this issue?
- (2) Is it likely that the CO CEMS for Unit 4 will be certified by the end of February? Has Unit 4 achieved 90% of the maximum permitted heat input rate after installing the LNB?
- (3) The application indicates that an additional stack test will be conducted on Unit 5 in accordance with EPA Method 10 to demonstrate that initial CO emissions will be below the numerical portion of the permitted CO emissions standard (0.17 lb/MMBtu of heat input and 1156.0 lb/hour based on a 30-day rolling

## REQUEST FOR ADDITIONAL INFORMATION

average). See suggested permit revision below. What is the current schedule for conducting the additional CO test on Unit 5? Until the CO CEMS is installed and certified for Unit 5, you intend to demonstrate compliance by: the additional stack test data, the Relative Accuracy Test Assessment (RATA) data from the Unit 4 CEMS, and data collected from the Unit 4 CEMS once it is certified. Is this correct?

### CEMS Applicability Trigger and Consistent Timeframes for Installation and Startup of Air Pollution Control Systems

- (4) The application identifies confusion with several permit conditions that establish initial compliance requirements for the coal-fired units. The Department's original intent was to require that the CEMS be installed and certified within 60 days of completing construction on the related air pollution control device. Monitoring data collected from the CEMS would be used to demonstrate compliance with the new emissions standards after completing shakedown of the air pollution control equipment and reestablishing "normal" operation. To clarify this issue, the Department suggests the following revisions:

#### 6. Authorized Fuels:

- a. In addition to the currently authorized fuels, this air construction permit authorizes Units 4 and 5 to fire a blend of bituminous coal and sub-bituminous coal of up to 20% sub-bituminous coal upon issuance of this permit. Once initial shakedown of the FGD system is complete, Coal fuel blends shall not exceed a maximum sulfur content of 3.13% by weight.

14. CO CEMS Installation: For Units 4 and 5, the permittee shall properly install, calibrate, operate and maintain CEMS to measure and record CO emissions in the terms of the applicable standard. Each CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The permittee shall locate the CEMS by following the procedures contained in the applicable performance specification of 40 CFR Part 60, Appendix B. The permittee shall install each CEMS required by this permit and conduct the appropriate performance specification for each CEMS within 60 calendar days of completing installation of the low-NO<sub>x</sub> burners and achieving permitted capacity as defined in Rule 62-297.310(2), F.A.C., but no later than 180 calendar days after initial startup. As an option for Unit 5 because of verifiable construction delays, the permittee may delay installation of the CO CEMS until the Unit 5 exhaust is tied into the new FGD system and stack, but not to exceed 180 days from completing installation of the low-NO<sub>x</sub> burners. If this option is selected, the permittee shall conduct an initial CO stack test in accordance with EPA Method 10 within 60 days of completing installation of the low-NO<sub>x</sub> burners that demonstrates compliance with a CO emissions standard of 0.17 lb/MMBtu of heat input based on a 3-run test average. In addition, CEMS data collected from similar Unit 4 shall be used as a surrogate to show compliance until the Unit 5 CEMS is installed. Based on the Unit 4 CEMS data, the Compliance Authority may require special tests in accordance with Rule 62-297.310(7)(b), F.A.C. [Rules 62-4.070(3), 62-297.310(7)(b) and 62-212.400(BACT), F.A.C.]

15. Compliance by CEMS: Compliance with the standards for opacity and emissions of CO, NO<sub>x</sub>, and SO<sub>2</sub> shall be demonstrated with data collected from the required continuous monitoring systems. Within 60 days of reestablishing commercial operation of completing construction on the related air pollution control device for each unit, the permittee shall certify proper operation of each required monitor. The permittee shall comply with the conditions of Appendix F (Standard Continuous Monitoring Requirements) of this permit as the compliance method for the corresponding emissions standards. The permittee shall begin demonstrating compliance with the CO CEMS emissions standards once a monitor is certified. The permittee shall begin demonstrating compliance with the opacity, NO<sub>x</sub> and SO<sub>2</sub> COMS/CEMS emissions standards after completing the initial shakedown of the associated air pollution control device, but no later than 180 days after certifying the corresponding COMS/CEMS. Within 10 days of completing initial shakedown for an air pollution control device, the permittee shall

## REQUEST FOR ADDITIONAL INFORMATION

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notify the compliance authority of the following: the air pollution control device; the date that shutdown was completed; the monitoring data being collected to demonstrate continuous compliance; and the status of the other air pollution control devices. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

No changes are proposed for Specific Condition Nos. 16 and 19. Please comment.

### Changes to On Site Limestone/Gypsum Handling and Storage Systems

- (5) The application indicates that the limestone operations will be subject to the New Source Performance Standards in Subpart OOO of 40 CFR 60. Please identify how the affected activities will be controlled to comply with the NSPS requirements.
- (6) The application indicates that gypsum will not be transferred to the wallboard plant by conveyor, but by truck; however, these emissions were conservatively considered in the modeling analysis. Please identify and explain the estimated potential emissions increase of particulate matter (< 1 ton/year).
- (7) How long will gypsum be stored on site? Describe the changes to the proposed gypsum storage building. What measures will be taken to control fugitive dust emissions from the gypsum storage area?

### Table 1: Emissions Limit Applicability

- (8) This table summarizes Progress Energy's understanding of the applicability dates and triggers for the new limits imposed by the permit. For clarity, please identify the permit condition that you believe to be the controlling requirement as well as any other conditions that might be considered in conflict with the controlling requirement.

### Alkali Injection System

- (9) Please provide supporting information from the equipment vendor regarding: the proposed maintenance schedule; the amount of time needed for shutdown to conduct the maintenance; the shared or common equipment; the cost of the shared or common equipment; the cost to install redundant shared or common equipment; and a detailed description of the operational control of the alkali injection system.
- (10) The Department understands that scheduled maintenance on the alkali injection system will be performed when at least one unit (Unit 4 or 5) is shutdown. However, during this period, the alkali system must also be shutdown since the systems share critical common equipment. Please estimate the sulfuric acid mist (SAM) emissions rate during this shutdown for maintenance (one unit in operation without control by alkali injection). Please describe the measures that will be taken to minimize excess emissions during these periods.
- (11) Since this issue may be more complicated to resolve than the other items, please advise the Department whether you would like to split this issue off as a separate permit request.

The above information is requested pursuant to the following F.A.C. regulations: Rule 62-4.050 (Procedures to Obtain Permits and Other Authorizations; Applications); 62-4.055 (Permit Processing); 62-4.070 (Standards for Issuing or Denying Permits; Issuance; Denial); 62-4.120 (Construction Permits); 62-204.800 (Federal Regulations Adopted by Reference); 62-212.300 (Permits Required); 62-210.370 (Emissions Computations and Reporting); 62-210.900 (Forms and Instructions); 62-212.300 (General Preconstruction review); and 62-212.400 (Preventions of Significant Deterioration). All applications for a Department permit must be certified by a professional engineer registered in the State of Florida pursuant to Rule 62-4.050(3), F.A.C. This requirement also applies to responses to Department requests for additional information of an engineering nature. For any material changes to the application, please include a new certification statement by the authorized representative or responsible official.

## REQUEST FOR ADDITIONAL INFORMATION

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We will resume processing your application after receipt of the requested information. You are reminded that Rule 62-4.055(1), F.A.C. requires applicants to respond to requests for information within 90 days or to provide a written request for an additional period of time to submit the information. If you have any questions regarding this matter, please contact the project engineer, Jeff Koerner, at 850/921-9536.

Sincerely,



Jeffery F. Koerner, Administrator  
New Source Review Section

This letter was sent to the following people by electronic mail with received receipt requested.

Mr. Larry Hatcher, Progress Energy ([larry.hatcher@pgnmail.com](mailto:larry.hatcher@pgnmail.com))  
Mr. David Meyer, Progress Energy ([dave.meyer@pgnmail.com](mailto:dave.meyer@pgnmail.com))  
Mr. Benjamin M. H. Borsch, Progress Energy ([benjamin.borsch@pgnmail.com](mailto:benjamin.borsch@pgnmail.com))  
Mr. Scott Osbourn, Golder Associates Inc. ([sosbourn@golder.com](mailto:sosbourn@golder.com))  
Ms. Cindy Zhang-Torres, SWD Office ([cindy.zhang-torres@dep.state.fl.us](mailto:cindy.zhang-torres@dep.state.fl.us))  
Mr. Mike Halpin, Siting Office ([halpin\\_m@dep.state.fl.us](mailto:halpin_m@dep.state.fl.us))  
Mr. James Little, EPA Region 4 ([little.james@epa.gov](mailto:little.james@epa.gov))  
Ms. Kathleen Forney, EPA Region 4 ([forney.kathleen@epa.gov](mailto:forney.kathleen@epa.gov))  
Ms. Heather Abrams, EPA Region 4 ([abrams.heather@epamail.epa.gov](mailto:abrams.heather@epamail.epa.gov))  
Mr. Dee Morse, National Park Service ([dee\\_morse@nps.gov](mailto:dee_morse@nps.gov))  
Ms. Vickie Gibson, BAR Reading File ([victoria.gibson@dep.state.fl.us](mailto:victoria.gibson@dep.state.fl.us))

## Livingston, Sylvia

---

**From:** Hatcher, Larry [Larry.Hatcher@pgnmail.com]  
**To:** Livingston, Sylvia  
**Sent:** Wednesday, January 28, 2009 8:33 PM  
**Subject:** Read: RAI-0170004-022-AC/PSD-FL-383B (Progress Energy Florida, Crystal River Power Plant)

Your message

**To:** [Larry.Hatcher@pgnmail.com](mailto:Larry.Hatcher@pgnmail.com)  
**Subject:**

was read on 1/28/2009 8:33 PM.

## Livingston, Sylvia

---

**From:** Meyer, Dave [Dave.Meyer@pgnmail.com]  
**Sent:** Wednesday, January 28, 2009 5:31 PM  
**To:** Livingston, Sylvia  
**Subject:** RE: RAI-0170004-022-AC/PSD-FL-383B (Progress Energy Florida, Crystal River Power Plant)

Hi Sylvia,

I got the email. Thank you very much, Dave

---

**From:** Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]  
**Sent:** Wednesday, January 28, 2009 4:36 PM  
**To:** Hatcher, Larry  
**Cc:** Meyer, Dave; Borsch, Benjamin; sosbourn@golder.com; Zhang-Torres; Halpin, Mike; little.james@epa.gov; forney.kathleen@epa.gov; abrams.heather@epa.gov; dee\_morse@nps.gov; Gibson, Victoria; Walker, Elizabeth (AIR); Koerner, Jeff  
**Subject:** RAI-0170004-022-AC/PSD-FL-383B (Progress Energy Florida, Crystal River Power Plant)

Dear Sir/Madam:

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

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

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

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

Thank you,

Sylvia Livingston  
Bureau of Air Regulation  
Division of Air Resource Management (DARM)  
850/921-9506  
[sylvia.livingston@dep.state.fl.us](mailto:sylvia.livingston@dep.state.fl.us)

*The Department of Environmental Protection values your feedback as a customer. DEP Secretary Michael W. Sole is committed to continuously assessing and improving the level and quality of services provided to you. Please take a few*

## Livingston, Sylvia

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**From:** Dee\_Morse@nps.gov  
**Sent:** Wednesday, January 28, 2009 5:06 PM  
**To:** Livingston, Sylvia  
**Subject:** Re: RAI-0170004-022-AC/PSD-FL-383B (Progress Energy Florida, Crystal River Power Plant)

Document Received

## Livingston, Sylvia

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**From:** Hatcher, Larry [Larry.Hatcher@pgnmail.com]  
**Sent:** Thursday, January 29, 2009 8:15 PM  
**To:** Livingston, Sylvia  
**Subject:** RE: RAI-0170004-022-AC/PSD-FL-383B (Progress Energy Florida, Crystal River Power Plant)

I have received the document. We will be sending our reply as requested.

Larry

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**From:** Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]  
**Sent:** Thursday, January 29, 2009 3:43 PM  
**To:** Hatcher, Larry  
**Subject:** FW: RAI-0170004-022-AC/PSD-FL-383B (Progress Energy Florida, Crystal River Power Plant)

We have not received confirmation that you were able to access the attached RAI document e-mailed on January 28, 2009. Please confirm receipt by opening the attachment and sending a reply to me.

The Division of Air Resource Management is sending electronic versions of these documents rather than sending them Return Receipt Requested via the US Postal service. Your "receipt confirmation" reply serves the same purpose as tracking the receipt of the signed "Return Receipt" card from the US Postal Service. Please let me know if you have any questions.

Thanks,

Sylvia Livingston  
Bureau of Air Regulation  
Division of Air Resource Management (DARM)  
850/921-9506  
[sylvia.livingston@dep.state.fl.us](mailto:sylvia.livingston@dep.state.fl.us)

*The Department of Environmental Protection values your feedback as a customer. DEP Secretary Michael W. Sole is committed to continuously assessing and improving the level and quality of services provided to you. Please take a few minutes to comment on the quality of service you received. Simply click on [this link to the DEP Customer Survey](#). Thank you in advance for completing the survey.*


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**From:** Livingston, Sylvia  
**Sent:** Wednesday, January 28, 2009 4:36 PM  
**To:** 'larry.hatcher@pgnmail.com'  
**Cc:** 'dave.meyer@pgnmail.com'; 'benjamin.borsch@pgnmail.com'; 'sosbourn@golder.com'; Zhang-Torres; Halpin, Mike; 'little.james@epa.gov'; 'forney.kathleen@epa.gov'; 'abrams.heather@epa.gov'; 'dee\_morse@nps.gov'; Gibson, Victoria; Walker, Elizabeth (AIR); Koerner, Jeff  
**Subject:** RAI-0170004-022-AC/PSD-FL-383B (Progress Energy Florida, Crystal River Power Plant)

Dear Sir/Madam:

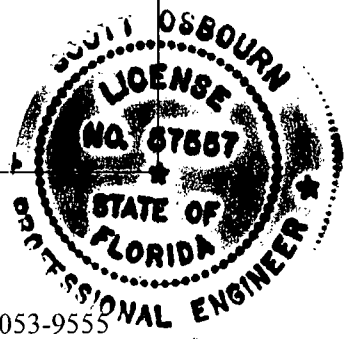
RECEIVED

**Professional Engineer Certification**

1. Professional Engineer Name: <b>SCOTT OSBOURN</b>	MAR 12 2009
Registration Number: <b>57557</b>	
2. Professional Engineer Mailing Address... Organization/Firm: <b>GOLDER ASSOCIATES, INC. **</b> Street Address: <b>5100 WEST LEMON ST., SUITE 114</b> City: <b>TAMPA</b> State: <b>FL</b> Zip Code: <b>33609</b>	BUREAU OF AIR REGULATION
3. Professional Engineer Telephone Numbers... Telephone: <b>(813) 287-1717</b> ext. Fax: <b>(813) 287-1716</b>	
4. Professional Engineer E-mail Address: <b>SOSBOURN@GOLDER.COM</b>	
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 <u></u> Date <u>3/11/09</u> (seal)	

\* Attach any exception to certification statement

\*\* Board of Professional Engineers Certificate of Authorization #00001670





Larry E. Hatcher  
Manager, Crystal River  
Fossil Plant & Fuel Operations

February 25, 2009

Mr. Jeffrey F. Koerner, Administrator  
New Source Review Section  
Air Quality Division  
Florida Department of Environmental Protection  
2600 Blair Stone Road,  
MS 5000  
Tallahassee, Florida 32399-2400

RECEIVED

MAR 12 2009

BUREAU OF AIR REGULATION

Re: **Request for Additional Information**  
Progress Energy Florida, Crystal River Power Plant  
Project No. 01700004-022-AC (PSD-FL-383B)  
Miscellaneous Permit Revisions

Dear Mr. Koerner:

This letter is written in response to your request for additional information regarding the subject permit application. In order to most clearly provide responses to your questions, we have reiterated the questions in *italics*, along with some of the introductory statements and topic headings.

**Installation of the Carbon Monoxide (CO) Continuous Emissions Monitoring Systems (CEMS)**

Construction was delayed substantially from the preliminary schedule. Low-NOx burners (LNB) were installed on Unit 4 in December of 2008. The CO CEMS has also been installed. The permit requires certification of the CO CEMS within 60 calendar days of achieving permitted capacity, but no later than 180 calendar days after initial startup. The permit also requires initial stack tests for volatile organic compounds (VOC) to be conducted within 60 days of installing the LNB. The installation of LNB on Unit 5 is scheduled for May of 2009. However, the outage to tie in the flue gas desulfurization (FGD) system is not scheduled until October of 2009. The permanent CO CEMS is intended to be installed on the new stack after the FGD system. Therefore, there will be a 5-month delay to install the CO CEMS on Unit 5; otherwise a temporary CEMS must be installed.

(1) *Does the above discussion properly summarize this issue?*

**Response:** In general it does. Please note that the currently scheduled date for the start of the Unit 5 fall outage (during which the FGD and new stack tie-ins will occur) has been adjusted to November 9, 2009. Although no significant further delays are anticipated, construction conditions and contingencies are not always predictable and some additional schedule slip is possible.

(2) *Is it likely that the CO CEMS for Unit 4 will be certified by the end of February? Has Unit 4 achieved 90% of the maximum permitted heat input rate after installing the LNB?*

**Response:** Unit 4 achieved greater than 90% of the unit capacity on January 2, 2009. We anticipate that certification of the CO CEMS will be completed within the required 60 day period.

(3) *The application indicates that an additional stack test will be conducted on Unit 5 in accordance with EPA Method 10 to demonstrate that initial CO emissions will be below the numerical portion of the permitted CO*

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

*emissions standard (0.17lb/MMBtu of heat input and 1156.0 lb/hour based on a 30-day rolling average). See suggested permit revision below. What is the current schedule for conducting the additional CO test on Unit 5? Until the CO CEMS is installed and certified for Unit 5, you intend to demonstrate compliance by: the additional stack test data, the Relative Accuracy Test Assessment (RATA) data from the Unit 4 CEMS, and data collected from the Unit 4 CEMS once it is certified. Is this correct?*

**Response:** Comments on the suggested permit language are below (See response to question 4). Progress Energy plans to complete the additional Method 10 compliance test within 60 days of completing installation of the low-NOx burners on Unit 5. The current schedule calls for this installation to be complete in mid-May 2009, therefore it is expected that this test would be conducted in the early part of July. Progress Energy's proposal for providing reasonable assurance of compliance during the interim period is as stated in your question, by the stack test and by the data provided from Unit 4, both in the initial RATA and the ongoing CEMS data.

**CEMS Applicability Trigger and Consistent Timeframes for Installation and Startup of Air Pollution Control Systems**

(4) *The application identifies confusion with several permit conditions that establish initial compliance requirements for the coal-fired units. The Department's original intent was to require that the CEMS be installed and certified within 60 days of completing construction on the related air pollution control device. Monitoring data collected from the CEMS would be used to demonstrate compliance with the new emissions standards after completing shakedown of the air pollution control equipment and reestablishing "normal" operation. To clarify this issue, the Department suggests the following revisions:*

**6. Authorized Fuels:**

- a. In addition to the currently authorized fuels, this air construction permit authorizes Units 4 and 5 to fire a blend of bituminous coal and sub-bituminous coal of up to 20% sub-bituminous coal upon issuance of this permit. Once initial shakedown of the FGD system is complete, coal fuel blends shall not exceed a maximum sulfur content of 3.13% by weight.

14. CO CEMS Installation: For Units 4 and 5, the permittee shall properly install, calibrate, operate and maintain CEMS to measure and record CO emissions in the terms of the applicable standard. Each CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The permittee shall locate the CEMS by following the procedures contained in the applicable performance specification of 40 CFR Part 60, Appendix B. The permittee shall install each CEMS required by this permit and conduct the appropriate performance specification for each CEMS within 60 calendar days of completing installation of the low-NOx burners and achieving permitted capacity as defined in Rule 62-297.310(2), F.A.C., but no later than 180 calendar days after initial startup. As an option for Unit 5 verifiable construction delays, the permittee may delay installation of the CO CEMS until the Unit 5 exhaust is tied into the new FGD system and stack but not to exceed 180 days from completing installation of the low-NOx burners. If this option is selected, the permittee shall conduct an initial CO stack test in accordance with EPA Method 10 within 60 days of completing installation of the low-NOx burners that demonstrates compliance with a CO emissions standard of 0.17 lb/MMBtu of heat input based on a 3 run test average. In addition CEMS data collected from similar Unit 4 shall be used as a surrogate to show compliance until the Unit 5 CEMS is installed. Based on the Unit 4 CEMS data the Compliance Authority may require special tests in accordance with Rule 62-297.310(7)(b) F.A.C. [Rules 62-4.070(3), 62-297.310(7)(b) and 62-212.400(BACT), F.A.C.]

15. Compliance by CEMS: Compliance with the standards for opacity and emissions of CO, NOx, and SO2 shall be demonstrated with data collected from the required continuous monitoring systems. Within 60 days of reestablishing commercial operation of completing construction on the related air pollution control device for each unit, the permittee shall certify proper operation of each required monitor. The permittee shall comply with the conditions of Appendix F (Standard Continuous Monitoring Requirements) of this permit as the compliance method for the corresponding emissions standards. The permittee shall begin demonstrating compliance with the CO CEMS emissions standards once a monitor is certified. The permittee shall begin demonstrating compliance with the opacity, NOx and SO2 COMS/CEMS emissions standards after completing initial shakedown of the associated air pollution control device, but no later than 180 days after certifying the

corresponding COMS/CEMS. Within 10 days of completing initial shakedown for an air pollution control device, permittee shall notify the compliance authority of the following: the air pollution control device; the date that shakedown was completed; the monitoring data being collected to demonstrate continuous compliance; and the status of other air pollution control devices. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

*No changes are proposed for Specific Condition Nos. 16 and 19. Please comment.*

**Response:** In general, PEF believes that the language proposed here will meet our requirements. We have suggested changes on two points in these conditions.

In Condition 6.a., the Department has suggested adding the clause "Once initial shakedown of the FGD system is complete". PEF's understanding is that the effect of this clause would be to limit the Units to firing coals of less than 0.68 % sulfur until the FGD shakedown is complete and the units comply with the new permit limit. In order to retain flexibility to test the FGD on some higher sulfur fuels, PEF suggests the following milestones:

- From start up of the FGD system until certification of the FGD SO<sub>2</sub> CEMS, PEF will be required to fire coals with a sulfur percentage of less than 0.68%. This period is limited to 60 days following completion of installation of the FGD system by Condition 15.
- Following certification of the CEMS but prior to the completion of the FGD shakedown period, PEF will demonstrate via the CEMS that the sulfur dioxide exiting the stack is no greater than 1.2 lb/mmBtu as required by Condition B.5.a. of the existing Title V permit. This period is limited to 180 days by Condition 15.
- Following completion of the shakedown period, the units will comply with the new SO<sub>2</sub> limit of 0.27 lb/mmBtu.

This proposed approach provides PEF with flexibility to test additional coal mixtures during the shakedown period with the understanding that the FGD system will provide reduction in SO<sub>2</sub> emissions although it may not reach the design removal efficiency until the completion of the shakedown activities.

In the proposed language for Condition 14, PEF recognizes and intends to comply with the agency's desire to limit the period of Unit 5 operation with the alternate method of compliance to no more than 180 days. However, because of the anticipated length of the fall 2009 Unit 5 outage (for the tie in to the new stack), PEF expects that the total time from restart of unit 5 with the low-NOx burners to the certification of the new CO CEMS will be greater than 180 days. PEF proposes that the period of operation of Unit 5 with the alternate method of compliance prior to tie-in to the new stack be limited to 180 days, but that PEF have the 60 day period following restart of the unit with the new stack to accomplish certification of the new CEMS.

Suggested permit language covering each of these topics is presented here. We have "accepted" all the previous changes from FDEP before marking additional additions in underscore and deletions in ~~striketrough~~.

6. Authorized Fuels:

- a. In addition to the currently authorized fuels, this air construction permit authorizes Units 4 and 5 to fire a blend of bituminous coal and sub-bituminous coal of up to 20% sub-bituminous coal upon issuance of this permit. Once initial shakedown of the FGD system is complete, coalCoal fuel blends shall not exceed a maximum sulfur content of 3.13% by weight.

14. CO CEMS Installation: For Units 4 and 5, the permittee shall properly install, calibrate, operate and maintain CEMS to measure and record CO emissions in the terms of the applicable standard. Each CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The permittee shall locate the CEMS by following the procedures contained in the applicable performance specification of 40 CFR Part 60, Appendix B. The permittee shall install each CEMS required by this permit and conduct the appropriate performance specification for each CEMS within 60 calendar days of completing installation of the low-NOx burners and achieving permitted capacity as defined in Rule 62-297.310(2), F.A.C., but no later than 180 calendar days after initial startup. As an option for Unit 5 verifiable construction delays, the permittee may delay installation of the CO CEMS until the Unit 5 exhaust is tied into the new FGD system and stack but not to exceed 180 days from completing installation of the low-NOx burners.

If this option is selected, the permittee shall conduct an initial CO stack test in accordance with EPA Method 10 within 60 days of completing installation of the low-NOx burners that demonstrates compliance with a CO emissions standard of 0.17 lb/MMBtu. of heat input based on a 3 run test average. In addition CEMS data collected from similar Unit 4 shall be used as a surrogate to show compliance until the Unit 5 CEMS is installed. Based on the Unit 4 CEMS data the Compliance Authority may require special tests in accordance with Rule 62-297.310(7)(b) F.A.C. The period of alternate compliance shall not last longer than 180 days. Within 60 days following the tie in of Unit 5 to the new stack, the permittee shall certify the operation of the new CEMS. [Rules 62-4.070(3), 62-297.310(7)(b) and 62-212.400(BACT), F.A.C.]

15. **Compliance by CEMS:** Compliance with the standards for opacity and emissions of CO, NOx, and SO2 shall be demonstrated with data collected from the required continuous monitoring systems. Within 60 days of completing construction on the related air pollution control device for each unit, the permittee shall certify proper operation of each required monitor. The permittee shall comply with the conditions of Appendix F (Standard Continuous Monitoring Requirements) of this permit as the compliance method for the corresponding emissions standards. The permittee shall begin demonstrating compliance with the CO CEMS emissions standards once a monitor is certified. The permittee shall begin demonstrating compliance with the opacity, NOx and SO2 COMS/CEMS emissions standards after completing initial shakedown of the associated air pollution control device, but no later than 180 days after certifying the corresponding COMS/CEMS. During the period between certification of the SO2 CEMS and the completion of initial shakedown of the FGD, the unit will comply with SO2 emissions limits set forth in existing Title V permit condition B.5.a.(2) {Permit #017004-015-AV} Within 10 days of completing initial shakedown for an air pollution control device, permittee shall notify the compliance authority of the following: the air pollution control device; the date that shakedown was completed; the monitoring data being collected to demonstrate continuous compliance; and the status of other air pollution control devices. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

#### **Changes to On Site Limestone/Gypsum Handling and Storage Systems**

- (5) *The application indicates that the limestone operations will be subject to the New Source Performance Standards in Subpart 000 of 40 CFR 60. Please identify how the affected activities will be controlled to comply with the NSPS requirements.*

**Response:** PEF has identified that the New Source Performance Standards in Subpart 000 of 40 CFR 60 will apply to the limestone handling and processing operations at the site. PEF believes that no additional controls are required and that the additional requirements of Subpart 000 are for specific testing, recordkeeping and reporting procedures. PEF has already proposed stringent baghouse and bin vent filter controls on limestone processing operations and transfer points, as well as enclosures and other dust suppression measures at other process emission points. These measures will meet the requirements of Subpart 000.

Subpart 000 requires particulate testing (Method 5/17) for baghouse discharge points and Opacity (Method 9) testing using a certified observer for most controlled and uncontrolled drop points such as hopper to conveyor or from conveyor to conveyor. NSPS Subpart 000 determines compliance with the particulate matter and opacity standards in §60.672(a) as follows:

On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any stack emissions which:

- (1) Contain particulate matter in excess of 0.05 g/dscm (0.022 gr/dscf); and
- (2) Exhibit greater than 7 percent opacity, unless the stack emissions are discharged from an affected facility using a wet scrubbing control device.

On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under §60.11 of this part, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any fugitive emissions which exhibit greater than 10 percent opacity, except as provided in paragraphs (c), (d), and (e) of this section.

In addition, the Subpart A requirement under §60.7(a)(2) for notification of the anticipated date of initial startup of an affected facility shall be waived for owners or operators of affected facilities regulated under this subpart. Further, a notification of the actual date of initial startup of each affected facility shall be submitted to the Administrator and, finally, for a combination of affected facilities in a production line that begin actual initial startup on the same day, a single notification of startup may be submitted by the owner or operator to the Administrator. The notification shall be postmarked within 15 days after such date and shall include a description of each affected facility, equipment manufacturer, and serial number of the equipment, if available.

- (6) *The application indicates that gypsum will not be transferred to the wallboard plant by conveyor, but by truck; however, these emissions were conservatively considered in the modeling analysis. Please identify and explain the estimated potential emissions increase of particulate matter (<1 ton/year).*

**Response:** Following a review of the modeling conducted, PEF has recognized that the modeling performed for the initial application included some 150 truck trips associated with the transfer of gypsum to the wall board plant. At that time, the conveyor was not a certainty and PEF modeling included the truck traffic to be conservative. Golder has reviewed this modeling and the associated emissions assumptions and has updated the overall particulate emissions. This update, which estimated a difference of less than one ton per year, includes emissions associated with the additional handling and storage of the gypsum at the proposed onsite handling pad. No update to the emissions associated with truck traffic was required as these were included in the original estimate. Based on these changes, the total change in particulate matter emissions are estimated to be less than one ton per year. The estimation of these emissions is documented in two calculation sheets attached, one for the transfer and one for the wind erosion from the pile.

- (7) *How long will gypsum be stored on site? Describe the changes to the proposed gypsum storage building. What measures will be taken to control fugitive dust emissions from the gypsum storage area?*

**Response:** The gypsum storage pad will be capable of handling approximately 32,000 tons of gypsum which represents approximately 12 days of operational capacity. There is no gypsum storage building. A lined concrete handling pad, with the capacity described previously, will be constructed. This pad will contain any runoff and will send the runoff back in to the FGD process. Water sprays will be used to control dusting from the pad. After initial wetting it is expected that a crust will form on the pile and only the working face will require continuous attention.

#### **Table 1. Emissions Limit Applicability**

- (8) *This table summarizes Progress Energy's understanding of the applicability dates and triggers for the new limits imposed by the permit. For clarity, please identify the permit condition that you believe to be the controlling requirement as well as any other conditions that might be considered in conflict with the controlling requirement.*

**Response:** A revised Table 1 is attached. Please note the PEF has corrected the PM and Opacity applicability to show that the new limits are dependent on the operation of the FGD for each unit. Note that approval of the requested language changes in question #4 above will result in minor changes to this table.

#### **Alkali Injection System**

- (9) *Please provide supporting information from the equipment vendor regarding: the proposed maintenance schedule; the amount of time needed for shutdown to conduct the maintenance; the shared or common equipment; the cost of the shared or common equipment; the cost to install redundant shared or common equipment; and a detailed description of the operational control of the alkali injection system.*

**Response:** PEF is working with the vendor and our EPC contractor to develop this information. We will provide this information to the agency as soon as it is available. Please see our response to Question 11, below, regarding severance of this issue from the other issues addressed in this letter.

*(10) The Department understands that scheduled maintenance on the alkali injection system will be performed when at least one unit (Unit 4 or 5) is shutdown. However, during this period, the alkali system must also be shutdown since the systems share critical common equipment. Please estimate the sulfuric acid mist (SAM) emissions rate during this shutdown for maintenance (one unit in operation without control by alkali injection). Please describe the measures that will be taken to minimize excess emissions during these periods.*

**Response:** As presented in Table B-1 of the application, the calculated emissions rate for SAM is 0.009 lb/mmBtu. This is also the limit expressed in the permit. Based on the maximum hourly heat input rate of 7,200 MMBtu/hr, this represents a maximum emission of 65.4 lb/hr with the system in operation. Progress calculates that the maximum emission with the ammonia injection off line will be 503.8 lb/hr (per unit). Based on the understanding that the ammonia system would be off line for a maximum of 10 days per year during which time one unit would be off line, this represents a maximum increase in emissions (potential to emit) of 5.26 tons per year from the unit that is operating (per unit). The calculations are shown in the table below.

Operation	Units	AMM System On	AMM System Off
Maximum Coal Sulfur Content	%	3.13	3.13
Coal Heat Content	Btu/lb	11375	11375
Uncontrolled SO2 Emissions	lb/mmBtu	5.5	5.5
Combustion Factor		0.011	0.011
SAM from Combustion	lb/mmBtu	0.093	0.093
SCR factor		0.005	0.005
SAM produced by SCR	lb/mmBtu	0.042	0.042
SAM leaving SCR	lb/mmBtu	0.135	0.135
Air Heater Factor		0.9	0.9
SAM leaving Air Heater	lb/mmBtu	0.121	0.121
ESP w/ AMM system		0.1	0.77
SAM leaving ESP	lb/mmBtu	0.012	0.093
FGD System Factor		0.75	0.75
SAM Leaving FGD	lb/mmBtu	0.009	0.070
Heat Input	mmbtu/hr	7200	7200
SAM Emission Rate (lb/hr)	lb/hr	65.4	503.8
Potential Emissions for 10 days per year	TPY	0.79	6.05
Change in Emissions (PTE)	TPY		5.26

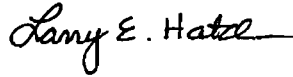
*(11) Since this issue may be more complicated to resolve than the other items, please advise the Department whether you would like to split this issue off as a separate permit request.*

**Response:** As PEF anticipates that it will take some time to generate the information requested regarding the AMM system (see response to question #9 above), and as PEF must make a decision on the purchase of the interim CEMS for Unit 5 immediately, we appreciate the department's willingness to address this issue separately in order to allow the other issues to move forward in a more timely manner.

Mr. Jeffrey Koerner  
February 25, 2009  
Page 7 of 11

PEF looks forward to working with you regarding this matter. For additional information or to discuss any issues regarding this application, please contact Mr. David Meyer in our St. Petersburg office by telephone at (727) 820-5295 or via email at [dave.meyer@pgnmail.com](mailto:dave.meyer@pgnmail.com).

Sincerely,

A handwritten signature in cursive script that reads "Larry E. Hatcher".

Larry E. Hatcher

Plant Manager/Responsible Official

**TABLE 1 – EMISSIONS LIMIT APPLICABILITY**

Emissions Type	Current Permit Limit	New Permit Limit	Unit 4 New Limit Date	Unit 5 New Limit Date	Notes	Permit Condition <sup>1</sup>
Nitrogen Oxide (NO <sub>x</sub> )	0.50 lb/MMBTU	0.47 lb/mmbtu	End of Unit 4 2008 fall outage measured at existing CEMS	End of Unit 5 2009 Spring Outage by existing CEMS	Based upon a 12 month <u>rolling</u> average	9.a. (15)
Sulfur Dioxide (SO <sub>2</sub> )	1.2 lb/MMBTU	0.27 lb/mmbtu - Including SU/SD/M 1944.0 lb/hr - Excluding SU/SD/M	Within 60 days of Construction Completion of FGD (End of Unit 4 2010 spring outage) measured at new CEMS	Within 60 days of Construction Completion of FGD(End of Unit 5 2009 Fall outage) measured by new CEMS	mmBtu/hr based upon a 30 day <u>rolling</u> average lb/hr based on a 24 hour (midnight to midnight) rolling block average	9.b. (15)
Sulfuric Acid Mist (SAM)	none	0.009 lb/mmbtu <u>and</u> 64.8 lb/hr	Within 60 days of Construction Completion of AMM (End of Unit 4 2010 spring outage) measured Compliance Stack test	Within 60 days of Construction Completion of AMM (End of Unit 5 2009 Spring outage) measured Compliance Stack test	This new limit is in effect because current SAM emissions will increase by greater than 7 tons/year due to burning higher sulfur coal. Annual test required to determine compliance. No continuous monitor. Retest with each 0.5% sulfur increase. Required to develop SAM estimation curves, and AMM Monitoring Plan	8.c. (16)
Particulate Matter	0.1 lb/MMBTU	0.030 lb/mmbtu <u>and</u> 216.0 lb/hour	Within 60 days of Construction Completion of FGD (End of Unit 4 2010 spring outage) measured at new Stack	Within 60 days of Construction Completion of FGD (End of Unit 5 2009 Fall outage) measured at New Stack	Annual test required to determine compliance. No continuous monitor. PM Compliance Stack Test required after LNB installation, but at existing limit (0.1).	8.b (19.a)

Emissions Type	Current Permit Limit	New Permit Limit	Unit 4 New Limit Date	Unit 5 New Limit Date	Notes	Permit Condition <sup>1</sup>
Opacity	20%	10%	Within 60 days of Construction Completion of FGD (End of Unit 4 2010 spring outage) measured at new Stack	Within 60 days of Construction Completion of FGD (End of Unit 5 2009 Fall outage) measured at New Stack	Limit is based upon a 6 minute average, except one six minute block per hour can be as high as 20 percent opacity	8.e. (15, 19.a.)
Ammonia Slip	none	5 ppmv	Within 60 days of Construction Completion of SCR (End of Unit 4 2010 spring outage) measured Compliance Stack test	Within 60 days of Construction Completion of SCR (End of Unit 5 2009 Spring outage) measured Compliance Stack test	Annual test required to determine compliance. No <u>continuous compliance</u> monitor. Monitoring plan for Ammonia injection rate.	8.a. (19.a.) ;
Carbon Monoxide (CO)	none	0.17 lb/MMBtu excluded SU/SD/M 1156.0 lb/hr Including SU/SD/M	End of Unit 4 2008 fall outage measured at existing Interim CEMS	Seeking exemption for interim CO CEMS, Then end of Unit 5 Fall outage with New CO CEMS at new Stack	Based upon a 30 day rolling average. New compliance monitors to be installed.	8.c. (14)
VOC		.004 lb/MMBtu and 28.8 lb/hour	Within 60 days of Construction Completion (End of Unit 4 2008 fall outage) measured Compliance Stack test	Within 60 days of Construction Completion (End of Unit 5 2009 Spring outage) measured Compliance Stack test	3 run test average at permitted capacity	8.d. (19.a)

Permit conditions are listed with the condition for the limit followed by the condition covering the testing in (parentheses).

**TABLE A-1**  
**ESTIMATION OF PM EMISSION FACTORS AND RATES FOR THE GYPSUM HANDLING SYSTEM**  
**FROM BATCH/CONTINUOUS DROP OPERATIONS AT TRANSFER POINTS**

Parameters	Operations	
	Gypsum Handling	
	Truck to Conveyor; Conveyor to Pile	
<b>Emission Point/Area</b>		TR-1, TR-2
<b>Operational Data</b>		
Activity, hours	Daily	24
days	Annual	365
<b>Material Handling Data</b>		
Material type		Gypsum
Material throughput, ton/hr (design)	Hourly	83.3
ton/day	Daily	2,750
ton/yr	Annual	1,003,750
Moisture content (M), % (nominal)		10
Number of transfers		2
<b>General/ Site Characteristics</b>		
Mean wind speed, mph	Daily	16.4
	Annual	8.2
Particle size multiplier, PM (k)		0.74
Particle size multiplier, PM10 (k)		0.35
<b>Emission Control Data</b>		
Emission control method	High moisture content (included in emission factor)	
Emission control removal efficiency, %		0
<b>Emission Factor (EF) Equations</b>		
Uncontrolled EF (UEF) Equation	$UEF (lb/ton) = k \times (0.0032) \times (U / 5)^{1.3} / [(M / 2)^{1.4}]$	
Controlled EF (CEF) Equation	$CEF (lb/ton) = UEF (lb/ton) \times [100\% - \text{Removal efficiency} (\%)]$	
<b>Calculated PM Emission Factor (EF)</b>		
Uncontrolled EF, lb/ton	Short term	0.001165
	Annual	0.000473
Controlled EF, lb/ton	Short term	0.001165
	Annual	0.000473
<b>Calculated PM10 Emission Factor (EF)</b>		
Uncontrolled EF, lb/ton	Short term	0.000551
	Annual	0.000224
Controlled EF, lb/ton	Short term	0.000551
	Annual	0.000224
<b>Estimated Emission Rate (ER)</b>		
PM ER lb/hr (daily basis)		0.267
TPY		0.475
PM10 ER lb/hr (daily basis)		0.126
TPY		0.225

Source: USEPA, 1995; AP-42, Section 13.2.4 for Aggregate Handling and Storage Piles.

**TABLE A-2**  
**ESTIMATION OF PM EMISSION FACTORS AND RATES**  
**FOR WIND EROSION FROM ACTIVE GYPSUM STORAGE PILES**

Parameters	Operations	
	Gypsum handling	Gypsum Stockout Pile
Emission Point/Area		
Storage Pile Data		
Material Type	Gypsum	
Pile Description (shape)	Oval	
Average Storage (ton)		
Average Pile Height (ft)	40	
Average Pile Length (ft)	400	
Average Pile Width (ft)	90	
Size, ft <sup>2</sup>	36,000	
Size, acres	0.83	
General/ Site Characteristics		
Days of precipitation greater than or equal to 0.01 inch (p)	Short term	0
	Annual	103
Time (%) that unobstructed wind speed exceeds 5.4 m/s at mean pile height (f)	Short term	60
	Annual	10
Silt content (s), %		3
Particle size multiplier, PM (k)		1.00
Particle size multiplier, PM10 (k)		0.50
Emission Control Data		
Emission control method	None (high moisture content)	
Emission control removal efficiency, %		0
Emission Factor (EF) Equation		
Uncontrolled EF (UEF) Equation	$UEF \text{ (lb/day/acre)} = k \times 1.7 \times (s/1.5) \times ((365 - p)/235) \times (f/15)$	
Controlled (Final) EF (CEF) Equation	$CEF \text{ (lb/day/acre)} = UEF \text{ (lb/day/acre)} \times (100 - \text{Removal efficiency (\%)})$	
Calculated PM Emission Factor (EF)		
Uncontrolled EF, lb/day/acre	Short term	21.12
	Annual	2.53
Controlled EF, lb/day/acre	Short term	21.12
	Annual	2.53
Calculated PM10 Emission Factor (EF)		
Uncontrolled EF, lb/day/acre	Short term	6.80
	Annual	0.81
Controlled EF, lb/day/acre	Short term	6.80
	Annual	0.81
Estimated Emission Rate (ER)		
PM ER lb/hr (daily basis)		0.73
TPY		0.382
PM10 ER lb/hr (daily basis)		0.234
		0.123
TPY		

Source: USEPA, 1992 (Fugitive Dust Background and Technical Information Document for Best Available Control Measures, Section 2.3.1.3.3, Wind Emissions from Continuously Active Piles)



Larry E. Hatcher  
Manager, Crystal River  
Fossil Plant & Fuel Operations

February 25, 2009

Mr. Jeffrey F. Koerner, Administrator  
New Source Review Section  
**Air Quality Division**  
**Florida Department of Environmental Protection**  
2600 Blair Stone Road,  
MS 5000  
Tallahassee, Florida 32399-2400

RECEIVED

MAR 02 2009

BUREAU OF AIR REGULATION

Re: **Request for Additional Information**  
Progress Energy Florida, Crystal River Power Plant  
Project No. 01700004-022-AC (PSD-FL-383B)  
Miscellaneous Permit Revisions

Dear Mr. Koerner:

This letter is written in response to your request for additional information regarding the subject permit application. In order to most clearly provide responses to your questions, we have reiterated the questions in *italics*, along with some of the introductory statements and topic headings.

**Installation of the Carbon Monoxide (CO) Continuous Emissions Monitoring Systems (CEMS)**

Construction was delayed substantially from the preliminary schedule. Low-NOx burners (LNB) were installed on Unit 4 in December of 2008. The CO CEMS has also been installed. The permit requires certification of the CO CEMS within 60 calendar days of achieving permitted capacity, but no later than 180 calendar days after initial startup. The permit also requires initial stack tests for volatile organic compounds (VOC) to be conducted within 60 days of installing the LNB. The installation of LNB on Unit 5 is scheduled for May of 2009. However, the outage to tie in the flue gas desulfurization (FGD) system is not scheduled until October of 2009. The permanent CO CEMS is intended to be installed on the new stack after the FGD system. Therefore, there will be a 5-month delay to install the CO CEMS on Unit 5; otherwise a temporary CEMS must be installed.

