Florida Department of Environmental Protection

Memorandum

TO: Joseph Kahn, DARM
TO: Trina Vielhauer, BAR
FROM: Jeff Koerner, Permitting North
DATE: February 26, 2007
SUBJECT: Permit No. 0170004-013-AC
Progress Energy Florida, Inc.
Crystal River Power Plant
SCR Project for Units 4 and 5

Permit Signing 3/2/07

This permit authorizes the construction of selective catalytic reduction (SCR) systems and alkali injection systems for existing Units 4 and 5 at the Crystal River Power Plant, which is an existing electrical generating station (SIC No. 4911) located north of Crystal River and west of U.S. 19 in Citrus County, Florida. The Department distributed an "Intent to Issue Permit" package on October 9, 2006. The applicant filed for, and received, an extension of time in which to file a petition for an administrative hearing. The extension expired on January 31, 2007. The applicant published the "Public Notice of Intent to Issue" in the Citrus County Chronicle on February 2, 2007. The Department received the proof of publication on February 16, 2007. No subsequent petitions for administrative hearings or extensions of time to petition for an administrative hearing were filed.

I recommend your approval of the attached Final Permit for this project.

Attachments

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NOTICE OF FINAL PERMIT

In the Matter of an
Application for Permit by:

Progress Energy Florida, Inc.
100 Central Avenue, CN77
St. Petersburg, Florida 33701

Authorized Representative:
Bernie Cumbie, Plant Manager

Air Permit No. 0170004-013-AC
Crystal River Power Plant
Facility ID No. 0170004
SCR Project for Units 4 and 5

Enclosed is Final Air Permit No. 0170004-013-AC, which authorizes the construction of selective catalytic reduction (SCR) systems and alkali injection systems for existing Units 4 and 5 at the Crystal River Power Plant, which is an existing electrical generating station (SIC No. 4911) located north of Crystal River and west of U.S. 19 in Citrus County, Florida. As noted in the attached Final Determination, only minor changes and clarifications were made. This permit is issued pursuant to Chapter 403, Florida Statutes (F.S.).

Any party to this order has the right to seek judicial review of it under Section 120.68, F.S. 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 of Appeal must be filed within thirty (30) days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida.

FOR Trina Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Notice of Final Permit (including the Final Permit) was sent by electronic mail (return receipt requested) to the persons listed below.

Mr. Bernie Cumbie, Progress Energy Florida, Inc. (BERNIE.CUMBIE@PGNMAIL.COM)
Mr. Dave Meyer, Progress Energy Florida, Inc. (DAVE.MEYER@PGNMAIL.COM)
Mr. Scott Osbourn, Golder Associates Inc. (SOSBOURN@GOLDER.COM)
Ms. Cindy Zhang-Torres, SWD Office (CINDY.ZHANG-TORRES@DEP.STATE.FL.US)
Mr. Gregg Worley, EPA Region 4 (WORLEY.GREGG@EPA.GOV)
Mr. Mike Halpin, Siting Office (HALPIN_M@DEP.STATE.FL.US)

Clerk Stamp

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

(Clerk) 3/2/07 (Date)

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road, MS#5505
Tallahassee, Florida 32399-2400

PERMITTEE:

Progress Energy Florida, Inc.
100 Central Avenue, CN77
St. Petersburg, Florida 33701
Authorized Representative:
Bernie Cumbie, Plant Manager

Air Permit No. 0170004-013-AC
Crystal River Power Plant
Facility ID No. 0170004
SCR Project for Units 4 and 5
Permit Expires: December 1, 2010

PROJECT AND LOCATION

This permit authorizes the construction of selective catalytic reduction (SCR) systems and alkali injection systems on existing Units 4 and 5 at the Crystal River Power Plant. The Crystal River Power Plant is an existing electrical generating station (SIC No. 4911), which is located north of Crystal River and west of U.S. 19 in Citrus County, Florida.

STATEMENT OF BASIS

Installation of the alkali injection systems is required to ensure that the SCR project will not result in an increase of sulfuric acid mist emissions above the PSD-significant emission rate of 7 tons per year. The applicant elects to install the SCR systems to provide full flexibility in implementing the federal cap and trade program for nitrogen oxides (NOx) under the Clean Air Interstate Rule (CAIR). Because CAIR affords a regulated facility the flexibility to evaluate market conditions to determine whether it will install controls, operate existing controls, or purchase allowances generated by other plants, the Department of Environmental Protection (Department) does not require the installation of this equipment nor its operation. This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.) and Title 40, Part 60 of the Code of Federal Regulations (CFR). The permittee is authorized to install the proposed equipment in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department.

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Joseph Kahn, Director
Division of Air Resource Management

3/2/07
(Date)

FINAL DETERMINATION

PERMITTEE

Progress Energy Florida, Inc.
100 Central Avenue, CN77
St. Petersburg, Florida 33701

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation, Air Permitting North Program
2600 Blair Stone Road, MS #5505
Tallahassee, Florida, 32399-2400

PROJECT

Air Permit No. 0170004