(1) *Does the above discussion properly summarize this issue?*

**Response:** In general it does. Please note that the currently scheduled date for the start of the Unit 5 fall outage (during which the FGD and new stack tie-ins will occur) has been adjusted to November 9, 2009. Although no significant further delays are anticipated, construction conditions and contingencies are not always predictable and some additional schedule slip is possible.

(2) *Is it likely that the CO CEMS for Unit 4 will be certified by the end of February? Has Unit 4 achieved 90% of the maximum permitted heat input rate after installing the LNB?*

**Response:** Unit 4 achieved greater than 90% of the unit capacity on January 2, 2009. We anticipate that certification of the CO CEMS will be completed within the required 60 day period.

(3) *The application indicates that an additional stack test will be conducted on Unit 5 in accordance with EPA Method 10 to demonstrate that initial CO emissions will be below the numerical portion of the permitted CO*

**Progress Energy Florida, Inc.**

Crystal River Steam Plant  
15760 W. Powerline Street  
Crystal River, FL 34428

*emissions standard (0.17lb/MMBtu of heat input and 1156.0 lb/hour based on a 30-day rolling average). See suggested permit revision below. What is the current schedule for conducting the additional CO test on Unit 5? Until the CO CEMS is installed and certified for Unit 5, you intend to demonstrate compliance by: the additional stack test data, the Relative Accuracy Test Assessment (RATA) data from the Unit 4 CEMS, and data collected from the Unit 4 CEMS once it is certified. Is this correct?*

**Response:** Comments on the suggested permit language are below (See response to question 4). Progress Energy plans to complete the additional Method 10 compliance test within 60 days of completing installation of the low-NOx burners on Unit 5. The current schedule calls for this installation to be complete in mid-May 2009, therefore it is expected that this test would be conducted in the early part of July. Progress Energy's proposal for providing reasonable assurance of compliance during the interim period is as stated in your question, by the stack test and by the data provided from Unit 4, both in the initial RATA and the ongoing CEMS data.

#### **CEMS Applicability Trigger and Consistent Timeframes for Installation and Startup of Air Pollution Control Systems**

- (4) *The application identifies confusion with several permit conditions that establish initial compliance requirements for the coal-fired units. The Department's original intent was to require that the CEMS be installed and certified within 60 days of completing construction on the related air pollution control device. Monitoring data collected from the CEMS would be used to demonstrate compliance with the new emissions standards after completing shakedown of the air pollution control equipment and reestablishing "normal" operation. To clarify this issue, the Department suggests the following revisions:*

#### **6. Authorized Fuels:**

- a. In addition to the currently authorized fuels, this air construction permit authorizes Units 4 and 5 to fire a blend of bituminous coal and sub-bituminous coal of up to 20% sub-bituminous coal upon issuance of this permit. Once initial shakedown of the FGD system is complete, coal fuel blends shall not exceed a maximum sulfur content of 3.13% by weight.

14. CO CEMS Installation: For Units 4 and 5, the permittee shall properly install, calibrate, operate and maintain CEMS to measure and record CO emissions in the terms of the applicable standard. Each CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The permittee shall locate the CEMS by following the procedures contained in the applicable performance specification of 40 CFR Part 60, Appendix B. The permittee shall install each CEMS required by this permit and conduct the appropriate performance specification for each CEMS within 60 calendar days of completing installation of the low-NOx burners and achieving permitted capacity as defined in Rule 62-297.310(2), F.A.C., but no later than 180 calendar days after initial startup. As an option for Unit 5 verifiable construction delays, the permittee may delay installation of the CO CEMS until the Unit 5 exhaust is tied into the new FGD system and stack but not to exceed 180 days from completing installation of the low-NOx burners. If this option is selected, the permittee shall conduct an initial CO stack test in accordance with EPA Method 10 within 60 days of completing installation of the low-NOx burners that demonstrates compliance with a CO emissions standard of 0.17 lb/MMBtu of heat input based on a 3 run test average. In addition CEMS data collected from similar Unit 4 shall be used as a surrogate to show compliance until the Unit 5 CEMS is installed. Based on the Unit 4 CEMS data the Compliance Authority may require special tests in accordance with Rule 62-297.310(7)(b) F.A.C. [Rules 62-4.070(3), 62-297.310(7)(b) and 62-212.400(BACT), F.A.C.]

15. Compliance by CEMS: Compliance with the standards for opacity and emissions of CO, NOx, and SO2 shall be demonstrated with data collected from the required continuous monitoring systems. Within 60 days of ~~reestablishing commercial operation of~~ completing construction on the related air pollution control device for each unit, the permittee shall certify proper operation of each required monitor. The permittee shall comply with the conditions of Appendix F (Standard Continuous Monitoring Requirements) of this permit as the compliance method for the corresponding emissions standards. The permittee shall begin demonstrating compliance with the CO CEMS emissions standards once a monitor is certified. The permittee shall begin demonstrating compliance with the opacity, NOx and SO2 CEMS/CEMS emissions standards after completing initial shakedown of the associated air pollution control device, but no later than 180 days after certifying the

corresponding COMS/CEMS. Within 10 days of completing initial shakedown for an air pollution control device, permittee shall notify the compliance authority of the following: the air pollution control device; the date that shakedown was completed; the monitoring data being collected to demonstrate continuous compliance; and the status of other air pollution control devices. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

*No changes are proposed for Specific Condition Nos. 16 and 19. Please comment.*

**Response:** In general, PEF believes that the language proposed here will meet our requirements. We have suggested changes on two points in these conditions.

In Condition 6.a., the Department has suggested adding the clause "Once initial shakedown of the FGD system is complete". PEF's understanding is that the effect of this clause would be to limit the Units to firing coals of less than 0.68 % sulfur until the FGD shakedown is complete and the units comply with the new permit limit. In order to retain flexibility to test the FGD on some higher sulfur fuels, PEF suggests the following milestones:

- From start up of the FGD system until certification of the FGD SO<sub>2</sub> CEMS, PEF will be required to fire coals with a sulfur percentage of less than 0.68%. This period is limited to 60 days following completion of installation of the FGD system by Condition 15.
- Following certification of the CEMS but prior to the completion of the FGD shakedown period, PEF will demonstrate via the CEMS that the sulfur dioxide exiting the stack is no greater than 1.2 lb/mmBtu as required by Condition B.5.a. of the existing Title V permit. This period is limited to 180 days by Condition 15.
- Following completion of the shakedown period, the units will comply with the new SO<sub>2</sub> limit of 0.27 lb/mmBtu.

This proposed approach provides PEF with flexibility to test additional coal mixtures during the shakedown period with the understanding that the FGD system will provide reduction in SO<sub>2</sub> emissions although it may not reach the design removal efficiency until the completion of the shakedown activities.

In the proposed language for Condition 14, PEF recognizes and intends to comply with the agency's desire to limit the period of Unit 5 operation with the alternate method of compliance to no more than 180 days. However, because of the anticipated length of the fall 2009 Unit 5 outage (for the tie in to the new stack), PEF expects that the total time from restart of unit 5 with the low-NO<sub>x</sub> burners to the certification of the new CO CEMS will be greater than 180 days. PEF proposes that the period of operation of Unit 5 with the alternate method of compliance prior to tie-in to the new stack be limited to 180 days, but that PEF have the 60 day period following restart of the unit with the new stack to accomplish certification of the new CEMS.

Suggested permit language covering each of these topics is presented here. We have "accepted" all the previous changes from FDEP before marking additional additions in underscore and deletions in ~~strike through~~.

6. Authorized Fuels:

- a. In addition to the currently authorized fuels, this air construction permit authorizes Units 4 and 5 to fire a blend of bituminous coal and sub-bituminous coal of up to 20% sub-bituminous coal upon issuance of this permit. Once initial shakedown of the FGD system is complete, coalCoal fuel blends shall not exceed a maximum sulfur content of 3.13% by weight.

14. CO CEMS Installation: For Units 4 and 5, the permittee shall properly install, calibrate, operate and maintain CEMS to measure and record CO emissions in the terms of the applicable standard. Each CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The permittee shall locate the CEMS by following the procedures contained in the applicable performance specification of 40 CFR Part 60, Appendix B. The permittee shall install each CEMS required by this permit and conduct the appropriate performance specification for each CEMS within 60 calendar days of completing installation of the low-NO<sub>x</sub> burners and achieving permitted capacity as defined in Rule 62-297.310(2), F.A.C., but no later than 180 calendar days after initial startup. As an option for Unit 5 verifiable construction delays, the permittee may delay installation of the CO CEMS until the Unit 5 exhaust is tied into the new FGD system and stack, but not to exceed 180 days from completing installation of the low NO<sub>x</sub> burners.

If this option is selected, the permittee shall conduct an initial CO stack test in accordance with EPA Method 10 within 60 days of completing installation of the low-NOx burners that demonstrates compliance with a CO emissions standard of 0.17 lb/MMBtu of heat input based on a 3 run test average. In addition CEMS data collected from similar Unit 4 shall be used as a surrogate to show compliance until the Unit 5 CEMS is installed. Based on the Unit 4 CEMS data the Compliance Authority may require special tests in accordance with Rule 62-297.310(7)(b) F.A.C. The period of alternate compliance shall not last longer than 180 days. Within 60 days following the tie in of Unit 5 to the new stack, the permittee shall certify the operation of the new CEMS. [Rules 62-4.070(3), 62-297.310(7)(b) and 62-212.400(BACT), F.A.C.]

15. Compliance by CEMS: Compliance with the standards for opacity and emissions of CO, NOx, and SO2 shall be demonstrated with data collected from the required continuous monitoring systems. Within 60 days of completing construction on the related air pollution control device for each unit, the permittee shall certify proper operation of each required monitor. The permittee shall comply with the conditions of Appendix F (Standard Continuous Monitoring Requirements) of this permit as the compliance method for the corresponding emissions standards. The permittee shall begin demonstrating compliance with the CO CEMS emissions standards once a monitor is certified. The permittee shall begin demonstrating compliance with the opacity, NOx and SO2 COMS/CEMS emissions standards after completing initial shakedown of the associated air pollution control device, but no later than 180 days after certifying the corresponding COMS/CEMS. During the period between certification of the SO2 CEMS and the completion of initial shakedown of the FGD, the unit will comply with SO2 emissions limits set forth in existing Title V permit condition B.5.a.(2) {Permit #017004-015-AV} Within 10 days of completing initial shakedown for an air pollution control device, permittee shall notify the compliance authority of the following: the air pollution control device; the date that shakedown was completed; the monitoring data being collected to demonstrate continuous compliance; and the status of other air pollution control devices. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

#### **Changes to On Site Limestone/Gypsum Handling and Storage Systems**

- (5) *The application indicates that the limestone operations will be subject to the New Source Performance Standards in Subpart 000 of 40 CFR 60. Please identify how the affected activities will be controlled to comply with the NSPS requirements.*

**Response:** PEF has identified that the New Source Performance Standards in Subpart 000 of 40 CFR 60 will apply to the limestone handling and processing operations at the site. PEF believes that no additional controls are required and that the additional requirements of Subpart 000 are for specific testing, recordkeeping and reporting procedures. PEF has already proposed stringent baghouse and bin vent filter controls on limestone processing operations and transfer points, as well as enclosures and other dust suppression measures at other process emission points. These measures will meet the requirements of Subpart 000.

Subpart 000 requires particulate testing (Method 5/17) for baghouse discharge points and Opacity (Method 9) testing using a certified observer for most controlled and uncontrolled drop points such as hopper to conveyor or from conveyor to conveyor. NSPS Subpart 000 determines compliance with the particulate matter and opacity standards in §60.672(a) as follows:

On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any stack emissions which:

- (1) Contain particulate matter in excess of 0.05 g/dscm (0.022 gr/dscf); and
- (2) Exhibit greater than 7 percent opacity, unless the stack emissions are discharged from an affected facility using a wet scrubbing control device.

On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under §60.11 of this part, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any fugitive emissions which exhibit greater than 10 percent opacity, except as provided in paragraphs (c), (d), and (e) of this section.

In addition, the Subpart A requirement under §60.7(a)(2) for notification of the anticipated date of initial startup of an affected facility shall be waived for owners or operators of affected facilities regulated under this subpart. Further, a notification of the actual date of initial startup of each affected facility shall be submitted to the Administrator and, finally, for a combination of affected facilities in a production line that begin actual initial startup on the same day, a single notification of startup may be submitted by the owner or operator to the Administrator. The notification shall be postmarked within 15 days after such date and shall include a description of each affected facility, equipment manufacturer, and serial number of the equipment, if available.

- (6) *The application indicates that gypsum will not be transferred to the wallboard plant by conveyor, but by truck; however, these emissions were conservatively considered in the modeling analysis. Please identify and explain the estimated potential emissions increase of particulate matter (<1 ton/year).*

**Response:** Following a review of the modeling conducted, PEF has recognized that the modeling performed for the initial application included some 150 truck trips associated with the transfer of gypsum to the wall board plant. At that time, the conveyor was not a certainty and PEF modeling included the truck traffic to be conservative. Golder has reviewed this modeling and the associated emissions assumptions and has updated the overall particulate emissions. This update, which estimated a difference of less than one ton per year, includes emissions associated with the additional handling and storage of the gypsum at the proposed onsite handling pad. No update to the emissions associated with truck traffic was required as these were included in the original estimate. Based on these changes, the total change in particulate matter emissions are estimated to be less than one ton per year. The estimation of these emissions is documented in two calculation sheets attached, one for the transfer and one for the wind erosion from the pile.

- (7) *How long will gypsum be stored on site? Describe the changes to the proposed gypsum storage building. What measures will be taken to control fugitive dust emissions from the gypsum storage area?*

**Response:** The gypsum storage pad will be capable of handling approximately 32,000 tons of gypsum which represents approximately 12 days of operational capacity. There is no gypsum storage building. A lined concrete handling pad, with the capacity described previously, will be constructed. This pad will contain any runoff and will send the runoff back in to the FGD process. Water sprays will be used to control dusting from the pad. After initial wetting it is expected that a crust will form on the pile and only the working face will require continuous attention.

#### **Table 1. Emissions Limit Applicability**

- (8) *This table summarizes Progress Energy's understanding of the applicability dates and triggers for the new limits imposed by the permit. For clarity, please identify the permit condition that you believe to be the controlling requirement as well as any other conditions that might be considered in conflict with the controlling requirement.*

**Response:** A revised Table 1 is attached. Please note the PEF has corrected the PM and Opacity applicability to show that the new limits are dependent on the operation of the FGD for each unit. Note that approval of the requested language changes in question #4 above will result in minor changes to this table.

#### **Alkali Injection System**

- (9) *Please provide supporting information from the equipment vendor regarding: the proposed maintenance schedule; the amount of time needed for shutdown to conduct the maintenance; the shared or common equipment; the cost of the shared or common equipment; the cost to install redundant shared or common equipment; and a detailed description of the operational control of the alkali injection system.*

**Response:** PEF is working with the vendor and our EPC contractor to develop this information. We will provide this information to the agency as soon as it is available. Please see our response to Question 11, below, regarding severance of this issue from the other issues addressed in this letter.

(10) *The Department understands that scheduled maintenance on the alkali injection system will be performed when at least one unit (Unit 4 or 5) is shutdown. However, during this period, the alkali system must also be shutdown since the systems share critical common equipment. Please estimate the sulfuric acid mist (SAM) emissions rate during this shutdown for maintenance (one unit in operation without control by alkali injection). Please describe the measures that will be taken to minimize excess emissions during these periods.*

**Response:** As presented in Table B-1 of the application, the calculated emissions rate for SAM is 0.009 lb/mmBtu. This is also the limit expressed in the permit. Based on the maximum hourly heat input rate of 7,200 MMBtu/hr, this represents a maximum emission of 65.4 lb/hr with the system in operation. Progress calculates that the maximum emission with the ammonia injection off line will be 503.8 lb/hr (per unit). Based on the understanding that the ammonia system would be off line for a maximum of 10 days per year during which time one unit would be off line, this represents a maximum increase in emissions (potential to emit) of 5.26 tons per year from the unit that is operating (per unit). The calculations are shown in the table below.

Operation	Units	AMM System On	AMM System Off
Maximum Coal Sulfur Content	%	3.13	3.13
Coal Heat Content	Btu/lb	11375	11375
Uncontrolled SO2 Emissions	lb/mmBtu	5.5	5.5
Combustion Factor		0.011	0.011
SAM from Combustion	lb/mmBtu	0.093	0.093
SCR factor		0.005	0.005
SAM produced by SCR	lb/mmBtu	0.042	0.042
SAM leaving SCR	lb/mmBtu	0.135	0.135
Air Heater Factor		0.9	0.9
SAM leaving Air Heater	lb/mmBtu	0.121	0.121
ESP w/ AMM system		0.1	0.77
SAM leaving ESP	lb/mmBtu	0.012	0.093
FGD System Factor		0.75	0.75
SAM Leaving FGD	lb/mmBtu	0.009	0.070
Heat Input	mmbtu/hr	7200	7200
SAM Emission Rate (lb/hr)	lb/hr	65.4	503.8
Potential Emissions for 10 days per year	TPY	0.79	6.05
Change in Emissions (PTE)	TPY		5.26

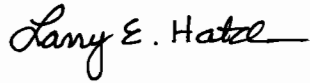
(11) *Since this issue may be more complicated to resolve than the other items, please advise the Department whether you would like to split this issue off as a separate permit request.*

**Response:** As PEF anticipates that it will take some time to generate the information requested regarding the AMM system (see response to question #9 above), and as PEF must make a decision on the purchase of the interim CEMS for Unit 5 immediately, we appreciate the department's willingness to address this issue separately in order to allow the other issues to move forward in a more timely manner.

Mr. Jeffrey Koerner  
February 25, 2009  
Page 7 of 11

PEF looks forward to working with you regarding this matter. For additional information or to discuss any issues regarding this application, please contact Mr. David Meyer in our St. Petersburg office by telephone at (727) 820-5295 or via email at [dave.meyer@pgnmail.com](mailto:dave.meyer@pgnmail.com).

Sincerely,

A handwritten signature in black ink that reads "Larry E. Hatcher". The signature is written in a cursive style with a horizontal line at the end.

Larry E. Hatcher

Plant Manager/Responsible Official

**TABLE 1 – EMISSIONS LIMIT APPLICABILITY**

<b>Emissions Type</b>	<b>Current Permit Limit</b>	<b>New Permit Limit</b>	<b>Unit 4 New Limit Date</b>	<b>Unit 5 New Limit Date</b>	<b>Notes</b>	<b>Permit Condition<sup>1</sup></b>
Nitrogen Oxide (NO <sub>x</sub> )	0.50 lb/MMBTU	0.47 lb/mmbtu	End of Unit 4 2008 fall outage measured at existing CEMS	End of Unit 5 2009 Spring Outage by existing CEMS	Based upon a 12 month <u>rolling</u> average	9.a. (15)
Sulfur Dioxide (SO <sub>2</sub> )	1.2 lb/MMBTU	0.27 lb/mmbtu - Including SU/SD/M 1944.0 lb/hr - Excluding SU/SD/M	Within 60 days of Construction Completion of FGD (End of Unit 4 2010 spring outage) measured at new CEMS	Within 60 days of Construction Completion of FGD(End of Unit 5 2009 Fall outage) measured by new CEMS	mmBtu/hr based upon a 30 day <u>rolling</u> average lb/hr based on a 24 hour (midnight to midnight) rolling block average	9.b. (15)
Sulfuric Acid Mist (SAM)	none	0.009 lb/mmbtu and 64.8 lb/hr	Within 60 days of Construction Completion of AMM (End of Unit 4 2010 spring outage) measured Compliance Stack test	Within 60 days of Construction Completion of AMM (End of Unit 5 2009 Spring outage) measured Compliance Stack test	This new limit is in effect because current SAM emissions will increase by greater than 7 tons/year due to burning higher sulfur coal. Annual test required to determine compliance. No continuous monitor. Retest with each 0.5% sulfur increase. Required to develop SAM estimation curves, and AMM Monitoring Plan	8.c. (16)
Particulate Matter	0.1 lb/MMBTU	0.030 lb/mmbtu and 216.0 lb/hour	Within 60 days of Construction Completion of FGD (End of Unit 4 2010 spring outage) measured at new Stack	Within 60 days of Construction Completion of FGD (End of Unit 5 2009 Fall outage) measured at New Stack	Annual test required to determine compliance. No continuous monitor. PM Compliance Stack Test required after LNB installation, but at existing limit (0.1).	8.b (19.a)

Emissions Type	Current Permit Limit	New Permit Limit	Unit 4 New Limit Date	Unit 5 New Limit Date	Notes	Permit Condition <sup>1</sup>
Opacity	20%	10%	Within 60 days of Construction Completion of FGD (End of Unit 4 2010 spring outage) measured at new Stack	Within 60 days of Construction Completion of FGD (End of Unit 5 2009 Fall outage) measured at New Stack	Limit is based upon a 6 minute average, except one six minute block per hour can be as high as 20 percent opacity	8.e. (15, 19.a.)
Ammonia Slip	none	5 ppmv	Within 60 days of Construction Completion of SCR (End of Unit 4 2010 spring outage) measured Compliance Stack test	Within 60 days of Construction Completion of SCR (End of Unit 5 2009 Spring outage) measured Compliance Stack test	Annual test required to determine compliance. No <u>continuous compliance</u> monitor. Monitoring plan for Ammonia injection rate.	8.a. (19.a)
Carbon Monoxide (CO)	none	0.17 lb/MMBtu excluded SU/SD/M 1156.0 lb/hr Including SU/SD/M	End of Unit 4 2008 fall outage measured at existing Interim CEMS	Seeking exemption for interim CO CEMS, Then end of Unit 5 Fall outage with New CO CEMS at new Stack	Based upon a 30 day rolling average. New compliance monitors to be installed.	8.c. (14)
VOC		.004 lb/MMBtu and 28.8 lb/hour	Within 60 days of Construction Completion (End of Unit 4 2008 fall outage) measured Compliance Stack test	Within 60 days of Construction Completion (End of Unit 5 2009 Spring outage) measured Compliance Stack test	3 run test average at permitted capacity	8.d. (19.a)

Permit conditions are listed with the condition for the limit followed by the condition covering the testing in (parentheses).

**TABLE A-1**  
**ESTIMATION OF PM EMISSION FACTORS AND RATES FOR THE GYPSUM HANDLING SYSTEM**  
**FROM BATCH/CONTINUOUS DROP OPERATIONS AT TRANSFER POINTS**

Parameters	Operations	
	Gypsum Handling	Truck to Conveyor; Conveyor to Pile
<b>Emission Point/Area</b>		TR-1, TR-2
<b>Operational Data</b>		
Activity, hours	Daily	24
days	Annual	365
<b>Material Handling Data</b>		
Material type		Gypsum
Material throughput, ton/hr (design)	Hourly	83.3
ton/day	Daily	2,750
ton/yr	Annual	1,003,750
Moisture content (M), % (nominal)		10
Number of transfers		2
<b>General/ Site Characteristics</b>		
Mean wind speed, mph	Daily	16.4
	Annual	8.2
Particle size multiplier, PM (k)		0.74
Particle size multiplier, PM10 (k)		0.35
<b>Emission Control Data</b>		
Emission control method	High moisture content (included in emission factor)	
Emission control removal efficiency, %		0
<b>Emission Factor (EF) Equations</b>		
Uncontrolled EF (UEF) Equation	$UEF (lb/ton) = k \times (0.0032) \times (U / 5)^{1.3} / [(M / 2)^{1.4}]$	
Controlled EF (CEF) Equation	$CEF (lb/ton) = UEF (lb/ton) \times [100\% - \text{Removal efficiency} (\%)]$	
<b>Calculated PM Emission Factor (EF)</b>		
Uncontrolled EF, lb/ton	Short term	0.001165
	Annual	0.000473
Controlled EF, lb/ton	Short term	0.001165
	Annual	0.000473
<b>Calculated PM10 Emission Factor (EF)</b>		
Uncontrolled EF, lb/ton	Short term	0.000551
	Annual	0.000224
Controlled EF, lb/ton	Short term	0.000551
	Annual	0.000224
<b>Estimated Emission Rate (ER)</b>		
PM ER lb/hr (daily basis)		0.267
TPY		0.475
PM10 ER lb/hr (daily basis)		0.126
TPY		0.225

Source: USEPA, 1995; AP-42, Section 13.2.4 for Aggregate Handling and Storage Piles.

**TABLE A-2**  
**ESTIMATION OF PM EMISSION FACTORS AND RATES**  
**FOR WIND EROSION FROM ACTIVE GYPSUM STORAGE PILES**

Parameters	Operations	
	Gypsum handling	Gypsum Stockout Pile
Emission Point/Area		
Storage Pile Data		
Material Type	Gypsum	
Pile Description (shape)	Oval	
Average Storage (ton)		
Average Pile Height (ft)		40
Average Pile Length (ft)		400
Average Pile Width (ft)		90
Size, ft <sup>2</sup>		36,000
Size, acres		0.83
General/ Site Characteristics		
Days of precipitation greater than or equal to 0.01 inch (p)	Short term	0
	Annual	103
Time (%) that unobstructed wind speed exceeds 5.4 m/s at mean pile height (f)	Short term	60
	Annual	10
Silt content (s), %		3
Particle size multiplier, PM (k)		1.00
Particle size multiplier, PM10 (k)		0.50
Emission Control Data		
Emission control method	None (high moisture content)	
Emission control removal efficiency, %		0
Emission Factor (EF) Equation		
Uncontrolled EF (UEF) Equation	UEF (lb/day/acre) = k x 1.7 x (s/1.5) x ((365 - p)/235) x (f/15)	
	CEF (lb/day/acre) = UEF (lb/day/acre) x (100 - Removal efficiency (%) )	
Controlled (Final) EF (CEF) Equation		
Calculated PM Emission Factor (EF)		
Uncontrolled EF, lb/day/acre	Short term	21.12
	Annual	2.53
Controlled EF, lb/day/acre	Short term	21.12
	Annual	2.53
Calculated PM10 Emission Factor (EF)		
Uncontrolled EF, lb/day/acre	Short term	6.80
	Annual	0.81
Controlled EF, lb/day/acre	Short term	6.80
	Annual	0.81
Estimated Emission Rate (ER)		
PM ER lb/hr (daily basis)		0.73
TPY		0.382
PM10 ER lb/hr (daily basis)		0.234
		0.123
TPY		

Source: USEPA, 1992 (Fugitive Dust Background and Technical Information Document for Best Available Control Measures, Section 2.3.1.3.3, Wind Emissions from Continuously Active Piles)



April 23, 2009

RECEIVED

APR 24 2009

**Via Overnight Mail**

BUREAU OF AIR REGULATION

Mr. Jeff Koerner, P.E.  
Bureau of Air Regulation  
Division of Air Resource Management  
Florida Department of Environmental Protection  
111 South Magnolia Drive, Suite 4  
Tallahassee, FL 32301-2956

Re: Crystal River Power Plant – Permit Number 0170004-022-AC  
Affidavit of Publication

Dear Mr. Koerner:

In accordance with Ms. Trina Vielhauer's letter to Mr. Hatcher dated April 9, 2009, we published the public notice in the Citrus County Chronicle on April 21, 2009.

Attached is the Affidavit of Publication.

If you have any questions, please contact me at (727) 820-5295. Thank you very much for all your help with the construction permit.

Best Regards,

A handwritten signature in cursive script that reads 'Dave Meyer'.

Dave Meyer, P.E.  
Senior Environmental Specialist

cc: Larry Hatcher

Attachment

# Proof of Publication

from the  
**CITRUS COUNTY CHRONICLE**  
Crystal River, Citrus County, Florida  
**PUBLISHED DAILY**

STATE OF FLORIDA  
COUNTY OF CITRUS

Before the undersigned authority personally appeared

Mary Ann Naczi

Of the Citrus County Chronicle, a newspaper published daily at Crystal River, in Citrus County, Florida, that the attached copy of advertisement being a public notice in the matter of the

557-0421 TUCRN PUBLIC NOTICE PUBLIC NOTICE  
OF INTENT TO ISSUE AIR PERMIT Florida Department  
of Environmental Protection Division of Air Resource  
Management, Bureau of Air Regulation Draft Air Permit  
No. PSD-FL-383B / Project No. 0170004-022-AC Progress  
E

Court, was published in said newspaper in the issues of

April 21st, 2009.

Affiant further says that the Citrus County Chronicle is a Newspaper published at Crystal River in said Citrus County, Florida, and that the said newspaper has heretofore been continuously published in Citrus County, Florida, each week and has been entered as second class mail matter at the post office in Inverness in said Citrus County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

*Mary Ann Naczi*

The forgoing instrument was acknowledged before me

This 21st day of April 2009

By: Mary Ann Naczi

who is personally known to me and who did take an oath.

*Nancy A. Parke*

Notary Public



557-0421 TUCRN  
PUBLIC NOTICE

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT  
Florida Department of Environmental Protection  
Division of Air Resource Management,  
Bureau of Air Regulation  
Draft Air Permit No. PSD-FL-383B / Project No.  
0170004-022-AC Progress Energy Florida, Inc.  
-Crystal River Power Plant Citrus County, Florida

**Applicant:** The applicant for this project is Progress Energy Florida, Inc. The applicant's authorized representative and mailing address is: Mr. Larry Hatcher, Plant Manager, Progress Energy-Florida, Crystal River Power Plant, 299 First Avenue, North, CN77, St. Petersburg, FL 33701.

**Facility Location:** The existing Crystal River Power Plant is located in Citrus County, north of Crystal River and west of U.S. Highway 19.

**Project:** In accordance with Permit No. PSD-FL-383A, Progress Energy Florida, Inc. is currently constructing the following air pollution control equipment for existing Units 4 and 5 at the Crystal River Power Plant: new low-NOX burners (LNB), new selective catalytic reduction (SCR) systems, new flue gas desulfurization (FGD) systems, new alkali injection systems, a new carbon burn out unit, upgraded electrostatic precipitators (ESP) and new stack configurations. The applicant requests the following primary revisions to Permit No. PSD-FL-383A for the ongoing air pollution control project: include a temporary alternate compliance demonstration for carbon monoxide emissions for Unit 5 until the continuous emissions monitoring system is installed during the outage to tie in the new wet FGD system and stack; correct as-built equipment descriptions for the gypsum storage and handling systems; acknowledge that the limestone crushing operations will be subject to the federal New Source Performance Standards in Subpart OOO, Part 60, Title 40 of the Code of Federal Regulations; and clarify the timeframes for compliance monitoring following completion of construction, startup and shakedown of the air pollution control systems. This project is a minor revision of the original permit, which was subject to Rule 62212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

**Permitting Authority:** Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210 and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Permitting Authority responsible for making a permit determination for this project is the Bureau of Air Regulation in the Department of Environmental Protection's Division of Air Resource Management. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

**Project File:** A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at the physical address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application and information submitted by the applicant (exclusive of confidential records under Section 403.111, F.S.). Interested persons may contact the Permitting Authority's project engineer for additional information at the address and phone number listed above. In addition, electronic copies of these documents are available on the following web site: <http://www.dep.state.fl.us/air/eproducts/apds/default.asp>.

**Notice of Intent to Issue Air Permit:** The Permitting Authority gives notice of its intent to issue an air construction permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

**Comments:** The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of 14 days from the date of publication of this Public Notice. Written comments must be received by the Permitting Authority by close of business (5:00 p.m.) on or before the end of the 14-day period. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

**Petitions:** A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000 (Telephone: 850/245-2241). Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S. must be filed within 14 days of publication of this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address and telephone number of the petitioner; the name address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial rights will be affected by the agency determination; (c) A statement of when and how the petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

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

**Mediation:** Mediation is not available for this proceeding.

Published one (1) time in the Citrus County Chronicle, April 21, 2009.

# Proof of Publication

from the  
**CITRUS COUNTY CHRONICLE**  
 Crystal River, Citrus County, Florida  
**PUBLISHED DAILY**

STATE OF FLORIDA  
 COUNTY OF CITRUS

Before the undersigned authority personally appeared

Mary Ann Naczi

Of the Citrus County Chronicle, a newspaper published daily at Crystal River, in Citrus County, Florida, that the attached copy of advertisement being a public notice in the matter of the

557-0421 TUCRN PUBLIC NOTICE PUBLIC NOTICE  
OF INTENT TO ISSUE AIR PERMIT Florida Department  
of Environmental Protection Division of Air Resource  
Management, Bureau of Air Regulation Draft Air Permit  
No. PSD-FL-383B / Project No. 0170004-022-AC Progress  
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Court, was published in said newspaper in the issues of

April 21st, 2009.

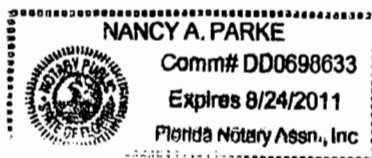
Affiant further says that the Citrus County Chronicle is a Newspaper published at Crystal River in said Citrus County, Florida, and that the said newspaper has heretofore been continuously published in Citrus County, Florida, each week and has been entered as second class mail matter at the post office in Inverness in said Citrus County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Mary Ann Naczi  
 The forgoing instrument was acknowledged before me

This 21st day of April 2009  
 By: Mary Ann Naczi

who is personally known to me and who did take an oath.

Nancy A. Parke  
 Notary Public



PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT  
 Florida Department of Environmental Protection  
 Division of Air Resource Management,  
 Bureau of Air Regulation  
 Draft Air Permit No. PSD-FL-383B / Project No.  
 0170004-022-AC Progress Energy Florida, Inc.  
 -Crystal River Power Plant Citrus County, Florida

**Applicant:** The applicant for this project is Progress Energy Florida, Inc. The applicant's authorized representative and mailing address is: Mr. Larry Hatcher, Plant Manager, Progress Energy Florida, Crystal River Power Plant, 299 First Avenue, North, CN77, St. Petersburg, FL 33701.

**Facility Location:** The existing Crystal River Power Plant is located in Citrus County, north of Crystal River and west of U.S. Highway 19.

**Project:** In accordance with Permit No. PSD-FL-383A, Progress Energy Florida, Inc. is currently constructing the following air pollution control equipment for existing Units 4 and 5 at the Crystal River Power Plant: new low-NOX burners (LNB), new selective catalytic reduction (SCR) systems, new flue gas desulfurization (FGD) systems, new alkali injection systems, a new carbon burn out unit, upgraded electrostatic precipitators (ESP) and new stack configurations. The applicant requests the following primary revisions to Permit No. PSD-FL-383A for the ongoing air pollution control project: Include a temporary alternate compliance demonstration for carbon monoxide emissions for Unit 5 until the continuous emissions monitoring system is installed during the outage to tie in the new wet FGD system and stack; correct as-built equipment descriptions for the gypsum storage and handling systems; acknowledge that the limestone crushing operations will be subject to the federal New Source Performance Standards in Subpart OOO, Part 60, Title 40 of the Code of Federal Regulations; and clarify the timeframes for compliance monitoring following completion of construction, startup and shutdown of the air pollution control systems. This project is a minor revision of the original permit, which was subject to Rule 62212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

**Permitting Authority:** Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210 and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Permitting Authority responsible for making a permit determination for this project is the Bureau of Air Regulation in the Department of Environmental Protection's Division of Air Resource Management. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

**Project File:** A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at the physical address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application and information submitted by the applicant (exclusive of confidential records under Section 403.111, F.S.). Interested persons may contact the Permitting Authority's project engineer for additional information at the address and phone number listed above. In addition, electronic copies of these documents are available at the following web site: <http://www.dep.state.fl.us/air/products/apds/default.asp>.

**Notice of Intent to Issue Air Permit:** The Permitting Authority gives notice of its intent to issue an air construction permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

**Comments:** The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of 14 days from the date of publication of this Public Notice. Written comments must be received by the Permitting Authority by close of business (5:00 p.m.) on or before the end of the 14-day period. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

**Petitions:** A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000 (Telephone: 850/245-2241). Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number; if known; (b) The name, address and telephone number of the petitioner; the name address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial rights will be affected by the agency determination; (c) A statement of when and how the petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact. If there are none, the petitioner must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

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

**Mediation:** Mediation is not available for this proceeding.

Published one (1) time in the Citrus County Chronicle, April 21, 2009.

## Memorandum

# Florida Department of Environmental Protection

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To: Trina Vielhauer, Bureau of Air Regulation

From: Jeff Koerner, New Source Review Section 

Date: April 9, 2009

Subject: Draft Air Permit No. PSD-FL-383B  
Project No. 0170004-022-AC  
Crystal River Power Plant, Units 4 and 5  
Revisions to Pollution Control Project

Progress Energy Florida, Inc. operates the existing Crystal River Power Plant, which is located in the Crystal River Energy Complex in Citrus County, north of Crystal River and west of U.S. Highway 19. The applicant requests the following primary revisions to Permit No. PSD-FL-383A for the ongoing air pollution control project: include a temporary alternate compliance demonstration for carbon monoxide emissions for Unit 5 until the continuous emissions monitoring system is installed during the outage to tie in the new wet FGD system and stack; correct as-built equipment descriptions for the gypsum storage and handling systems; acknowledge that the limestone crushing operations will be subject to the federal New Source Performance Standards in Subpart OOO, Part 60, Title 40 of the Code of Federal Regulations; and clarify the timeframes for compliance monitoring following completion of construction, startup and shakedown of the air pollution control systems. This project is a minor revision of the original permit, which was subject to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality. The Department's full review of the project is provided in the Technical Evaluation and Preliminary Determination. I recommend your approval of the attached Draft Permit package.

Attachments

TLV/jfk

## P.E. CERTIFICATION STATEMENT

### PERMITTEE

Progress Energy Florida, Inc.  
Crystal River Power Plant  
299 First Avenue North, CN-77  
St. Petersburg, Florida 33701

Air Permit No. PSD-FL-383B  
Project No. 0170004-022-AC  
Crystal River Power Plant, Units 4 and 5  
Revisions to Pollution Controls Project

### PROJECT DESCRIPTION

Progress Energy Florida, Inc. operates the existing Crystal River Power Plant, which is located in the Crystal River Energy Complex in Citrus County, north of Crystal River and west of U.S. Highway 19. In May of 2007, the Department issued Permit No. PSD-FL-383, which included authorization of the following air pollution control equipment for existing Units 4 and 5 to implement CAIR and the CAMR: new low-NO<sub>x</sub> burners (LNB), new selective catalytic reduction (SCR) systems, new flue gas desulfurization (FGD) systems, new alkali injection systems, a new carbon burn out unit, upgraded electrostatic precipitators (ESP) and new stack configurations. Due to the Environmental Protection Agency's revised 8-hour ozone standard, the permit was revised (PSD-FL-383A) in February of 2009 to require installation of the equipment with enforceable emissions standards. For this project, the applicant requests the following primary revisions to Permit No. PSD-FL-383A:

- Installation of LNB on Unit 5 has been delayed to May of 2009. However, the outage to tie in the flue gas desulfurization (FGD) system is not scheduled until October of 2009. The permanent carbon monoxide (CO) continuous emissions monitoring system (CEMS) is planned for installation on the new stack, which is part of the FGD tie-in. Unit 4 already has the LNB and a CO CEMS. To accommodate the revised construction and outage schedule, the applicant requests a revision of the permit to allow compliance to be demonstrated with the CO emissions standard for Unit 5 by: conducting additional stack tests, the Relative Accuracy Test Assessment (RATA) data from the Unit 4 CEMS, and data collected from the Unit 4 CEMS once it is certified. This would apply until the permanent CO CEMS is installed and certified for Unit 5.
- The applicant requests several miscellaneous revisions to correct equipment descriptions for the gypsum storage and handling systems and acknowledgement that the limestone crushing operations will be subject to the New Source Performance Standards in Subpart OOO of 40 CFR 60.
- The applicant requests clarifications to permit conditions regarding the timeframes for compliance monitoring following completion of construction, startup and shakedown of the pollution control systems.

The original project included a request to add authorized periods of shutdown for the alkali injection system to conduct maintenance while one or more of the units continued to operate. The applicant later requested that this item be separated into another project to provide additional time to gather information related to alkali injection equipment. This project is a minor revision of the original permit, which was subject to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality. The Department's full review of the project is provided in the Technical Evaluation and Preliminary Determination.

***I HEREBY CERTIFY** that the air pollution control engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. However, I have not evaluated and I do not certify any other aspects of the proposal (including, but not limited to, the electrical, mechanical, structural, hydrological, geological, and meteorological features).*



Jeffery F. Koerner, P.E.  
Registration Number 49441

4-9-09

(Date)



# Florida Department of Environmental Protection

Bob Martinez Center  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Charlie Crist  
Governor

Jeff Kottkamp  
Lt. Governor

Michael W. Sole  
Secretary

April 9, 2009

Mr. Larry Hatcher, Plant Manager  
Progress Energy Florida, Inc. - Crystal River Power Plant  
299 First Avenue, North, CN77  
St. Petersburg, FL 33701

Re: Draft Permit No. PSD-FL-383B  
Project No. 0170004-022-AC  
Progress Energy Florida, Inc - Crystal River Power Plant  
Revisions to Pollution Control Project, Units 4 and 5

Dear Mr. Hatcher:

On December 30, 2008, you submitted an application requesting miscellaneous revisions to Permit No. PSD-FL-383A for the ongoing air pollution control project being installed on Units 4 and 5. The existing Crystal River Power Plant is located in Citrus County, north of Crystal River and west of U.S. Highway 19. Enclosed are the following documents: the Technical Evaluation and Preliminary Determination; the Draft Permit and Appendices; the Written Notice of Intent to Issue Air Permit; and the Public Notice of Intent to Issue Air Permit. The Public Notice of Intent to Issue Air Permit is the actual notice that you must have published in the legal advertisement section of a newspaper of general circulation in the area affected by this project. If you have any questions, please contact the project engineer, Jeff Koerner, at 850/921-9536.

Sincerely,

Trina Vielhauer, Chief  
Bureau of Air Regulation

Enclosures

TLV/jfk

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**WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT**

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*In the Matter of an  
Application for Air Permit by:*

Progress Energy Florida, Inc.  
299 First Avenue, North, CN77  
St. Petersburg, FL 33701

*Authorized Representative:*  
Mr. Larry Hatcher, Plant Manager

Draft Permit No. PSD-FL-383B  
Project No. 0170004-022-AC  
Progress Energy Florida  
Crystal River Power Plant  
Revisions to Pollution Control Project  
Citrus County, Florida

**Facility Location:** Progress Energy Florida, Inc. operates the existing Crystal River Power Plant, which is located in Citrus County, north of Crystal River and west of U.S. Highway 19.

**Project:** In accordance with Permit No. PSD-FL-383A, Progress Energy Florida, Inc. is currently constructing the following air pollution control equipment for existing Units 4 and 5 at the Crystal River Power Plant: new low-NO<sub>x</sub> burners (LNB), new selective catalytic reduction (SCR) systems, new flue gas desulfurization (FGD) systems, new alkali injection systems, a new carbon burn out unit, upgraded electrostatic precipitators (ESP) and new stack configurations. The applicant requests the following primary revisions to Permit No. PSD-FL-383A for the ongoing air pollution control project: include a temporary alternate compliance demonstration for carbon monoxide emissions for Unit 5 until the continuous emissions monitoring system is installed during the outage to tie in the new wet FGD system and stack; correct as-built equipment descriptions for the gypsum storage and handling systems; acknowledge that the limestone crushing operations will be subject to the federal New Source Performance Standards in Subpart OOO, Part 60, Title 40 of the Code of Federal Regulations; and clarify the timeframes for compliance monitoring following completion of construction, startup and shakedown of the air pollution control systems. This project is a minor revision of the original permit, which was subject to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality. Details of the project are provided in the application and the enclosed Technical Evaluation and Preliminary Determination.

**Permitting Authority:** Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210, and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

**Project File:** A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address or phone number listed above.

**Notice of Intent to Issue Permit:** The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of the proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

## WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

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**Public Notice:** Pursuant to Section 403.815, F.S. and Rules 62-110.106 and 62-210.350, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Air Permit (Public Notice). The Public Notice shall be published one time only as soon as possible in the legal advertisement section of a newspaper of general circulation in the area affected by this project. The newspaper used must meet the requirements of Sections 50.011 and 50.031, F.S. in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Permitting Authority at above address or phone number. Pursuant to Rule 62-110.106(5) and (9), F.A.C., the applicant shall provide proof of publication to the Permitting Authority at the above address within 7 days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rule 62-110.106(11), F.A.C.

**Comments:** The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of 14 days from the date of publication of the Public Notice. Written comments must be received by the Permitting Authority by close of business (5:00 p.m.) on or before the end of the 14-day period. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

**Petitions:** A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the applicant or any of the parties listed below must be filed within 14 days of receipt of this Written Notice of Intent to Issue Air Permit. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of the attached Public Notice or within 14 days of receipt of this Written Notice of Intent to Issue Air Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of when and how each petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

## WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

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

**Mediation:** Mediation is not available in this proceeding.

Executed in Tallahassee, Florida.

  
Trina Vielhauer, Chief  
Bureau of Air Regulation

### CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Written Notice of Intent to Issue Air Permit package (including the Written Notice of Intent to Issue Air Permit, the Public Notice of Intent to Issue Air Permit, the Technical Evaluation and Preliminary Determination and the Draft Permit) was sent by electronic mail (or a link to these documents made available electronically on a publicly accessible server) with received receipt requested before the close of business on 4/9/09 to the persons listed below.

Mr. Larry Hatcher, Progress Energy, Inc. ([larry.hatcher@pgnmail.com](mailto:larry.hatcher@pgnmail.com))  
Mr. Dave Meyer, Progress Energy, Inc. ([dave.meyer@pgnmail.com](mailto:dave.meyer@pgnmail.com))  
Mr. Benjamin Borsch, Progress Energy, Inc. ([benjamin.borsch@pgnmail.com](mailto:benjamin.borsch@pgnmail.com))  
Mr. Scott Osbourn, Golder Associates ([sosbourn@golder.com](mailto:sosbourn@golder.com))  
Mr. Mike Halpin, DEP Siting ([mike.halpin@dep.state.fl.us](mailto:mike.halpin@dep.state.fl.us))  
Ms. Cindy Zhang-Torres, DEP SWD ([cindy.zhang-torres@dep.state.fl.us](mailto:cindy.zhang-torres@dep.state.fl.us))  
Ms. Katy Forney, EPA Region 4 ([forney.kathleen@epa.gov](mailto:forney.kathleen@epa.gov))  
Ms. Heather Abrams, EPA Region 4 ([abrams.heather@epamail.epa.gov](mailto:abrams.heather@epamail.epa.gov))  
Mr. Dee Morse, NPS ([dee\\_morse@nps.gov](mailto:dee_morse@nps.gov))  
Ms. Vickie Gibson, DEP BAR Reading File ([victoria.gibson@dep.state.fl.us](mailto:victoria.gibson@dep.state.fl.us))

Clerk Stamp

**FILING AND ACKNOWLEDGMENT FILED**, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

  
(Clerk)

4/9/09  
(Date)

## **PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT**

Florida Department of Environmental Protection  
Division of Air Resource Management, Bureau of Air Regulation  
Draft Air Permit No. PSD-FL-383B / Project No. 0170004-022-AC  
Progress Energy Florida, Inc. - Crystal River Power Plant  
Citrus County, Florida

**Applicant:** The applicant for this project is Progress Energy Florida, Inc. The applicant's authorized representative and mailing address is: Mr. Larry Hatcher, Plant Manager, Progress Energy Florida, Crystal River Power Plant, 299 First Avenue, North, CN77, St. Petersburg, FL 33701.

**Facility Location:** The existing Crystal River Power Plant is located in Citrus County, north of Crystal River and west of U.S. Highway 19.

**Project:** In accordance with Permit No. PSD-FL-383A, Progress Energy Florida, Inc. is currently constructing the following air pollution control equipment for existing Units 4 and 5 at the Crystal River Power Plant: new low-NO<sub>x</sub> burners (LNB), new selective catalytic reduction (SCR) systems, new flue gas desulfurization (FGD) systems, new alkali injection systems, a new carbon burn out unit, upgraded electrostatic precipitators (ESP) and new stack configurations. The applicant requests the following primary revisions to Permit No. PSD-FL-383A for the ongoing air pollution control project: include a temporary alternate compliance demonstration for carbon monoxide emissions for Unit 5 until the continuous emissions monitoring system is installed during the outage to tie in the new wet FGD system and stack; correct as-built equipment descriptions for the gypsum storage and handling systems; acknowledge that the limestone crushing operations will be subject to the federal New Source Performance Standards in Subpart OOO, Part 60, Title 40 of the Code of Federal Regulations; and clarify the timeframes for compliance monitoring following completion of construction, startup and shakedown of the air pollution control systems. This project is a minor revision of the original permit, which was subject to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

**Permitting Authority:** Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210 and 62-212 of the Florida Administrative Code (F.A.C.). The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Permitting Authority responsible for making a permit determination for this project is the Bureau of Air Regulation in the Department of Environmental Protection's Division of Air Resource Management. The Permitting Authority's physical address is: 111 South Magnolia Drive, Suite #4, Tallahassee, Florida. The Permitting Authority's mailing address is: 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Permitting Authority's telephone number is 850/488-0114.

**Project File:** A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at the physical address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application and information submitted by the applicant (exclusive of confidential records under Section 403.111, F.S.). Interested persons may contact the Permitting Authority's project engineer for additional information at the address and phone number listed above. In addition, electronic copies of these documents are available on the following web site: <http://www.dep.state.fl.us/air/eproducts/apds/default.asp>.

**Notice of Intent to Issue Air Permit:** The Permitting Authority gives notice of its intent to issue an air construction permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of proposed equipment will not adversely impact air quality and that the project will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

**Comments:** The Permitting Authority will accept written comments concerning the proposed Draft Permit for a

**(Public Notice to be Published in the Newspaper)**

period of 14 days from the date of publication of this Public Notice. Written comments must be received by the Permitting Authority by close of business (5:00 p.m.) on or before the end of the 14-day period. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

**Petitions:** A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection at 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000 (Telephone: 850/245-2241). Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S. must be filed within 14 days of publication of this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address and telephone number of the petitioner; the name address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial rights will be affected by the agency determination; (c) A statement of when and how the petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

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

**Mediation:** Mediation is not available for this proceeding.



**TECHNICAL EVALUATION  
&  
PRELIMINARY DETERMINATION**

**APPLICANT**

Progress Energy Florida, Inc.  
299 First Avenue, North, CN77  
St. Petersburg, FL 33701

**PROJECT**

Air Permit No. PSD-FL-383B  
Project No. 0170004-022-AC  
Crystal River Power Plant  
ARMS Facility ID No. 0170004  
Revisions to FGD/SCR Projects for Units 4 and 5

**COUNTY**

Citrus County, Florida

**PERMITTING AUTHORITY**

Florida Department of Environmental Protection  
Division of Air Resource Management  
Bureau of Air Regulation  
New Source Review Section  
2600 Blair Stone Road, MS#5505  
Tallahassee, Florida 32399-2400

April 8, 2009

**1. GENERAL PROJECT INFORMATION****Air Pollution Regulations**

Projects with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following chapters: 62-4 (Permits); 62-204 (Air Pollution Control – General Provisions); 62-210 (Stationary Sources – General Requirements); 62-212 (Stationary Sources – Preconstruction Review); 62-213 (Operation Permits for Major Sources of Air Pollution); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources – Emissions Monitoring). Specifically, air construction permits are required pursuant to Rules 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial activities. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations on a quarterly basis in Rule 62-204.800, F.A.C.

**Glossary of Common Terms**

Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of this permit.

**Facility Description and Location**

The existing Crystal River Power Plant (SIC No. 4911) is located in the Crystal River Energy Complex in Citrus County, north of Crystal River and west of U.S. Highway 19. The existing plant consists of the following units: four coal-fired steam generating units with electrostatic precipitators; two natural draft cooling towers; two sets of mechanical draft cooling towers; coal and ash material handling facilities; and relocatable diesel fired generators. The Crystal River Energy Complex includes a nuclear unit and associated facilities permitted under the same Title V air operation permit. The UTM coordinates are Zone 17, 334.3 km East, and 3204.5 km North. This site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to state and federal Ambient Air Quality Standards (AAQS).

**Facility Regulatory Categories**

- The facility is a major source of hazardous air pollutants (HAP).
- The facility operates units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.
- The existing facility is subject to Power Plant Site Certification No. PA 77-09.

**Project Description**

Only the following existing emissions units will be affected by the proposed project.

ID No.	Description
003	Unit 5 Fossil Fuel Steam Generator
004	Unit 4 Fossil Fuel Steam Generator

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## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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In May of 2007, the Department issued Permit No. PSD-FL-383, which included authorization of the following air pollution control equipment for existing Units 4 and 5: new low-NO<sub>x</sub> burners (LNB), new selective catalytic reduction (SCR) systems, new flue gas desulfurization (FGD) systems, new alkali injection systems, a new carbon burn out unit, upgraded electrostatic precipitators (ESP) and new stack configurations. The purpose of the project was to implement the Clean Air Interstate Rule (CAIR) and the Clean Air Mercury Rule (CAMR). Due to the Environmental Protection Agency's revised 8-hour ozone standard, the permit was revised (PSD-FL-383A) in February of 2009 to require installation of the equipment with enforceable emissions standards. For this project, the applicant requests the following primary revisions to Permit No. PSD-FL-383A:

- Interim CO Compliance for Unit 5: Installation of LNB on Unit 5 has been delayed to May of 2009. However, the outage to tie in the flue gas desulfurization (FGD) system is not scheduled until October of 2009. The permanent carbon monoxide (CO) continuous emissions monitoring system (CEMS) is planned for installation on the new stack, which is part of the FGD tie-in. Unit 4 already has the LNB and a CO CEMS. To accommodate the revised construction and outage schedule, the applicant requests a revision of the permit to allow compliance to be demonstrated with the CO emissions standard for Unit 5 by: conducting additional stack tests, the Relative Accuracy Test Assessment (RATA) data from the Unit 4 CEMS, and data collected from the Unit 4 CEMS once it is certified. This would apply until the permanent CO CEMS is installed and certified for Unit 5.
- Compliance Timeframes: The applicant requests clarifications to permit conditions regarding the timeframes for compliance monitoring following completion of construction, startup and shakedown of the pollution control systems.
- Gypsum and Limestone Storage and Handling: The applicant requests several miscellaneous revisions to correct equipment descriptions for the gypsum storage and handling systems and acknowledgement that the limestone crushing operations will be subject to the New Source Performance Standards in Subpart 000 of 40 CFR 60.

The original project included a request to add authorized periods of shutdown for the alkali injection system to conduct maintenance while one or more of the units continued to operate. However, the applicant later requested that this item be separated into another project to provide additional time to gather information related to alkali injection equipment. This project is a minor revision of the original permit, which was subject to Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

### Processing Schedule

12/30/08    Department received the application for an air pollution construction permit.  
01/28/09    Department requested additional information.  
03/02/09    Department received additional information; application complete. (As requested by the applicant, we moved the project for permit revisions regarding the alkali injection system to new Project No. 0170004-023-AC.)

## 2. PSD APPLICABILITY REVIEW

### General PSD Applicability

The Department regulates major stationary sources of air pollution in accordance with Florida's PSD preconstruction review program pursuant to Rule 62-212.400, F.A.C. A PSD applicability review is required in areas currently in attainment with the state and federal AAQS or areas otherwise designated as "unclassifiable". A facility is considered a major stationary source with respect to PSD if it emits or has the potential to emit: 250 tons per year or more of any regulated air pollutant; 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the 28 PSD major facility categories defined in Rule 62-210.200, F.A.C. for major stationary sources; or 5 tons per year of lead. Projects at existing or new major stationary sources are subject to PSD preconstruction review. In addition, proposed projects at existing minor sources are subject to PSD

preconstruction review if potential emissions *from the proposed project* will exceed the PSD major stationary source thresholds.

Once a project becomes subject to PSD preconstruction review, each of the following PSD pollutants is reviewed for PSD applicability based on emissions thresholds known as the “significant emission rates” defined in Rule 62-210.200, F.A.C.: carbon monoxide (CO); nitrogen oxides (NO<sub>x</sub>); sulfur dioxide (SO<sub>2</sub>); particulate matter (PM); particulate matter with a mean particle diameter of 10 microns or less (PM<sub>10</sub>); particulate matter with a mean particle diameter of 2.5 microns or less (PM<sub>2.5</sub>); volatile organic compounds (VOC); lead (Pb); fluorides (Fl); sulfuric acid mist (SAM); hydrogen sulfide (H<sub>2</sub>S); total reduced sulfur (TRS), including H<sub>2</sub>S; reduced sulfur compounds, including H<sub>2</sub>S; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as SO<sub>2</sub> and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as nonmethane organic compounds (NMOC); and mercury (Hg). Emissions from the project exceeding the significant emission rate are considered “significant” and the applicant must employ the Best Available Control Technology (BACT) to minimize emissions of each such pollutant and evaluate the air quality impacts. Although a facility or project may be *major* with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several “significant” regulated pollutants.

Rule 62-210.200, F.A.C. defines “BACT” as:

*An emission limitation, including a visible emissions standard, based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, taking into account:*

- 1. Energy, environmental and economic impacts, and other costs;*
- 2. All scientific, engineering, and technical material and other information available to the Department; and*
- 3. The emission limiting standards or BACT determinations of Florida and any other state;*

*determines is achievable through application of production processes and available methods, systems and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of each such pollutant.*

*If the Department determines that technological or economic limitations on the application of measurement methodology to a particular part of an emissions unit or facility would make the imposition of an emission standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reductions achievable by implementation of such design, equipment, work practice or operation.*

*Each BACT determination shall include applicable test methods or shall provide for determining compliance with the standard(s) by means which achieve equivalent results.*

*In no event shall application of best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR Parts 60, 61, and 63.*

In addition to a review and proposal of BACT, applicants must provide an Air Quality Analysis that evaluates the predicted air quality impacts resulting from the project for each PSD pollutant.

### **PSD Applicability for the Project**

The project is located in Citrus County, which is in an area that is currently in attainment with the state and federal AAQS or otherwise designated as unclassifiable. The facility is an existing major stationary source; however, the project is a minor revision to existing conditions in previously issued Permit No. PSD-FL-383A. The project is not subject to PSD preconstruction review.

### 3. DEPARTMENT REVIEW

#### Interim CO Compliance for Unit 5 and Compliance Timeframes

The revised schedule for Unit 5 is to install the LNB in May of 2009 and the CO CEMS in the permanent stack in October of 2009 during the outage to tie in the FGD system. For the interim period prior to installing the CO CEMS, the applicant proposes to demonstrate compliance with the CO standards by conducting an emissions compliance test on Unit 5 as well as using the CO data collected from similar Unit 4, which already has the CO CEMS and LNB system installed.

The applicant identified confusion with several permit conditions (Conditions 6, 14 and 15) that establish initial compliance requirements for the coal-fired units. The Department's original intent was to require that the CEMS be installed and certified within 60 days of completing construction on the related air pollution control device. Monitoring data collected from the CEMS would be used to demonstrate compliance with the new emissions standards after completing shakedown of the air pollution control equipment and reestablishing "normal" operation. To clarify this issue, the Department will make the following revisions to these conditions:

14. CO CEMS Installation: For Units 4 and 5, the permittee shall properly install, calibrate, operate and maintain CEMS to measure and record CO emissions in the terms of the applicable standard. Each CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The permittee shall locate the CEMS by following the procedures contained in the applicable performance specification of 40 CFR Part 60, Appendix B. The permittee shall install each CEMS required by this permit and conduct the appropriate performance specification for each CEMS within 60 calendar days of completing installation of the low-NO<sub>x</sub> burners and achieving permitted capacity as defined in Rule 62-297.310(2), F.A.C., but no later than 180 calendar days after initial startup. As an option for Unit 5 because of construction delays, the permittee may postpone installation of the CO CEMS until the Unit 5 exhaust is tied into the new FGD system and stack. If this option is selected, the permittee shall conduct an initial CO stack test in accordance with EPA Method 10 within 60 days of completing installation of the low-NO<sub>x</sub> burners. The tests shall demonstrate compliance with the numerical portion of the CO emissions standard based on the 3-run test average. In addition, CEMS data collected from similar Unit 4 shall be used as a surrogate to show compliance until the Unit 5 CEMS is installed. Based on the Unit 4 CEMS data, the Compliance Authority may require special compliance tests in accordance with Rule 62-297.310(7)(b), F.A.C. This period of alternate compliance shall not exceed 180 days from completing installation of the low-NO<sub>x</sub> burners and the permittee shall install and certify the CO CEMS within 60 days following the tie-in of the new FGD system and permanent stack. [Rules 62-4.070(3), 62-297.310(7)(b) and 62-212.400(BACT), F.A.C.]
15. Compliance by CEMS: Compliance with the standards for opacity and emissions of CO, NO<sub>x</sub>, and SO<sub>2</sub> shall be demonstrated with data collected from the required continuous monitoring systems. Within 60 days of ~~reestablishing commercial operation of~~ completing construction on the related air pollution control device for each unit, the permittee shall certify proper operation of each required monitor. The permittee shall comply with the conditions of Appendix F (Standard Continuous Monitoring Requirements) of this permit as the compliance method for the corresponding emissions standards. The permittee shall begin demonstrating compliance with the CO CEMS emissions standards once a monitor is certified. The permittee shall begin demonstrating compliance with the opacity, NO<sub>x</sub> and SO<sub>2</sub> COMS/CEMS emissions standards after completing the initial shakedown of the associated air pollution control device, but no later than 180 days after certifying the corresponding COMS/CEMS. During the period between certification of the SO<sub>2</sub> CEMS and completing initial shakedown of the FGD system, the units shall comply with the SO<sub>2</sub> emissions standards in the current Title V permit, which requires diligent monitoring of the fuel sulfur content. Within 10 days of completing initial shakedown for an air pollution control device, the permittee shall notify the compliance authority of the following: the air pollution control device; the date that shakedown was completed; the monitoring data being collected to demonstrate continuous compliance; and the status of the other air pollution control devices. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

### **Gypsum and Limestone Storage and Handling**

The applicant identified the following changes based on the final designs.

- The limestone crushing operation will be subject to NSPS Subpart OOO in 40 CFR 60. To comply with the federal provisions, the affected equipment will be controlled by enclosure, baghouses and vent filters as already described in the initial application and current PSD permit.
- Gypsum will be transferred to the wallboard plant by truck instead of conveyor. This method is already described in the permit and was considered in the initial air quality modeling analysis.
- Gypsum produced at the facility will be stored on a lined concrete handling pad sized for 32,000 tons of gypsum, which is approximately 12 days of operational capacity. The pad will contain runoff and will transfer it back to the FGD process. Water sprays will be used to control dust from the storage area.

The process description in Subsection 3B of the draft permit was revised to reflect the changes to the gypsum and limestone storage and handling based on the above requests and the final design. In addition, the table in Subsection 3B identifying the control technique for each emissions point has a space used as a placeholder for the flow rate of each dust collector and baghouse. To clarify, the table was revised to remove the placeholder and add a requirement to identify the design flow rates for these devices after completing the final design and submitting the Title V application. Also, each dust collector and baghouse was given a point ID number.

### **4. PRELIMINARY DETERMINATION**

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the Draft Permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the Draft Permit. Jeff Koerner is the project engineer responsible for reviewing the application and drafting the permit changes. Additional details of this analysis may be obtained by contacting the project engineer at the Department's Bureau of Air Regulation at Mail Station #5505, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

# REVISED DRAFT PERMIT

## PERMITTEE:

Progress Energy Florida, Inc.  
Crystal River Power Plant  
299 First Avenue North, CN-77  
St. Petersburg, Florida 33701

### *Authorized Representative:*

Mr. Larry Hatcher, Plant Manager

Air Permit No. PSD-FL-383B  
Project No. 0170004-022-AC  
Facility ID No. 0170004  
Crystal River Power Plant, Units 4 and 5  
Revised Air Pollution Controls Project  
Permit Expires: November 1, 2011

## PLANT LOCATION

The existing Crystal River Power Plant (SIC No. 4911) is located in the Crystal River Energy Complex in Citrus County, north of Crystal River and west of U.S. Highway 19.

## STATEMENT OF BASIS

This permit is a revision of Permit No. PSD-FL-383A, which revised original Permit No. PSD-FL-383. This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.), and Part 60 in Title 40 of the Code of Federal Regulations (CFR). Specifically, this permit is issued in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality. The permittee is authorized to install the proposed equipment and perform the work in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department). This air construction permit supplements all other valid air construction and operation permits.

## CONTENTS

- Section 1. General Information
- Section 2. Administrative Requirements
- Section 3. Emissions Units Specific Conditions
- Section 4. Appendices

Executed in Tallahassee, Florida

(DRAFT)

\_\_\_\_\_  
Joseph Kahn, Director  
Division of Air Resource Management

\_\_\_\_\_  
Effective Date

## SECTION 1. GENERAL INFORMATION (DRAFT)

### FACILITY AND PROJECT DESCRIPTION

The existing Crystal River Power Plant consists of the following: four coal-fired fossil fuel steam generating units with electrostatic precipitators; two natural draft cooling towers; two sets of mechanical draft cooling towers (one set of “helper” cooling towers and a second set of “modular” cooling towers); coal and ash material handling facilities; and relocatable diesel fired generators. The Crystal River Energy Complex includes the nuclear unit and associated facilities permitted under the same Title V air operation permit.

Due to the Environmental Protection Agency’s revised 8-hour ozone standard, the permittee shall install and continuously operate new low-NO<sub>x</sub> burners, new selective catalytic reduction systems, new flue gas desulfurization systems, and new stack configurations for existing Units 4 and 5, except for designed periods of SCR bypass as specified in condition 2.b. The installation and use of these control devices require a demonstration of continuous compliance with new standards for NO<sub>x</sub> and SO<sub>2</sub>.

In conjunction with the proposed new control equipment, the permit also authorizes the following: a new carbon burn-out (CBO<sup>TM</sup>) system to reburn fly ash, a new blend of bituminous/sub-bituminous coal, a trial burn to evaluate coals blends with up to 30% petroleum coke, and a trial burn to evaluate a new fuel additive intended to reduce slagging and improve emissions performance. This permit also establishes the maximum heat input rates for Units 4 and 5. The combination of new fuel blends and control equipment will result in PSD-significant emissions increases of carbon monoxide (CO), particulate matter (PM/PM<sub>10</sub>), sulfuric acid mist (SAM), and volatile organic compounds (VOC). Therefore, the permittee is also required to perform the following work and install the following additional equipment as the Best Available Control Technologies (BACT) for these pollutants: the new low-NO<sub>x</sub> burners (CO, PM/PM<sub>10</sub>, and VOC); modifications to the existing electrostatic precipitators (PM/PM<sub>10</sub> and SAM); and new alkali injection systems (SAM).

This permit affects the following emissions units:

EU No.	New/Existing	Emission Unit Description
001	Existing	Unit 1 Fossil Fuel Steam Generator
002	Existing	Unit 2 Fossil Fuel Steam Generator
003	Existing	Unit 5 Fossil Fuel Steam Generator
004	Existing	Unit 4 Fossil Fuel Steam Generator
016	Existing	Coal and Ash Material Handling Activities for Coal-Fired Steam Generators
023	New	Limestone and Gypsum Material Handling Activities
024	New	CBO Fluidized Bed Combustor
025	New	CBO Feed Fly Ash Silo
026	New	CBO Product Fly Ash Storage Dome and Truck Loadout Silo

### REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants (HAP).
- The facility operates units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.
- The existing facility is subject to Power Plant Site Certification No. PA 77-09.

## **RELEVANT DOCUMENTS**

The following relevant documents are not a part of this permit, but helped form the basis for this permitting action: the permit application and additional information received to make it complete; the draft permit package including the Department's Technical Evaluation and Preliminary Determination; publication and comments; the Department's BACT determinations and the Department's Final Determination.

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Section 2. Administrative Requirements

Section 3. Emissions Units Specific Conditions

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    Subsection B. Material Handling Activities for Limestone and Gypsum

    Subsection C. Material Handling Activities for CBO System

    Subsection D. Units 4 and 5 – Temporary Trial Period with up to 50% Sub-bituminous Coal

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Section 4. Appendices

    Appendix A. Citation Formats

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## SECTION 2. ADMINISTRATIVE REQUIREMENTS (DRAFT)

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1. Permitting Authority: All documents related to PSD applications for permits to construct or modify emissions units shall be submitted to the Department's Bureau of Air Regulation in the Division of Air Resource Management at 2600 Blair Stone Road, MS #5505, Tallahassee, Florida, 32399-2400. Copies of all such applications shall also be submitted to each Compliance Authority.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Air Resource Section of the Department's Southwest District Office at 13051 N. Telecom Parkway, Temple Terrace, FL 33637-0926.
3. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of the subject emissions unit shall be in accordance with the capacities and specifications stated in the application. The facility is subject to the applicable requirements of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C. The terms used in this permit have specific meanings as defined in the applicable chapters of the Florida Administrative Code. The permittee shall use the appropriate forms provided in Rule 62-210.900, F.A.C. and follow the applicable permitting procedures as specified in the above regulations. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
4. Source Obligation:
  - (a) Authorization to construct shall expire if construction is not commenced within 18 months after receipt of the permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. This provision does not apply to the time period between construction of the approved phases of a phased construction project except that each phase must commence construction within 18 months of the commencement date established by the Department in the permit.
  - (b) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.
  - (c) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

[Rule 62-212.400(12), F.A.C.]
5. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rule 62-4.030 and Chapters 62-210 and 62-212, F.A.C.]
6. Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. [Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213.420, F.A.C.]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

#### A. Unit 4, Unit 5 and CBO Unit – Pollution Control Projects

This section of the permit addresses the following emissions units.

EU No.	Emission Unit Description
003	Unit 5 is a fossil fuel-fired electric utility steam generator consisting of a pulverized coal, dry bottom, wall-fired boiler rated at 760 MW, which began commercial operation in 1984. Air pollution control equipment will include: low-NO <sub>x</sub> burners, selective catalytic reduction (SCR) systems, flue gas desulfurization (FGD) systems, alkali injection, and an electrostatic precipitator (ESP). The flue gas exhausts at 130° F with a volumetric flow rate of 2,205,195 acfm through a stack that is 30.5 feet in diameter and 550 feet tall. Units 4 and 5 share a common chimney with separate internal stack liners.
004	Unit 4 is a fossil fuel-fired, electric utility steam generator consisting of a pulverized coal, dry bottom, wall-fired boiler rated at 760 MW, which began commercial operation in 1982. Air pollution control equipment will include: low-NO <sub>x</sub> burners, selective catalytic reduction (SCR) systems, flue gas desulfurization (FGD) systems, alkali injection, and an electrostatic precipitator (ESP). The flue gas exhausts at 130° F with a volumetric flow rate of 2,205,195 acfm through a stack that is 30.5 feet in diameter and 550 feet tall. Units 4 and 5 share a common chimney with separate internal stack liners.
016	Material handling activities consist of the existing handling and storage of coal and ash for coal-fired electric utility steam generators.
024	The carbon burn-out (CBO) unit is a fluidized bed combustor that will reburn fly ash generated from Units 4 and 5 to produce low-carbon, low-ammonia fly ash material suitable for commercial use. The CBO unit is included in this subsection because the flue gas exhaust is directed back into the ductwork of Units 4 and 5 prior to the control equipment.

*{Permitting Note: Existing units EU-003, EU-004, and EU-016 are currently subject to the following applicable requirements: Power Plant Site Certification No. PA 77-09; 40 CFR 60, NSPS Subpart D (fossil fuel-fired steam generators); NSPS Subpart Y (coal preparation plants); and Chapter 62-214, F.A.C. (Acid Rain Program). This permit does not affect these previous requirements. In accordance with Rule 62-212.400 (PSD), F.A.C., this project subjects these units to BACT determinations for the following pollutants: CO, PM/PM<sub>10</sub>, SAM, and VOC. Final BACT determinations are presented in Appendix E of this permit. Emissions standards specified in this permit allow these units to avoid PSD preconstruction review for NO<sub>x</sub> and SO<sub>2</sub>.*

#### AUTHORIZED CONSTRUCTION

##### 1. Previous Permits:

- a. *Units 4 and 5:* Except for Permit No. 0170004-013-AC, the conditions of this permit supplement all previously issued air construction and operation permits for Units 4 and 5. Unless otherwise specified, these conditions are in addition to all other applicable permit conditions and regulations including: Power Plant Site Certification No. PA 77-09; 40 CFR 60, NSPS Subpart D (fossil fuel-fired steam generators); and Chapter 62-214, F.A.C. (Phase I and II of the Acid Rain Program). However, this permit supersedes Permit No. 0170004-013-AC for the construction of the selective catalytic reduction systems, which is now on the same construction schedule as the flue gas desulfurization systems.
- b. *Material Handling Activities (EU-016):* The material handling activities for the existing coal-fired electric utility steam generators remain subject to the applicable permit conditions and regulations as specified by Permit No. 0170004-014-AC issued on December 15, 2006. That permit authorized modifications to the existing material handling activities and included the following primary regulations: Power Plant Site Certification No. PA 77-09; Permit No. PSD-FL-139; and 40 CFR 60, NSPS Subpart Y (coal preparation plants). This permit does not add any new requirements.

[Permit Nos. 0170004-013-AC and 017004-014-AC; Application No. 0170004-016-AC; Rule 62-4.070(3), F.A.C.]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

#### A. Unit 4, Unit 5 and CBO Unit – Pollution Control Projects

2. Emissions Reduction Projects: For Units 4 and 5, the permittee is required to make the following modifications to assure compliance with the new emissions limits listed below.
- a. *Low-NO<sub>x</sub> Burners*: The permittee is required to install new low-NO<sub>x</sub> burners manufactured by Babcock & Wilcox (Model No. DRB-42) or equivalent. The preliminary design is for 54 burners per unit. The existing burner inlet system will be modified to allow even airflow distribution to the new burners.
  - b. *SCR Systems*: The permittee is required to install new SCR systems to reduce NO<sub>x</sub> emissions. Each system will consist of the following basic components: an ammonia injection grid, a mixing grid, SCR reactor with catalyst modules, a urea-to-ammonia processing system, associated bulk storage systems, an automated control system, piping, electrical, and other ancillary equipment. As needed, urea will be converted into ammonia, which will be mixed to the proper concentration. Ammonia will be injected ahead of the SCR reactor, which will be installed upstream of the air heater for each unit. The ammonia will combine with NO<sub>x</sub> in the presence of the catalyst in a reduction reaction to form nitrogen and water. The preliminary design is for 90% reduction in NO<sub>x</sub> emissions with a maximum ammonia slip of 2 to 5 ppmv. The design also incorporates dampers and ductwork to provide the capability of bypassing the SCR system. The bypass is most commonly used to gradually heat or cool the catalyst structure to minimize thermal fatigue during startup and shutdown. During catalyst maintenance and repair, the bypass would also allow access to the SCR reactor without requiring the complete shutdown of a unit.
  - c. *FGD Systems*: The permittee is required to install new wet flue gas desulfurization (FGD) systems after the existing ESPs and induced draft fans to reduce SO<sub>2</sub> and other acid gas emissions. A limestone slurry will be injected into the FGD absorbers at design feed rate of approximately 352 gpm. The slurry will consist of approximately 25 to 30% solids and a specific gravity of 1.22. The preliminary design is for a 97% reduction in SO<sub>2</sub> emissions. In addition to the FGD absorbers, the systems will consist of limestone storage and handling, limestone preparation, limestone slurry injection, FGD blowdown, and gypsum dewatering, transfer and storage.
  - d. *Stacks*: In conjunction with the emissions reduction projects, the permittee is authorized to construct a single new 550 feet tall chimney with separate internal stack liners for Units 4 and 5, one per unit. Each stack liner will have an internal diameter of 30.5 feet. The existing stacks will no longer be used. The required continuous emissions monitoring systems (CEMS) will be installed on each new stack liner.

The above information is based on the preliminary design. As necessary, the permittee shall provide the Permitting and Compliance Authorities with updated information should the final design significantly change. [Application No. 0170004-016-AC; Rules 62-4.070(3), 62-4.080 and 62-212.300, F.A.C.]

3. BACT Controls: For Units 4 and 5, the permittee is required to perform the following work as the basis for the BACT determinations.
- a. *Alkali Injection Systems*: The permittee is required to install new alkali injection systems to reduce SAM emissions. The preliminary design for the alkali injection system is to use ammonia generated from the urea-to-ammonia processing system, which is part of the new SCR system. Ammonia will be injected into the flue gas through a uniform injection grid located after the boiler air heaters and proposed SCR reactor and before the existing ESP. The additional ammonia reacts with SO<sub>3</sub> to form salts (e.g., bisulfates), which will be removed by the ESP. The preliminary design is for an 85% reduction.
  - b. *ESP*: The permittee is authorized to modify the existing ESPs to achieve the new PM/PM<sub>10</sub> emissions

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

#### A. Unit 4, Unit 5 and CBO Unit – Pollution Control Projects

standards. Some of this work may include the following: removing and replacing the precipitator roof; replacing the precipitator internals; replacing and upgrading the discharge electrodes to improve collection efficiency; as necessary, modifying the gas flow path deflectors at the inlet of the precipitator to improve the flow distribution; replacing the rapping system with top-mounted rappers to improve performance; adjusting the plate spacing for improved collection efficiency; and reinforcing the precipitator box to account for increased transient pressures from the new induced draft fans.

*{Permitting Note: The modifications are intended to improve the estimated collection efficiency to more than 99.5%.}*

[Application No. 0170004-016-AC; Rules 62-4.070(3), 62-212.300 and 62-212.400(PSD), F.A.C.]

4. CBO Unit: The permittee is authorized to install a new CBO fluidized bed combustor (Model No. 1500 or equivalent) with a nominal bed area of 1500 ft<sup>2</sup> that will reburn fly ash generated from Units 4 and 5 to produce low-carbon, low-ammonia fly ash material suitable for commercial use as an additive in Portland cement. The CBO unit also includes the following process equipment: hot cyclones to recycle fly ash back to the fluidized bed combustor; a heat recovery heat exchanger; cold cyclones to recover product fly ash; and a fabric filter to recover product fly ash. The flue gas exhaust shall be directed back into the ductwork of Units 4 and 5 prior to the air pollution control equipment such that emissions will be controlled when either unit or both units are in operation. The hot cyclones, cold cyclones and baghouse are considered process equipment and not air pollution control equipment because the equipment is used to separate the ash from the flue gas exhaust. The recovered ash is sold as a byproduct and the flue gas exhaust is directed back into the boiler ductwork for control. Details of the CBO process are provided in Subsection B, which regulates the material handling activities. [Application No. 0170004-016-AC; Rules 62-4.070(3), 62-212.300 and 62-212.400(PSD), F.A.C.]

#### PERFORMANCE REQUIREMENTS

5. Permitted Capacities:

- a. *Units 4 and 5*: The maximum heat input rates to Units 4 and 5 are 7200 MMBtu per hour per unit based on a 24-hour block average (midnight to midnight) and 6800 MMBtu per hour per unit based on a 30-day rolling average. Compliance shall be demonstrated by collecting the fuel feed rate and fuel heating values as monitored by the existing operating data monitoring system.
- b. *CBO Unit*: The maximum heat input rate to the CBO fluidized bed combustor is 95.6 MMBtu per hour based on a 24-hour block average.

[Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-212.300, F.A.C.]

6. Authorized Fuels:

- a. In addition to the currently authorized fuels, this air construction permit authorizes Units 4 and 5 to fire a blend of bituminous coal and sub-bituminous coal of up to 20% sub-bituminous coal upon issuance of this permit. Coal fuel blends shall not exceed a maximum sulfur content of 3.13% by weight.
- b. For startup, the CBO fluidized bed combustor will fire distillate oil with a maximum sulfur content of 0.5% by weight. Once the target operating temperature is achieved, fly ash from the boilers will be combusted.

*{Permitting Note: The current Title V air operation permit authorizes Units 4 and 5 to fire bituminous coal, a bituminous coal and bituminous coal briquette mixture, used oil, No. 2 fuel oil as a startup fuel, and natural gas as a startup and low-load flame stabilization fuel. Recently, the plant successfully tested a blend of approximately 80% bituminous coal with 20% Powder River Basin coal (sub-bituminous coal).}*

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### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

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#### A. Unit 4, Unit 5 and CBO Unit – Pollution Control Projects

[Application No. 0170004-016-AC; Rule 62-4.070(3), F.A.C.]

7. Capacities and Restrictions: None of the emissions units in this subsection are restricted by hours of operation (8760 hours/year). [Application No. 0170004-016-AC; Rule 62-210.200(PTE), F.A.C.]

#### EMISSIONS LIMITATIONS AND PERFORMANCE STANDARDS

8. Standards Based on Stack Tests: Including the emissions from the CBO unit, emissions from each Unit 4 or Unit 5 shall not exceed the following standards based on stack tests.
- a. *Ammonia Slip*: As determined by EPA Method CTM-027 (or equivalent), the ammonia slip shall not exceed 5 ppmv based on a 3-run test average conducted at permitted capacity.
  - b. *PM/PM<sub>10</sub> Emissions*: As determined by EPA Method 5 or 5b, PM emissions shall not exceed 0.030 lb/MMBtu and 216.0 lb/hour based on a 3-run test average conducted at permitted capacity.
  - c. *SAM emissions*: As determined by EPA Method 8 or 8A, SAM emissions shall not exceed 0.009 lb/MMBtu and 64.8 lb/hour based on a 3-run test average conducted at permitted capacity.
  - d. *VOC Emissions*: As determined by EPA Method 25A, VOC emissions shall not exceed 0.004 lb/MMBtu and 28.8 lb/hour based on a 3-run test average conducted at permitted capacity. Optionally, EPA Method 18 may be conducted concurrently in order to deduct non-regulated VOC emissions such as methane and ethane.
  - e. *Opacity*: As determined by EPA Method 9, the stack opacity shall not exceed 10% based on a 6-minute block average, except for one 6-minute period per hour of not more than 20%.

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

9. Standards Based on CEMS: Including the emissions from the CBO unit, emissions from Units 4 and 5 each shall not exceed the following standards based on data collected by the CEMS.
- a. *NO<sub>x</sub> Emissions*: As determined by CEMS data, NO<sub>x</sub> emissions shall not exceed 2,085 tons per year per unit based on a 12-month rolling average for all periods of operation including startup, shutdown and malfunction. [Application No. 0170004-016-AC; Rules 62-4.070(3), 62-4.080 and 62-212.400(12), F.A.C.]
  - b. *SO<sub>2</sub> Emissions*: As determined by CEMS data, SO<sub>2</sub> emissions shall not exceed 0.27 lb/MMBtu of heat input based on a 30-day rolling average for all periods of operation including startup, shutdown and malfunction. As determined by CEMS data, SO<sub>2</sub> emissions shall not exceed 1944.0 lb/hour per unit based on a 24-hour block average excluding startup, shutdown and malfunction of the FGD system. [Application No. 0170004-016-AC; Rules 62-4.070(3), 62-4.080 and 62-212.400(12), F.A.C.]
  - c. *CO Emissions (Interim)*: As determined by CEMS data, CO emissions shall not exceed 0.17 lb/MMBtu of heat input based on a 30-day rolling average excluding periods of startup, shutdown and malfunction. As determined by CEMS data, CO emissions shall not exceed 1156.0 lb/hour based on a 30-day rolling average for all periods of operation including startup, shutdown and malfunction. [Rule 62-212.400 (BACT), F.A.C.]
  - d. *CO Emissions (Final)*: Within 24 months of commencing commercial operation of each unit with the new low-NO<sub>x</sub> burners, the permittee shall submit an application proposing a revised (lower) final BACT standard. The final standard shall be based on actual CO emissions data collected for initial operation after completing installation of the new low-NO<sub>x</sub> burners. There may be separate standards proposed for different fuels. [Rule 62-212.400(BACT), F.A.C.]
10. Circumvention: No person shall circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly. The SCR and FGD

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

#### A. Unit 4, Unit 5 and CBO Unit – Pollution Control Projects

systems shall operate as necessary to comply with the emissions standards of this permit. The alkali injection system and ESP shall operate in accordance with the automated controls system as determined by subsequent performance and compliance testing. [Rules 62-210.650 and 62-212.400(BACT), F.A.C.]

11. Excess Emissions - Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. All such preventable emissions shall be included in any compliance determinations based on CEMS data. [Rule 62-210.700(4), F.A.C.]
12. Excess Emissions - Allowed: In accordance with Rule 62-210.700(6), F.A.C., excess emissions due to startup, shutdown or malfunction have been considered in establishing the sets of emissions standards of this permit. No other periods of excess emissions are authorized. [Rule 62-210.700(6), F.A.C.]

#### CONTINUOUS EMISSIONS MONITORING REQUIREMENTS

13. Existing CEMS/COMS: For Units 4 and 5, the permittee shall continue to calibrate, operate, and maintain continuous monitoring equipment to measure and record opacity, NO<sub>x</sub> and SO<sub>2</sub> in terms of the applicable standards. The permittee shall either relocate the existing CEMS to the new stack configurations or replace the monitoring systems. Due to the wet stack, the existing COMS shall be relocated or new COMS installed in the ductwork after the ESP and prior to the wet FGD system. Each COMS and CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The monitors shall be installed, operated and maintained in accordance with the existing requirements of 40 CFR 60.45, as well as the provisions of the federal acid rain program. [Rule 62-4.070(3), F.A.C.]
14. CO CEMS Installation: For Units 4 and 5, the permittee shall properly install, calibrate, operate and maintain CEMS to measure and record CO emissions in the terms of the applicable standard. Each CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The permittee shall locate the CEMS by following the procedures contained in the applicable performance specification of 40 CFR Part 60, Appendix B. The permittee shall install each CEMS required by this permit and conduct the appropriate performance specification for each CEMS within 60 calendar days of completing installation of the low-NO<sub>x</sub> burners and achieving permitted capacity as defined in Rule 62-297.310(2), F.A.C., but no later than 180 calendar days after initial startup. As an option for Unit 5 because of construction delays, the permittee may postpone installation of the CO CEMS until the Unit 5 exhaust is tied into the new FGD system and stack. If this option is selected, the permittee shall conduct an initial CO stack test in accordance with EPA Method 10 within 60 days of completing installation of the low-NO<sub>x</sub> burners. The tests shall demonstrate compliance with the numerical portion of the CO emissions standard based on the 3-run test average. In addition, CEMS data collected from similar Unit 4 shall be used as a surrogate to show compliance until the Unit 5 CEMS is installed. Based on the Unit 4 CEMS data, the Compliance Authority may require special compliance tests in accordance with Rule 62-297.310(7)(b), F.A.C. This period of alternate compliance shall not exceed 180 days from completing installation of the low-NO<sub>x</sub> burners. The permittee shall install and certify the CO CEMS within 60 days following the tie-in of the new FGD system and permanent stack. [Rules 62-4.070(3), 62-297.310(7)(b) and 62-212.400(BACT), F.A.C.]
15. Compliance by CEMS: Compliance with the standards for opacity and emissions of CO, NO<sub>x</sub>, and SO<sub>2</sub> shall be demonstrated with data collected from the required continuous monitoring systems. Within 60 days of reestablishing commercial operation of completing construction on the related air pollution control device for each unit, the permittee shall certify proper operation of each required monitor. The permittee shall comply with the conditions of Appendix F (Standard Continuous Monitoring Requirements) of this permit as the compliance method for the corresponding emissions standards. The permittee shall begin

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### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

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#### A. Unit 4, Unit 5 and CBO Unit – Pollution Control Projects

demonstrating compliance with the CO CEMS emissions standards once a monitor is certified. The permittee shall begin demonstrating compliance with the opacity, NO<sub>x</sub> and SO<sub>2</sub> COMS/CEMS emissions standards after completing the initial shakedown of the associated air pollution control device, but no later than 180 days after certifying the corresponding COMS/CEMS. During the period between certification of the SO<sub>2</sub> CEMS and completing initial shakedown of the FGD system, the units shall comply with the SO<sub>2</sub> emissions standards in the current Title V permit, which requires diligent monitoring of the fuel sulfur content. Within 10 days of completing initial shakedown for an air pollution control device, the permittee shall notify the compliance authority of the following: the air pollution control device; the date that shakedown was completed; the monitoring data being collected to demonstrate continuous compliance; and the status of the other air pollution control devices. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

#### PRELIMINARY PERFORMANCE TESTING REQUIREMENTS

16. Preliminary SAM Performance Tests: Within 60 days after completing construction on the pollution control systems, the permittee shall conduct a series of preliminary performance tests on either unit to determine the SAM emissions rate under a variety of operating scenarios. The purpose of the tests is to document the impact of alkali injection on reducing SAM emissions and results in the development of correlation/curves between injection rates, operating conditions and emissions. When collecting data during the preliminary SAM performance tests, the permittee is exempt from the SAM emissions standards of this permit.
- a. For each set of operating conditions being evaluated, the permittee shall conduct at least a 1-hour test run to determine SAM emissions. At least nine test runs shall be conducted to evaluate the effect of SAM emissions on parameters such as: the SO<sub>2</sub> emissions rate prior to the SCR catalyst, the unit load, the flue gas flow rate, the alkali injection rate, the current catalyst oxidation rate, and the operating level of the FGD system.
  - b. Tests shall be conducted with the fuel blends and load rates that are representative of the actual operating ranges intended for Units 4 and 5. Sufficient tests shall be conducted to establish the SAM emissions rates for the following scenarios: bypass of the SCR reactor, SCR reactor in service without alkali injection, and SCR reactor in service under varying operating conditions and levels of alkali injection.
  - c. At least 15 days prior to initiating the performance tests, the permittee shall submit a test notification, preliminary test schedule and test protocol to the Bureau of Air Regulation and the Compliance Authority.
  - d. Within 45 days following the last test run conducted, the permittee shall provide a report summarizing the emissions tests and results. All SAM emissions test data shall be provided with this report.
  - e. Within 45 days following the submittal of the emissions test report and no later than 90 days following the last test run conducted, the permittee shall submit an operating protocol and report summarizing the following: identify each set of operating conditions evaluated; identify each operating parameter evaluated; identify the relative influence of each operating parameter; describe how the automated control system will adjust the alkali injection rate based on the selected parameters; identify the frequency with which operational parameters will be reevaluated and adjusted within the automated control system; provide a description of the algorithm used for the automated control system or a series of related performance curves; and provide details for calculating and estimating the SAM emissions rate based on the level of alkali injection and operating conditions. The preliminary performance tests shall be used to set the alkali injection control system and estimate SAM emissions.

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

#### A. Unit 4, Unit 5 and CBO Unit – Pollution Control Projects

- f. The permittee shall operate the alkali injection system in accordance with the operating protocol determined by the performance tests. The permittee may request that additional performance tests be conducted to establish new operating conditions for the alkali injection system due to changes with the fuel blends, the SCR catalyst, or other circumstances.

[Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

#### COMPLIANCE TESTING REQUIREMENTS

17. Common Testing Requirements: All required emissions tests shall be conducted in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. [Rules 62-204.800 and 62-297.100, F.A.C.; and 40 CFR 60, Appendix A]
18. Test Methods: Any required stack tests shall be performed in accordance with the following methods.

EPA Method	Description of Method and Comments
1 - 4	Methods for Determining Traverse Points, Velocity, Flow Rate, Gas Analysis, and Moisture Content These methods shall be performed as necessary to support other methods.
5 or 5b	Method for Determining Particulate Matter Emissions
6C	Method for Determining SO <sub>2</sub> Emissions (Instrumental)
7E	Method for Determining NO <sub>x</sub> Emissions (Instrumental)
8 or 8A	Method for Determining Sulfuric Acid Mist (SAM) Emissions
9	Method for Determining Opacity Observations
10	Method for Determining Carbon Monoxide Emissions (Instrumental) The method shall be based on a continuous sampling train.
18	Method for Determining Gaseous Organic Compound Emissions (Gas Chromatography) Concurrently with EPA Method 25A, EPA Method 18 may be used as an optional method to deduct emissions of methane and ethane from the THC emissions measured by Method 25A.
19	Methods for Determining NO <sub>x</sub> , PM, and SO <sub>2</sub> Mass Emission Rates
25A	Method for Determining Gaseous Organic Concentrations (Flame Ionization)
CTM-027	Procedure for Collection and Analysis of Ammonia in Stationary Source This is an EPA conditional test method with a minimum detection limit of 1 ppm. Other equivalent methods may be used.

The above methods are specified in Appendix A of 40 CFR 60 and are adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [Rules 62-4.070(3), 62-204.800(8) and 62-212.400(BACT), F.A.C.; 40 CFR 60, Appendix A]

19. Compliance Tests: In accordance with the following requirements, the permittee shall have stack tests conducted to demonstrate compliance with the emissions standards specified in this permit for ammonia slip, PM, SAM and VOC.
- a. *Initial Tests*: Within 60 days after completing construction on the pollution control systems, initial compliance tests shall be conducted to determine emissions of ammonia slip, opacity, PM and VOC. Within 120 days after completing construction on the pollution control systems and after completing the preliminary SAM performance tests, initial compliance tests shall be conducted to determine SAM emissions. At least one boiler shall be tested with the CBO unit also in operation. If the CBO unit is not yet in service at the time of the initial tests, separate compliance tests to determine PM and SAM

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

#### A. Unit 4, Unit 5 and CBO Unit – Pollution Control Projects

emissions shall be conducted on at least one boiler with the CBO unit in operation. All initial tests shall be conducted with the emissions units operating at permitted capacity (within at least 90% of 7200 MMBtu/hour); otherwise, this permit shall be modified to reflect the true maximum capacity of each unit as constructed should the permitted capacity be unattainable. If initial equipment problems prevent operation at permitted capacity, the initial tests may be repeated to demonstrate compliance at permitted capacity. [Rules 62-212.400(BACT) and 62-297.310(7), F.A.C.; 40 CFR 60.8]

- b. *Subsequent Tests:* During each federal fiscal year (October 1<sup>st</sup> to September 30<sup>th</sup>), Units 4 and 5 shall be tested to determine emissions of ammonia slip, opacity, PM, and SAM. During the 12 months prior to renewal of the operation permit, Units 4 and 5 shall be tested to demonstrate compliance with the VOC emission standards. For each pollutant, at least one boiler shall be tested with the CBO unit also in operation. The Department may require the permittee to repeat some or all of the initial stack tests after substantial replacement or repair of any air pollution control or process equipment.
  - c. *Test Fuel:* Initial compliance tests shall be conducted with the highest sulfur content representative of the actual coal blends being fired. Within 60 days of determining that the fuel sulfur content of the actual coal blends fired have increased by 0.5% by weight or more from the highest tested sulfur content that demonstrated compliance, the permittee shall conduct new tests to determine emissions of opacity, PM and SAM. For purposes of this condition, the fuel sulfur content shall be based on an average of the as-fired fuel samples for 30 successive operating days. Once initial compliance has been demonstrated at the higher fuel sulfur levels (2.63% to 3.13% sulfur by weight), subsequent tests shall be conducted using a fuel with a sulfur content that is representative of the actual coal blends being fired. [Rules 62-4.070(3), 62-212.400(BACT) and 62-297.310, F.A.C.]
  - d. *Test Capacity:* Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Except for the initial tests, if it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit (7200 MMBtu/hour based on a 24-hour average). [Rules 62-212.400(BACT) and 62-297.310, F.A.C.]
20. Operational Data for Tests: For each test run, the permittee shall monitor and record the following information: fuel feed rate; heat input rate; sulfur content of fuel; the ammonia injection rate of the SCR control system; the limestone slurry injection rate of the FGD control system; alkali injection rate of the alkali injection system; flue gas oxygen content (%); CO, NO<sub>x</sub>, and SO<sub>2</sub> CEMS emissions data; and opacity data. [Rules 62-297.310 and 62-4.070(3), F.A.C.]

#### RECORDS AND REPORTS

21. Stack Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Compliance Authority on the results of each such test. The required test report shall be filed with the Compliance Authority as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Compliance Authority to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the specified in Rule 62-297.310(8), F.A.C. The stack test report shall also indicate all required operational data collected during each test run. [Rule 62-297.310(8), F.A.C.]
22. Malfunction Notifications: If temporarily unable to comply with any condition of the permit due to breakdown of equipment (malfunction) or destruction by hazard of fire, wind or by other cause, the

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

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#### A. Unit 4, Unit 5 and CBO Unit – Pollution Control Projects

permittee shall immediately (within one working day) notify the Compliance Authority. Notification shall include pertinent information as to the cause of the problem, and what steps are being taken to correct the problem and to prevent its recurrence, and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with Department rules. If requested by the Compliance Authority, the owner or operator shall submit a quarterly written report describing the malfunction. [Rules 62-210.700(6) and 62-4.130, F.A.C.]

23. Fuel Monitoring – Units 4 and 5: Using the existing operating data system, the permittee shall continuously monitor each fuel to determine the heat input rates to Units 4 and 5. The heat input rates shall be calculated from the amounts of fuel fired and the higher heating value (HHV) of each fuel as determined by vendor certifications or the regular sampling and analysis required by the current Title V permit. Data shall be reduced to 1-hour blocks, 24-hour blocks (midnight-to-midnight), and 30-day rolling averages (average of all the 1-hour blocks for 30 operating days). [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]
24. Fuel Monitoring – CBO Unit: During any compliance test and when requested by the Compliance Authority, the permittee shall monitor and record the heat input rate to the CBO Unit from the amount of ash burned and the heating value of the ash. [Rule 62-212.400(BACT), F.A.C.]
25. Control Device – Parametric Monitoring:
  - a. *SCR System*: The permittee shall continuously monitor and record the ammonia injection rate of the SCR control system. Data shall be reduced to 1-hour block averages. [Rule 62-4.070(3), F.A.C.]
  - b. *FGD System*: The permittee shall continuously monitor and record the limestone slurry injection rate of the FGD control system. Data shall be reduced to 1-hour block averages. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]
  - c. *Alkali Injection System*: The permittee shall continuously monitor and record the alkali injection rate of the alkali injection system. Data shall be reduced to 1-hour block averages. Operation of the alkali injection system shall be determined by the automated control system, which shall be set in accordance with the preliminary performance and compliance tests for SAM emissions. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]
  - d. *ESP*: The permittee shall continuously monitor and record the opacity in the ductwork just after the ESP for use as part of the Compliance Assurance Monitoring Plan under Title V. Operation of the ESP shall be based upon COMS data collected during satisfactory PM emissions compliance tests. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

#### B. Material Handling Activities for Limestone and Gypsum

This section of the permit addresses the following emissions unit.

EU No.	Emission Unit Description
023	Limestone and Gypsum Material Handling Activities

##### *Process Description*

The FGD systems will include limestone storage and handling, limestone preparation, limestone slurry injection, and gypsum dewatering, transfer and storage. The limestone handling system will receive, store, size and transfer limestone to the FGD system's limestone preparation equipment. It will be designed to receive limestone delivered to the plant by: ~~conveyor from an adjacent quarry, or by rear dump trucks unloading into aboveground truck unloading feeders with integral hoppers.~~ The system will consist of: a conveyor to transfer limestone received from the ~~quarry delivery conveyor;~~ truck unloading feeders; unloading and the stacking belt conveyors to transfer limestone to a covered storage pile; a portal scraper reclaim and an emergency reclaim feeder located inside a limestone storage building; a reclaim conveyor ~~crusher feed belt conveyors~~ to transfer limestone from the storage pile to a crusher feed belt conveyor, which transfers limestone to a crusher building for limestone sizing; a plant feed belt conveyors and silo feed belt conveyors to transfer limestone to the day silos.

~~Limestone received from the quarry conveyor will be transported to the unloading conveyor by the transfer conveyor. Limestone received by trucks will be transferred to the unloading conveyor by the truck unloading feeders. The delivered limestone will be conveyed to a covered storage pile via conveyor system. From the storage pile, the material is reclaimed using a single full portal scraper reclaim and conveyed to a crusher building where the material is sized using crushers. One or more feed conveyors will receive limestone from the crushers and distribute the material to the three limestone day silos.~~

The plant feed conveyor(s) will be equipped with a diverter gate and will supply limestone to the first limestone day silo (Silo AB) directly via a chute and to the other limestone day silos (Silos BA & C) using a reversible conveyor silo feed conveyors equipped with diverter gates. Each ~~limestone~~ silo will be equipped with a pulse-jet fabric filter dust collection system. ~~Insertable dust~~ collectors will be provided at each of the truck unloading feeders ~~and at the loading points of the silo feed conveyors.~~ A dust collection system will be provided for the crusher building. A water-fog surfactant blend dust suppression system will be provided at the discharge point of the transfer reclaim conveyor and at the head tail end of the unloading crusher feed conveyor to treat suppress the limestone dust formation ~~before it is loaded onto the belt of the stacking conveyor.~~

The limestone preparation system includes wet ball mill grinding systems to produce the limestone slurry. Filtrate-recycle water from the FGD system will be used to prepare the limestone slurry to conserve make-up water ~~for FGD system mist eliminator washing.~~ The preliminary design is based on a feed rate of approximately 352 gpm of limestone slurry consisting of 25% to 30% solids with a specific gravity of 1.22. Fugitive dust emissions are minimized, by enclosures and the addition of water for the slurry.

The gypsum slurry from the FGD system will be delivered by bleed pumps to the dewatering system, which will consist of a filter feed tank, hydro-cyclones, vacuum belt filters, vacuum pumps, filtrate tanks, filtrate pumps, lined piping, and associated valves. ~~Based on the preliminary design, t~~The incoming gypsum slurry will contain approximately 18 to 22% suspended solids. Using a series of hydro-cyclones and three horizontal vacuum belt filters, the dewatering system will remove water until the slurry contains approximately 90% solids. Filtrate removed from the slurry will be stored and pumped back to the limestone preparation system or the absorber module. The de-watering system will be located inside a building. Fugitive dust emissions are negligible because the system is enclosed and wet.

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

#### B. Material Handling Activities for Limestone and Gypsum

A collecting belt conveyors collect dewatered gypsum from the vacuum belt filters at in the dewatering system. Under normal operating conditions, the this conveyors will feed gypsum onto a system of the belt of the transfer conveyors, which transfers the gypsum onto a gypsum handling pad or a belt-feed conveyor for delivery to the future an adjacent proposed wallboard plant. In the reverse direction, the gypsum an emergency this conveyor will feed gypsum onto another belt, which can also delivers gypsum to the emergency gypsum pile. The gypsum material handling pad emergency gypsum pile will be located northeast of the dewatering facility and will be used primarily (until the future adjacent wallboard facility is built) to store the gypsum until it can be transferred offsite for beneficial use or disposal, upon loss of the gypsum transfer and feed conveyors. In addition, the gypsum handling pad emergency pile may be used to store "off-specification" gypsum if needed. Trucks will remove gypsum from the emergency gypsum stockpile. Fugitive dust emissions will be minimal because the dewatered gypsum still contains at least approximately 10% water.

#### AUTHORIZED CONSTRUCTION

1. Equipment: The permittee is authorized to construct the following processes to support the FGD system: limestone storage and handling, limestone preparation, limestone slurry injection, and gypsum dewatering, transfer and storage. [Application No. 0170004-016-AC; Rules 62-4.070(3), 62-212.300 and 62-212.400(PSD), F.A.C.]
2. Air Pollution Control Equipment and Techniques: To comply with the standards of this permit, the permittee shall design, install, operate and maintain the following air pollution control equipment.

Process Activity	Emissions Point No.	Control Device	Flow Rate	Outlet Dust Loading Specification
Dry Limestone Handling System				
Limestone conveyors (general)	---	<u>enclosed covered</u>	---	---
Limestone <del>stacking</del> <u>reclaim</u> conveyor (discharge to)	---	dust suppressant	---	---
Dump trucks	---	covered	---	---
Truck unloading feeders w/integral hoppers	EP-1000	dust collectors	acfm	0.010 grains/dscf
Limestone storage	---	covered pile	---	---
Limestone crushing and sizing	EP-2000	enclosed building w/baghouse	acfm	0.010 grains/dscf
Limestone silo feed conveyors	EP-3000	dust collectors	acfm	0.010 grains/dscf
<u>3</u> Limestone day silos, <del>up to</del> (4)	EP-4000	baghouse	acfm	0.010 grains/dscf
Limestone Preparation System				
<del>Wet ball mill grinders and misc. equipment</del>	---	<u>wet</u>	---	---
Gypsum Dewatering System				
Gypsum dewatering system	---	enclosure/wet	---	---
Gypsum Handling System				
Gypsum handling system	---	enclosure/wet	---	---
<u>Gypsum Handling Pad</u>	---	<u>water spray</u>	---	---

Initial and replacement bags shall be selected based on the above design outlet dust loading specification. As part of the application to revise the Title V air operation permit to incorporate this air construction permit, the permittee shall submit the final design flow rates for each dust collector and baghouse.

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

#### B. Material Handling Activities for Limestone and Gypsum

[Application No. 0170004-016-AC; Rules 62-4.070(3), 62-212.300 and 62-212.400(BACT), F.A.C.]

3. Fugitive Dust Emissions: The dry limestone handling and storage operations shall be enclosed to the extent practicable and confined to prevent fugitive dust emissions. During the construction period, fugitive dust emissions shall be minimized by techniques such as covering, confining and/or the application of water or dust suppressants to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

#### EMISSIONS LIMITATIONS AND PERFORMANCE STANDARDS

4. Capacities: None of the emissions units in this subsection are restricted by hours of operation (8760 hours/year). *{Permitting Note: For informational purposes, maximum limestone processing rate is estimated at 100 tons per day.}* [Application No. 0170004-016-AC; Rule 62-210.200(PTE), F.A.C.]
5. Opacity Standard: As determined by EPA Method 9, visible emissions from each baghouse and dust collector exhaust point shall not exceed 5% opacity based on a 6-minute average. [Application No. 0170004-016-AC; Rule 62-212.400(BACT), F.A.C.]
6. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]
7. NSPS Subpart OOO Provisions: The limestone crushing activities are subject to the applicable requirements in NSPS Subpart OOO of 40 CFR 60. See Appendix G of this permit.

#### COMPLIANCE TESTING REQUIREMENTS

8. Initial Compliance Tests: Each baghouse exhaust shall be tested to demonstrate initial compliance with the specified opacity standard. The initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the unit. [Rule 62-297.310(7)(a)1, F.A.C.]
9. Annual Compliance Tests: During each federal fiscal year (October 1<sup>st</sup> to September 30<sup>th</sup>), each baghouse exhaust point shall be tested to demonstrate compliance with the specified opacity standard. [Rule 62-297.310(7)(a)4, F.A.C.]
10. Test Notification: At least 15 days prior to the date on which each formal compliance test is to begin, the permittee shall notify the Compliance Authority of: the date, time, and place of the test; and the contact person who will be responsible for coordinating and having the test conducted. [Rule 62-297.310(7)(a)9, F.A.C.]
11. Test Method: Opacity tests shall be conducted in accordance with EPA Method 9, which is described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. Tests shall also comply with the applicable requirements of Rule 62-297.310, F.A.C. summarized in Appendix D (Common Testing Requirements) of this permit. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]
12. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C. The minimum observation period for a visible emissions compliance test shall be 30 minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. The permittee shall record the actual processing rate for the emissions unit being tested. [Rules 62-297.310(4) and (5), F.A.C.]
13. Common Testing Requirements: All required emissions tests shall be conducted in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. The minimum observation period for a visible emissions compliance test shall be 30 minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. The permittee shall record the actual processing rate for the emissions unit being tested. [Rule 62-297.310, F.A.C.]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

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#### B. Material Handling Activities for Limestone and Gypsum

##### RECORDS AND REPORTS

14. Final Design Notification: Within 90 days of completing the FGD system design, provide the final details for the limestone and gypsum material handling activities including a process flow diagram and all control equipment specifications. It may be necessary to modify this air construction permit. [Application No. 0170004-016-AC; Rule 62-4.070(3), F.A.C.]
15. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Compliance Authority on the results of each such test. The required test report shall be filed with the Compliance Authority as soon as practical, but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Compliance Authority to determine if the test was properly conducted and the test results properly computed. [Rule 62-297.310(8), F.A.C.]
16. Operational Records: The owner or operator shall maintain the following records on site to demonstrate compliance with the specifications and limitations of this subsection.
  - a. Records of the design outlet dust loading specifications for new and replacement fabric filter bags; and
  - b. For each month, record the total limestone processed for the month and the previous 12 months.

All records shall be made available to the Department and Compliance Authority upon request. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

#### C. Material Handling Activities for CBO System

This section of the permit addresses the following emissions unit.

ID	Emission Unit Description
025	CBO Feed Fly Ash Silo
026	CBO Product Fly Ash Storage Dome and Truck Loadout Silo

##### *Process Description*

Fly ash from Units 4 and 5 will be conveyed pneumatically to the CBO feed fly ash silo (EU-025). The silo will vent through a baghouse prior to discharge to the atmosphere. Fly ash will then be fed from the silo to the fluidized bed combustor (EU-024) for processing. Fly ash from the fluidized bed combustor will be separated from the exhaust gases by hot cyclones and directed to a heat exchanger to cool the product and recover heat. Thermal energy recovered from the CBO process will be used to heat condensate from the Unit 4 and 5 low-pressure feed water systems. The cooled exhaust gas will be routed through a cold cyclone and fabric filter to remove residual product fly ash before being returned to the inlet ductwork of Units 4 and 5 pollution control equipment (SCR, FGD, ESP and alkali injection systems).

Product fly ash separated by the cold cyclone and fabric filter will be sent to a surge bin with a portion of the product fly ash being returned to the fluidized bed combustor for temperature control. The remaining product ash is pneumatically conveyed to the product fly ash storage dome (EU-026) or directly to a truck load-out silo (also EU-026). The product fly ash storage dome will vent through a baghouse prior to discharging to the atmosphere. Particulate emissions captured during the truck load-out process will be routed to the truck load-out silo which will vent through a baghouse. Trucks will travel on paved roads within the plant and exit the plant for delivery offsite. Fugitive particulate matter emissions associated with product fly ash truck traffic will be controlled by maintaining the roads and periodic watering as needed.

#### AUTHORIZED CONSTRUCTION

1. CBO System: The permittee is authorized to construct a carbon burnout system consisting of the following major components: a fluidized bed combustor (EU-024) with hot cyclones to recycle ash back to the fluidized bed combustor, a heat recovery heat exchanger, cold cyclones to recover product ash and a fabric filter to recover product ash; a feed fly ash silo (EU-025, CBO-001); a product fly ash storage dome and a product fly ash truck loadout silo (EU-026). The system is designed for a maximum ash process rate of 75 tons per hour. For the fluidized bed combustor, the hot cyclones, cold cyclones and baghouse are considered process equipment and not air pollution control devices because the equipment is used to separate ash from the flue gas exhaust, which is then directed back into the boiler ductwork for emissions control. [Application No. 0170004-016-AC; Rules 62-4.070(3), 62-212.300 and 62-212.400(PSD), F.A.C.]
2. Air Pollution Control Equipment: To comply with the standards of this permit, the permittee shall design, install, operate, and maintain the following air pollution control equipment.

EU No.	Emissions Unit	Emissions Point No.	Control Device	Flow Rate	Outlet Dust Loading Specification
025	CBO Feed Fly Ash Silo	CBO-001	Baghouse	3040 acfm	0.010 grains/dscf
026	CBO Product Storage Dome	CBO-002	Baghouse	7600 acfm	0.010 grains/dscf
026	CBO Product Truck Loadout	CBO-003	Baghouse	7600 acfm	0.010 grains/dscf

Initial and replacement bags shall be selected based on the above design outlet dust loading specification. [Application No. 0170004-016-AC; Rules 62-4.070(3), 62-212.300 and 62-212.400(BACT), F.A.C.]

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### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

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#### C. Material Handling Activities for CBO System

3. Fugitive Dust Emissions: The CBO system shall be enclosed to the extent practicable and confined to prevent fugitive dust emissions. During the construction period, fugitive dust emissions shall be minimized by techniques such as covering, confining and/or the application of water or dust suppressants to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

#### EMISSIONS LIMITATIONS AND PERFORMANCE STANDARDS

4. Capacities and Restrictions: None of the emissions units in this subsection are restricted by hours of operation (8760 hours/year). The maximum ash processing rate for the CBO system shall not exceed 320,000 tons of product ash during any consecutive 12 months. [Application No. 0170004-016-AC; Rule 62-210.200(PTE), F.A.C.]
5. Opacity Standard: As determined by EPA Method 9, visible emissions from each baghouse exhaust point shall not exceed 5% opacity based on a 6-minute average. [Application No. 0170004-016-AC; Rule 62-212.400(BACT), F.A.C.]
6. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]

#### COMPLIANCE TESTING REQUIREMENTS

7. Initial Compliance Tests: Each baghouse exhaust shall be tested to demonstrate initial compliance with the specified opacity standard. The initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the unit. [Rule 62-297.310(7)(a)1, F.A.C.]
8. Annual Compliance Tests: During each federal fiscal year (October 1<sup>st</sup> to September 30<sup>th</sup>), each baghouse exhaust point shall be tested to demonstrate compliance with the specified opacity standard. [Rule 62-297.310(7)(a)4, F.A.C.]
9. Test Notification: At least 15 days prior to the date on which each formal compliance test is to begin, the permittee shall notify the Compliance Authority of: the date, time, and place of the test; and the contact person who will be responsible for coordinating and having the test conducted. [Rule 62-297.310(7)(a)9, F.A.C.]
10. Test Method: Opacity tests shall be conducted in accordance with EPA Method 9, which is described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. Tests shall also comply with the applicable requirements of Rule 62-297.310, F.A.C. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]
11. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C. The minimum observation period for a visible emissions compliance test shall be thirty (30) minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. The permittee shall record the actual ash processing rate for the emissions unit being tested. [Rules 62-297.310(4) and (5), F.A.C.]

#### RECORDS AND REPORTS

12. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Compliance Authority on the results of each such test. The required test report shall be filed with the Compliance Authority as soon as practical, but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Compliance Authority to determine if the test was properly conducted and the test results properly computed. [Rule 62-297.310(8), F.A.C.]

### **SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)**

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#### **C. Material Handling Activities for CBO System**

13. Operational Records: The owner or operator shall maintain the following records on site to demonstrate compliance with the specifications and limitations of this subsection.

- a. Records of the design outlet dust loading specifications for new and replacement fabric filter bags; and
- b. For each month, record the total product ash processed for the month and the previous 12 months.

All records shall be made available to the Department and Compliance Authority upon request. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

#### D. Units 4 and 5 – Temporary Trial Period with up to 50% Sub-bituminous Coal

This section of the permit addresses a temporary trial period for the following emissions units.

EU No.	Emission Unit Description
004	Unit 4 is a fossil fuel-fired, electric utility steam generator
003	Unit 5 is a fossil fuel-fired, electric utility steam generator

#### TEMPORARY AUTHORIZATION AND RESTRICTIONS

1. **Trial Coal Blend:** For Units 4 and 5, the permittee is temporarily authorized to fire trial coal blends with greater than 20% sub-bituminous coal by weight (including Powder River Basin coal), but not more than 50% sub-bituminous coal by weight. The maximum sulfur content of such coal blends shall not exceed 3.13% by weight. The preliminary schedule is to conduct the trial before installation of the additional control systems. The purpose is to gather operational and emissions data to evaluate overall impacts in support of a future permanent request to fire bituminous/sub-bituminous coal blends. [Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]
2. **Trial Test Burn Duration:** The trial coal blends shall only be fired in existing Units 4 and 5 and shall be fired in a similar manner to the bituminous coal currently in use at the plant. The permittee shall provide at least a one-day advance notice (by phone, fax, or email) to the Compliance Authority prior to the initial firing of any trial coal blend. Once any trial coal blend is fired, the permittee shall complete the trial burn within 90 calendar days. No more than 150,000 tons of the trial coal blends shall be burned during the trial burn period. In addition, all trial burns shall be completed prior to the expiration date of this permit. Within five calendar days of completing the trial burn, the permittee shall notify the Compliance Authority (by phone, fax, or email) that the trial burn has been completed. [Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

#### EMISSIONS LIMITING AND PERFORMANCE STANDARDS

3. **Performance Requirements:** The permittee shall provide the Compliance Authority with a preliminary schedule for conducting the trial burn and performance tests and shall update this schedule as necessary. During the trial burn, the permittee shall comply with all terms and conditions in the current Title V air operation permit. If the trial burn results in operation that is not in accordance with the conditions of the Title V permit or the test protocol, the performance testing will cease as soon as possible. The permittee shall immediately notify the Compliance Authority (by phone, fax, or email) of any non-compliance issue. The trial burn shall not resume until appropriate actions have been taken to correct the problem. [Application No. 0170004-016-AC; Rule 62-4.070(3), F.A.C.]
4. **Fugitive Dust:** The permittee shall take reasonable precautions to prevent fugitive dust emissions from the unloading, storage, and handling of trial coal blends. These shall be the same reasonable precautions specified in the most recent Title V air operation permit to prevent fugitive dust emissions from the unloading, storage, and handling of the coal blends currently in use at the plant. [Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

#### MONITORING AND TESTING

5. **Baseline Emissions:** Baseline emissions shall be determined by the continuous monitoring systems for opacity, NO<sub>x</sub>, and SO<sub>2</sub> emissions when firing bituminous coal at permitted capacity. For each boiler that will fire the trial coal blend, the permittee shall conduct tests at permitted capacity for emissions of CO and PM. Permitted capacity is defined as 90 to 100 percent of the maximum heat input rate allowed by the permit (7200 MMBtu/hour based on a 24-hour average). Test results shall be reported in units of lb/MMBtu and lb/hour. If tests are conducted after installation of the new CO CEMS, baseline CO

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

#### D. Units 4 and 5 – Temporary Trial Period with up to 50% Sub-bituminous Coal

emissions shall be determined by data collected by the CEMS. If available, existing data may be used for baseline data. [Rule 62-4.070(3), F.A.C.]

6. Trial Coal Blend Emissions: Emissions from firing the trial coal blend at permitted capacity shall be determined by the continuous monitoring systems for opacity, NO<sub>x</sub>, and SO<sub>2</sub> coal blends. For each boiler that will fire the trial coal blends, the permittee shall conduct tests at permitted capacity for emissions of CO and PM. Permitted capacity is defined as 90 to 100 percent of the maximum heat input rate allowed by the permit (7200 MMBtu/hour based on a 24-hour average). If only one boiler fires the trial coal blend during the trial burn period, that unit shall conduct two series of tests to determine emission levels of PM, SAM, and VOC for the trial coal blend. Test results shall be reported in units of lb/MMBtu and lb/hour. If tests are conducted after installation of the new CO CEMS, baseline CO emissions shall be determined by data collected by the CEMS. The permittee shall obtain a sample of each trial coal blend fired. A proximate and ultimate analysis shall be provided for each sample taken. [Rule 62-4.070(3), F.A.C.]
7. Monitoring: The permittee shall conduct the following monitoring when firing the trial coal blend.
  - a. The permittee shall record the amount and blend ratio of each trial coal blend delivered to the plant. A “certificate of analysis” (including the proximate and ultimate analysis) shall be retained for each delivery of trial coal blend.
  - b. On at least three separate days, the permittee shall take samples of the trial coal blend being fired. A proximate and ultimate analysis shall be provided for each sample taken. Samples taken on different emissions testing days may satisfy this requirement.
  - c. The permittee shall maintain daily records of the boiler operations including: the blend ratio as fired; the fuel mass firing rate; the heat input rate; steam production, temperature and pressure; and the MW generated.
  - d. The permittee shall monitor and record the ESP secondary voltage and secondary current and calculate and record the total ESP secondary power input.
  - e. The permittee shall continuously monitor and record opacity, NO<sub>x</sub>, and SO<sub>2</sub> with the existing CEMS. If the trial burn is conducted after installation of the CO CEMS, CO emissions shall also be continuously monitored.

[Rule 62-4.070(3), F.A.C.]

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

Method	Description of Method and Comments
1 - 4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
5 or 5b	Determination of Particulate Matter (PM) Emissions
8 or 8A	Method for Determining Sulfuric Acid Mist (SAM) Emissions
9	Method for Determining Opacity Observations
10	Method for Determining Carbon Monoxide Emissions (Instrumental) The method shall be based on a continuous sampling train.
18	Method for Determining Gaseous Organic Compound Emissions (Gas Chromatography) Concurrently with EPA Method 25A, EPA Method 18 may be used as an optional method to deduct emissions of methane and ethane from the THC emissions measured by Method 25A.
19	Methods for Determining NO <sub>x</sub> , PM, and SO <sub>2</sub> Mass Emission Rates
25A	Method for Determining Gaseous Organic Concentrations (Flame Ionization)

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

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#### D. Units 4 and 5 – Temporary Trial Period with up to 50% Sub-bituminous Coal

Tests shall also be conducted in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]

9. Notifications: The permittee shall provide the Compliance Authority with a written preliminary schedule for conducting any emissions tests (by letter, fax, or email). The preliminary schedule shall be updated as necessary. The permittee shall provide the Compliance Authority with at least 5 days advance notice (by phone, fax, or email) prior to conducting any emissions tests. [Rule 62-4.070(3), F.A.C.]

#### RECORDS AND REPORTS

10. Trial Burn Report: Within 60 days of completing the trial burn period, the permittee shall submit a final report summarizing the trial burn to the Bureau of Air Regulation and the Compliance Authority. The trial burn report shall include, but not be limited to, the following information: actual schedule and overall description of the trial burn; summary of trial coal blends evaluated (amounts delivered; blend ratio; and proximate/ultimate analyses); discussion of operational issues with the trial coal blends (coal unloading, coal handling, coal storage, coal firing, fugitive dust, soot blowing, ESP performance and adjustments, ash handling, and ash storage); comparison of baseline operations versus operation with the trial coal blends; evaluation of current equipment compatibility with the trial coal blends; summary of boiler operating data and continuous emissions monitoring data; comparison of baseline emissions with emissions from firing trial coal blends (short-term and long-term); and a discussion of emissions changes as described in Appendix C of 40 CFR 60. [Rules 62-4.070(3), 62-210.200(PTE) and 62-212.400, F.A.C.]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

#### E. Units 1, 2, 4 and 5 – Temporary Trial Period with Fuel Additive

This section of the permit addresses a temporary trial period for the following emissions units.

EU No.	Emission Unit Description
001	Unit 1 is a fossil fuel-fired, electric utility steam generator
002	Unit 2 is a fossil fuel-fired, electric utility steam generator
003	Unit 5 is a fossil fuel-fired, electric utility steam generator
004	Unit 4 is a fossil fuel-fired, electric utility steam generator

#### TEMPORARY AUTHORIZATION AND RESTRICTIONS

1. Fuel Additive: For Units 1, 2, 4 and 5, the permittee is temporarily authorized to apply a fuel additive (Environmental Energy Services, Inc.) based on calcium nitrate to currently authorized coal blends (bituminous coal, bituminous coal with coal briquettes, bituminous coal with sub-bituminous coal). The preliminary schedule is to conduct the trial before installation of the additional control systems. The purpose of the trial period is to evaluate the impact of the fuel additive on unit performance, slagging, emissions levels, and loss on ignition (LOI). The preliminary design is to spray the fuel additive on the coal prior to combustion. Preliminary estimates are for a rate of 3 to 30 gph (total to all feeders) of 500 to 1000 ppm of active concentrate onto the coal. Various applications rates will be tested. The purpose is to gather operational and emissions data to evaluate overall impacts in support of a future permanent request to use this fuel additive. *{Permitting Note: The vendor expects a 30% reduction in CO emissions, a 30% reduction in PM emissions, a 20% reduction in NOx emissions, and a 10% reduction in opacity.}* [Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]
2. Trial Test Burn Duration: The fuel additive shall only be applied to coal fired in the existing units. The permittee shall provide at least a one-day advance notice (by phone, fax, or email) to the Compliance Authority prior to the initial application of the fuel additive. Once the fuel additive is initially applied, the permittee shall complete all trial burns within 90 calendar days. Within five calendar days of completing the trial burn period, the permittee shall notify the Compliance Authority (by phone, fax, or email) that the trial burn period has been completed. [Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

#### EMISSIONS LIMITING AND PERFORMANCE STANDARDS

3. Performance Requirements: The permittee shall provide the Compliance Authority with a preliminary schedule for conducting trial burns and performance tests and shall update this schedule as necessary. During each trial burn, the permittee shall comply with all terms and conditions in the current Title V air operation permit. If a trial burn results in operation that is not in accordance with the conditions of the Title V permit or the test protocol, the trial burn shall cease as soon as possible. The permittee shall immediately notify the Compliance Authority (by phone, fax, or email) of any non-compliance issue. The trial burn shall not resume until appropriate actions have been taken to correct the problem. [Application No. 0170004-016-AC; Rule 62-4.070(3), F.A.C.]

#### MONITORING AND TESTING

4. Emissions - Baseline: Baseline emissions shall be determined by the continuous monitoring systems for opacity and NO<sub>x</sub>, and SO<sub>2</sub> emissions when firing representative coal fuel blends at permitted capacity. For each boiler that will fire coal with the fuel additive, the permittee shall conduct impaction plate tests at permitted capacity for baseline PM emissions and use a portable analyzer to document baseline CO emissions. Permitted capacity is defined as 90 to 100 percent of the maximum heat input rate allowed by

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

#### E. Units 1, 2, 4 and 5 – Temporary Trial Period with Fuel Additive

the permit (7200 MMBtu/hour based on a 24-hour average). Test results shall be reported in units of lb/MMBtu and lb/hour. [Rule 62-4.070(3), F.A.C.]

5. Emissions with Fuel Additive: Emissions shall be determined by the continuous monitoring systems for opacity, NO<sub>x</sub>, and SO<sub>2</sub> emissions when firing coal blends with fuel additive at permitted capacity. For each boiler that will fire coal with the fuel additive, the permittee shall conduct impaction plate tests at permitted capacity for baseline emissions of particulate matter (PM) and use a portable analyzer to document baseline CO emissions. Permitted capacity is defined as 90 to 100 percent of the maximum heat input rate allowed by the permit. Test results shall be reported in units of lb/MMBtu and lb/hour. [Rule 62-4.070(3), F.A.C.]
6. Monitoring of Operations: For each trial, the permittee shall conduct the following monitoring: the type, amount, and heat input of fuel fired; the boiler feedwater flow rates, boiler feedwater temperatures to the economizer, flue gas oxygen levels, and electrical outputs; the fuel additive injection rates and fuel additive concentrations; LOI, ash porosity, iron content, and slag viscosity; and continuously monitor and record opacity, NO<sub>x</sub> and SO<sub>2</sub> with the existing COMS and CEMS. For comparison purposes, the permittee shall identify the current corresponding baseline monitoring values for bituminous coal firing or collect baseline data during the trial burn period. [Rule 62-4.070(3), F.A.C.]
7. Notifications: The permittee shall provide the Compliance Authority with a written preliminary schedule for conducting any emissions tests (by letter, fax, or email). The preliminary schedule shall be updated as necessary. The permittee shall provide the Compliance Authority with at least 5 days advance notice (by phone, fax, or email) prior to conducting any emissions tests. [Rule 62-4.070(3), F.A.C.]

#### RECORDS AND REPORTS

8. Trial Burn Report: Within 60 days of completing the trial burn, the permittee shall submit a final report summarizing the trial burn to the Bureau of Air Regulation and the Compliance Authority. The final report shall provide the following: the actual schedule and overall description of the trial burn; any operational issues related to the fuel additive; a comparison of baseline operation versus operation with the fuel additive; an evaluation of equipment compatibility with fuel additive; a summary and comparison of continuous emissions and opacity monitoring data; a summary and comparison of all operational parameters; a summary and comparison of emissions test results; a comparison of continuously monitored emissions; a discussion of the impacts on LOI, ash porosity, iron content, and slag viscosity; and a discussion of emissions changes as described in Appendix C of 40 CFR 60.  
[Rules 62-4.070(3), 62-210.200(PTE) and 62-212.400, F.A.C.]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

#### F. Units 4 and 5 – Temporary Trial Period with up to 30% Petroleum Coke

This section of the permit addresses a temporary trial period for the following emissions units.

EU No.	Emission Unit Description
003	Unit 5 is a fossil fuel-fired, electric utility steam generator
004	Unit 3 is a fossil fuel-fired, electric utility steam generator

#### TEMPORARY AUTHORIZATION AND RESTRICTIONS

1. **Trial Coal Blend:** Upon commercial operation of all air pollution control equipment (low-NO<sub>x</sub> burners, SCR systems, FGD systems, alkali injection systems, and ESP improvements) and satisfactorily demonstrating compliance with the required initial tests, this air construction permit authorizes Units 4 and 5 to fire a trial coal blend of bituminous coal with up to 30% petroleum coke by weight. The maximum sulfur content of the trial coal blend shall not exceed 3.13% by weight. This permit authorizes a trial period to fire such blends and does not authorize the permanent firing of petroleum coke. The purpose is to gather operational and emissions data to evaluate overall impacts in support of a future permanent request to fire coal blends with petroleum coke. [Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]
2. **Trial Test Burn Duration:** Trial coal blends shall only be fired in existing Units 4 and 5 and shall be fired in a manner similar to bituminous coal. The permittee shall provide at least a one-day advance notice (by phone, fax, or email) to the Compliance Authority prior to the initial firing of the first trial coal blend. Once the first trial coal blend is fired, the permittee shall complete all trial burns within 90 calendar days. No more than a total of 150,000 tons of trial petroleum coke/coal blends shall be fired during the trial burn period. In addition, all trial burns shall be completed prior to the expiration date of this permit. Within five calendar days of completing the trial burn period, the permittee shall notify the Compliance Authority (by phone, fax, or email) that the trial burn period has been completed. [Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

#### EMISSIONS LIMITING AND PERFORMANCE STANDARDS

3. **Performance Requirements:** The permittee shall provide the Compliance Authority with a preliminary schedule for conducting trial burns and performance tests and shall update this schedule as necessary. During each trial burn, the permittee shall comply with all terms and conditions in the current Title V air operation permit. If a trial burn results in operation that is not in accordance with the conditions of the Title V permit or the test protocol, the trial burn shall cease as soon as possible. The permittee shall immediately notify the Compliance Authority (by phone, fax, or email) of any non-compliance issue. The trial burn shall not resume until appropriate actions have been taken to correct the problem. [Application No. 0170004-016-AC; Rule 62-4.070(3), F.A.C.]
4. **Fugitive Dust:** The permittee shall take reasonable precautions to prevent fugitive dust emissions from the unloading, storage, and handling of the trial coal blends. These shall be the same reasonable precautions specified in the current Title V air operation permit to prevent fugitive dust emissions from the unloading, storage, and handling of bituminous coal currently in use at the plant. [Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

#### MONITORING AND TESTING

5. **Baseline Emissions:** Baseline emissions shall be determined by the continuous monitoring systems for opacity and CO, NO<sub>x</sub>, and SO<sub>2</sub> emissions when firing bituminous coal at permitted capacity. For each boiler that will fire a petroleum coke/coal blend, the permittee shall conduct tests at permitted capacity for PM, SAM and VOC emissions. Permitted capacity is defined as 90 to 100 percent of the maximum heat

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

#### F. Units 4 and 5 – Temporary Trial Period with up to 30% Petroleum Coke

input rate allowed by the permit (7200 MMBtu/hour based on a 24-hour average). Test results shall be reported in units of lb/MMBtu and lb/hour. Compliance tests conducted after completing the construction authorized by this permit may be used for the baseline emissions data. [Rule 62-4.070(3), F.A.C.]

6. Trial Coal Blend Emissions: Emissions shall be determined by the continuous monitoring systems for opacity and CO, NO<sub>x</sub>, and SO<sub>2</sub> emissions when petroleum coke/coal blends at permitted capacity. For each boiler that fires a petroleum coke/coal blend, the permittee shall conduct tests at permitted capacity for PM, SAM and VOC emissions. Permitted capacity is defined as 90 to 100 percent of the maximum heat input rate allowed by the permit (7200 MMBtu/hour based on a 24-hour average). Test results shall be reported in units of lb/MMBtu and lb/hour. During each required emission test, the permittee shall obtain a sample of the petroleum coke/coal blend as fired. A proximate and ultimate analysis shall be provided for each sample taken. If only one boiler fires the trial coal blend during the trial burn period, that unit shall conduct two series of tests to determine emission levels of PM, SAM, and VOC for the trial coal blend. [Rule 62-4.070(3), F.A.C.]
7. Monitoring: When firing trial coal blends, the permittee shall conduct the following monitoring.
  - a. The permittee shall record the amount and blend ratio of each petroleum coke/coal blend delivered to the plant. A “certificate of analysis” (including the proximate and ultimate analysis) shall be retained for each delivery of petroleum coke/coal blend.
  - b. For each petroleum coke/coal blend, the permittee shall take a sample of the blend as fired. A proximate and ultimate analysis shall be provided for each sample taken. Samples taken on different emissions testing days may satisfy this requirement.
  - c. The permittee shall maintain daily records of the boiler operations including: the petroleum coke/blend ratio fired; the fuel mass firing rate; the heat input rate; steam production, temperature and pressure; and the MW generated.
  - d. The permittee shall monitor and record the ESP secondary voltage and secondary current and calculate and record the total ESP secondary power input.
  - e. The permittee shall continuously monitor and record opacity, CO, NO<sub>x</sub>, and SO<sub>2</sub> with existing monitoring systems.

[Rule 62-4.070(3), F.A.C.]

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

Method	Description of Method and Comments
1 - 4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
5 or 5b	Determination of Particulate Matter (PM) Emissions
8 or 8A	Method for Determining Sulfuric Acid Mist (SAM) Emissions
9	Method for Determining Opacity Observations
10	Method for Determining Carbon Monoxide Emissions (Instrumental) The method shall be based on a continuous sampling train.
18	Method for Determining Gaseous Organic Compound Emissions (Gas Chromatography) Concurrently with EPA Method 25A, EPA Method 18 may be used as an optional method to deduct emissions of methane and ethane from the THC emissions measured by Method 25A.
19	Methods for Determining NO <sub>x</sub> , PM, and SO <sub>2</sub> Mass Emission Rates
25A	Method for Determining Gaseous Organic Concentrations (Flame Ionization)

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

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#### F. Units 4 and 5 – Temporary Trial Period with up to 30% Petroleum Coke

Tests shall also be conducted in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. The above methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]

9. Notifications: The permittee shall provide the Compliance Authority with a written preliminary schedule for conducting any emissions tests (by letter, fax, or email). The preliminary schedule shall be updated as necessary. The permittee shall provide the Compliance Authority with at least 5 days advance notice (by phone, fax, or email) prior to conducting any emissions tests. [Rule 62-4.070(3), F.A.C.]

#### RECORDS AND REPORTS

10. Emissions Tests Reports: The permittee shall prepare and submit reports for all emissions tests in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. For each test run, the report shall also indicate the following: the petroleum coke/blend ratio, the fuel firing rate, the heat input rate, the average ESP secondary power input, the opacity, the CO emission rate, the NOx emission rate, and the SO<sub>2</sub> emission rate. [Rule 62-297.310(8), F.A.C.]
11. Trial Burn Report: Within 60 days of completing the trial burn, the permittee shall submit a final report summarizing the trial burn to the Bureau of Air Regulation and the Compliance Authority. The trial burn report shall include, but not be limited to, the following information: actual schedule and overall description of the trial burn period; summary of petroleum coke/coal blends evaluated (amounts delivered, blend ratio, and proximate/ultimate analyses); discussion of operational issues of petroleum coke/coal (coal unloading, coal handling, coal storage, coal firing, fugitive dust, soot blowing, ESP performance and adjustments, ash handling, and ash storage); comparison of baseline operations versus operation with petroleum coke/coal blend; evaluation of current equipment compatibility with petroleum coke/coal blend; summary of continuous emissions monitoring data; summary of boiler operating data; summary of emissions test results, actual test schedule, and procedures used; comparison of baseline emissions with emissions from firing petroleum coke/coal blend (short-term and long-term); and a discussion of emissions changes as described in Appendix C of 40 CFR 60. [Rules 62-4.070(3), 62-210.200(PTE) and 62-212.400, F.A.C.]

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**SECTION 4. APPENDICES**  
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- Appendix E. Summary of Final BACT Determinations
- Appendix F. Standard Continuous Monitoring Requirements
- Appendix G. New Source Performance Standards

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## SECTION 4. APPENDIX A

### CITATION FORMATS

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*The following examples illustrate the format used in the permit to identify applicable permitting actions and regulations.*

#### REFERENCES TO PREVIOUS PERMITTING ACTIONS

##### Old Permit Numbers

*Example:* Permit No. AC50-123456 or Air Permit No. AO50-123456

*Where:* “AC” identifies the permit as an Air Construction Permit  
“AO” identifies the permit as an Air Operation Permit  
“123456” identifies the specific permit project number

##### New Permit Numbers

*Example:* Permit Nos. 099-2222-001-AC, 099-2222-001-AF, 099-2222-001-AO, or 099-2222-001-AV

*Where:* “099” represents the specific county ID number in which the project is located  
“2222” represents the specific facility ID number  
“001” identifies the specific permit project  
“AC” identifies the permit as an air construction permit  
“AF” identifies the permit as a minor federally enforceable state operation permit  
“AO” identifies the permit as a minor source air operation permit  
“AV” identifies the permit as a Title V Major Source Air Operation Permit

##### PSD Permit Numbers

*Example:* Permit No. PSD-FL-317

*Where:* “PSD” means issued pursuant to the Prevention of Significant Deterioration of Air Quality  
“FL” means that the permit was issued by the State of Florida  
“317” identifies the specific permit project

#### RULE CITATION FORMATS

##### Florida Administrative Code (F.A.C.)

*Example:* [Rule 62-213.205, F.A.C.]

*Means:* Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

##### Code of Federal Regulations (CFR)

*Example:* [40 CFR 60.7]

*Means:* Title 40, Part 60, Section 7

#### GLOSSARY OF COMMON TERMS

**° F:** degrees Fahrenheit

**acfm:** actual cubic feet per minute

**ARMS:** Air Resource Management System  
(Department’s database)

**BACT:** best available control technology

**Btu:** British thermal units

**CAM:** compliance assurance monitoring

**CEMS:** continuous emissions monitoring system

**cfm:** cubic feet per minute

**CFR:** Code of Federal Regulations

## SECTION 4. APPENDIX A

### CITATION FORMATS

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**CO:** carbon monoxide

**COMS:** continuous opacity monitoring system

**DEP:** Department of Environmental Protection

**Department:** Department of Environmental Protection

**dscfm:** dry standard cubic feet per minute

**EPA:** Environmental Protection Agency

**ESP:** electrostatic precipitator (control system for reducing particulate matter)

**EU:** emissions unit

**F.A.C.:** Florida Administrative Code

**F.D.:** forced draft

**F.S.:** Florida Statutes

**FGR:** flue gas recirculation

**Fl:** fluoride

**ft<sup>2</sup>:** square feet

**ft<sup>3</sup>:** cubic feet

**gpm:** gallons per minute

**gr:** grains

**HAP:** hazardous air pollutant

**Hg:** mercury

**I.D.:** induced draft

**ID:** identification

**kPa:** kilopascals

**lb:** pound

**MACT:** maximum achievable technology

**MMBtu:** million British thermal units

**MSDS:** material safety data sheets

**MW:** megawatt

**NESHAP:** National Emissions Standards for Hazardous Air Pollutants

**NO<sub>x</sub>:** nitrogen oxides

**NSPS:** New Source Performance Standards

**O&M:** operation and maintenance

**O<sub>2</sub>:** oxygen

**Pb:** lead

**PM:** particulate matter

**PM<sub>10</sub>:** particulate matter with a mean aerodynamic diameter of 10 microns or less

**PSD:** prevention of significant deterioration

**psi:** pounds per square inch

**PTE:** potential to emit

**RACT:** reasonably available control technology

**RATA:** relative accuracy test audit

**SAM:** sulfuric acid mist

**scf:** standard cubic feet

**scfm:** standard cubic feet per minute

**SIC:** standard industrial classification code

**SNCR:** selective non-catalytic reduction (control system used for reducing emissions of nitrogen oxides)

**SO<sub>2</sub>:** sulfur dioxide

**TPH:** tons per hour

**TPY:** tons per year

**UTM:** Universal Transverse Mercator coordinate system

**VE:** visible emissions

**VOC:** volatile organic compounds

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**SECTION 4. APPENDIX B**  
**GENERAL CONDITIONS**

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The permittee shall comply with the following general conditions from Rule 624.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of F.S. and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
  - a. Have access to and copy and records that must be kept under the conditions of the permit;
  - b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
  - c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

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

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
  - a. A description of and cause of non-compliance; and
  - b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

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

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

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**SECTION 4. APPENDIX B**  
**GENERAL CONDITIONS**

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

10. The permittee agrees to comply with changes in Department rules and F.S. after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by F.S. or Department rules.
11. This permit is transferable only upon Department approval in accordance with F.A.C. Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
12. This permit or a copy thereof shall be kept at the work site of the permitted activity.
13. This permit also constitutes:
  - a. Determination of Best Available Control Technology;
  - b. Determination of Prevention of Significant Deterioration; and
  - c. Compliance with New Source Performance Standards.
14. The permittee shall comply with the following:
  - a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
  - b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
  - c. Records of monitoring information shall include:
    - 1) The date, exact place, and time of sampling or measurements;
    - 2) The person responsible for performing the sampling or measurements;
    - 3) The dates analyses were performed;
    - 4) The person responsible for performing the analyses;
    - 5) The analytical techniques or methods used; and
    - 6) The results of such analyses.
15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

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**SECTION 4. APPENDIX C**  
**COMMON CONDITIONS**

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

**EMISSIONS AND CONTROLS**

1. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]
2. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]
3. Excess Emissions Allowed: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. [Rule 62-210.700(1), F.A.C.]
4. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]
5. Excess Emissions - Notification: In case of excess emissions resulting from malfunctions, the permittee shall notify the Department or the appropriate Local Program in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]
6. VOC or OS Emissions: No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds (VOC) or organic solvents (OS) without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]
7. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and 62-210.200(Definitions), F.A.C.]
8. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20% opacity. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1, F.A.C.]
9. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

**RECORDS AND REPORTS**

10. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rule 62-213.440(1)(b)2, F.A.C.]
11. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(3), F.A.C.]

**SECTION 4. APPENDIX D**  
**COMMON TESTING REQUIREMENTS**

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

**GENERAL COMPLIANCE TESTING REQUIREMENTS**

1. Required Number of Test Runs: For mass emission limitations, a compliance test shall consist of three complete and separate determinations of the total air pollutant emission rate through the test section of the stack or duct and three complete and separate determinations of any applicable process variables corresponding to the three distinct time periods during which the stack emission rate was measured; provided, however, that three complete and separate determinations shall not be required if the process variables are not subject to variation during a compliance test, or if three determinations are not necessary in order to calculate the unit's emission rate. The three required test runs shall be completed within one consecutive five-day period. In the event that a sample is lost or one of the three runs must be discontinued because of circumstances beyond the control of the owner or operator, and a valid third run cannot be obtained within the five-day period allowed for the test, the Secretary or his or her designee may accept the results of two complete runs as proof of compliance, provided that the arithmetic mean of the two complete runs is at least 20% below the allowable emission limiting standard. [Rule 62-297.310(1), F.A.C.]
2. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. [Rule 62-297.310(2), F.A.C.]
3. Calculation of Emission Rate: For each emissions performance test, the indicated emission rate or concentration shall be the arithmetic average of the emission rate or concentration determined by each of the three separate test runs unless otherwise specified in a particular test method or applicable rule. [Rule 62-297.310(3), F.A.C.]
4. Applicable Test Procedures [Rule 62-297.310(4), F.A.C.]
  - a. *Required Sampling Time*.
    - (1) Unless otherwise specified in the applicable rule, the required sampling time for each test run shall be no less than one hour and no greater than four hours, and the sampling time at each sampling point shall be of equal intervals of at least two minutes.
    - (2) Opacity Compliance Tests. When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:
      - (a) For batch, cyclical processes, or other operations which are normally completed within less than the minimum observation period and do not recur within that time, the period of observation shall be equal to the duration of the batch cycle or operation completion time.
      - (b) The observation period for special opacity tests that are conducted to provide data to establish a surrogate standard pursuant to Rule 62-297.310(5)(k), F.A.C., Waiver of Compliance Test Requirements, shall be established as necessary to properly establish the relationship between a proposed surrogate standard and an existing mass emission limiting standard.
      - (c) The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.
  - b. *Minimum Sample Volume*. Unless otherwise specified in the applicable rule or test method, the minimum sample volume per run shall be 25 dry standard cubic feet.
  - c. *Calibration of Sampling Equipment*. Calibration of the sampling train equipment shall be conducted in accordance with the schedule shown in Table 297.310-1, F.A.C.
  - d. *Calibration of Sampling Equipment*. Calibration of the sampling train equipment shall be conducted in accordance

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with the schedule shown in Table 297.310-1.

- e. *Allowed Modification to EPA Method 5.* When EPA Method 5 is required, the following modification is allowed: the heated filter may be separated from the impingers by a flexible tube.

5. Determination of Process Variables [Rule 62-297.310(5), F.A.C.]

- a. *Required Equipment.* The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
- b. *Accuracy of Equipment.* Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

6. Sampling Facilities: The permittee shall install permanent stack sampling ports and provide sampling facilities that meet the requirements of Rule 62-297.310(6), F.A.C. Sampling facilities include sampling ports, work platforms, access to work platforms, electrical power, and sampling equipment support. All stack sampling facilities must also comply with all applicable Occupational Safety and Health Administration (OSHA) Safety and Health Standards described in 29 CFR Part 1910, Subparts D and E. [Rule 62-297.310(6), F.A.C.]

- a. *Permanent Test Facilities.* The owner or operator of an emissions unit for which a compliance test, other than a visible emissions test, is required on at least an annual basis, shall install and maintain permanent stack sampling facilities.
- b. *Temporary Test Facilities.* The owner or operator of an emissions unit that is not required to conduct a compliance test on at least an annual basis may use permanent or temporary stack sampling facilities. If the owner chooses to use temporary sampling facilities on an emissions unit, and the Department elects to test the unit, such temporary facilities shall be installed on the emissions unit within 5 days of a request by the Department and remain on the emissions unit until the test is completed.

c. *Sampling Ports.*

- (1) All sampling ports shall have a minimum inside diameter of 3 inches.
- (2) The ports shall be capable of being sealed when not in use.
- (3) The sampling ports shall be located in the stack at least 2 stack diameters or equivalent diameters downstream and at least 0.5 stack diameter or equivalent diameter upstream from any fan, bend, constriction or other flow disturbance.
- (4) For emissions units for which a complete application to construct has been filed prior to December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 15 feet or less. For stacks with a larger diameter, four sampling ports, each 90 degrees apart, shall be installed. For emissions units for which a complete application to construct is filed on or after December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 10 feet or less. For stacks with larger diameters, four sampling ports, each 90 degrees apart, shall be installed. On horizontal circular ducts, the ports shall be located so that the probe can enter the stack vertically, horizontally or at a 45 degree angle.
- (5) On rectangular ducts, the cross sectional area shall be divided into the number of equal areas in accordance with EPA Method 1. Sampling ports shall be provided which allow access to each sampling point. The ports shall be located so that the probe can be inserted perpendicular to the gas flow.

d. *Work Platforms.*

- (1) Minimum size of the working platform shall be 24 square feet in area. Platforms shall be at least 3 feet wide.
- (2) On circular stacks with 2 sampling ports, the platform shall extend at least 110 degrees around the stack.
- (3) On circular stacks with more than two sampling ports, the work platform shall extend 360 degrees around the stack.
- (4) All platforms shall be equipped with an adequate safety rail (ropes are not acceptable), toe board, and hinged floor-opening cover if ladder access is used to reach the platform. The safety rail directly in line with the

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**COMMON TESTING REQUIREMENTS**

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sampling ports shall be removable so that no obstruction exists in an area 14 inches below each sample port and 6 inches on either side of the sampling port.

e. *Access to Work Platform.*

- (1) Ladders to the work platform exceeding 15 feet in length shall have safety cages or fall arresters with a minimum of 3 compatible safety belts available for use by sampling personnel.
- (2) Walkways over free-fall areas shall be equipped with safety rails and toe boards.

f. *Electrical Power.*

- (1) A minimum of two 120-volt AC, 20-amp outlets shall be provided at the sampling platform within 20 feet of each sampling port.
- (2) If extension cords are used to provide the electrical power, they shall be kept on the plant's property and be available immediately upon request by sampling personnel.

g. *Sampling Equipment Support.*

- (1) A three-quarter inch eyebolt and an angle bracket shall be attached directly above each port on vertical stacks and above each row of sampling ports on the sides of horizontal ducts.
  - (a) The bracket shall be a standard 3 inch × 3 inch × one-quarter inch equal-legs bracket which is 1 and one-half inches wide. A hole that is one-half inch in diameter shall be drilled through the exact center of the horizontal portion of the bracket. The horizontal portion of the bracket shall be located 14 inches above the centerline of the sampling port.
  - (b) A three-eighth inch bolt which protrudes 2 inches from the stack may be substituted for the required bracket. The bolt shall be located 15 and one-half inches above the centerline of the sampling port.
  - (c) The three-quarter inch eyebolt shall be capable of supporting a 500 pound working load. For stacks that are less than 12 feet in diameter, the eyebolt shall be located 48 inches above the horizontal portion of the angle bracket. For stacks that are greater than or equal to 12 feet in diameter, the eyebolt shall be located 60 inches above the horizontal portion of the angle bracket. If the eyebolt is more than 120 inches above the platform, a length of chain shall be attached to it to bring the free end of the chain to within safe reach from the platform.
- (2) A complete monorail or dual rail arrangement may be substituted for the eyebolt and bracket.
- (3) When the sample ports are located in the top of a horizontal duct, a frame shall be provided above the port to allow the sample probe to be secured during the test.

7. Frequency of Compliance Tests. The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required. [Rule 62-297.310(7), F.A.C.]

a. *General Compliance Testing.*

1. The owner or operator of a new or modified emissions unit that is subject to an emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining an operation permit for such emissions unit.
2. For excess emission limitations for particulate matter specified in Rule 62-210.700, F.A.C., a compliance test shall be conducted annually while the emissions unit is operating under soot blowing conditions in each federal fiscal year during which soot blowing is part of normal emissions unit operation, except that such test shall not be required in any federal fiscal year in which a fossil fuel steam generator does not burn liquid and/or solid fuel for more than 400 hours other than during startup.
3. The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to sub-subparagraph 62-210.300(2)(a)3.b., c., or d., F.A.C., the Department shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:
  - (a) Did not operate; or

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**COMMON TESTING REQUIREMENTS**

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- (b) In the case of a fuel burning emissions unit, burned liquid and/or solid fuel for a total of no more than 400 hours,
- 4. During each federal fiscal year (October 1 – September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for:
  - (a) Visible emissions, if there is an applicable standard;
  - (b) Each of the following pollutants, if there is an applicable standard, and if the emissions unit emits or has the potential to emit: 5 tons per year or more of lead or lead compounds measured as elemental lead; 30 tons per year or more of acrylonitrile; or 100 tons per year or more of any other regulated air pollutant; and
  - (c) Each NESHAP pollutant, if there is an applicable emission standard.
- 5. An annual compliance test for particulate matter emissions shall not be required for any fuel burning emissions unit that, in a federal fiscal year, does not burn liquid and/or solid fuel, other than during startup, for a total of more than 400 hours.
- 6. For fossil fuel steam generators on a semi-annual particulate matter emission compliance testing schedule, a compliance test shall not be required for any six-month period in which liquid and/or solid fuel is not burned for more than 200 hours other than during startup.
- 7. For emissions units electing to conduct particulate matter emission compliance testing quarterly pursuant to paragraph 62-296.405(2)(a), F.A.C., a compliance test shall not be required for any quarter in which liquid and/or solid fuel is not burned for more than 100 hours other than during startup.
- 8. Any combustion turbine that does not operate for more than 400 hours per year shall conduct a visible emissions compliance test once per each five-year period, coinciding with the term of its air operation permit.
- 9. The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.
- 10. An annual compliance test conducted for visible emissions shall not be required for units exempted from air permitting pursuant to subsection 62-210.300(3), F.A.C.; units determined to be insignificant pursuant to subparagraph 62-213.300(2)(a)1., F.A.C., or paragraph 62-213.430(6)(b), F.A.C.; or units permitted under the General Permit provisions in paragraph 62-210.300(4)(a) or Rule 62-213.300, F.A.C., unless the general permit specifically requires such testing.
- b. *Special Compliance Tests.* When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department.
- c. *Waiver of Compliance Test Requirements.* If the owner or operator of an emissions unit that is subject to a compliance test requirement demonstrates to the Department, pursuant to the procedure established in Rule 62-297.620, F.A.C., that the compliance of the emissions unit with an applicable weight emission limiting standard can be adequately determined by means other than the designated test procedure, such as specifying a surrogate standard of no visible emissions for particulate matter sources equipped with a bag house or specifying a fuel analysis for sulfur dioxide emissions, the Department shall waive the compliance test requirements for such emissions units and order that the alternate means of determining compliance be used, provided, however, the provisions of paragraph 62-297.310(7)(b), F.A.C., shall apply.

**RECORDS AND REPORTS**

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

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

**SECTION 4. APPENDIX D**  
**COMMON TESTING REQUIREMENTS**

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

**SECTION 4. APPENDIX E**  
**SUMMARY OF FINAL BACT DETERMINATIONS**

**PROJECT DESCRIPTION**

Progress Energy Florida, Inc. operates the existing Crystal River Power Plant, which is located north of Crystal River and west of U.S. 19 in Citrus County, Florida. The plant consists of four coal-fired steam generating units, natural draft cooling towers, helper mechanical draft cooling towers, coal and ash handling facilities, and relocatable diesel-fired generators. The following changes will occur as a result of this project.

- To provide full flexibility in implementing the federal cap and trade program for NO<sub>x</sub> and SO<sub>2</sub> emissions under CAIR, the plant will install new low-NO<sub>x</sub> burners, new SCR systems, new FGD systems, and new stack configurations for Units 4 and 5.
- In conjunction with the proposed control equipment, the new control equipment will allow the flexibility to fire additional fuel blends (sub-bituminous coal and petroleum coke) and recognize the actual maximum heat input rates for Units 4 and 5 as 7200 MMBtu per hour.
- The plant will install a new CBO system that will reburn fly ash generated at this plant to recover the remaining heating value in this material and minimize the onsite landfilling of fly ash.
- The plant will conduct a trial burn to evaluate a new fuel additive intended to reduce slagging and improve emissions performance.

The combination of new fuel blends and control equipment will result in PSD-significant emissions increases of CO, PM/PM<sub>10</sub>, SAM, and VOC. The Department's preliminary determinations of the Best Available Control Technologies (BACT) for these pollutants are based on: the design of the new low-NO<sub>x</sub> burners and good combustion practices (CO, PM/PM<sub>10</sub>, and VOC); modifications to the existing ESPs (PM/PM<sub>10</sub> and SAM); and new alkali injection systems (SAM).

**FINAL BACT DETERMINATIONS**

In accordance with Rule 62-212.400(6), F.A.C., the Department establishes the following standards as BACT for CO, PM/PM, SAM, and VOC emissions.

**Unit 4 (EU-004), Unit 5 (EU-003) and CBO Fluidized Bed Combustor (EU-024)<sup>f</sup>**

Pollutant	BACT Standard <sup>b</sup>	Averaging Period	Compliance Method
Ammonia Slip	5 ppmv	3-run test average	CTM-027 (or equivalent)
CO <sup>a</sup> (Interim)	0.17 lb/MMBtu excluding SU/SD/M 1156.0 lb/hour including SU/SD/M	30-day rolling average	CEMS Data
Opacity <sup>b</sup>	10% opacity, except for one 6-minute block per hour up to 20% opacity	6-minute block	EPA Method 9
PM/PM <sub>10</sub> <sup>c</sup>	0.030 lb/MMBtu and 216.0 lb/hour	3-run test average	EPA Methods 5 or 5b
SAM <sup>d</sup>	0.009 lb/MMBtu and 64.8 lb/hour	3-run test average	EPA Methods 8 or 8A
VOC <sup>e</sup>	0.004 lb/MMBtu and 28.8 lb/hour	3-run test average	EPA Method 25A

**Notes:**

- Within 24 months of commencing commercial operation of each unit with the new low-NO<sub>x</sub> burners, the permittee shall submit an application proposing a revised (lower) final BACT standard. The final standard shall be based on actual CO emissions data collected for initial operation after completing installation of the new low-NO<sub>x</sub> burners. There may be separate standards proposed for different fuels.
- Due to concerns regarding moisture interference from the wet stack conditions caused by the FGD system, COMS were not required on the new stack.
- The Department notes that this control strategy directly reduces PM/PM<sub>10</sub> emissions as well as the formation of PM<sub>2.5</sub> in the environment when combined with the other proposed control systems (SCR systems designed for low ammonia slip; alkali injection to reduce sulfuric acid mist emissions; and FGD systems to minimize precursors known to contribute to formation of PM<sub>2.5</sub>). The permittee shall continuously monitor and record the opacity in the ductwork just

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**SECTION 4. APPENDIX E**  
**SUMMARY OF FINAL BACT DETERMINATIONS**

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after the ESP for use as part of the Compliance Assurance Monitoring Plan under Title V. Operation of the ESP shall be based upon COMS data collected during satisfactory PM emissions compliance tests.

- d. Operation of the alkali injection system shall be determined by the automated control system, which shall be set in accordance with the preliminary performance and compliance tests for SAM emissions.
- e. Concurrently with EPA Method 25A, EPA Method 18 may be used as an optional method to deduct emissions of methane and ethane from the THC emissions measured by Method 25A.
- f. The CBO fluidized bed combustor is also subject to the following applicable NSPS Subpart Dc provisions for boilers: the firing of fuel with no more than 0.5% sulfur by weight percent based on a certification from the fuel supplier (applies at all times, including periods of startup, shutdown, and malfunction); and no more than 20% opacity based on a 6-minute average, except for one 6-minute period per hour of not more than 27% opacity (applies at all times, except during periods of startup, shutdown, or malfunction). Since the flue gas exhaust from the CBO unit is directed back into the boiler ductwork for control, the CBO unit will achieve the same standards as Units 4 and 5, which are more stringent than the applicable NSPS.
- g. "SU" means startup; "SD" means shutdown; and "M" means malfunction.

**Limestone/Gypsum Material Storage and Handling (EU-023)**

Limestone is the reactant for the FGD systems, which will produce gypsum as a byproduct. The following control equipment and techniques are determined to be BACT for minimizing dust emissions from the related material handling and storage activities.

- To the extent practical, all limestone conveyors will be enclosed to confine dust emissions.
- The initial storage of limestone will be in a covered storage pile.
- The portal scraper reclaimers and an emergency reclaim feeder will be located inside a limestone storage building.
- Limestone will be crushed and sized inside a crusher building, which will include a dust collection system.
- The three (possibly four) limestone silos will be equipped with pulse-jet fabric filter dust collection systems.
- Insertable dust collectors will be installed at each of the truck unloading feeders and at each of the loading points of the silo feed conveyors.
- A water-surfactant blend dust suppression system will be provided at the discharge point of the transfer conveyor and at the head end of the unloading conveyor to treat the limestone before it is loaded onto the belt of the stacking conveyor.
- Wet ball mill grinding systems will produce the limestone slurry for the FGD system. Fugitive dust emissions will be minimized by the addition of water for the slurry.
- The dewatering system will be located inside a building. Fugitive dust emissions will be negligible because the system is enclosed and wet.
- Fugitive dust emissions from dewatered gypsum will be minimal because it still contains 10% water. Gypsum storage piles will be watered as necessary to prevent fugitive dust.
- Bags for all dust collection systems shall be selected based on the above design outlet dust loading specification of no more than 0.010 grains per acf of exhaust. All replacement filter bags and cartridges shall meet this design specification.
- Visible emissions from each dust collector and fabric filter shall not exceed 5% opacity.

**CBO Feed Ash Silo (EU-025) and Product Ash Storage (EU-026)**

Fly ash from Units 4 and 5 will be conveyed pneumatically to the CBO feed fly ash silo (EU-025). Ash will be fed from this silo to the fluidized bed combustor (EU-024) for processing. Exhaust from the feed fly ash silo will vent through a baghouse prior to discharge to the atmosphere. Product ash will be pneumatically conveyed to storage (EU-026) in either the product fly ash storage dome or directly to a truck load-out silo, which will each vent to a separate baghouse. In addition, particulate emissions captured during the truck load-out process will be routed to the truck load-out silo for control.

**SECTION 4. APPENDIX E**  
**SUMMARY OF FINAL BACT DETERMINATIONS**

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by the baghouse. The following control equipment and techniques are determined to be BACT for minimizing dust emissions from the related material handling and storage activities.

- Dust emissions from the transfer of ash will be controlled by full enclosure throughout the CBO process.
- Bags for all dust collection systems shall be selected based on the above design outlet dust loading specification of no more than 0.010 grains per acf of exhaust. All replacement filter bags and cartridges shall meet this design specification.
- Visible emissions from each dust collector and fabric filter shall not exceed 5% opacity.
- Trucks will travel on paved roads within the plant and exit the plant for delivery offsite. Fugitive particulate matter emissions associated with product fly ash truck traffic will be controlled by maintaining the roads and periodic watering as needed.

The Department's technical review and rationale for the BACT determinations are presented in Technical Evaluation and Preliminary Determination issued concurrently with the draft permit for the original project.

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**SECTION 4. APPENDIX F**  
**STANDARD CONTINUOUS MONITORING REQUIREMENTS**

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Unit 4 (EU-004) and Unit 5 (EU-003) are subject to the following requirements for continuous emissions monitoring systems (CEMS).

**CEMS OPERATION PLAN**

1. CEMS Operation Plan: The permittee shall create and implement a facility-wide plan for the proper installation, calibration, maintenance, and operation of each CEMS required by this permit. The permittee shall submit the CEMS Operation Plan to the Bureau of Air Monitoring and Mobile Sources for approval at least 60 days prior to CEMS installation. The CEMS Operation Plan shall become effective 60 days after submittal or upon its approval. If the CEMS Operation Plan is not approved, the permittee shall submit a new or revised plan for approval. [Rule 62-4.070(3), F.A.C.]

*{Permitting Note: The Department maintains both guidelines for developing a CEMS Operation Plan and example language that can be used as the basis for the facility-wide plan required by this permit. Contact the Emissions Monitoring Section of the Bureau of Air Monitoring and Mobile Sources at 850/488-0114.}*

**MONITORS, PERFORMANCE SPECIFICATIONS AND QUALITY ASSURANCE**

2. Existing CEMS: Existing Units 4 and 5 have CEMS currently installed. The permittee shall also continue to meet the applicable performance specifications and quality assurance procedures for these systems. [Rule 62-4.070(3), F.A.C.]
3. Span Values and Dual Range Monitors: The permittee shall set appropriate span values for the CEMS based on the emissions standards and range of operation. If necessary, the permittee shall install dual range monitors in accordance with the CEMS Operation Plan. [Rule 62-4.070(3), F.A.C.]
4. Moisture Correction: If necessary, the permittee shall install a system to determine the moisture content of the exhaust gas and develop an algorithm to enable correction of the monitoring results to a dry basis (0% moisture). [Rule 62-4.070(3), F.A.C.]

5. Continuous Flow Monitor: For compliance with mass emission flow rate standards, the permittee shall install a continuous flow monitor to determine the stack exhaust flow rate. The flow monitor shall be certified pursuant to 40 CFR Part 60, Appendix B, Performance Specification 6. Alternatively, the permittee may install a fuel flow monitor and use an appropriate F-Factor computational approach to calculate stack exhaust flow rate. [Rules 62-212.400 and 62-4.070(3), F.A.C.]

*{Permitting Note: The CEMS Operation Plan will contain additional CEMS-specific details and procedures for installation.} [Rule 62-4.070(3), F.A.C.]*

6. Performance Specifications: The permittee shall evaluate the “acceptability” of each CEMS by conducting the appropriate performance specification. CEMS determined to be “unacceptable” shall not be considered “installed” for purposes of meeting the timelines of this permit. For carbon monoxide, use Performance Specification 4 or 4A (as appropriate) in Appendix B of 40 CFR 60. [Rule 62-4.070(3), F.A.C.]
7. Quality Assurance: The permittee shall follow the quality assurance procedures of 40 CFR Part 60, Appendix F. For carbon monoxide, the required relative accuracy test assessment (RATA) tests shall be performed using EPA Method 10 in Appendix A of 40 CFR Part 60. [Rule 62-4.070(3), F.A.C.]

**CALCULATION APPROACH FOR SIP COMPLIANCE**

8. CEMS for Compliance: Once adherence to the applicable performance specification for each CEMS is demonstrated, the permittee shall use the CEMS to demonstrate compliance with the applicable emission standards as specified by this permit. [Rules 62-4.070(3) and 62-212.400, F.A.C.]
9. CEMS Data: Each CEMS shall monitor and record emissions during all operations and whenever emissions are being generated, including during episodes of startups, shutdowns, and malfunctions. All data shall be used, except for invalid measurements taken during monitor system breakdowns, repairs, calibration checks, zero adjustments, and span adjustments. [Rule 62-4.070(3), F.A.C.]
10. Operating Hours and Operating Days: For purposes of this Appendix, the following definitions shall apply. An hour is the 60-minute period beginning at the top of each hour. Any hour during which an emissions unit is in operation for

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**SECTION 4. APPENDIX F**  
**STANDARD CONTINUOUS MONITORING REQUIREMENTS**

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more than 15 minutes is an operating hour for that emission unit. A day is the 24-hour period from midnight to midnight. Any day with at least one operating hour for an emissions unit is an operating day for that emission unit. [Rule 62-4.070(3), F.A.C.]

11. Valid Hourly Averages: Each CEMS shall be designed and operated to sample, analyze, and record data evenly spaced over the hour at a minimum of one measurement per minute. All valid measurements collected during an hour shall be used to calculate a 1-hour block average that begins at the top of each hour.
- Hours that are not operating hours are not valid hours.
  - For each operating hour, the 1-hour block average shall be computed from at least two data points separated by a minimum of 15 minutes. If less than two such data points are available, there is insufficient data, the 1-hour block average is not valid, and the hour is considered as "monitor unavailable."

[Rule 62-4.070(3), F.A.C.]

12. Calculation Approaches: The permittee shall implement the calculation approach specified by this permit for each CEMS, as follows:
- 24-hour Block Average*. Compliance shall be determined after each 24-hour block by calculating the arithmetic average of all valid hourly averages occurring within that block averaging period.
  - 30-day Rolling Average*. Compliance shall be determined after each operating day by calculating the arithmetic average of all valid hourly averages occurring within that day and the prior 29 operating days.
  - 12-month Rolling Average*. Compliance shall be determined after each operating month by calculating the arithmetic average of all valid hourly averages occurring within that day and the prior 29 operating days.

[Rule 62-4.070(3), F.A.C.]

13. Minimum Valid Hours: At least one valid hourly average shall be used to calculate the emissions over any block averaging period specified by this permit. One valid hourly average shall be sufficient to calculate the emissions over any block averaging period. [Rule 62-4.070(3), F.A.C.]
14. Data Exclusion for SIP Compliance: As per the procedures in this condition, limited amounts of CEMS emissions data may be excluded from the corresponding compliance demonstration, provided that best operational practices to minimize emissions are adhered to and the duration of data excluded is minimized. As provided by the authority in Rule 62-210.700(5), F.A.C., the following conditions replace the provisions in Rule 62-210.700(1), F.A.C.
- Excess Emissions*. For purposes of SIP-based limits, some data collected during periods of SIP-based excess emissions (startup, shutdown, and malfunction) may be excluded from compliance calculations. The maximum duration of excluded data is 2 hours in any 24-hour period, unless some other duration is specified by permit.
  - Limiting Data Exclusion*. If the compliance calculation using all valid CEMS emission data (as defined in this Appendix) indicates that the emission unit is in compliance, then no CEMS data shall be excluded from the compliance demonstration.
  - Event Driven Exclusion*. The underlying event (startup, shutdown, or malfunction) must precede the data exclusion. If there is no underlying event, then no data may be excluded.
  - Continuous Exclusion*. Data shall be excluded on a continuous basis per event. Data from discontinuous periods shall not be excluded for the same underlying event.
  - Reporting Excluded Data*. These procedures for excluding SIP-based excess emissions from compliance calculations are not necessarily the same procedures used for "excess emissions" as defined by federal rules. Semiannual reports required by this permit shall indicate the duration of data excluded from SIP compliance calculations as well as the number of excess emissions as defined in the applicable federal rules.
15. Acid Rain CEMS: For CEMS that are also subject to the acid rain program, the data substitution and bias adjustment procedures from 40 CFR part 75 shall only be applied to data submitted to the EPA. Compliance with SIP-based emission standards shall be determined using unadjusted data and using the calculation procedures of this Appendix. [Rule 62-4.070(3), F.A.C.]

**SECTION 4. APPENDIX F**  
**STANDARD CONTINUOUS MONITORING REQUIREMENTS**

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**MONITOR AVAILABILITY**

16. Monitor Availability: Monitor availability shall be calculated on a quarterly basis for each emission unit as the number of valid hourly averages obtained by the CEMS, divided by the number of operating hours, times 100%. The monitor availability calculation shall not include periods of time where the monitor was functioning properly, but was unable to collect data while conducting a mandated quality assurance/quality control activity such as calibration error tests, RATA, calibration gas audit, or relative accuracy audits (RAA). Monitor availability for each CEMS shall be 95% or greater in any calendar quarter. Monitor availability shall be reported in the quarterly excess emissions report. In the event 95% availability is not achieved, the permittee shall provide the Department with a report identifying the problems in achieving 95% availability and a plan of corrective actions that will be taken to achieve 95% availability. The permittee shall implement the reported corrective actions within the next calendar quarter. Failure to take corrective actions or continued failure to achieve the minimum monitor availability shall be violations of this permit. [Rule 62-4.070(3), F.A.C.]

**CALCULATING AND REPORTING ANNUAL EMISSIONS**

17. CEMS for Calculating Annual Emissions: As defined by this Appendix, all valid data shall be used when calculating annual emissions.
- a. Annual emissions shall include data collected during startup, shutdown, and malfunction periods.
  - b. Annual emissions shall include data collected during periods when the emission unit is not operating but emissions are being generated (for example, firing fuel to warm up a process for some period of time prior to the emission unit's "official" startup).
  - c. Annual emissions shall not include data from periods of time where the monitor was functioning properly but was unable to collect data while conducting a mandated quality assurance/quality control activity such as calibration error tests, RATA, calibration gas audit, or RAA. These periods of time shall be considered "missing data" for purposes of calculating annual emissions.
  - d. Annual emissions shall not include data from periods of time when emissions are in excess of the calibrated span of the CEMS. These periods of time shall be considered "missing data" for purposes of calculating annual emissions.
- [Rule 62-4.070(3), F.A.C.]
18. Accounting for Missing Data: All valid measurements collected during each hour shall be used to calculate a 1-hour block average that begins at the top of each hour. For each hour, the 1-hour block average shall be computed from at least two data points separated by a minimum of 15 minutes. If less than two such data points are available, the permittee shall account for emissions during that hour using site-specific data to generate a reasonable estimate of the 1-hour block average. [Rule 62-4.070(3), F.A.C.]
19. Emissions Calculation: Hourly emissions shall be calculated for each hour as the product of the 1-hour block average and the duration of pollutant emissions during that hour. Annual emissions shall be calculated as the sum of all hourly emissions occurring during the year. [Rule 62-4.070(3), F.A.C.]
20. Acid Rain CEMS: For CEMS that are also subject to the acid rain program, the data substitution and bias adjustment procedures from 40 CFR part 75 shall only be applied to data submitted to the U.S. EPA. Annual emissions shall be determined using unadjusted data and using the calculation procedures of this Appendix. [Rule 62-4.070(3), F.A.C.]
21. Reporting Annual Emissions: The permittee shall use data from each required CEMS when calculating annual emissions for purposes of computing actual emissions, baseline actual emissions, and net emissions increase, as defined at Rule 62-210.200, F.A.C., and for purposes of computing emissions pursuant to the reporting requirements of Rules 62-210.370(3) and 62-212.300(1)(e), F.A.C. The owner or operator shall follow the procedures in Appendix E (Standard CEMS Requirements) for calculating annual emissions. [Rule 62-4.070(3), F.A.C.]

**SECTION 4. APPENDIX G**  
**NEW SOURCE PERFORMANCE STANDARDS**

The following emissions units are subject to applicable New Source Performance Standards (NSPS) in 40 CFR 60, which are adopted by reference in Rule 62-204.800(8), F.A.C.

<b>EU No.</b>	<b>Description</b>
024	The CBO Unit is a fluidized bed combustor that will reburn fly ash generated from Units 4 and 5 to produce low-carbon, low-ammonia fly ash material suitable for commercial use. Flue gas exhaust from CBO Unit is directed back into the ductwork of Units 4 and 5 prior to the control equipment.

**40 CFR 60, NSPS SUBPART A - GENERAL PROVISIONS**

The following emissions units are subject to applicable New Source Performance Standards (NSPS) in 40 CFR 60, which are adopted by reference in Rule 62-204.800(8), F.A.C.

<b>EU No.</b>	<b>Description</b>
023	<u>Limestone and Gypsum Material Handling Activities</u>
024	<u>The CBO Unit is a fluidized bed combustor that will reburn fly ash generated from Units 4 and 5 to produce low-carbon, low-ammonia fly ash material suitable for commercial use. Flue gas exhaust from CBO Unit is directed back into the ductwork of Units 4 and 5 prior to the control equipment.</u>

The affected emission units are subject to the applicable General Provisions in Subpart A of the New Source Performance Standards including: §60.1 (Applicability); §60.2 (Definitions); §60.3 (Units and Abbreviations); §60.4 (Address); §60.5 (Determination of Construction or Modification); §60.6 (Review of Plans); §60.7 (Notification and Record Keeping); §60.8 (Performance Tests); §60.9 (Availability of Information); §60.10 (State Authority); §60.11 (Compliance with Standards and Maintenance Requirements); §60.12 (Circumvention); §60.13 (Monitoring Requirements); §60.14 (Modification); §60.15 (Reconstruction); §60.16 (Priority List); §60.17 (Incorporations by Reference); §60.18 (General Control Device Requirements); §60.19 (General Notification and Reporting Requirements). The General Provisions are not included in this permit, but can be obtained from the Department upon request.

**40 CFR 60, SUBPART Dc - STANDARDS OF PERFORMANCE FOR SMALL INDUSTRIAL-COMMERCIAL-INSTITUTIONAL STEAM GENERATING UNITS**

The following emissions units are subject to applicable New Source Performance Standards (NSPS) in 40 CFR 60, which are adopted by reference in Rule 62-204.800(8), F.A.C.

<b>EU No.</b>	<b>Description</b>
024	<u>The CBO Unit is a fluidized bed combustor that will reburn fly ash generated from Units 4 and 5 to produce low-carbon, low-ammonia fly ash material suitable for commercial use. Flue gas exhaust from CBO Unit is directed back into the ductwork of Units 4 and 5 prior to the control equipment.</u>

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**NEW SOURCE PERFORMANCE STANDARDS**

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**§ 60.40c Applicability and Delegation of Authority.**

- (a) Except as provided in paragraph (d) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million Btu per hour (Btu/hr)) or less, but greater than or equal to 2.9 MW (10 million Btu/hr).
- (b) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, § 60.48c(a)(4) shall be retained by the Administrator and not transferred to a State.
- (c) Not applicable.
- (d) Not applicable.
- (e) Not applicable.
- (f) Not applicable.
- (g) Not applicable.

**§ 60.41c Definitions.**

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

*Annual capacity factor* means the ratio between the actual heat input to a steam generating unit from an individual fuel or combination of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam generating unit been operated for 8,760 hours during that 12-month period at the maximum design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility during a period of 12 consecutive calendar months.

*Coal* means all solid fuels classified as anthracite, bituminous, sub-bituminous, or lignite by the American Society of Testing and Materials in ASTM D388-77, 90, 91, 95, or 98a, Standard Specification for Classification of Coals by Rank (IBR--see Sec. 60.17), coal refuse, and petroleum coke. Coal-derived synthetic fuels derived from coal for the purposes of creating useful heat, including but not limited to solvent refined coal, gasified coal, coal-oil mixtures, and coal-water mixtures, are also included in this definition for the purposes of this subpart.

*Coal refuse* means any by-product of coal mining or coal cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (kJ/kg) (6,000 Btu per pound (Btu/lb)) on a dry basis.

*Cogeneration steam generating unit* means a steam generating unit that simultaneously produces both electrical (or mechanical) and thermal energy from the same primary energy source.

*Combined cycle system* means a system in which a separate source (such as a stationary gas turbine, internal combustion engine, or kiln) provides exhaust gas to a steam generating unit.

*Combustion research* means the experimental firing of any fuel or combination of fuels in a steam generating unit for the purpose of conducting research and development of more efficient combustion or more effective prevention or control of air pollutant emissions from combustion, provided that, during these periods of research and development, the heat generated is not used for any purpose other than preheating combustion air for use by that steam generating unit (i.e., the heat generated is released to the atmosphere without being used for space heating, process heating, driving pumps, preheating combustion air for other units, generating electricity, or any other purpose).

*Conventional technology* means wet flue gas desulfurization technology, dry flue gas desulfurization technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

*Distillate oil* means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-78, 89, 90, 92, 96, or 98, "Standard Specification for Fuel Oils" (incorporated by reference -- see § 60.17).

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*Dry flue gas desulfurization technology* means a sulfur dioxide (SO<sub>2</sub>) control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline reagents used in dry flue gas desulfurization systems include, but are not limited to, lime and sodium compounds.

*Duct burner* means a device that combusts fuel and that is placed in the exhaust duct from another source (such as a stationary gas turbine, internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.

*Emerging technology* means any SO<sub>2</sub> control system that is not defined as a conventional technology under this section, and for which the owner or operator of the affected facility has received approval from the Administrator to operate as an emerging technology under § 60.48c(a)(4).

*Federally enforceable* means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR Parts 60 and 61, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

*Fluidized bed combustion technology* means a device wherein fuel is distributed onto a bed (or series of beds) of limestone aggregate (or other sorbent materials) for combustion; and these materials are forced upward in the device by the flow of combustion air and the gaseous products of combustion. Fluidized bed combustion technology includes, but is not limited to, bubbling bed units and circulating bed units.

*Fuel pretreatment* means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.

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

*Heat transfer medium* means any material that is used to transfer heat from one point to another point.

*Maximum design heat input capacity* means the ability of a steam generating unit to combust a stated maximum amount of fuel (or combination of fuels) on a steady state basis as determined by the physical design and characteristics of the steam generating unit.

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

*Noncontinental area* means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

*Oil* means crude oil or petroleum, or a liquid fuel derived from crude oil or petroleum, including distillate oil and residual oil.

*Potential sulfur dioxide emission rate* means the theoretical SO<sub>2</sub> emissions (nanograms per joule [ng/J], or pounds per million Btu [lb/million Btu] heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.

*Process heater* means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

*Residual oil* means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society for Testing and Materials in ASTM D39678, 89, 90, 92, 96, or 98, "Standard Specification for Fuel Oils" (incorporated by reference -- see § 60.17).

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

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*Steam generating unit operating day* means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

*Wet flue gas desulfurization technology* means an SO<sub>2</sub> control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material. This definition includes devices where the liquid material is subsequently converted to another form. Alkaline reagents used in wet flue gas desulfurization systems include, but are not limited to, lime, limestone, and sodium compounds.

*Wet scrubber system* means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of particulate matter (PM) or SO<sub>2</sub>.

*Wood* means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including but not limited to sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

**§ 60.42c Standard for Sulfur Dioxide.**

- (a) Not applicable.
- (b) Not applicable.
- (c) Not applicable.
- (d) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO<sub>2</sub> in excess of 215 ng/J (0.50 lb/million Btu) heat input; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater than 0.5 weight percent sulfur. The percent reduction requirements are not applicable to affected facilities under this paragraph.  
*{Permitting Note: The permit restricts fuel oil for startup to a maximum sulfur content of 0.5% by weight. Flue gases from the CBO unit are directed back into the ductwork for Units 4 and 5 to meet an SO<sub>2</sub> standard of 0.27 lb/MMBtu of heat input. Compliance with this NSPS Subpart Dc requirement is assured by compliance with the permit conditions.}*
- (e) Not applicable.
- (f) Not applicable.
- (g) Not applicable.
- (h) Not applicable.
- (i) The SO<sub>2</sub> emission limits, fuel oil sulfur limits, and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.
- (j) Only the heat input supplied to the affected facility from the combustion of coal and oil is counted under this section. No credit is provided for the heat input to the affected facility from wood or other fuels or for heat derived from exhaust gases from other sources, such as stationary gas turbines, internal combustion engines, and kilns.

**§ 60.43c Standard for Particulate Matter.**

- (a) Not applicable.
- (b) Not applicable.
- (c) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.

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(d) The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction.

(e) Not applicable.

**§ 60.44c Compliance and Performance Test Methods and Procedures for Sulfur Dioxide.**

(a) Not applicable.

(b) Not applicable.

(c) Not applicable.

(d) Not applicable.

(e) Not applicable.

(f) Not applicable.

(g) For oil-fired affected facilities where the owner or operator seeks to demonstrate compliance with the fuel oil sulfur limits under § 60.42c based on shipment fuel sampling, the initial performance test shall consist of sampling and analyzing the oil in the initial tank of oil to be fired in the steam generating unit to demonstrate that the oil contains 0.5 weight percent sulfur or less. Thereafter, the owner or operator of the affected facility shall sample the oil in the fuel tank after each new shipment of oil is received, as described under § 60.46c(d)(2).

(h) Not applicable.

(i) Not applicable.

(j) Not applicable.

**§ 60.45c Compliance and Performance Test Methods and Procedures for Particulate Matter.**

(a) The owner or operator of an affected facility subject to the PM and/or opacity standards under Sec. 60.43c shall conduct an initial performance test as required under Sec. 60.8, and shall conduct subsequent performance tests as requested by the Administrator, to determine compliance with the standards using the following procedures and reference methods, except as specified in paragraph (c) and (d) of this section.

(b) Not applicable.

(c) Units that burn only oil containing no more than 0.5 weight percent sulfur or liquid or gaseous fuels with potential sulfur dioxide emission rates of 230 ng/J (0.54 lb/MMBtu) heat input or less are not required to conduct emissions monitoring if they maintain fuel supplier certifications of the sulfur content of the fuels burned.

(d) Not applicable.

**§ 60.46c Emission Monitoring for Sulfur Dioxide**

(a) Not applicable.

(b) Not applicable.

(c) Not applicable.

(d) Not applicable.

(e) The monitoring requirements of paragraphs (a) and (d) of this section shall not apply to affected facilities subject to § 60.42c(h)(1), (2), or (3) where the owner or operator of the affected facility seeks to demonstrate compliance with the SO<sub>2</sub> standards based on fuel supplier certification, as described under § 60.48c(f) (1), (2), or (3), as applicable.

(f) Not applicable.

**§ 60.47c Emission Monitoring for Particulate Matter.**

(a) The owner or operator of an affected facility combusting coal, oil, gas, or wood that is subject to the opacity standards under Sec. 60.43c shall install, calibrate, maintain, and operate a COMS for measuring the opacity of the emissions

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discharged to the atmosphere and record the output of the system, except as specified in paragraphs (c) and (d) of this section.

- (b) Not applicable.
- (c) Units that burn only oil that contains no more than 0.5 weight percent sulfur or liquid or gaseous fuels with potential sulfur dioxide emission rates of 230 ng/J (0.54 lb/MMBtu) heat input or less are not required to conduct PM emissions monitoring if they maintain fuel supplier certifications of the sulfur content of the fuels burned.

(d) Not applicable.

**§ 60.48c Reporting and Recordkeeping Requirements.**

- (a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by § 60.7 of this part. This notification shall include:
  - (1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.
  - (2) Not applicable.
  - (3) Not applicable.
  - (4) Not applicable.
- (b) The owner or operator of each affected facility subject to the SO<sub>2</sub> emission limits of § 60.42c, or the PM or opacity limits of § 60.43c, shall submit to the Administrator the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the CEMS and/or COMS using the applicable performance specifications in appendix B.
- (c) The owner or operator of each coal-fired, residual oil-fired, or wood-fired affected facility subject to the opacity limits under § 60.43c(c) shall submit excess emission reports for any excess emissions reports for any excess emissions from the affected facility which occur during the reporting period.
- (d) The owner or operator of each affected facility subject to the SO<sub>2</sub> emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.42c shall submit reports to the Administrator.
- (e) The owner or operator of each affected facility subject to the SO<sub>2</sub> emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.43c shall keep records and submit reports as required under paragraph (d) of this section, including the following information, as applicable.
  - (1) Calendar dates covered in the reporting period.
  - (2) Each 30-day average SO<sub>2</sub> emission rate (ng/J or lb/million Btu), or 30-day average sulfur content (weight percent), calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.
  - (3) Each 30-day average percent of potential SO<sub>2</sub> emission rate calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.
  - (4) Identification of any steam generating unit operating days for which SO<sub>2</sub> or diluent (oxygen or carbon dioxide) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and a description of corrective actions taken.
  - (5) Identification of any times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and a description of corrective actions taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit.
  - (6) Identification of the F factor used in calculations, method of determination, and type of fuel combusted.
  - (7) Identification of whether averages have been obtained based on CEMS rather than manual sampling methods.
  - (8) If a CEMS is used, identification of any times when the pollutant concentration exceeded the full span of the

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CEMS.

- (9) If a CEMS is used, description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specifications 2 or 3 (appendix B).
  - (10) If a CEMS is used, results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.
  - (11) If fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification as described under paragraph (f)(1), (2), or (3) of this section, as applicable. In addition to records of fuel supplier certifications, the report shall include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period.
- (f) Fuel supplier certification shall include the following information:
- (1) For distillate oil:
    - (i) The name of the oil supplier; and
    - (ii) A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in § 60.41c.
  - (2) For residual oil:
    - (i) The name of the oil supplier;
    - (ii) The location of the oil when the sample was drawn for analysis to determine the sulfur content of the oil, specifically including whether the oil was sampled as delivered to the affected facility, or whether the sample was drawn from oil in storage at the oil supplier's or oil refiner's facility, or other location;
    - (iii) The sulfur content of the oil from which the shipment came (or of the shipment itself); and
    - (iv) The method used to determine the sulfur content of the oil.
  - (3) Not applicable.
- (g) The owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day. The owner or operator of an affected facility that only burns very low sulfur fuel oil or other liquid or gaseous fuels with potential sulfur dioxide emissions rate of 140 ng/J (0.32 lb/MMBtu) heat input or less shall record and maintain records of the fuels combusted during each calendar month.
- (h) Not applicable.
- (i) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.
- (j) The reporting period for the reports required under this subpart is each six-month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30<sup>th</sup> day following the end of each reporting period.

**40 CFR PART 60, SUBPART OOO - STANDARDS OF PERFORMANCE FOR NONMETALLIC MINERAL PROCESSING PLANTS**

The following emissions units are subject to applicable New Source Performance Standards (NSPS) in 40 CFR 60, which are adopted by reference in Rule 62-204.800(8), F.A.C.

<u><b>EU No.</b></u>	<u><b>Description</b></u>
<u>023</u>	<u>Limestone and Gypsum Material Handling Activities</u>

**§ 60.670 Applicability and designation of affected facility.**

- (a)

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- (1) Except as provided in paragraphs (a)(2), (b), (c), and (d) of this section, the provisions of this subpart are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station. Also, crushers and grinding mills at hot mix asphalt facilities that reduce the size of nonmetallic minerals embedded in recycled asphalt pavement and subsequent affected facilities up to, but not including, the first storage silo or bin are subject to the provisions of this subpart.
- (2) The provisions of this subpart do not apply to the following operations: All facilities located in underground mines; and stand-alone screening operations at plants without crushers or grinding mills.
- (b) An affected facility that is subject to the provisions of subpart F or I or that follows in the plant process any facility subject to the provisions of subparts F or I of this part is not subject to the provisions of this subpart.
- (c) Facilities at the following plants are not subject to the provisions of this subpart:
  - (1) Fixed sand and gravel plants and crushed stone plants with capacities, as defined in §60.671, of 23 megagrams per hour (25 tons per hour) or less;
  - (2) Portable sand and gravel plants and crushed stone plants with capacities, as defined in §60.671, of 136 megagrams per hour (150 tons per hour) or less; and
  - (3) Common clay plants and pumice plants with capacities, as defined in §60.671, of 9 megagrams per hour (10 tons per hour) or less.
- (d)
  - (1) When an existing facility is replaced by a piece of equipment of equal or smaller size, as defined in §60.671, having the same function as the existing facility, the new facility is exempt from the provisions of §§60.672, 60.674, and 60.675 except as provided for in paragraph (d)(3) of this section.
  - (2) An owner or operator complying with paragraph (d)(1) of this section shall submit the information required in §60.676(a).
  - (3) An owner or operator replacing all existing facilities in a production line with new facilities does not qualify for the exemption described in paragraph (d)(1) of this section and must comply with the provisions of §§60.672, 60.674 and 60.675.
- (e) An affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after August 31, 1983 is subject to the requirements of this part.
- (f) Table 1 of this subpart specifies the provisions of subpart A of this part 60 that apply and those that do not apply to owners and operators of affected facilities subject to this subpart.

**Table 1—Applicability of Subpart A to Subpart OOO**

Subpart A reference	Applies to Subpart OOO	Comment
60.1, Applicability	Yes	
60.2, Definitions	Yes	
60.3, Units and abbreviations	Yes	
60.4, Address:		
(a)	Yes	

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<b>Subpart A reference</b>	<b>Applies to Subpart OOO</b>	<b>Comment</b>
(b)	Yes	
60.5, Determination of construction or modification	Yes	
60.6, Review of plans	Yes	
60.7, Notification and recordkeeping	Yes	Except in (a)(2) report of anticipated date of initial startup is not required (§60.676(h)).
60.8, Performance tests	Yes	Except in (d), after 30 days notice for an initially scheduled performance test, any rescheduled performance test requires 7 days notice, not 30 days (§60.675(g)).
60.9, Availability of information	Yes	
60.10, State authority	Yes	
60.11, Compliance with standards and maintenance requirements	Yes	Except in (b) under certain conditions (§§60.675 (c)(3) and (c)(4)), Method 9 observation may be reduced from 3 hours to 1 hour. Some affected facilities exempted from Method 9 tests (§60.675(h)).
60.12, Circumvention	Yes	
60.13, Monitoring requirements	Yes	
60.14, Modification	Yes	
60.15, Reconstruction	Yes	
60.16, Priority list	Yes	
60.17, Incorporations by reference	Yes	
60.18, General control device	No	Flares will not be used to comply with the emission limits.
60.19, General notification and reporting requirements	Yes	

**§ 60.671 Definitions.**

All terms used in this subpart, but not specifically defined in this section, shall have the meaning given them in the Act and in subpart A of this part.

*Bagging operation* means the mechanical process by which bags are filled with nonmetallic minerals.

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*Belt conveyor* means a conveying device that transports material from one location to another by means of an endless belt that is carried on a series of idlers and routed around a pulley at each end.

*Bucket elevator* means a conveying device of nonmetallic minerals consisting of a head and foot assembly which supports and drives an endless single or double strand chain or belt to which buckets are attached.

*Building* means any frame structure with a roof.

*Capacity* means the cumulative rated capacity of all initial crushers that are part of the plant.

*Capture system* means the equipment (including enclosures, hoods, ducts, fans, dampers, etc.) used to capture and transport particulate matter generated by one or more process operations to a control device.

*Control device* means the air pollution control equipment used to reduce particulate matter emissions released to the atmosphere from one or more process operations at a nonmetallic mineral processing plant.

*Conveying system* means a device for transporting materials from one piece of equipment or location to another location within a plant. Conveying systems include but are not limited to the following: Feeders, belt conveyors, bucket elevators and pneumatic systems.

*Crusher* means a machine used to crush any nonmetallic minerals, and includes, but is not limited to, the following types: jaw, gyratory, cone, roll, rod mill, hammermill, and impactor.

*Enclosed truck or railcar loading station* means that portion of a nonmetallic mineral processing plant where nonmetallic minerals are loaded by an enclosed conveying system into enclosed trucks or railcars.

*Fixed plant* means any nonmetallic mineral processing plant at which the processing equipment specified in §60.670(a) is attached by a cable, chain, turnbuckle, bolt or other means (except electrical connections) to any anchor, slab, or structure including bedrock.

*Fugitive emission* means particulate matter that is not collected by a capture system and is released to the atmosphere at the point of generation.

*Grinding mill* means a machine used for the wet or dry fine crushing of any nonmetallic mineral. Grinding mills include, but are not limited to, the following types: hammer, roller, rod, pebble and ball, and fluid energy. The grinding mill includes the air conveying system, air separator, or air classifier, where such systems are used.

*Initial crusher* means any crusher into which nonmetallic minerals can be fed without prior crushing in the plant.

*Nonmetallic mineral* means any of the following minerals or any mixture of which the majority is any of the following minerals:

- (a) Crushed and Broken Stone, including Limestone, Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell.
- (b) Sand and Gravel.
- (c) Clay including Kaolin, Fireclay, Bentonite, Fuller's Earth, Ball Clay, and Common Clay.
- (d) Rock Salt.
- (e) Gypsum.
- (f) Sodium Compounds, including Sodium Carbonate, Sodium Chloride, and Sodium Sulfate.
- (g) Pumice.
- (h) Gilsonite.
- (i) Talc and Pyrophyllite.
- (j) Boron, including Borax, Kernite, and Colemanite.
- (k) Barite.
- (l) Fluorospars.

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- (m) Feldspar.
- (n) Diatomite.
- (o) Perlite.
- (p) Vermiculite.
- (q) Mica.
- (r) Kyanite, including Andalusite, Sillimanite, Topaz, and Dumortierite.

*Nonmetallic mineral processing plant* means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including lime plants, power plants, steel mills, asphalt concrete plants, portland cement plants, or any other facility processing nonmetallic minerals except as provided in §60.670 (b) and (c).

*Portable plant* means any nonmetallic mineral processing plant that is mounted on any chassis or skids and may be moved by the application of a lifting or pulling force. In addition, there shall be no cable, chain, turnbuckle, bolt or other means (except electrical connections) by which any piece of equipment is attached or clamped to any anchor, slab, or structure, including bedrock that must be removed prior to the application of a lifting or pulling force for the purpose of transporting the unit.

*Production line* means all affected facilities (crushers, grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins, and enclosed truck and railcar loading stations) which are directly connected or are connected together by a conveying system.

*Screening operation* means a device for separating material according to size by passing undersize material through one or more mesh surfaces (screens) in series, and retaining oversize material on the mesh surfaces (screens).

*Size* means the rated capacity in tons per hour of a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station; the total surface area of the top screen of a screening operation; the width of a conveyor belt; and the rated capacity in tons of a storage bin.

*Stack emission* means the particulate matter that is released to the atmosphere from a capture system.

*Storage bin* means a facility for storage (including surge bins) or nonmetallic minerals prior to further processing or loading.

*Transfer point* means a point in a conveying operation where the nonmetallic mineral is transferred to or from a belt conveyor except where the nonmetallic mineral is being transferred to a stockpile.

*Truck dumping* means the unloading of nonmetallic minerals from movable vehicles designed to transport nonmetallic minerals from one location to another. Movable vehicles include but are not limited to: trucks, front end loaders, skip hoists, and railcars.

*Vent* means an opening through which there is mechanically induced air flow for the purpose of exhausting from a building air carrying particulate matter emissions from one or more affected facilities.

*Wet mining operation* means a mining or dredging operation designed and operated to extract any nonmetallic mineral regulated under this subpart from deposits existing at or below the water table, where the nonmetallic mineral is saturated with water.

*Wet screening operation* means a screening operation at a nonmetallic mineral processing plant which removes unwanted material or which separates marketable fines from the product by a washing process which is designed and operated at all times such that the product is saturated with water.

**§ 60.672 Standard for particulate matter.**

- (a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any stack emissions which:
  - (1) Contain particulate matter in excess of 0.05 g/dscm (0.022 gr/dscf); and

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- (2) Exhibit greater than 7 percent opacity, unless the stack emissions are discharged from an affected facility using a wet scrubbing control device. Facilities using a wet scrubber must comply with the reporting provisions of §60.676 (c), (d), and (e).
- (b) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under §60.11 of this part, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any fugitive emissions which exhibit greater than 10 percent opacity, except as provided in paragraphs (c), (d), and (e) of this section.
- (c) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under §60.11 of this part, no owner or operator shall cause to be discharged into the atmosphere from any crusher, at which a capture system is not used, fugitive emissions which exhibit greater than 15 percent opacity.
- (d) Truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from the requirements of this section.
- (e) If any transfer point on a conveyor belt or any other affected facility is enclosed in a building, then each enclosed affected facility must comply with the emission limits in paragraphs (a), (b) and (c) of this section, or the building enclosing the affected facility or facilities must comply with the following emission limits:
  - (1) No owner or operator shall cause to be discharged into the atmosphere from any building enclosing any transfer point on a conveyor belt or any other affected facility any visible fugitive emissions except emissions from a vent as defined in §60.671.
  - (2) No owner or operator shall cause to be discharged into the atmosphere from any vent of any building enclosing any transfer point on a conveyor belt or any other affected facility emissions which exceed the stack emissions limits in paragraph (a) of this section.
- (f) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under §60.11 of this part, no owner or operator shall cause to be discharged into the atmosphere from any baghouse that controls emissions from only an individual, enclosed storage bin, stack emissions which exhibit greater than 7 percent opacity.
- (g) Owners or operators of multiple storage bins with combined stack emissions shall comply with the emission limits in paragraph (a)(1) and (a)(2) of this section.
- (h) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, no owner or operator shall cause to be discharged into the atmosphere any visible emissions from:
  - (1) Wet screening operations and subsequent screening operations, bucket elevators, and belt conveyors that process saturated material in the production line up to the next crusher, grinding mill or storage bin.
  - (2) Screening operations, bucket elevators, and belt conveyors in the production line downstream of wet mining operations, where such screening operations, bucket elevators, and belt conveyors process saturated materials up to the first crusher, grinding mill, or storage bin in the production line.

**§ 60.673 Reconstruction.**

- (a) The cost of replacement of ore-contact surfaces on processing equipment shall not be considered in calculating either the “fixed capital cost of the new components” or the “fixed capital cost that would be required to construct a comparable new facility” under §60.15. Ore-contact surfaces are crushing surfaces; screen meshes, bars, and plates; conveyor belts; and elevator buckets.
- (b) Under §60.15, the “fixed capital cost of the new components” includes the fixed capital cost of all depreciable components (except components specified in paragraph (a) of this section) which are or will be replaced pursuant to all continuous programs of component replacement commenced within any 2-year period following August 31, 1983.

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**SECTION 4. APPENDIX G**  
**NEW SOURCE PERFORMANCE STANDARDS**

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**§ 60.674 Monitoring of operations.**

The owner or operator of any affected facility subject to the provisions of this subpart which uses a wet scrubber to control emissions shall install, calibrate, maintain and operate the following monitoring devices:

- (a) A device for the continuous measurement of the pressure loss of the gas stream through the scrubber. The monitoring device must be certified by the manufacturer to be accurate within  $\pm 250$  pascals  $\pm 1$  inch water gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions.
- (b) A device for the continuous measurement of the scrubbing liquid flow rate to the wet scrubber. The monitoring device must be certified by the manufacturer to be accurate within  $\pm 5$  percent of design scrubbing liquid flow rate and must be calibrated on an annual basis in accordance with manufacturer's instructions.

**§ 60.675 Test methods and procedures.**

- (a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b). Acceptable alternative methods and procedures are given in paragraph (e) of this section.
- (b) The owner or operator shall determine compliance with the particulate matter standards in §60.672(a) as follows:
  - (1) Method 5 or Method 17 shall be used to determine the particulate matter concentration. The sample volume shall be at least 1.70 dscm (60 dscf). For Method 5, if the gas stream being sampled is at ambient temperature, the sampling probe and filter may be operated without heaters. If the gas stream is above ambient temperature, the sampling probe and filter may be operated at a temperature high enough, but no higher than 121 °C (250 °F), to prevent water condensation on the filter.
  - (2) Method 9 and the procedures in §60.11 shall be used to determine opacity.
- (c)
  - (1) In determining compliance with the particulate matter standards in §60.672 (b) and (c), the owner or operator shall use Method 9 and the procedures in §60.11, with the following additions:
    - (i) The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet).
    - (ii) The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources (e.g., road dust). The required observer position relative to the sun (Method 9, Section 2.1) must be followed.
    - (iii) For affected facilities using wet dust suppression for particulate matter control, a visible mist is sometimes generated by the spray. The water mist must not be confused with particulate matter emissions and is not to be considered a visible emission. When a water mist of this nature is present, the observation of emissions is to be made at a point in the plume where the mist is no longer visible.
  - (2) In determining compliance with the opacity of stack emissions from any baghouse that controls emissions only from an individual enclosed storage bin under §60.672(f) of this subpart, using Method 9, the duration of the Method 9 observations shall be 1 hour (ten 6-minute averages).
  - (3) When determining compliance with the fugitive emissions standard for any affected facility described under §60.672(b) of this subpart, the duration of the Method 9 observations may be reduced from 3 hours (thirty 6 minute averages) to 1 hour (ten 6-minute averages) only if the following conditions apply:
    - (i) There are no individual readings greater than 10 percent opacity; and
    - (ii) There are no more than 3 readings of 10 percent for the 1-hour period.
  - (4) When determining compliance with the fugitive emissions standard for any crusher at which a capture system is not used as described under §60.672(c) of this subpart, the duration of the Method 9 observations may be reduced from 3 hours (thirty 6-minute averages) to 1 hour (ten 6-minute averages) only if the following conditions apply:
    - (i) There are no individual readings greater than 15 percent opacity; and

**SECTION 4. APPENDIX G**  
**NEW SOURCE PERFORMANCE STANDARDS**

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- (ii) There are no more than 3 readings of 15 percent for the 1-hour period.
- (d) In determining compliance with §60.672(e), the owner or operator shall use Method 22 to determine fugitive emissions. The performance test shall be conducted while all affected facilities inside the building are operating. The performance test for each building shall be at least 75 minutes in duration, with each side of the building and the roof being observed for at least 15 minutes.
- (e) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:
  - (1) For the method and procedure of paragraph (c) of this section, if emissions from two or more facilities continuously interfere so that the opacity of fugitive emissions from an individual affected facility cannot be read, either of the following procedures may be used:
    - (i) Use for the combined emission stream the highest fugitive opacity standard applicable to any of the individual affected facilities contributing to the emissions stream.
    - (ii) Separate the emissions so that the opacity of emissions from each affected facility can be read.
- (f) To comply with §60.676(d), the owner or operator shall record the measurements as required in §60.676(c) using the monitoring devices in §60.674 (a) and (b) during each particulate matter run and shall determine the averages.
- (g) If, after 30 days notice for an initially scheduled performance test, there is a delay (due to operational problems, etc.) in conducting any rescheduled performance test required in this section, the owner or operator of an affected facility shall submit a notice to the Administrator at least 7 days prior to any rescheduled performance test.
- (h) Initial Method 9 performance tests under §60.11 of this part and §60.675 of this subpart are not required for:
  - (1) Wet screening operations and subsequent screening operations, bucket elevators, and belt conveyors that process saturated material in the production line up to, but not including the next crusher, grinding mill or storage bin.
  - (2) Screening operations, bucket elevators, and belt conveyors in the production line downstream of wet mining operations, that process saturated materials up to the first crusher, grinding mill, or storage bin in the production line.

**§ 60.676 Reporting and recordkeeping.**

- (a) Each owner or operator seeking to comply with §60.670(d) shall submit to the Administrator the following information about the existing facility being replaced and the replacement piece of equipment.
  - (1) For a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station:
    - (i) The rated capacity in megagrams or tons per hour of the existing facility being replaced and
    - (ii) The rated capacity in tons per hour of the replacement equipment.
  - (2) For a screening operation:
    - (i) The total surface area of the top screen of the existing screening operation being replaced and
    - (ii) The total surface area of the top screen of the replacement screening operation.
  - (3) For a conveyor belt:
    - (i) The width of the existing belt being replaced and
    - (ii) The width of the replacement conveyor belt.
  - (4) For a storage bin:
    - (i) The rated capacity in megagrams or tons of the existing storage bin being replaced and
    - (ii) The rated capacity in megagrams or tons of replacement storage bins.
- (b) [Reserved]

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- (c) During the initial performance test of a wet scrubber, and daily thereafter, the owner or operator shall record the measurements of both the change in pressure of the gas stream across the scrubber and the scrubbing liquid flow rate.
- (d) After the initial performance test of a wet scrubber, the owner or operator shall submit semiannual reports to the Administrator of occurrences when the measurements of the scrubber pressure loss (or gain) and liquid flow rate differ by more than  $\pm 30$  percent from the averaged determined during the most recent performance test.
- (e) The reports required under paragraph (d) shall be postmarked within 30 days following end of the second and fourth calendar quarters.
- (f) The owner or operator of any affected facility shall submit written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in §60.672 of this subpart, including reports of opacity observations made using Method 9 to demonstrate compliance with §60.672(b), (c), and (f), and reports of observations using Method 22 to demonstrate compliance with §60.672(e).
- (g) The owner or operator of any screening operation, bucket elevator, or belt conveyor that processes saturated material and is subject to §60.672(h) and subsequently processes unsaturated materials, shall submit a report of this change within 30 days following such change. This screening operation, bucket elevator, or belt conveyor is then subject to the 10 percent opacity limit in §60.672(b) and the emission test requirements of §60.11 and this subpart. Likewise a screening operation, bucket elevator, or belt conveyor that processes unsaturated material but subsequently processes saturated material shall submit a report of this change within 30 days following such change. This screening operation, bucket elevator, or belt conveyor is then subject to the no visible emission limit in §60.672(h).
- (h) The subpart A requirement under §60.7(a)(2) for notification of the anticipated date of initial startup of an affected facility shall be waived for owners or operators of affected facilities regulated under this subpart.
- (i) A notification of the actual date of initial startup of each affected facility shall be submitted to the Administrator.
  - (1) For a combination of affected facilities in a production line that begin actual initial startup on the same day, a single notification of startup may be submitted by the owner or operator to the Administrator. The notification shall be postmarked within 15 days after such date and shall include a description of each affected facility, equipment manufacturer, and serial number of the equipment, if available.
  - (2) For portable aggregate processing plants, the notification of the actual date of initial startup shall include both the home office and the current address or location of the portable plant.
- (j) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected facilities within the State will be relieved of the obligation to comply with the reporting requirements of this section, provided that they comply with requirements established by the State.

**Livingston, Sylvia**

**From:** Livingston, Sylvia  
**Sent:** Thursday, April 09, 2009 3:54 PM  
**To:** 'larry.hatcher@pgnmail.com'  
**Cc:** 'dave.meyer@pgnmail.com'; 'benjamin.borsch@pgnmail.com'; 'sosbourn@golder.com'; Halpin, Mike; Zhang-Torres; 'forney.kathleen@epa.gov'; 'abrams.heather@epamail.epa.gov'; 'dee\_morse@nps.gov'; Gibson, Victoria; Koerner, Jeff; Walker, Elizabeth (AIR)  
**Subject:** Progress Energy - CRYSTAL RIVER POWER PLANT; 0170004-022-AC/ PSD-FL-383B  
**Attachments:** 0170004-022-AC\_Intent.pdf

Tracking:	Recipient	Delivery	Read
	'larry.hatcher@pgnmail.com'		
	'dave.meyer@pgnmail.com'		
	'benjamin.borsch@pgnmail.com'		
	'sosbourn@golder.com'		
	Halpin, Mike	Delivered: 4/9/2009 3:54 PM	Read: 4/9/2009 4:00 PM
	Zhang-Torres	Delivered: 4/9/2009 3:54 PM	
	'forney.kathleen@epa.gov'		
	'abrams.heather@epamail.epa.gov'		
	'dee_morse@nps.gov'		
	Gibson, Victoria	Delivered: 4/9/2009 3:54 PM	Read: 4/10/2009 9:47 AM
	Koerner, Jeff	Delivered: 4/9/2009 3:54 PM	
	Walker, Elizabeth (AIR)	Delivered: 4/9/2009 3:54 PM	

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**Owner/Company Name:** FLORIDA POWER CORPORATION D/B/A PROGRESS

**Facility Name:** CRYSTAL RIVER POWER PLANT

**Project Number:** 0170004-022-AC/ PSD-FL-383B

**Permit Status:** DRAFT

**Permit Activity:** CONSTRUCTION

**Facility County:** CITRUS

**Processor:** Jeff Koerner

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other

4/17/2009

## Livingston, Sylvia

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**From:** Hatcher, Larry [Larry.Hatcher@pgnmail.com]  
**Sent:** Friday, April 10, 2009 6:34 AM  
**To:** Livingston, Sylvia  
**Subject:** RE: Progress Energy - CRYSTAL RIVER POWER PLANT; 0170004-022-AC/ PSD-FL-383B

I have received these documents.

Thanks!

Larry

---

**From:** Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]  
**Sent:** Thursday, April 09, 2009 3:54 PM  
**To:** Hatcher, Larry  
**Cc:** Meyer, Dave; Borsch, Benjamin; sosbourn@golder.com; Halpin, Mike; Zhang-Torres; forney.kathleen@epa.gov; abrams.heather@epamail.epa.gov; dee\_morse@nps.gov; Gibson, Victoria; Koerner, Jeff; Walker, Elizabeth (AIR)  
**Subject:** Progress Energy - CRYSTAL RIVER POWER PLANT; 0170004-022-AC/ PSD-FL-383B

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**Owner/Company Name:** FLORIDA POWER CORPORATION D/B/A PROGRESS  
**Facility Name:** CRYSTAL RIVER POWER PLANT  
**Project Number:** 0170004-022-AC/ PSD-FL-383B  
**Permit Status:** DRAFT  
**Permit Activity:** CONSTRUCTION  
**Facility County:** CITRUS  
**Processor:** Jeff Koerner

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Permit project documents addressed in this email may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible, and verify that they are

4/10/2009

## Livingston, Sylvia

---

**From:** Meyer, Dave [Dave.Meyer@pgnmail.com]  
**Sent:** Monday, April 13, 2009 10:20 AM  
**To:** Livingston, Sylvia  
**Cc:** McDaniel, Kim  
**Subject:** RE: Progress Energy - CRYSTAL RIVER POWER PLANT; 0170004-022-AC/ PSD-FL-383B

Hi Sylvia,

I was able to retrieve the documents. Thank you very much for all your help. Best regards, Dave Meyer 727-820-5295

---

**From:** Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]  
**Sent:** Thursday, April 09, 2009 3:54 PM  
**To:** Hatcher, Larry  
**Cc:** Meyer, Dave; Borsch, Benjamin; sosbourn@golder.com; Halpin, Mike; Zhang-Torres; forney.kathleen@epa.gov; abrams.heather@epamail.epa.gov; dee\_morse@nps.gov; Gibson, Victoria; Koerner, Jeff; Walker, Elizabeth (AIR)  
**Subject:** Progress Energy - CRYSTAL RIVER POWER PLANT; 0170004-022-AC/ PSD-FL-383B

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## Livingston, Sylvia

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**From:** Borsch, Benjamin [Benjamin.Borsch@pgnmail.com]  
**Sent:** Monday, April 13, 2009 9:40 AM  
**To:** Livingston, Sylvia  
**Subject:** RE: Progress Energy - CRYSTAL RIVER POWER PLANT; 0170004-022-AC/ PSD-FL-383B

The subject files have been received and are accessible.

Thank you.

**Benjamin M. H. Borsch, PE**  
Lead Technical Specialist - Project Development

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**From:** Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]  
**Sent:** Thursday, April 09, 2009 3:54 PM  
**To:** Hatcher, Larry  
**Cc:** Meyer, Dave; Borsch, Benjamin; sosbourn@golder.com; Halpin, Mike; Zhang-Torres; forney.kathleen@epa.gov; abrams.heather@epamail.epa.gov; dee\_morse@nps.gov; Gibson, Victoria; Koerner, Jeff; Walker, Elizabeth (AIR)  
**Subject:** Progress Energy - CRYSTAL RIVER POWER PLANT; 0170004-022-AC/ PSD-FL-383B

Dear Sir/ Madam:

Attached is the official **Notice of Intent to Issue** for the project referenced below. Click on the link displayed below to access the permit project documents and send a "reply" message verifying receipt of the document(s) provided in the link; this may be done by selecting "Reply" on the menu bar of your e-mail software, noting that you can view the documents, and then selecting "Send".

*Note: We must receive verification that you are able to access the documents. Your immediate reply will preclude subsequent e-mail transmissions to verify accessibility of the document(s).*

**Click on the following link to access the permit project documents:**

[http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf\\_permit\\_zip\\_files/0170004.022.AC.D\\_pdf.zip](http://ARM-PERMIT2K.dep.state.fl.us/adh/prod/pdf_permit_zip_files/0170004.022.AC.D_pdf.zip)

**Owner/Company Name:** FLORIDA POWER CORPORATION D/B/A PROGRESS  
**Facility Name:** CRYSTAL RIVER POWER PLANT  
**Project Number:** 0170004-022-AC/ PSD-FL-383B  
**Permit Status:** DRAFT  
**Permit Activity:** CONSTRUCTION  
**Facility County:** CITRUS  
**Processor:** Jeff Koerner

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Access these documents by clicking on the link provided above, or search for other project documents using the "*Air Permit Documents Search*" website at <http://www.dep.state.fl.us/air/eproducts/apds/default.asp>.

Permit project documents addressed in this email may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible, and verify that they are accessible. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record. If you have any

## Livingston, Sylvia

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**From:** Dee\_Morse@nps.gov  
**Sent:** Thursday, April 09, 2009 5:13 PM  
**To:** Livingston, Sylvia  
**Subject:** Re: Progress Energy - CRYSTAL RIVER POWER PLANT; 0170004-022-AC/ PSD-FL-383B

Message received

Dee Morse  
Environmental Protection Specialist  
Air Resources Division  
Natural Resource Program Center  
National Park Service  
Phone: 303 969-2817  
Fax: 303 969-2822  
e-mail: dee\_morse@nps.gov



**Progress Energy**

Larry E. Hatcher  
Manager, Crystal River  
Fossil Plant & Fuel Operations

December 11, 2008

Mr. Jeffrey Koerner, P.E.  
Air Quality Division  
Department of Environmental Protection  
2600 Blair Stone Road,  
MS 5000  
Tallahassee, Florida 32399-2400

**RECEIVED**

**DEC 30 2008**

Re: Application for Permit Revision  
Crystal River Units 4 and 5

**BUREAU OF AIR REGULATION**

Dear Mr. Koerner:

Enclosed please find one original and three copies of an application for revision of permit number 017004-016-AC governing the construction of the clean air projects at Progress Energy Florida's (PEF) Crystal River Power Plant Units 4 and 5. This application covers a number of issues which Progress staff and consultants have previously discussed with you. Specifically, these include:

- The requirement for use of a carbon monoxide continuous emission monitoring system at Unit 5 during the interim construction period;
- Revisions relating to description of the gypsum storage and handling systems onsite; and
- Consistency with regard to applicable timeframes for testing following the installation and startup of elements of the pollution control systems.

In addition to these issues, PEF seeks the agency's concurrence with our understanding regarding the applicability of Condition 12 regarding excess emissions to the operation of the alkali injection system for sulfuric acid mist (SAM) mitigation.

Finally, we enclose a table (Table 1) outlining our understanding of the applicability dates and triggers for the new limits imposed by this permit. This table is for your information. Although we are not requesting formal concurrence, we would appreciate any comments you may have regarding our understanding.

PEF looks forward to working with you regarding this matter. We hope to meet with you to discuss specific details of the issues listed here early in January. If you would like to discuss any issues regarding this application, please contact Mr. David Meyer in our St. Petersburg office by telephone at (727) 820-5295 or via email at [dave.meyer@prnmail.com](mailto:dave.meyer@prnmail.com).

Sincerely,

Larry E. Hatcher  
Plant Manager/Responsible Official  
Enclosures

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

*PEF's  
Current  
(average in permit)*

**TABLE 1 – EMISSIONS LIMIT APPLICABILITY**

<b>Emissions Type</b>	<b>Current Permit Limit</b>	<b>New Permit Limit</b>	<b>Unit 4 New Limit Date</b>	<b>Unit 5 New Limit Date</b>	<b>Notes</b>
Nitrogen Oxide (NOx)	0.50 lb/MMBTU	0.47 lb/mmbtu	End of Unit 4 2008 fall outage measured at existing CEMS	End of Unit 5 2009 Spring Outage by existing CEMS	Based upon a 12 month <u>rolling</u> average
Sulfur Dioxide (SO <sub>2</sub> )	1.2 lb/MMBTU	0.27 lb/mmbtu - Including SU/SD/M 1944.0 lb/hr - Excluding SU/SD/M	Within 60 days of Construction Completion of FGD (End of Unit 4 2010 spring outage) measured at new CEMS	Within 60 days of Construction Completion of FGD(End of Unit 5 2009 Fall outage) measured by new CEMS	mmBtu/hr based upon a 30 day <u>rolling</u> average lb/hr based on a 24 hour (midnight to midnight) rolling block average
Sulfuric Acid Mist (SAM)	none	0.009 lb/mmbtu <u>and</u> 64.8 lb/hr	Within 60 days of Construction Completion of AMM (End of Unit 4 2010 spring outage) measured Compliance Stack test	Within 60 days of Construction Completion of AMM (End of Unit 5 2009 Spring outage) measured Compliance Stack test	This new limit is in effect because current SAM emissions will increase by greater than 7 tons/year due to burning higher sulfur coal. Annual test required to determine compliance. No continuous monitor. Retest with each 0.5% sulfur increase. Required to develop SAM estimation curves, and AMM Monitoring Plan
Particulate Matter	0.1 lb/MMBTU	0.030 lb/mmbtu <u>and</u> 216.0 lb/hour	Within 60 days of Construction Completion of ESP Upgrades (End of Unit 4 2010 spring outage)	Within 60 days of Construction Completion of ESP Upgrades (End of Unit 5 2009 Spring outage)	Annual test required to determine compliance. No continuous monitor. PM Compliance Stack Test required after LNB installation,, but at existing limit (0.1).

Emissions Type	Current Permit Limit	New Permit Limit	Unit 4 New Limit Date	Unit 5 New Limit Date	Notes
Opacity	20%	10%	Within 60 days of Construction Completion of FGD (End of Unit 4 2010 spring outage) measured at new Stack	Within 60 days of Construction Completion of FGD(End of Unit 5 2009 Fall outage) measured at New Stack	Limit is based upon a 6 minute average, except one six minute block per hour can be as high as 20 percent opacity
Ammonia Slip	none	5ppmv	Within 60 days of Construction Completion of SCR (End of Unit 4 2010 spring outage) measured Compliance Stack test	Within 60 days of Construction Completion of SCR(End of Unit 5 2009 Spring outage) measured Compliance Stack test	Annual test required to determine compliance. No <u>continuous compliance</u> monitor. Monitoring plan for Ammonia injection rate.
Carbon Monoxide (CO)	none	0.17 lb/mmbtu excluded SU/SD/M 1156.0 lb/hr Including SU/SD/M	End of Unit 4 2008 fall outage measured at existing Interim CEMS	Seeking exemption for interim CO CEMS, Then end of Unit 5 Fall outage with New CO CEMS at new Stack	Based upon a 30 day rolling average. New compliance monitor to be installed.
VOC		.004 lb/MMBtu and 28.8 lb/hour	Within 60 days of Construction Completion (End of Unit 4 2008 fall outage) measured Compliance Stack test	Within 60 days of Construction Completion (End of Unit 5 2009 Spring outage) measured Compliance Stack test	3 run test average at permitted capacity

## **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 any required purpose at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air operation permit;
- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment new source review, or maximum achievable control technology (MACT);
- To assume a restriction on the potential emissions of one or more pollutants to escape a requirement such as PSD review, nonattainment new source review, MACT, or Title V; or
- To establish, revise, or renew a plantwide applicability limit (PAL).

**Air Operation Permit** – Use this form to apply for:

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

**To ensure accuracy, please see form instructions.**

#### Identification of Facility

1. Facility Owner/Company Name: <b>PROGRESS ENERGY, INC.DBA FLORIDA POWER CORP..</b>	
2. Site Name: <b>CRYSTAL RIVER POWER PLANT</b>	
3. Facility Identification Number: <b>0170004</b>	
4. Facility Location... Street Address or Other Locator: <b>NORTH OF CRYSTAL RIVER, WEST OF U.S. 19</b> City: <b>CRYSTAL RIVER</b> County: <b>CITRUS</b> Zip Code: <b>34428</b>	
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: <b>DAVE MEYER, SENIOR ENVIRONMENTAL SPECIALIST</b>	
2. Application Contact Mailing Address... Organization/Firm: <b>PROGRESS ENERGY FLORIDA</b> Street Address: <b>299 FIRST AVENUE, NORTH, PEF 903</b> City: <b>ST. PETERSBURG</b> State: <b>FL</b> Zip Code: <b>33701</b>	
3. Application Contact Telephone Numbers... Telephone: <b>(727) 820-5295</b> ext.      Fax: <b>(727) 820-5229</b>	
4. Application Contact E-mail Address: <b>DAVE.MEYER@PGNMAIL.COM</b>	

#### Application Processing Information (DEP Use)

1. Date of Receipt of Application:	3. PSD Number (if applicable):
2. Project Number(s):	4. Siting Number (if applicable):



# Department of Environmental Protection

## Division of Air Resource Management

### APPLICATION FOR AIR PERMIT - LONG FORM

#### Purpose of Application

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

#### **Air Construction Permit**

- ☒ Air construction permit.
- ☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).
- ☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

#### **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**

**This application and attachments serve to request revisions to permit language associated with Air Permit No. 0170004-016-AC. This construction permit was to address 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. Specifically, the referenced AC permit addressed the following:**

- **Install low-NO<sub>x</sub> burners;**
- **Add SCR systems for nitrogen oxide (NO<sub>x</sub>) removal;**
- **Add alkali injection systems for SO<sub>3</sub> control;**
- **Add FGD systems for sulfur dioxide (SO<sub>2</sub>) control;**
- **Upgrade existing ESPs;**
- **Construct a new stack to accommodate the new Project configuration; and**
- **Install a single carbon burn out (CBO™) unit to reburn fly ash generated, if needed.**

**This permit application is to request changes to the current permit language with respect to:**

- **The use of a carbon monoxide (CO) continuous emission monitoring system (CEMS). This is necessary due to the construction schedule and the transition to a new stack;**
- **Revisions relating to the gypsum storage and handling systems onsite that will more accurately describe the actual modifications being undertaken; and**
- **Consistency with regard to applicable timeframes for testing following the installation and startup of elements of the pollution control systems; and**

**In addition, PEF requests the Department's concurrence on the definition of allowable excess emissions related to required maintenance and potential malfunction of the sulfuric acid mist (SAM) control system.**

**Finally, this application also serves to request that the Department include permit language that references the applicability of NSPS Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants, with respect to the installation of the limestone system. While the applicability of this standard was an oversight, it does not affect the currently permitted standards, which are more stringent than the referenced NSPS standards.**

**Scope of Application**

<b>Emissions Unit ID Number</b>	<b>Description of Emissions Unit</b>	<b>Air Permit Type</b>	<b>Air Permit Processing Fee</b>
004	FFSG, Unit 4	AC1F	NA
003	FFSG, Unit 5	AC1F	NA

**Application Processing Fee**

Check one: ☐ Attached - Amount: \$\_\_\_\_\_ ☒ Not Applicable

**Owner/Authorized Representative Statement**

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

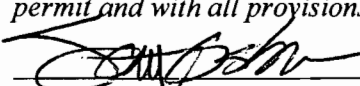
1. Owner/Authorized Representative Name : <b>LARRY HATCHER, PLANT MANAGER</b>
2. Owner/Authorized Representative Mailing Address... Organization/Firm: <b>PROGRESS ENERGY FLORIDA</b> Street Address: <b>299 FIRST AVENUE, NORTH, CN77</b> City: <b>ST PETERSBURG</b> State: <b>FLORIDA</b> Zip Code: <b>33701</b>
3. Owner/Authorized Representative Telephone Numbers... Telephone: <b>(352) 563-4484</b> ext. Fax: <b>(352) 563-4496</b>
4. Owner/Authorized Representative E-mail Address: <b>LARRY.HATCHER@PGNMAIL.COM</b>
5. Owner/Authorized Representative Statement:  <i>I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.</i>  <div style="display: flex; justify-content: space-between;"><div style="text-align: center;"> _____ Signature</div><div style="text-align: center;"><u>12/19/08</u> _____ Date</div></div>

### **Application Responsible Official Certification**

**Complete if applying for an initial, revised, or renewal Title V air operation permit or concurrent processing of an air construction permit and revised or renewal Title V air operation 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, CAIR source, or Hg Budget 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 E-mail Address:		
6. Application Responsible Official Certification: <p>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.</p> <div style="display: flex; justify-content: space-between;"><div>_____ Signature</div><div>_____ Date</div></div>		

### **Professional Engineer Certification**

1. Professional Engineer Name: <b>SCOTT OSBOURN</b> Registration Number: <b>57557</b>
2. Professional Engineer Mailing Address... Organization/Firm: <b>GOLDER ASSOCIATES, INC. **</b> Street Address: <b>5100 WEST LEMON ST., SUITE 114</b> City: <b>TAMPA</b> State: <b>FL</b> Zip Code: <b>33609</b>
3. Professional Engineer Telephone Numbers... Telephone: <b>(813) 287-1717</b> ext. Fax: <b>(813) 287-1716</b>
4. Professional Engineer E-mail Address: <b>SOSBOURN@GOLDER.COM</b>
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>  <div style="display: flex; justify-content: space-between;"><div>Signature  (seal)</div><div>Date <u>12/22/08</u></div></div>

\* Attach any exception to certification statement

\*\* Board of Professional Engineers Certificate of Authorization #00001670



**ATTACHMENT 1**  
**Application Background**

## **ATTACHMENT 1**

This permit application is to request changes to the current permit language with respect to:

- The use of a carbon monoxide (CO) continuous emission monitoring system (CEMS);
- Revisions relating to the gypsum storage and handling systems onsite; and
- Consistency with regard to applicable timeframes for testing following the installation and startup of elements of the pollution control systems.

In addition to these issues, PEF seeks the agency's concurrence with our understanding regarding the applicability of Condition 12 regarding excess emissions to the operation of the alkali injection system for sulfuric acid mist (SAM) mitigation.

The permit language revisions requested by PEF are included in Attachment 2 of this application package. PEF's requests are related to a number of factors that have changed since the issuance of the current permit. Specifically:

- Schedule changes for the installation of various elements of the pollution control project have resulted in a situation in which Unit 5 will have a very short operating window between the installation of the low NO<sub>x</sub> burners and tie-in of the scrubber to the new stack;
- The design of the limestone and gypsum storage and handling systems have changed slightly from the design that was assumed for the initial air construction permit application;
- PEF has identified an apparent inconsistency in the requirements for applicability of the conditions; and
- A detailed review of the operations and maintenance requirements associated with the SAM mitigation system has raised concerns regarding the "continuous" compliance

obligation in the currently permitted SAM emission limits and the allowable excess emissions provision in the permit.

### Revised Schedule

The current permit was based on the initial approximate schedule for the Clean Air Project modifications which was developed to maintain the reliability of Units 4 and 5 and minimize down time, and was shown in the air application as follows:

Proposed Modification	Commence Construction	Commence Operation
Unit 4 SCR – tie in	September 2006	November 2008
Unit 5 SCR – tie in	December 2006	April 2009
Unit 4 Alkali – tie in	September 2006	November 2008
Unit 5 Alkali – tie in	December 2006	April 2009
Unit 4 LNB – tie in	March 2008	November 2008
Unit 5 LNB – tie in	March 2009	April 2009
Unit 4 FGD – tie in	December 2006	November 2009
Unit 5 FGD – tie in	December 2006	April 2009

The FGD systems for Units 4 and 5 were anticipated to commence construction as early as December 2006. As PEF completed contract negotiations with the control equipment contractors, it became clear that the initial schedule summarized above was untenable. Specifically, there were problems implementing both the SCR and FGD portions of Unit 5 during the Spring 2009 outage. These projects are currently in the construction phase. The proposed construction tie in outages and outage completion schedule is summarized below:

Proposed Modification	Commence Tie In Outage	Outage Completion (Operation Of Modification Begins)
Unit 4 SCR – tie in	February 2010	May 2010
Unit 5 SCR – tie in	February 2009	May 2009
Unit 4 Alkali – tie in	February 2010	May 2010
Unit 5 Alkali – tie in	February 2009	May 2009
Unit 4 LNB – tie in	November 2008	December 2008
Unit 5 LNB – tie in	February 2009	May 2009
Unit 4 FGD – tie in	February 2010	May 2010
Unit 5 FGD – tie in	November 2009	December 2009

Unit 4 ESP Upgrade	February 2010	May 2010
Unit 5 ESP Upgrade	February 2009	May 2009

This change in schedule, while necessary, has resulted in some minor issues in the implementation of the permit and its requirements. These issues and PEF's requests for modifications to the permit are discussed in the sections below.

#### **CO CEMS Installation Schedule**

PEF is requesting revisions to the CO CEMS conditions because the revised schedule results in a short window, at CR 5, between installation of the low NOx burners and tie-in of the scrubber to the new stack. The current permit language requires that CO CEMS be installed and operational on Unit 5 upon completion of installation of the low NOx burners (estimated at May 15, 2009, see above). Under the original schedule, the start up of the low NOx burners would have coincided with the FGD tie-in and the CEMS would have been installed on the new stack. Since the tie-in of the FGD system will now not be complete when the low NOx burners begin operation, the CO CEMS would be installed on the existing stack. After the tie-in of the FGD, a new CO CEMS will need to be installed on the new stack. The outage for the FGD tie in is scheduled for October 23, 2009. Thus this CEMS unit will be in place for only five months. In order to monitor CO for this short a period of time, it would be necessary to install a temporary CO monitor in the existing stack, and then purchase a new monitor for the new stack. Installing and certifying this temporary CO monitor unit is very burdensome and PEF believes that reasonable assurance of compliance can be provided by other means. Therefore, PEF requests a permit revision to waive the CEMS requirement during this short period of time, until the tie-in to the new stack is complete. In support of this request, it should be noted that Unit 4 will have operational CO CEMS as early as December 2008. The two units are very similar and the CO CEMS data collected can be considered representative of Unit 5 operation. Unit 5 will be tested for CO emissions to demonstrate compliance with the limits set forth in the permit, using EPA Reference Method 10, upon completion of the low NOx burner installation. The data from this test will also serve to demonstrate similarity in emissions to Unit 4, providing further assurance that the Unit 4 data may be considered representative for Unit 5 during this period.

PEF has provided proposed revisions to the permit language. These are provided in a “track-change” format in Attachment 2. PEF requests that these changes be approved by the agency and incorporated into the revised permit.

### **Limestone and Gypsum Transfer and Storage System Descriptions**

Regarding the gypsum system, PEF requests that the description of the system be updated to reflect minor changes made to the design. Golder had previously calculated emissions from the transfer and storage of gypsum at the Crystal River site, including initial conservative assumptions which account for some of the proposed system revisions. Based on the assumptions available to date, the difference in PM/PM<sub>10</sub> emissions potential appears to be less than one ton per year (TPY), which is an insignificant amount. Regarding the additional truck traffic that would result from US Gypsum’s request to use the Crystal River access road for their inbound and outbound truck traffic, Golder had already assumed an additional 150 truck trips associated with the proposed wallboard plant in the initial application. At the time, this was assumed to be a conservative assumption in the event that a conveying system would not be used to transport the gypsum to the wallboard facility. The current projection for the additional truck traffic will not exceed the value used in the previous air modeling. Based on these findings, Golder has concluded that it is not necessary to re-run the air modeling, but that some permit language revisions would be required. These are provided in a “track-change” format in Attachment 2. PEF requests that these changes be approved by the agency and incorporated into the revised permit.

### **Applicability Trigger**

Condition 15 “Compliance by CEMS” requires that compliance with the limits set forth in the permit be demonstrated by collection of continuous monitoring data for CO, NO<sub>x</sub> and SO<sub>2</sub> and that the monitors be certified within 60 days of *re-establishing commercial operation*. In contrast, Conditions 16 and 19 require that compliance and/or performance tests for SAM, ammonia slip, PM, and VOC be conducted within 60 days of *completion of construction of the pollution control equipment*. The modifications covered by this permit are for the installation of the pollution control equipment. PEF believes that it is therefore reasonable to base the requirements for compliance on completion of construction of the pollution control devices. For

several reasons, including the phased nature of the construction in accordance with the schedule shown above, the need to operate these units to maintain reliability in the electrical grid, and the complexities of adding pollution controls to these existing units, it is possible that the units may return to operation before the pollution control devices are 100 percent operational. Final tuning, commissioning and completion of the pollution control devices may be required following the return to service of the emissions units. In recognition of this issue, PEF requests that the language of Condition 15 be changed to make it consistent with the language in Conditions 16 and 19. Revised language would read as shown here and in redline/strikeout format in Attachment 2.

15. Compliance by CEMS: *Compliance with the standards for opacity and emissions of CO, NOx, and SO<sub>2</sub> shall be demonstrated with data collected from the required continuous monitoring systems. Within 60 days after initial performance testing, tuning and calibration on the pollution control systems, the permittee shall certify proper operation of each required monitor.*

#### **Sulfuric Acid Mist (SAM or SO<sub>3</sub>) Mitigation (AMM) System**

PEF is also concerned with the “continuous” compliance obligation in the currently permitted SAM emission limits of 0.009 lb/MMBtu and 64.8 lb/hr (based on stack test results using EPA Methods 8 or 8A). These limits are contained in Condition 8.c. The development of a CAM Plan and reporting requirements to demonstrate continuous compliance are also provided in Conditions 16 and 25.c, respectively. The concern has to do with the allowable excess emissions provision in Condition 12, which states:

*In accordance with Rule 62-210.700(6), F.A.C., excess emissions due to startup, shutdown or malfunction have been considered in establishing the sets of emissions standards of this permit. No other periods of excess emissions are authorized. [Rule 62-210.700(6), F.A.C.]*

PEF believes that this statement is appropriate for the standards based on CEMS listed in Condition 9 of the permit. However, for standards based on consistent operation such as the SAM mitigation system, a different consideration may be appropriate. PEF requests that FDEP confirm that Condition 12 applies specifically to the pollutants addressed in Condition 9. PEF

will work with the agency to determine appropriate monitoring of system operation related to the SAM mitigation system including necessary maintenance intervals and the potential for resulting periods of excess emissions as a part of the development of the operating protocol required by Condition 16.e and the monitoring requirements of Condition 25.c.

PEF believes that the FDEP had already contemplated this approach. For example, in Condition 10, the permit contains language specific to the SAM mitigation (alkali injection) system, as follows:

*Circumvention: No person shall circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly. The SCR and FGD systems shall operate as necessary to comply with the emissions standards of this permit. The alkali injection system and ESP shall operate in accordance with the automated controls system as determined by subsequent performance and compliance testing.*

The AMM system design is relatively new to the utility industry, compared to more common pollution control equipment, such as flue gas desulfurization systems. While the AMM systems have been used in the power industry for approximately eight years, during most of that time the equipment has been in seasonal utilization (ozone season), which then allowed for scheduled annual maintenance downtime. During the last two to three years, these systems have been pressed into year-round service as part of increased nitrogen oxide emission regulation in the utility industry. However, the reliability of these systems, the necessary maintenance intervals for year-round service and the impacts on potential periods of excess emissions are still being demonstrated and are not fully developed by the industry.

In addition, some of the equipment is common to both units with no redundancy, therefore; when scheduled maintenance is performed on one unit during a scheduled outage, the operating unit SAM emissions will be affected, because the AMM system would be taken out of service for the minimum time needed to perform OEM recommended maintenance. At Crystal River North (Units 4 and 5), only one unit is typically scheduled for an outage at a time – PEF generally must operate either Unit 4 or Unit 5 (or both) to meet its obligation to maintain electrical reliability. PEF will keep critical spare parts on hand and will optimize maintenance practices and maintenance opportunities to keep any out of service time to a minimum.

The individual components provided by Wahlco as part of the AMM System are typical of the equipment provided for power plant pollution control systems, including valves, pumps, instruments, etc. As such, the failure rates for individual components should be comparable to systems which have much longer utility service records. It is important to note that redundancy has been built into many of the systems and most customers, including PEF, have developed contingency plans, including identification of critical spare parts and routine equipment inspections to reduce potential system downtimes.

Wahlco Inc. will supply equipment for the urea to ammonia conversion system associated with the AMM System consisting of the following major components:

- AMM Urea Solution Day Tank;
- AMM Hydrolyzer Feed Pump Skid;
- AMM Hydrolyzer Skid A;
- AMM Hydrolyzer Skid B;
- AMM Hydrolyzer Blowdown Tank;
- Unit 4 AMM AFCU Skid;
- Unit 5 AMM AFCU Skid
- Urea Steam Saturator
- Condensate Cooler Unit Assembly
- Urea Auxiliary Steam Supply Line

These project components have been specified, designed, engineered and fabricated to provide robust and reliable operation. In addition, most of the equipment on these skids including pumps, blowers, valves and instrumentation, has redundant features built into the design specifically to improve system availability. However, some of the equipment is common to both units and some have no redundancy, therefore; when scheduled maintenance is performed on a system during a scheduled unit outage, the operating unit SAM emissions will be affected, because the AMM system would be taken out of service for the minimum time needed to perform the OEM recommended maintenance. These components include the following:

- AMM Urea Solution Day Tank (common)
- AMM Hydrolyzer Blowdown Tank (common)
- Condensate Cooler Unit Assembly (common)
- Urea Steam Saturator (common)
- Urea Auxiliary Steam Supply Line (common)
- AMM AFCU Skid - Air Duct Heater Units (unit specific)
- AMM AFCU Skid - Dilution Heater Eurotherm Controller Unit (unit specific)

The urea-to-ammonia system equipment has been designed to allow for proper preventative maintenance to provide long term reliability. Many of the current system users schedule annual maintenance periods to perform inspections, service and maintenance of the equipment. The items serviced include:

- Inspection and cleaning of the Hydrolyzer and removal of the steam bundle tubing assembly from the Hydrolyzer Vessel (5 -7 days)
- Inspection and servicing of the pump equipment (1-2 days)
- Inspection and servicing of the blower equipment (1-2 days)
- Inspection and cleaning the Condensate Recovery spray nozzles (1-2 days)
- Inspection and cleaning of the Condensate Cooler cooling fins assembly (1-2 days)
- Inspection and testing the instrumentation and valve control components (2-4 days)

Some of these activities require the equipment to be removed from service and cooled down from high operating temperatures before servicing. Some of these activities will affect the ability for PEF to operate both units' AMM systems. In addition, this list does not include periods of excess emissions that may be associated with start up and shutdown of the coal fired units. As noted above, PEF will keep critical spare parts on hand and will optimize maintenance practices, routine inspections and maintenance opportunities to reduce out of service time. However, it should be noted that PEF's projected annual out of service time for the AMM system for each unit (based on the above summary) is 240 hours (10 days) or 2.7 percent, providing 97.3 percent availability.

PEF requests the Department's concurrence that appropriate allowances for necessary maintenance and system downtime be addressed in the operating protocol required by Condition 16.e and the monitoring requirements of Condition 25.c. PEF would be pleased to meet with the agency in the near future to further discuss the details surrounding this issue.

As previously stated, the industry is still collecting Best Practices in system design due to the limited number of years the technology has been in service. Earlier vintage systems that are in service have been operated on a seasonal basis (Ozone Season). This allowed for scheduled maintenance on various components without affecting plant operations and/or emissions. As additional operating experience is gained, PEF will continue to work to minimize excess emissions.

**ATTACHMENT 2**

**Requested Permit Revision Language**

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### A. Unit 4, Unit 5 and CBO Unit - Pollution Control Projects

[Application No. 0170004-016-AC; Rule 62-4.070(3), F.A.C.]

7. Capacities and Restrictions: None of the emissions units in this subsection are restricted by hours of operation (8760 hours/year). [Application No. 0170004-016-AC; Rule 62-210.200(PTE), F.A.C.]

#### EMISSIONS LIMITATIONS AND PERFORMANCE STANDARDS

8. Standards Based on Stack Tests: Including the emissions from the CBO unit, emissions from each Unit 4 or Unit 5 shall not exceed the following standards based on stack tests.

- a. *Ammonia Slip*: As determined by EPA Method CTM-027 (or equivalent), the ammonia slip shall not exceed 5 ppmv based on a 3-run test average conducted at permitted capacity.
- b. *PM/PM<sub>10</sub> Emissions*: As determined by EPA Method 5 or 5b, PM emissions shall not exceed 0.030 lb/MMBtu and 216.0 lb/hour based on a 3-run test average conducted at permitted capacity.
- c. *SAM emissions*: As determined by EPA Method 8 or 8A, SAM emissions shall not exceed 0.009 lb/MMBtu and 64.8 lb/hour based on a 3-run test average conducted at permitted capacity.
- d. *VOC Emissions*: As determined by EPA Method 25A, VOC emissions shall not exceed 0.004 lb/MMBtu and 28.8 lb/hour based on a 3-run test average conducted at permitted capacity. Optionally, EPA Method 18 may be conducted concurrently in order to deduct non-regulated VOC emissions such as methane and ethane.
- e. *Opacity*: As determined by EPA Method 9, the stack opacity shall not exceed 10% based on a 6-minute block average, except for one 6-minute period per hour of not more than 20%.

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

9. Standards Based on CEMS: Including the emissions from the CBO unit, emissions from Units 4 and 5 each shall not exceed the following standards based on data collected by the CEMS.

- a. *NO<sub>x</sub> Emissions*: As determined by CEMS data, NO<sub>x</sub> emissions shall not exceed 0.47 lb/MMBtu of heat input based on a 12-month rolling average for all periods of operation including startup, shutdown and malfunction. [Application No. 01 70004-016-AC; Rules 62-4.070(3) and 62-2 12.400(12), F.A.C.]
- b. *SO<sub>2</sub> Emissions*: As determined by CEMS data, SO<sub>2</sub> emissions shall not exceed 0.27 lb/MMBtu of heat input based on a 30-day rolling average for all periods of operation including startup, shutdown and malfunction. As determined by CEMS data, SO<sub>2</sub> emissions shall not exceed 1944.0 lb/hour based on a 24-hour block average excluding startup, shutdown and malfunction of the FGD system. [Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-212.400(12), F.A.C.]
- c. *CO Emissions (Interim)*: As determined by CEMS data, CO emissions shall not exceed 0.17 lb/MMBtu of heat input based on a 30-day rolling average excluding periods of startup, shutdown and malfunction. As determined by CEMS data, CO emissions shall not exceed 1156.0 lb/hour based on a 30-day rolling average for all periods of operation including startup, shutdown and malfunction. [Rule 62-2 12.400 (BACT), F.A.C.]
- d. *CO Emissions (Final)*: Within 24 months of commencing commercial operation of each unit with the new low-NO<sub>x</sub> burners, or, when 24 months of CO emissions data has been collected, the permittee shall submit an application proposing a revised (lower) final BACT standard. The final standard shall be based on actual CO emissions data collected for initial operation after completing installation of the new low-NO<sub>x</sub> burners. There may be separate standards proposed for different fuels. [Rule 62-212.400(BACT), F.A.C.]

10. Circumvention: No person shall circumvent any air pollution control device, or allow the emission of air

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### A. Unit 4, Unit 5 and CBO Unit - Pollution Control Projects

pollutants without the applicable air pollution control device operating properly. The SCR and FGD systems shall operate as necessary to comply with the emissions standards of this permit. The alkali injection system and ESP shall operate in accordance with the automated controls system as determined by subsequent performance and compliance testing. [Rules 62-2 10.650 and 62-2 12.400(BACT), F.A.C.]

11. Excess Emissions - Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. All such preventable emissions shall be included in any compliance determinations based on CEMS data. [Rule 62-21 0.700(4), F.A.C.]

12. Excess Emissions - Allowed: In accordance with Rule 62-210.700(6), F.A.C., excess emissions due to startup, shutdown or malfunction have been considered in establishing the sets of emissions standards of this permit. No other periods of excess emissions are authorized. [Rule 62-210.700(6), F.A.C.]

#### CONTINUOUS EMISSIONS MONITORING REQUIREMENTS

13. Existing CEMS/COMS: For Units 4 and 5, the permittee shall continue to calibrate, operate, and maintain continuous monitoring equipment to measure and record opacity, NO<sub>x</sub> and SO<sub>2</sub> in terms of the applicable standards. The permittee shall either relocate the existing CEMS to the new stack configurations or replace the monitoring systems. Due to the wet stack, the existing COMS shall be relocated or new COMS installed in the ductwork after the ESP and prior to the wet FGD system. Each COMS and CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The monitors shall be installed, operated and maintained in accordance with the existing requirements of 40 CFR 60.45, as well as the provisions of the federal acid rain program. [Rule 62-4.070(3), F.A.C.]

14. CO CEMS Installation: For Units 4 and 5, the permittee shall properly install, calibrate, operate and maintain CEMS to measure and record CO emissions in the terms of the applicable standard. Each CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The permittee shall locate the CEMS by following the procedures contained in the applicable performance specification of 40 CFR Part 60, Appendix B. The permittee shall install each CEMS required by this permit and conduct the appropriate performance specification for each CEMS within 60 calendar days of achieving permitted capacity as defined in Rule 62-297.310(2), F.A.C., but no later than 180 calendar days after initial startup. [Rules 62-4.070(3) and 62-2 12.400(BACT), F.A.C.]

14.a. CO CEMS Waiver: The CO CEMS for Unit 4 will be installed in accordance with the requirements and schedule detailed in Condition 14 above. Units 4 and 5 are similar, and data collected for Unit 4 should be representative of Unit 5 performance. Regarding Unit 5, due to construction scheduling, there will be an approximate 5 month lag between installation of the low NO<sub>x</sub> burners and the tie-in to the new FGD stack. Therefore, CO compliance testing will be conducted on Unit 5 after installation of the low NO<sub>x</sub> burners. However, installation of and monitoring by CO CEMS can be deferred until Unit 5 tie-in to the new stack is complete [Applicant Request].

15. Compliance by CEMS: Compliance with the standards for opacity and emissions of CO, NO<sub>x</sub>, and SO<sub>2</sub> shall be demonstrated with data collected from the required continuous monitoring systems. Within 60 days after completing construction on the pollution control systems ~~of reestablishing commercial operation of each unit~~, the permittee shall certify proper operation of each required monitor, except for Condition 14.a. above. The permittee shall comply with the conditions of Appendix F (Standard Continuous Monitoring Requirements) of this permit as the compliance method for the corresponding emissions standards. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

#### PRELIMINARY PERFORMANCE TESTING REQUIREMENTS

16. Preliminary SAM Performance Tests: Within 60 days after completing construction on the pollution control systems, the permittee shall conduct a series of preliminary performance tests on either unit to determine the SAM

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### B. Material handling Activities for Limestone and Gypsum

This section of the permit addresses the following emissions unit

EU No.	Emission Unit Description
023	Limestone and Gypsum Material Handling Activities

##### Process Description

The FGD systems will include limestone storage and handling, limestone preparation, limestone slurry injection, and gypsum dewatering, transfer and storage. The limestone handling system will receive, store, size and transfer limestone to the FGD system's limestone preparation equipment. It will ~~be designed to receive limestone delivered to the plant by conveyor from an adjacent quarry, or~~ by rear dump trucks unloading into aboveground truck unloading feeders with integral hoppers. The system will ~~receive limestone from one source at a time and will consist of: a conveyor to transfer limestone received from the quarry delivery conveyor; truck unloading feeders; unloading and stacking belt conveyors to transfer limestone to a covered storage pile; a portal scraper reclaim and an emergency reclaim feeder located inside a limestone storage building shed; a reclaim conveyor to transfer limestone from the storage pile to a crusher feed belt conveyor, a crusher feed belt conveyors to which transfer~~ limestone to a crusher building for limestone sizing; ~~a plant feed belt conveyors; and silo feed belt conveyors to transfer limestone to the day silos.~~

~~Limestone received from the quarry conveyor will be transported to the unloading conveyor by the transfer conveyor. Limestone received by trucks will be transferred to the unloading conveyor by the truck unloading feeders. The delivered limestone will be conveyed to a covered storage pile via conveyor and a stacking conveyor equipped with dual discharge overhead traveling tripper. From the storage pile, the material is reclaimed using a single full portal scraper reclaim and conveyed by a conveyor to a crusher building where the material is sized using crushers. One or more feed conveyors will receive limestone from the crushers and distribute the material to the three limestone day silos. Two A plant feed conveyors and four silo feed conveyors are provided to receive limestone from the crushers and distribute material to the three limestone day silos.~~

The plant feed conveyor(s) will be equipped with a diverter gate and will supply limestone to the first limestone day silo (Silo ~~AB~~) directly via a chute and to the other limestone day silos (Silos ~~BA~~ & C) using ~~a reversible conveyor, silo feed conveyors equipped with diverter gates. Each limestone~~ Limestone silos will be equipped with a pulse-jet fabric filter dust collection system. ~~Insertable Ddust collectors will be provided at each of the truck unloading feeders, and at the loading points of the silo feed conveyors.~~ A dust collection system will be provided for the crusher building. A water-~~fogsurfactant blend~~ dust suppression system will be provided at the discharge point of the ~~transfer reclaim~~ conveyor and at the ~~head tail~~ end of the ~~unloading crusher feed~~ conveyor to ~~treat suppress~~ the limestone ~~dust formation, before it is loaded onto the belt of the stacking conveyor.~~

The limestone preparation system includes wet ball mill grinding systems to produce ~~the~~ limestone slurry. Filtrate-recycle water from the FGD system will be used to prepare the limestone slurry to conserve make-up water ~~for FGD system mist eliminator washing. The preliminary design is based on a feed rate of approximately 352 gpm of limestone slurry consisting of 25% to 30% solids with a specific gravity of 1.22.~~ Fugitive dust emissions are minimized, by enclosures and the addition of water for the slurry.

The gypsum slurry from the FGD system will be delivered by bleed pumps to the dewatering system, which will consist of a filter feed tank, hydro-cyclones, vacuum belt filters, vacuum pumps, filtrate tanks, filtrate pumps, lined piping, and associated valves. ~~Based on the preliminary design, the~~ The incoming gypsum slurry will contain approximately 18 to 22% suspended solids. Using a series of hydro-cyclones and ~~three~~ horizontal vacuum belt filters, the dewatering system will remove water until the slurry contains approximately 90% solids. Filtrate removed from the slurry will be stored and pumped back to the limestone preparation system or the absorber module. The de-watering system will be located inside a building. Fugitive dust emissions are negligible because the system is enclosed and wet.

## SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

### B. Material handling Activities for Limestone and Gypsum

A collecting belt conveyors collect dewatered gypsum from the vacuum belt filters ~~at in~~ the dewatering system. Under normal operating conditions, ~~the this~~ conveyors will feed gypsum onto ~~a system of the belt of the transfer conveyors~~, which transfers the gypsum onto ~~a gypsum handling pad or a belt feed conveyor for delivery to the future an adjacent (proposed) wallboard plant. In the reversedirection, the gypsum an emergency this conveyor will feed gypsum onto another belt, which can also delivers gypsum to the emergency gypsum pile.~~ The ~~gypsum material handling pademergency gypsum pile~~ will be located ~~northeast~~ of the dewatering facility and will be used primarily ~~(until the future adjacent wallboard facility is built) to store the gypsum until it can be transferred offsite for beneficial use or disposal upon loss of the gypsum transfer and feed conveyors.~~ In addition, the ~~gypsum handling pademergency pile~~ may be used to store "off-specification" gypsum if needed. ~~Trucks will remove gypsum from the emergency gypsum stockpile.~~ Fugitive dust emissions will be minimal because the dewatered gypsum still contains ~~at least approximately~~ 10% water.

#### AUTHORIZED CONSTRUCTION

1. Equipment: The permittee is authorized to construct the following processes to support the FGD system: limestone storage and handling, limestone preparation, limestone slurry injection, and gypsum dewatering, transfer and storage. [Application No. 01 70004-016-AC; Rules 62-4.070(3), 62-212.300 and 62-212.400(PSD), F.A.C.]

2. Air Pollution Control Equipment and Techniques: To comply with the standards of this permit, the permittee shall design, install, operate and maintain the following air pollution control equipment.

Process Activity	Emissions Point No.	Control Device <del>Flow-Rate</del>	Outlet Dust Loading Specification
<b>Dry Limestone Handling System</b>			
Limestone conveyors (general)	---	<del>enclosedcovered</del> ---	---
Limestone <del>stacking-reclaim</del> conveyor (discharge to)	---	dust suppressant ---	---
Dump trucks	---	covered ---	---
Truck unloading feeders w/integral hoppers	EP-000	dust collectors <del>acfm</del>	0.010 grains/dscf
Limestone storage		covered pile ---	---
Limestone crushing and sizing	EP-000	enclosed building w/baghouse <del>acfm</del>	0.010 grains/dscf
Limestone silo feed conveyors	EP-000	dust collectors <del>acfm</del>	0.010 grains/dscf
Limestone day silos <del>(3), up to (4)</del>	EP-000	<del>dust collector baghouse</del> <del>acfm</del>	0.010 grains/dscf
<b>Limestone Preparation System</b>			
<del>Wet ball mill grinders and misc. equipment</del>	---	<del>enclosure/wet</del> ---	---
<b>Gypsum Dewatering System</b>			
Gypsum dewatering system	---	enclosure/wet ---	---
<b>Gypsum Handling System</b>			
Gypsum handling system	---	enclosure/wet ---	---
<u>Gypsum Handling Pad</u>	---	<u>water spray</u> ---	---

Initial and replacement bags shall be selected based on the above design outlet dust loading specification. [Application No. 01 70004-016-AC; Rules 62-4.070(3), 62-212.300 and 62-212.400(BACT), F.A.C.]

3. Fugitive Dust Emissions: The dry limestone handling and storage operations shall be enclosed to the extent practicable and confined to prevent fugitive dust emissions. During the construction period, fugitive dust emissions

shall be minimized by techniques such as covering, confining and/or the application of water or dust suppressants to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

#### **EMISSIONS LIMITATIONS AND PERFORMANCE STANDARDS**

4. Capacities: None of the emissions units in this subsection are restricted by hours of operation (8760 hours/year).  
{*Permitting Note: For information purposes, maximum limestone processing rate is estimated at 100 tons per day.*}  
[Application No. 0170004-016-AC; Rule 62-210.200(PTE), F.A.C.]

## SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

### B. Material handling Activities for Limestone and Gypsum

5. Opacity Standard: As determined by EPA Method 9, visible emissions from each baghouse and dust collector exhaust point shall not exceed 5% opacity based on a 6-minute average. [Application No. 0170004-016-AC; Rule 62-212.400(BACT), F.A.C.]

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

### COMPLIANCE TESTING REQUIREMENTS

7. Initial Compliance Tests: Each baghouse exhaust shall be tested to demonstrate initial compliance with the specified opacity standard. The initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the unit. [Rule 62-297.3 10(7)(a)l, F.A.C.]

8. Annual Compliance Tests: During each federal fiscal year (October 1<sup>st</sup> to September 30<sup>th</sup>), each baghouse exhaust point shall be tested to demonstrate compliance with the specified opacity standard. [Rule 62-297.3 10(7)(a)4, F.A.C.]

9. Test Notification: At least 15 days prior to the date on which each formal compliance test is to begin, the permittee shall notify the Compliance Authority of: the date, time, and place of the test; and the contact person who will be responsible for coordinating and having the test conducted. [Rule 62-297.310(7)(a)9, F.A.C.]

10. Test Method: Opacity tests shall be conducted in accordance with EPA Method 9, which is described in 40 CFR 60, Appendix A\_ and adopted by reference in Rule 62-204.800, F.A.C. Tests shall also comply with the applicable requirements of Rule 62-297.310\_ F.A.C. summarized in Appendix D (Common Testing Requirements) of this permit. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]

11. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C. The minimum observation period for a visible emissions compliance test shall be 30 minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. The permittee shall record the actual processing rate for the emissions unit being tested. [Rules 62-297.3 10(4) and (5), F.A.C.]

12. Common Testing Requirements: All required emissions tests shall be conducted in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. The minimum observation period for a visible emissions compliance test shall be 30 minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. The permittee shall record the actual processing rate for the emissions unit being tested. [Rule 62-297.310, F.A.C.]

### RECORDS AND REPORTS

13. Final Design Notification: Within 90 days of completing the FGD system design provide the final details for the limestone and gypsum material handling activities including a process flow diagram and all control equipment specifications. It may be necessary to modify this air construction permit. [Application No. 01 70004-016-AC; Rule 62-4.070(3), F.A.C.]

14. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Compliance Authority on the results of each such test. The required test report shall be filed with the Compliance Authority as soon as practical, but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Compliance Authority to determine if the test was properly conducted and the test results properly computed. [Rule 62-297.3 10(8), F.A.C.]

## SECTION 4. APPENDIX E

### SUMMARY OF FINAL BACT DETERMINATIONS

15. Operational Records: The owner or operator shall maintain the following records on site to demonstrate compliance with the specifications and limitations of this subsection.

- a. Records of the design outlet dust loading specifications for new and replacement fabric filter bags; and
- b. For each month, record the total limestone processed for the month and the previous 12 months.
- c. After the ESP for use as part of the Compliance Assurance Monitoring Plan under Title V. Operation of the ESP shall be based upon COMS data collected during satisfactory PM emissions compliance tests.
- d. Operation of the alkali injection system shall be determined by the automated control system, which shall be set in accordance with the preliminary performance and compliance tests for SAM emissions.
- e. Concurrently with EPA Method 25A, EPA Method 18 may be used as an optional method to deduct emissions of methane and ethane from the THC emissions measured by Method 25A.
- f. The CBO fluidized bed combustor is also subject to the following applicable NSPS Subpart Dc provisions for boilers: the firing of fuel with no more than 0.5% sulfur by weight percent based on a certification from the fuel supplier (applies at all times, including periods of startup, shutdown, and malfunction); and no more than 20% opacity based on a 6-minute average, except for one 6-minute period per hour of not more than 27% opacity (applies at all times, except during periods of startup, shutdown, or malfunction). Since the flue gas exhaust from the CBO unit is directed back into the boiler ductwork for control, the CBO unit will achieve the same standards as Units 4 and 5, which are more stringent than the applicable NSPS.
- g. "SU" means startup; "SD" means shutdown; and "M" means malfunction.

#### Limestone/Gypsum Material Storage and Handling (EU-023)

Limestone is the reactant for the FGD systems, which will produce gypsum as a byproduct. The following control equipment and techniques are determined to be BACT for minimizing dust emissions from the related material handling and storage activities.

- To the extent practical, all limestone conveyors will be enclosed covered to confine dust emissions.
- The initial storage of limestone will be in a covered storage pile.
- The portal scraper reclaim and an emergency reclaim feeder will be located inside the limestone storage building shed.
- Limestone will be crushed and sized inside a crusher building, which will include a dust collection system.
- The three (possibly four) limestone silos will be equipped with pulse-jet fabric filter dust collection systems.
- Dust collectors will be installed at each of the truck unloading feeders, and at each of the loading points of the silo feed conveyors.
- A water-fog/surfactant blend dust suppression system will be provided at the discharge point of the transfer reclaim conveyor and at the tailhead end of the unloading crusher feed conveyor to treat the limestone before it is loaded onto the belt of the stacking conveyor suppress limestone dust.
- Wet ball mill grinding systems will produce the limestone slurry for the FGD system. Fugitive dust emissions will be minimized by from the addition of water for the slurry.
- The dewatering system will be located inside a building. Fugitive dust emissions will be negligible because the system is enclosed and wet.
- Fugitive dust emissions from dewatered gypsum will be minimal because it still contains 10% water. Gypsum storage piles will be watered as necessary to prevent fugitive dust.
- Bags for all dust collection systems shall be selected based on the above design outlet dust loading specification of no more than 0.010 grains per acf of exhaust. All replacement filter bags and cartridges shall meet this design specification.
- Visible emissions from each dust collector and fabric filter shall not exceed 5% opacity.

#### CBO Feed Ash Silo (EU-025) and Product Ash Storage (EU-026)

Fly ash from Units 4 and 5 will be conveyed pneumatically to the CBO feed fly ash silo (EU-025). Ash will be fed from this silo to the fluidized bed combustor (EU-024) for processing. Exhaust from the feed fly ash silo will vent through a baghouse prior to discharge to the atmosphere. Product ash will be pneumatically conveyed to storage

LIST FOR NEW APPLICATIONS

Application Facility/Site Name:

Progress Energy, Crystal Run

- ☐ Find out which section/Processor: Jeff K.
- ☐ EPSAP Application: Application Number/Version: \_\_\_\_\_
- ☐ Box already selected to display on APDS
- ☒ Received Date:
- ☒ Stamped date
- ☐ Special Instructions:

☒ PSD FL

383AB

☐ Log Project: Project Number:

0170004-022-AC

☒ Have project scanned (return to: Sylvia / Barbara / Elizabeth )

☐ Document Date: 12 / 30 / 08

☐ Document Type:

- ☒ Application
- ☐ Correspondence

☐ Notes for Scanning Staff:

Submitted: 1-7-2009

Scanned:

JAN 08 2009

28 pgs.

☐ Already Scanned (look for it in APDS under air permit/project number)

☒ Make Folder

☐ Send Notification e-mail

☒ EPA (Katy gets all EPA emailed notifications)

☐ Impact Area:

- ☒ NPS
- ☒ FWS
- ☐ GEORGIA
- ☒ Forest Service

☐ District/Local (look in ARMS for Facility Office)

☐ Permit Processor

☒ Final Document Destination - File Sylvia Barbara Elizabeth



Larry E. Hatcher  
Manager, Crystal River  
Fossil Plant & Fuel Operations

December 11, 2008

Mr. Jeffrey Koerner, P.E.  
Air Quality Division  
Department of Environmental Protection  
2600 Blair Stone Road,  
MS 5000  
Tallahassee, Florida 32399-2400

RECEIVED

DEC 30 2008

BUREAU OF AIR REGULATION

Re: Application for Permit Revision  
Crystal River Units 4 and 5

Dear Mr. Koerner:

Enclosed please find one original and three copies of an application for revision of permit number 017004-016-AC governing the construction of the clean air projects at Progress Energy Florida's (PEF) Crystal River Power Plant Units 4 and 5. This application covers a number of issues which Progress staff and consultants have previously discussed with you. Specifically, these include:

- The requirement for use of a carbon monoxide continuous emission monitoring system at Unit 5 during the interim construction period;
- Revisions relating to description of the gypsum storage and handling systems onsite; and
- Consistency with regard to applicable timeframes for testing following the installation and startup of elements of the pollution control systems.

In addition to these issues, PEF seeks the agency's concurrence with our understanding regarding the applicability of Condition 12 regarding excess emissions to the operation of the alkali injection system for sulfuric acid mist (SAM) mitigation.

Finally, we enclose a table (Table 1) outlining our understanding of the applicability dates and triggers for the new limits imposed by this permit. This table is for your information. Although we are not requesting formal concurrence, we would appreciate any comments you may have regarding our understanding.

PEF looks forward to working with you regarding this matter. We hope to meet with you to discuss specific details of the issues listed here early in January. If you would like to discuss any issues regarding this application, please contact Mr. David Meyer in our St. Petersburg office by telephone at (727) 820-5295 or via email at [dave.meyer@prnmail.com](mailto:dave.meyer@prnmail.com).

Sincerely,

A handwritten signature in cursive script that reads 'Larry E. Hatcher'.

Larry E. Hatcher  
Plant Manager/Responsible Official  
Enclosures

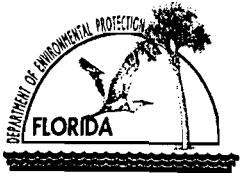
Progress Energy Florida, Inc.  
15760 W. Powerline Street  
Crystal River, FL 34428

**TABLE 1 – EMISSIONS LIMIT APPLICABILITY**

<b>Emissions Type</b>	<b>Current Permit Limit</b>	<b>New Permit Limit</b>	<b>Unit 4 New Limit Date</b>	<b>Unit 5 New Limit Date</b>	<b>Notes</b>
Nitrogen Oxide (NO <sub>x</sub> )	0.50 lb/MMBTU	0.47 lb/mmbtu	End of Unit 4 2008 fall outage measured at existing CEMS	End of Unit 5 2009 Spring Outage by existing CEMS	Based upon a 12 month <u>rolling</u> average
Sulfur Dioxide (SO <sub>2</sub> )	1.2 lb/MMBTU	0.27 lb/mmbtu - Including SU/SD/M 1944.0 lb/hr - Excluding SU/SD/M	Within 60 days of Construction Completion of FGD (End of Unit 4 2010 spring outage) measured at new CEMS	Within 60 days of Construction Completion of FGD(End of Unit 5 2009 Fall outage) measured by new CEMS	mmBtu/hr based upon a 30 day <u>rolling</u> average lb/hr based on a 24 hour (midnight to midnight) rolling block average
Sulfuric Acid Mist (SAM)	none	0.009 lb/mmbtu <u>and</u> 64.8 lb/hr	Within 60 days of Construction Completion of AMM (End of Unit 4 2010 spring outage) measured Compliance Stack test	Within 60 days of Construction Completion of AMM (End of Unit 5 2009 Spring outage) measured Compliance Stack test	This new limit is in effect because current SAM emissions will increase by greater than 7 tons/year due to burning higher sulfur coal. Annual test required to determine compliance. No continuous monitor. Retest with each 0.5% sulfur increase. Required to develop SAM estimation curves, and AMM Monitoring Plan
Particulate Matter	0.1 lb/MMBTU	0.030 lb/mmbtu <u>and</u> 216.0 lb/hour	Within 60 days of Construction Completion of ESP Upgrades (End of Unit 4 2010 spring outage)	Within 60 days of Construction Completion of ESP Upgrades (End of Unit 5 2009 Spring outage)	Annual test required to determine compliance. No continuous monitor. PM Compliance Stack Test required after LNB installation,, but at existing limit (0.1).

Emissions Type	Current Permit Limit	New Permit Limit	Unit 4 New Limit Date	Unit 5 New Limit Date	Notes
Opacity	20%	10%	Within 60 days of Construction Completion of FGD (End of Unit 4 2010 spring outage) measured at new Stack	Within 60 days of Construction Completion of FGD(End of Unit 5 2009 Fall outage) measured at New Stack	Limit is based upon a 6 minute average, except one six minute block per hour can be as high as 20 percent opacity
Ammonia Slip	none	5ppmv	Within 60 days of Construction Completion of SCR (End of Unit 4 2010 spring outage) measured Compliance Stack test	Within 60 days of Construction Completion of SCR(End of Unit 5 2009 Spring outage) measured Compliance Stack test	Annual test required to determine compliance. No <u>continuous compliance</u> monitor. Monitoring plan for Ammonia injection rate.
Carbon Monoxide (CO)	none	0.17 lb/mmbtu excluded SU/SD/M 1156.0 lb/hr Including SU/SD/M	End of Unit 4 2008 fall outage measured at existing Interim CEMS	Seeking exemption for iterim CO CEMS, Then end of Unit 5 Fall outage with New CO CEMS at new Stack	Based upon a 30 day rolling average. New compliance monitor to be installed.
VOC		.004 lb/MMBtu and 28.8 lb/hour	Within 60 days of Construction Completion (End of Unit 4 2008 fall outage) measured Compliance Stack test	Within 60 days of Construction Completion (End of Unit 5 2009 Spring outage) measured Compliance Stack test	3 run test average at permitted capacity

## 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 any required purpose at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air operation permit;
- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment new source review, or maximum achievable control technology (MACT);
- To assume a restriction on the potential emissions of one or more pollutants to escape a requirement such as PSD review, nonattainment new source review, MACT, or Title V; or
- To establish, revise, or renew a plantwide applicability limit (PAL).

**Air Operation Permit** – Use this form to apply for:

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

**To ensure accuracy, please see form instructions.**

#### Identification of Facility

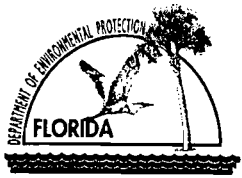
1. Facility Owner/Company Name: <b>PROGRESS ENERGY, INC.DBA FLORIDA POWER CORP..</b>	
2. Site Name: <b>CRYSTAL RIVER POWER PLANT</b>	
3. Facility Identification Number: <b>0170004</b>	
4. Facility Location... Street Address or Other Locator: <b>NORTH OF CRYSTAL RIVER, WEST OF U.S. 19</b> City: <b>CRYSTAL RIVER</b> County: <b>CITRUS</b> Zip Code: <b>34428</b>	
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: <b>DAVE MEYER, SENIOR ENVIRONMENTAL SPECIALIST</b>	
2. Application Contact Mailing Address... Organization/Firm: <b>PROGRESS ENERGY FLORIDA</b> Street Address: <b>299 FIRST AVENUE, NORTH, PEF 903</b> City: <b>ST. PETERSBURG</b> State: <b>FL</b> Zip Code: <b>33701</b>	
3. Application Contact Telephone Numbers... Telephone: <b>(727) 820-5295 ext.</b> Fax: <b>(727) 820-5229</b>	
4. Application Contact E-mail Address: <b>DAVE.MEYER@PGNMAIL.COM</b>	

#### Application Processing Information (DEP Use)

1. Date of Receipt of Application: <b>12/30/08</b>	3. PSD Number (if applicable): <b>383 A</b>
2. Project Number(s): <b>0170664-022-AC</b>	4. Siting Number (if applicable):



# Department of Environmental Protection

## Division of Air Resource Management

### APPLICATION FOR AIR PERMIT - LONG FORM

#### Purpose of Application

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

#### **Air Construction Permit**

- ☒ Air construction permit.
- ☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).
- ☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

#### **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**

This application and attachments serve to request revisions to permit language associated with Air Permit No. 0170004-016-AC. This construction permit was to address 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. Specifically, the referenced AC permit addressed the following:

- Install low-NO<sub>x</sub> burners;
- Add SCR systems for nitrogen oxide (NO<sub>x</sub>) removal;
- Add alkali injection systems for SO<sub>3</sub> control;
- Add FGD systems for sulfur dioxide (SO<sub>2</sub>) control;
- Upgrade existing ESPs;
- Construct a new stack to accommodate the new Project configuration; and
- Install a single carbon burn out (CBO™) unit to reburn fly ash generated, if needed.

This permit application is to request changes to the current permit language with respect to:

- The use of a carbon monoxide (CO) continuous emission monitoring system (CEMS). This is necessary due to the construction schedule and the transition to a new stack;
- Revisions relating to the gypsum storage and handling systems onsite that will more accurately describe the actual modifications being undertaken; and
- Consistency with regard to applicable timeframes for testing following the installation and startup of elements of the pollution control systems; and

In addition, PEF requests the Department's concurrence on the definition of allowable excess emissions related to required maintenance and potential malfunction of the sulfuric acid mist (SAM) control system.

Finally, this application also serves to request that the Department include permit language that references the applicability of NSPS Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants, with respect to the installation of the limestone system. While the applicability of this standard was an oversight, it does not affect the currently permitted standards, which are more stringent than the referenced NSPS standards.

**Scope of Application**

<b>Emissions Unit ID Number</b>	<b>Description of Emissions Unit</b>	<b>Air Permit Type</b>	<b>Air Permit Processing Fee</b>
004	FFSG, Unit 4	AC1F	NA
003	FFSG, Unit 5	AC1F	NA

**Application Processing Fee**

**Check one:** ☐ Attached - Amount: \$ \_\_\_\_\_ ☒ Not Applicable

**Owner/Authorized Representative Statement**

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

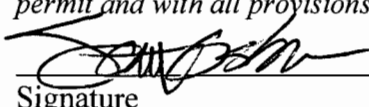
1. Owner/Authorized Representative Name : <b>LARRY HATCHER, PLANT MANAGER</b>
2. Owner/Authorized Representative Mailing Address... Organization/Firm: <b>PROGRESS ENERGY FLORIDA</b> Street Address: <b>299 FIRST AVENUE, NORTH, CN77</b> City: <b>ST PETERSBURG</b> State: <b>FLORIDA</b> Zip Code: <b>33701</b>
3. Owner/Authorized Representative Telephone Numbers... Telephone: <b>(352) 563-4484</b> ext. Fax: <b>(352) 563-4496</b>
4. Owner/Authorized Representative E-mail Address: <b>LARRY.HATCHER@PGNMAIL.COM</b>
5. Owner/Authorized Representative Statement:  <i>I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.</i>  <div style="display: flex; justify-content: space-between;"><div style="text-align: center;"> _____ Signature</div><div style="text-align: center;"><u>12/19/08</u> _____ Date</div></div>

### Application Responsible Official Certification

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

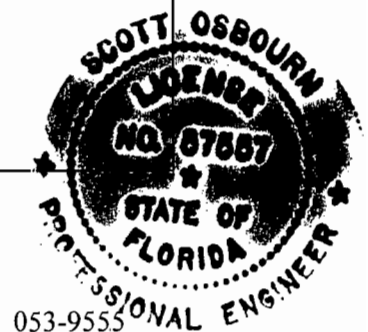
1. Application Responsible Official Name:
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable): <input type="checkbox"/> For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business 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, CAIR source, or Hg Budget 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 E-mail Address:
6. Application Responsible Official Certification: <p>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.</p> <div style="display: flex; justify-content: space-between;"><div>_____ Signature</div><div>_____ Date</div></div>

### Professional Engineer Certification

1. Professional Engineer Name: <b>SCOTT OSBOURN</b> Registration Number: <b>57557</b>
2. Professional Engineer Mailing Address... Organization/Firm: <b>GOLDER ASSOCIATES, INC. **</b> Street Address: <b>5100 WEST LEMON ST., SUITE 114</b> City: <b>TAMPA</b> State: <b>FL</b> Zip Code: <b>33609</b>
3. Professional Engineer Telephone Numbers... Telephone: <b>(813) 287-1717</b> ext. Fax: <b>(813) 287-1716</b>
4. Professional Engineer E-mail Address: <b>SOSBOURN@GOLDER.COM</b>
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>  <div style="display: flex; justify-content: space-between;"><div>Signature  (seal)</div><div>Date <u>12/22/08</u></div></div>

\* Attach any exception to certification statement

\*\* Board of Professional Engineers Certificate of Authorization #00001670



**ATTACHMENT 1**  
**Application Background**

## ATTACHMENT 1

This permit application is to request changes to the current permit language with respect to:

- The use of a carbon monoxide (CO) continuous emission monitoring system (CEMS);
- Revisions relating to the gypsum storage and handling systems onsite; and
- Consistency with regard to applicable timeframes for testing following the installation and startup of elements of the pollution control systems.

In addition to these issues, PEF seeks the agency's concurrence with our understanding regarding the applicability of Condition 12 regarding excess emissions to the operation of the alkali injection system for sulfuric acid mist (SAM) mitigation.

The permit language revisions requested by PEF are included in Attachment 2 of this application package. PEF's requests are related to a number of factors that have changed since the issuance of the current permit. Specifically:

- Schedule changes for the installation of various elements of the pollution control project have resulted in a situation in which Unit 5 will have a very short operating window between the installation of the low NO<sub>x</sub> burners and tie-in of the scrubber to the new stack;
- The design of the limestone and gypsum storage and handling systems have changed slightly from the design that was assumed for the initial air construction permit application;
- PEF has identified an apparent inconsistency in the requirements for applicability of the conditions; and
- A detailed review of the operations and maintenance requirements associated with the SAM mitigation system has raised concerns regarding the "continuous" compliance

obligation in the currently permitted SAM emission limits and the allowable excess emissions provision in the permit.

### Revised Schedule

The current permit was based on the initial approximate schedule for the Clean Air Project modifications which was developed to maintain the reliability of Units 4 and 5 and minimize down time, and was shown in the air application as follows:

<b>Proposed Modification</b>	<b>Commence Construction</b>	<b>Commence Operation</b>
Unit 4 SCR – tie in	September 2006	November 2008
Unit 5 SCR – tie in	December 2006	April 2009
Unit 4 Alkali – tie in	September 2006	November 2008
Unit 5 Alkali – tie in	December 2006	April 2009
Unit 4 LNB – tie in	March 2008	November 2008
Unit 5 LNB – tie in	March 2009	April 2009
Unit 4 FGD – tie in	December 2006	November 2009
Unit 5 FGD – tie in	December 2006	April 2009

The FGD systems for Units 4 and 5 were anticipated to commence construction as early as December 2006. As PEF completed contract negotiations with the control equipment contractors, it became clear that the initial schedule summarized above was untenable. Specifically, there were problems implementing both the SCR and FGD portions of Unit 5 during the Spring 2009 outage. These projects are currently in the construction phase. The proposed construction tie in outages and outage completion schedule is summarized below:

<b>Proposed Modification</b>	<b>Commence Tie In Outage</b>	<b>Outage Completion (Operation Of Modification Begins)</b>
Unit 4 SCR – tie in	February 2010	May 2010
Unit 5 SCR – tie in	February 2009	May 2009
Unit 4 Alkali – tie in	February 2010	May 2010
Unit 5 Alkali – tie in	February 2009	May 2009
Unit 4 LNB – tie in	November 2008	December 2008
Unit 5 LNB – tie in	February 2009	May 2009
Unit 4 FGD – tie in	February 2010	May 2010
Unit 5 FGD – tie in	November 2009	December 2009

Unit 4 ESP Upgrade	February 2010	May 2010
Unit 5 ESP Upgrade	February 2009	May 2009

This change in schedule, while necessary, has resulted in some minor issues in the implementation of the permit and its requirements. These issues and PEF's requests for modifications to the permit are discussed in the sections below.

### **CO CEMS Installation Schedule**

PEF is requesting revisions to the CO CEMS conditions because the revised schedule results in a short window, at CR 5, between installation of the low NOx burners and tie-in of the scrubber to the new stack. The current permit language requires that CO CEMS be installed and operational on Unit 5 upon completion of installation of the low NOx burners (estimated at May 15, 2009, see above). Under the original schedule, the start up of the low NOx burners would have coincided with the FGD tie-in and the CEMS would have been installed on the new stack. Since the tie-in of the FGD system will now not be complete when the low NOx burners begin operation, the CO CEMS would be installed on the existing stack. After the tie-in of the FGD, a new CO CEMS will need to be installed on the new stack. The outage for the FGD tie in is scheduled for October 23, 2009. Thus this CEMS unit will be in place for only five months. In order to monitor CO for this short a period of time, it would be necessary to install a temporary CO monitor in the existing stack, and then purchase a new monitor for the new stack. Installing and certifying this temporary CO monitor unit is very burdensome and PEF believes that reasonable assurance of compliance can be provided by other means. Therefore, PEF requests a permit revision to waive the CEMS requirement during this short period of time, until the tie-in to the new stack is complete. In support of this request, it should be noted that Unit 4 will have operational CO CEMS as early as December 2008. The two units are very similar and the CO CEMS data collected can be considered representative of Unit 5 operation. Unit 5 will be tested for CO emissions to demonstrate compliance with the limits set forth in the permit, using EPA Reference Method 10, upon completion of the low NOx burner installation. The data from this test will also serve to demonstrate similarity in emissions to Unit 4, providing further assurance that the Unit 4 data may be considered representative for Unit 5 during this period.

PEF has provided proposed revisions to the permit language. These are provided in a “track-change” format in Attachment 2. PEF requests that these changes be approved by the agency and incorporated into the revised permit.

### **Limestone and Gypsum Transfer and Storage System Descriptions**

Regarding the gypsum system, PEF requests that the description of the system be updated to reflect minor changes made to the design. Golder had previously calculated emissions from the transfer and storage of gypsum at the Crystal River site, including initial conservative assumptions which account for some of the proposed system revisions. Based on the assumptions available to date, the difference in PM/PM<sub>10</sub> emissions potential appears to be less than one ton per year (TPY), which is an insignificant amount. Regarding the additional truck traffic that would result from US Gypsum’s request to use the Crystal River access road for their inbound and outbound truck traffic, Golder had already assumed an additional 150 truck trips associated with the proposed wallboard plant in the initial application. At the time, this was assumed to be a conservative assumption in the event that a conveying system would not be used to transport the gypsum to the wallboard facility. The current projection for the additional truck traffic will not exceed the value used in the previous air modeling. Based on these findings, Golder has concluded that it is not necessary to re-run the air modeling, but that some permit language revisions would be required. These are provided in a “track-change” format in Attachment 2. PEF requests that these changes be approved by the agency and incorporated into the revised permit.

### **Applicability Trigger**

Condition 15 “Compliance by CEMS” requires that compliance with the limits set forth in the permit be demonstrated by collection of continuous monitoring data for CO, NO<sub>x</sub> and SO<sub>2</sub> and that the monitors be certified within 60 days of *re-establishing commercial operation*. In contrast, Conditions 16 and 19 require that compliance and/or performance tests for SAM, ammonia slip, PM, and VOC be conducted within 60 days of *completion of construction of the pollution control equipment*. The modifications covered by this permit are for the installation of the pollution control equipment. PEF believes that it is therefore reasonable to base the requirements for compliance on completion of construction of the pollution control devices. For

several reasons, including the phased nature of the construction in accordance with the schedule shown above, the need to operate these units to maintain reliability in the electrical grid, and the complexities of adding pollution controls to these existing units, it is possible that the units may return to operation before the pollution control devices are 100 percent operational. Final tuning, commissioning and completion of the pollution control devices may be required following the return to service of the emissions units. In recognition of this issue, PEF requests that the language of Condition 15 be changed to make it consistent with the language in Conditions 16 and 19. Revised language would read as shown here and in redline/strikeout format in Attachment 2.

15. *Compliance by CEMS:* *Compliance with the standards for opacity and emissions of CO, NO<sub>x</sub>, and SO<sub>2</sub> shall be demonstrated with data collected from the required continuous monitoring systems. Within 60 days after initial performance testing, tuning and calibration on the pollution control systems, the permittee shall certify proper operation of each required monitor.*

#### **Sulfuric Acid Mist (SAM or SO<sub>3</sub>) Mitigation (AMM) System**

PEF is also concerned with the “continuous” compliance obligation in the currently permitted SAM emission limits of 0.009 lb/MMBtu and 64.8 lb/hr (based on stack test results using EPA Methods 8 or 8A). These limits are contained in Condition 8.c. The development of a CAM Plan and reporting requirements to demonstrate continuous compliance are also provided in Conditions 16 and 25.c, respectively. The concern has to do with the allowable excess emissions provision in Condition 12, which states:

*In accordance with Rule 62-210.700(6), F.A.C., excess emissions due to startup, shutdown or malfunction have been considered in establishing the sets of emissions standards of this permit. No other periods of excess emissions are authorized. [Rule 62-210.700(6), F.A.C.]*

PEF believes that this statement is appropriate for the standards based on CEMS listed in Condition 9 of the permit. However, for standards based on consistent operation such as the SAM mitigation system, a different consideration may be appropriate. PEF requests that FDEP confirm that Condition 12 applies specifically to the pollutants addressed in Condition 9. PEF

will work with the agency to determine appropriate monitoring of system operation related to the SAM mitigation system including necessary maintenance intervals and the potential for resulting periods of excess emissions as a part of the development of the operating protocol required by Condition 16.e and the monitoring requirements of Condition 25.c.

PEF believes that the FDEP had already contemplated this approach. For example, in Condition 10, the permit contains language specific to the SAM mitigation (alkali injection) system, as follows:

*Circumvention: No person shall circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly. The SCR and FGD systems shall operate as necessary to comply with the emissions standards of this permit. The alkali injection system and ESP shall operate in accordance with the automated controls system as determined by subsequent performance and compliance testing.*

The AMM system design is relatively new to the utility industry, compared to more common pollution control equipment, such as flue gas desulfurization systems. While the AMM systems have been used in the power industry for approximately eight years, during most of that time the equipment has been in seasonal utilization (ozone season), which then allowed for scheduled annual maintenance downtime. During the last two to three years, these systems have been pressed into year-round service as part of increased nitrogen oxide emission regulation in the utility industry. However, the reliability of these systems, the necessary maintenance intervals for year-round service and the impacts on potential periods of excess emissions are still being demonstrated and are not fully developed by the industry.

In addition, some of the equipment is common to both units with no redundancy, therefore; when scheduled maintenance is performed on one unit during a scheduled outage, the operating unit SAM emissions will be affected, because the AMM system would be taken out of service for the minimum time needed to perform OEM recommended maintenance. At Crystal River North (Units 4 and 5), only one unit is typically scheduled for an outage at a time – PEF generally must operate either Unit 4 or Unit 5 (or both) to meet its obligation to maintain electrical reliability. PEF will keep critical spare parts on hand and will optimize maintenance practices and maintenance opportunities to keep any out of service time to a minimum.

The individual components provided by Wahlco as part of the AMM System are typical of the equipment provided for power plant pollution control systems, including valves, pumps, instruments, etc. As such, the failure rates for individual components should be comparable to systems which have much longer utility service records. It is important to note that redundancy has been built into many of the systems and most customers, including PEF, have developed contingency plans, including identification of critical spare parts and routine equipment inspections to reduce potential system downtimes.

Wahlco Inc. will supply equipment for the urea to ammonia conversion system associated with the AMM System consisting of the following major components:

- AMM Urea Solution Day Tank;
- AMM Hydrolyzer Feed Pump Skid;
- AMM Hydrolyzer Skid A;
- AMM Hydrolyzer Skid B;
- AMM Hydrolyzer Blowdown Tank;
- Unit 4 AMM AFCU Skid;
- Unit 5 AMM AFCU Skid
- Urea Steam Saturator
- Condensate Cooler Unit Assembly
- Urea Auxiliary Steam Supply Line

These project components have been specified, designed, engineered and fabricated to provide robust and reliable operation. In addition, most of the equipment on these skids including pumps, blowers, valves and instrumentation, has redundant features built into the design specifically to improve system availability. However, some of the equipment is common to both units and some have no redundancy, therefore; when scheduled maintenance is performed on a system during a scheduled unit outage, the operating unit SAM emissions will be affected, because the AMM system would be taken out of service for the minimum time needed to perform the OEM recommended maintenance. These components include the following:

- AMM Urea Solution Day Tank (common)
- AMM Hydrolyzer Blowdown Tank (common)
- Condensate Cooler Unit Assembly (common)
- Urea Steam Saturator (common)
- Urea Auxiliary Steam Supply Line (common)
- AMM AFCU Skid - Air Duct Heater Units (unit specific)
- AMM AFCU Skid - Dilution Heater Eurotherm Controller Unit (unit specific)

The urea-to-ammonia system equipment has been designed to allow for proper preventative maintenance to provide long term reliability. Many of the current system users schedule annual maintenance periods to perform inspections, service and maintenance of the equipment. The items serviced include:

- Inspection and cleaning of the Hydrolyzer and removal of the steam bundle tubing assembly from the Hydrolyzer Vessel (5 -7 days)
- Inspection and servicing of the pump equipment (1-2 days)
- Inspection and servicing of the blower equipment (1-2 days)
- Inspection and cleaning the Condensate Recovery spray nozzles (1-2 days)
- Inspection and cleaning of the Condensate Cooler cooling fins assembly (1-2 days)
- Inspection and testing the instrumentation and valve control components (2-4 days)

Some of these activities require the equipment to be removed from service and cooled down from high operating temperatures before servicing. Some of these activities will affect the ability for PEF to operate both units' AMM systems. In addition, this list does not include periods of excess emissions that may be associated with start up and shutdown of the coal fired units. As noted above, PEF will keep critical spare parts on hand and will optimize maintenance practices, routine inspections and maintenance opportunities to reduce out of service time. However, it should be noted that PEF's projected annual out of service time for the AMM system for each unit (based on the above summary) is 240 hours (10 days) or 2.7 percent, providing 97.3 percent availability.

PEF requests the Department's concurrence that appropriate allowances for necessary maintenance and system downtime be addressed in the operating protocol required by Condition 16.e and the monitoring requirements of Condition 25.c. PEF would be pleased to meet with the agency in the near future to further discuss the details surrounding this issue.

As previously stated, the industry is still collecting Best Practices in system design due to the limited number of years the technology has been in service. Earlier vintage systems that are in service have been operated on a seasonal basis (Ozone Season). This allowed for scheduled maintenance on various components without affecting plant operations and/or emissions. As additional operating experience is gained, PEF will continue to work to minimize excess emissions.

**ATTACHMENT 2**

**Requested Permit Revision Language**

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### A. Unit 4, Unit 5 and CBO Unit - Pollution Control Projects

[Application No. 0170004-016-AC; Rule 62-4.070(3), F.A.C.]

7. Capacities and Restrictions: None of the emissions units in this subsection are restricted by hours of operation (8760 hours/year). [Application No. 0170004-016-AC; Rule 62-210.200(PTE), F.A.C.]

#### EMISSIONS LIMITATIONS AND PERFORMANCE STANDARDS

8. Standards Based on Stack Tests: Including the emissions from the CBO unit, emissions from each Unit 4 or Unit 5 shall not exceed the following standards based on stack tests.

- a. *Ammonia Slip*: As determined by EPA Method CTM-027 (or equivalent), the ammonia slip shall not exceed 5 ppmv based on a 3-run test average conducted at permitted capacity.
- b. *PM/PM<sub>10</sub> Emissions*: As determined by EPA Method 5 or 5b, PM emissions shall not exceed 0.030 lb/MMBtu and 216.0 lb/hour based on a 3-run test average conducted at permitted capacity.
- c. *SAM emissions*: As determined by EPA Method 8 or 8A, SAM emissions shall not exceed 0.009 lb/MMBtu and 64.8 lb/hour based on a 3-run test average conducted at permitted capacity.
- d. *VOC Emissions*: As determined by EPA Method 25A, VOC emissions shall not exceed 0.004 lb/MMBtu and 28.8 lb/hour based on a 3-run test average conducted at permitted capacity. Optionally, EPA Method 18 may be conducted concurrently in order to deduct non-regulated VOC emissions such as methane and ethane.
- e. *Opacity*: As determined by EPA Method 9, the stack opacity shall not exceed 10% based on a 6-minute block average, except for one 6-minute period per hour of not more than 20%.

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

9. Standards Based on CEMS: Including the emissions from the CBO unit, emissions from Units 4 and 5 each shall not exceed the following standards based on data collected by the CEMS.

- a. *NO<sub>x</sub> Emissions*: As determined by CEMS data, NO<sub>x</sub> emissions shall not exceed 0.47 lb/MMBtu of heat input based on a 12-month rolling average for all periods of operation including startup, shutdown and malfunction. [Application No. 01 70004-016-AC; Rules 62-4.070(3) and 62-2 12.400(12), F.A.C.]
- b. *SO<sub>2</sub> Emissions*: As determined by CEMS data, SO<sub>2</sub> emissions shall not exceed 0.27 lb/MMBtu of heat input based on a 30-day rolling average for all periods of operation including startup, shutdown and malfunction. As determined by CEMS data, SO<sub>2</sub> emissions shall not exceed 1944.0 lb/hour based on a 24-hour block average excluding startup, shutdown and malfunction of the FGD system. [Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-212.400(12), F.A.C.]
- c. *CO Emissions (Interim)*: As determined by CEMS data, CO emissions shall not exceed 0.17 lb/MMBtu of heat input based on a 30-day rolling average excluding periods of startup, shutdown and malfunction. As determined by CEMS data, CO emissions shall not exceed 1156.0 lb/hour based on a 30-day rolling average for all periods of operation including startup, shutdown and malfunction. [Rule 62-2 12.400 (BACT), F.A.C.]
- d. *CO Emissions (Final)*: Within 24 months of commencing commercial operation of each unit with the new low-NO<sub>x</sub> burners, **or, when 24 months of CO emissions data has been collected**, the permittee shall submit an application proposing a revised (lower) final BACT standard. The final standard shall be based on actual CO emissions data collected for initial operation after completing installation of the new low-NO<sub>x</sub> burners. There may be separate standards proposed for different fuels. [Rule 62-212.400(BACT), F.A.C.]

10. Circumvention: No person shall circumvent any air pollution control device, or allow the emission of air

## SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

### A. Unit 4, Unit 5 and CBO Unit - Pollution Control Projects

pollutants without the applicable air pollution control device operating properly. The SCR and FGD systems shall operate as necessary to comply with the emissions standards of this permit. The alkali injection system and ESP shall operate in accordance with the automated controls system as determined by subsequent performance and compliance testing. [Rules 62-2 10.650 and 62-2 12.400(BACT), F.A.C.]

11. Excess Emissions - Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. All such preventable emissions shall be included in any compliance determinations based on CEMS data. [Rule 62-21 0.700(4), F.A.C.]

12. Excess Emissions - Allowed: In accordance with Rule 62-210.700(6), F.A.C., excess emissions due to startup, shutdown or malfunction have been considered in establishing the sets of emissions standards of this permit. No other periods of excess emissions are authorized. [Rule 62-210.700(6), F.A.C.]

### CONTINUOUS EMISSIONS MONITORING REQUIREMENTS

13. Existing CEMS/COMS: For Units 4 and 5, the permittee shall continue to calibrate, operate, and maintain continuous monitoring equipment to measure and record opacity, NO<sub>x</sub> and SO<sub>2</sub> in terms of the applicable standards. The permittee shall either relocate the existing CEMS to the new stack configurations or replace the monitoring systems. Due to the wet stack, the existing COMS shall be relocated or new COMS installed in the ductwork after the ESP and prior to the wet FGD system. Each COMS and CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The monitors shall be installed, operated and maintained in accordance with the existing requirements of 40 CFR 60.45, as well as the provisions of the federal acid rain program. [Rule 62-4.070(3), F.A.C.]

14. CO CEMS Installation: For Units 4 and 5, the permittee shall properly install, calibrate, operate and maintain CEMS to measure and record CO emissions in the terms of the applicable standard. Each CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The permittee shall locate the CEMS by following the procedures contained in the applicable performance specification of 40 CFR Part 60, Appendix B. The permittee shall install each CEMS required by this permit and conduct the appropriate performance specification for each CEMS within 60 calendar days of achieving permitted capacity as defined in Rule 62-297.310(2), F.A.C., but no later than 180 calendar days after initial startup. [Rules 62-4.070(3) and 62-2 12.400(BACT), F.A.C.]

14.a. CO CEMS Waiver: The CO CEMS for Unit 4 will be installed in accordance with the requirements and schedule detailed in Condition 14 above. Units 4 and 5 are similar, and data collected for Unit 4 should be representative of Unit 5 performance. Regarding Unit 5, due to construction scheduling, there will be an approximate 5 month lag between installation of the low NO<sub>x</sub> burners and the tie-in to the new FGD stack. Therefore, CO compliance testing will be conducted on Unit 5 after installation of the low NO<sub>x</sub> burners. However, installation of and monitoring by CO CEMS can be deferred until Unit 5 tie-in to the new stack is complete [Applicant Request].

15. Compliance by CEMS: Compliance with the standards for opacity and emissions of CO, NO<sub>x</sub>, and SO<sub>2</sub> shall be demonstrated with data collected from the required continuous monitoring systems. Within 60 days after completing construction on the pollution control systems of reestablishing commercial operation of each unit, the permittee shall certify proper operation of each required monitor, except for Condition 14.a. above. The permittee shall comply with the conditions of Appendix F (Standard Continuous Monitoring Requirements) of this permit as the compliance method for the corresponding emissions standards. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

### PRELIMINARY PERFORMANCE TESTING REQUIREMENTS

16. Preliminary SAM Performance Tests: Within 60 days after completing construction on the pollution control systems, the permittee shall conduct a series of preliminary performance tests on either unit to determine the SAM

## SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

### B. Material handling Activities for Limestone and Gypsum

This section of the permit addresses the following emissions unit

EU No.	Emission Unit Description
023	Limestone and Gypsum Material Handling Activities

#### Process Description

The FGD systems will include limestone storage and handling, limestone preparation, limestone slurry injection, and gypsum dewatering, transfer and storage. The limestone handling system will receive, store, size and transfer limestone to the FGD system's limestone preparation equipment. It will ~~be designed to receive limestone delivered to the plant by conveyor from an adjacent quarry, or~~ by rear dump trucks unloading into aboveground truck unloading feeders with integral hoppers. The system will ~~receive limestone from one source at a time and will consist of: a conveyor to transfer limestone received from the quarry delivery conveyor; truck unloading feeders; unloading and stacking belt conveyors to transfer limestone to a covered storage pile; a portal scraper reclaim and an emergency reclaim feeder located inside a limestone storage building shed; a reclaim conveyor to transfer limestone from the storage pile to a crusher feed belt conveyor, a crusher feed belt conveyors to which transfers limestone to a crusher building for limestone sizing; a plant feed belt conveyors; and silo feed belt conveyors to transfer limestone to the day silos.~~

~~Limestone received from the quarry conveyor will be transported to the unloading conveyor by the transfer conveyor. Limestone received by trucks will be transferred to the unloading conveyor by the truck unloading feeders. The delivered limestone will be conveyed to a covered storage pile via conveyor and a stacking conveyor equipped with dual discharge overhead traveling tripper. From the storage pile, the material is reclaimed using a single full portal scraper reclaim and conveyed by a conveyor to a crusher building where the material is sized using crushers. One or more feed conveyors will receive limestone from the crushers and distribute the material to the three limestone day silos. Two A plant feed conveyors and four silo feed conveyors are provided to receive limestone from the crushers and distribute material to the three limestone day silos.~~

The plant feed conveyor(s) will be equipped with a diverter gate and will supply limestone to the first limestone day silo (Silo ~~AB~~) directly via a chute and to the other limestone day silos (Silos ~~BA~~ & C) using ~~a reversible conveyor, silo feed conveyors equipped with diverter gates. Each limestone~~ Limestone silos will be equipped with a pulse-jet fabric filter dust collection system. ~~Insertable-D~~ dust collectors will be provided at each of the truck unloading feeders, ~~and at the loading points of the silo feed conveyors.~~ A dust collection system will be provided for the crusher building. A water-~~fogsurfactant blend~~ dust suppression system will be provided at the discharge point of the ~~transfer reclaim~~ conveyor and at the ~~head tail~~ end of the ~~unloading crusher feed~~ conveyor to ~~treat suppress~~ the limestone ~~dust formation, before it is loaded onto the belt of the stacking conveyor.~~

The limestone preparation system includes wet ball mill grinding systems to produce ~~the~~ limestone slurry. Filtrate-recycle water from the FGD system will be used to prepare the limestone slurry to conserve make-up water ~~for FGD system mist eliminator washing. The preliminary design is based on a feed rate of approximately 352 gpm of limestone slurry consisting of 25% to 30% solids with a specific gravity of 1.22.~~ Fugitive dust emissions are minimized, by enclosures and the addition of water for the slurry.

The gypsum slurry from the FGD system will be delivered by bleed pumps to the dewatering system, which will consist of a filter feed tank, hydro-cyclones, vacuum belt filters, vacuum pumps, filtrate tanks, filtrate pumps, lined piping, and associated valves. ~~Based on the preliminary design, the~~ The incoming gypsum slurry will contain approximately 18 to 22% suspended solids. Using a series of hydro-cyclones and ~~three~~ horizontal vacuum belt filters, the dewatering system will remove water until the slurry contains approximately 90% solids. Filtrate removed from the slurry will be stored and pumped back to the limestone preparation system or the absorber module. The de-watering system will be located inside a building. Fugitive dust emissions are negligible because the system is enclosed and wet.

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### B. Material handling Activities for Limestone and Gypsum

A collecting belt conveyors collect dewatered gypsum from the vacuum belt filters ~~at in~~ the dewatering system. Under normal operating conditions, ~~the this~~ conveyors will feed gypsum onto ~~a system of the belt of the transfer conveyor~~, which transfers the gypsum onto ~~a gypsum handling pad or a belt feed conveyor for delivery to the future an adjacent (proposed) wallboard plant. In the reversedirection, the gypsum an emergency this conveyor will feed gypsum onto another belt, which can also delivers gypsum to the emergency gypsum pile.~~ The ~~gypsum material handling pademergency gypsum pile~~ will be located ~~northeast of the dewatering facility and will be used primarily (until the future adjacent wallboard facility is built) to store the gypsum until it can be transferred offsite for beneficial use or disposal upon loss of the gypsum transfer and feed conveyors.~~ In addition, the ~~gypsum handling pademergency pile~~ may be used to store "off-specification" gypsum if needed. ~~Trucks will remove gypsum from the emergency gypsum stockpile.~~ Fugitive dust emissions will be minimal because the dewatered gypsum still contains ~~at leastapproximately~~ 10% water.

#### AUTHORIZED CONSTRUCTION

1. Equipment: The permittee is authorized to construct the following processes to support the FGD system: limestone storage and handling, limestone preparation, limestone slurry injection, and gypsum dewatering, transfer and storage. [Application No. 01 70004-016-AC; Rules 62-4.070(3), 62-212.300 and 62- 212.400(PSD), F.A.C.]

2. Air Pollution Control Equipment and Techniques: To comply with the standards of this permit, the permittee shall design, install, operate and maintain the following air pollution control equipment.

Process Activity	Emissions Point No.	Control Device <del>Flow Rate</del>	Outlet Dust Loading Specification
Dry Limestone Handling System			
Limestone conveyors (general)	---	<del>enclosedcovered</del> ---	---
Limestone <del>stacking-reclaim</del> conveyor (discharge <del>to</del> )	---	dust suppressant ---	---
Dump trucks	---	covered ---	---
Truck unloading feeders w/integral hoppers	EP-000	<del>acfm</del> dust collectors	0.010 grains/dscf
Limestone storage	---	covered pile ---	---
Limestone crushing and sizing	EP-000	enclosed building w/baghouse <del>acfm</del>	0.010 grains/dscf
Limestone silo feed conveyors	EP-000	dust collectors <del>acfm</del>	0.010 grains/dscf
Limestone day silos <del>(3)- up to (4)</del>	EP-000	<del>dust collector baghouse</del> <del>acfm</del>	0.010 grains/dscf
Limestone Preparation System			
<del>Wet ball mill grinders and misc. equipment</del>	---	<del>enclosure/wet</del> ---	---
Gypsum Dewatering System			
Gypsum dewatering system	---	enclosure/wet ---	---
Gypsum Handling System			
Gypsum handling system	---	enclosure/wet ---	---
<u>Gypsum Handling Pad</u>	---	<u>water spray</u> ---	---

Initial and replacement bags shall be selected based on the above design outlet dust loading specification. [Application No. 01 70004-016-AC; Rules 62-4.070(3), 62-2 12.300 and 62-212.400(BACT), F.A.C.]

3. Fugitive Dust Emissions: The dry limestone handling and storage operations shall be enclosed to the extent practicable and confined to prevent fugitive dust emissions. During the construction period, fugitive dust emissions

shall be minimized by techniques such as covering, confining and/or the application of water or dust suppressants to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

#### EMISSIONS LIMITATIONS AND PERFORMANCE STANDARDS

4. Capacities: None of the emissions units in this subsection are restricted by hours of operation (8760 hours/year).  
{*Permitting Note: For information purposes, maximum limestone processing rate is estimated at 100 tons per day.*}  
[Application No. 0170004-016-AC; Rule 62-210.200(PTE), F.A.C.]

### SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

#### B. Material handling Activities for Limestone and Gypsum

5. Opacity Standard: As determined by EPA Method 9, visible emissions from each baghouse and dust collector exhaust point shall not exceed 5% opacity based on a 6-minute average. [Application No. 0170004-016-AC; Rule 62-212.400(BACT), F.A.C.]

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

#### COMPLIANCE TESTING REQUIREMENTS

7. Initial Compliance Tests: Each baghouse exhaust shall be tested to demonstrate initial compliance with the specified opacity standard. The initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the unit. [Rule 62-297.3 10(7)(a)l, F.A.C.]

8. Annual Compliance Tests: During each federal fiscal year (October 1<sup>st</sup> to September 30<sup>th</sup>), each baghouse exhaust point shall be tested to demonstrate compliance with the specified opacity standard. [Rule 62-297.3 10(7)(a)4, F.A.C.]

9. Test Notification: At least 15 days prior to the date on which each formal compliance test is to begin, the permittee shall notify the Compliance Authority of: the date, time, and place of the test; and the contact person who will be responsible for coordinating and having the test conducted. [Rule 62-297.310(7)(a)9, F.A.C.]

10. Test Method: Opacity tests shall be conducted in accordance with EPA Method 9, which is described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. Tests shall also comply with the applicable requirements of Rule 62-297.310, F.A.C. summarized in Appendix D (Common Testing Requirements) of this permit. [Rules 62-204.800 and 62-297.100, F.A.C.; 40 CFR 60, Appendix A]

11. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C. The minimum observation period for a visible emissions compliance test shall be 30 minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. The permittee shall record the actual processing rate for the emissions unit being tested. [Rules 62-297.3 10(4) and (5), F.A.C.]

12. Common Testing Requirements: All required emissions tests shall be conducted in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. The minimum observation period for a visible emissions compliance test shall be 30 minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. The permittee shall record the actual processing rate for the emissions unit being tested. [Rule 62-297.310, F.A.C.]

#### RECORDS AND REPORTS

13. Final Design Notification: Within 90 days of completing the FGD system design provide the final details for the limestone and gypsum material handling activities including a process flow diagram and all control equipment specifications. It may be necessary to modify this air construction permit. [Application No. 01 70004-016-AC; Rule 62-4.070(3), F.A.C.]

14. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Compliance Authority on the results of each such test. The required test report shall be filed with the Compliance Authority as soon as practical, but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Compliance Authority to determine if the test was properly conducted and the test results properly computed. [Rule 62-297.3 10(8), F.A.C.]

## SECTION 4. APPENDIX E

### SUMMARY OF FINAL BACT DETERMINATIONS

15. Operational Records: The owner or operator shall maintain the following records on site to demonstrate compliance with the specifications and limitations of this subsection.

- a. Records of the design outlet dust loading specifications for new and replacement fabric filter bags; and
- b. For each month, record the total limestone processed for the month and the previous 12 months.
- c. After the ESP for use as part of the Compliance Assurance Monitoring Plan under Title V. Operation of the ESP shall be based upon COMS data collected during satisfactory PM emissions compliance tests.
- d. Operation of the alkali injection system shall be determined by the automated control system, which shall be set in accordance with the preliminary performance and compliance tests for SAM emissions.
- e. Concurrently with EPA Method 25A, EPA Method 18 may be used as an optional method to deduct emissions of methane and ethane from the THC emissions measured by Method 25A.
- f. The CBO fluidized bed combustor is also subject to the following applicable NSPS Subpart Dc provisions for boilers: the firing of fuel with no more than 0.5% sulfur by weight percent based on a certification from the fuel supplier (applies at all times, including periods of startup, shutdown, and malfunction); and no more than 20% opacity based on a 6-minute average, except for one 6-minute period per hour of not more than 27% opacity (applies at all times, except during periods of startup, shutdown, or malfunction). Since the flue gas exhaust from the CBO unit is directed back into the boiler ductwork for control, the CBO unit will achieve the same standards as Units 4 and 5, which are more stringent than the applicable NSPS.
- g. "SU" means startup; "SD" means shutdown; and "M" means malfunction.

#### Limestone/Gypsum Material Storage and Handling (EU-023)

Limestone is the reactant for the FGD systems, which will produce gypsum as a byproduct. The following control equipment and techniques are determined to be BACT for minimizing dust emissions from the related material handling and storage activities.

- To the extent practical, all limestone conveyors will be enclosed covered to confine dust emissions.
- The initial storage of limestone will be in a covered storage pile.
- The portal scraper reclaimer and an emergency reclaim feeder will be located inside the limestone storage building shed.
- Limestone will be crushed and sized inside a crusher building, which will include a dust collection system.
- The three (possibly four) limestone silos will be equipped with pulse-jet fabric filter dust collection systems.
- Insertable dust collectors will be installed at each of the truck unloading feeders, and at each of the loading points of the silo feed conveyors.
- A water-fog/surfactant blend dust suppression system will be provided at the discharge point of the transfer reclaim conveyor and at the tailhead end of the unloading crusher feed conveyor to treat the limestone before it is loaded onto the belt of the stacking conveyor to suppress limestone dust.
- Wet ball mill grinding systems will produce the limestone slurry for the FGD system. Fugitive dust emissions will be minimized by from the addition of water for the slurry.
- The dewatering system will be located inside a building. Fugitive dust emissions will be negligible because the system is enclosed and wet.
- Fugitive dust emissions from dewatered gypsum will be minimal because it still contains 10% water. Gypsum storage piles will be watered as necessary to prevent fugitive dust.
- Bags for all dust collection systems shall be selected based on the above design outlet dust loading specification of no more than 0.010 grains per acf of exhaust. All replacement filter bags and cartridges shall meet this design specification.
- Visible emissions from each dust collector and fabric filter shall not exceed 5% opacity.

#### CBO Feed Ash Silo (EU-025) and Product Ash Storage (EU-026)

Fly ash from Units 4 and 5 will be conveyed pneumatically to the CBO feed fly ash silo (EU-025). Ash will be fed from this silo to the fluidized bed combustor (EU-024) for processing. Exhaust from the feed fly ash silo will vent through a baghouse prior to discharge to the atmosphere. Product ash will be pneumatically conveyed to storage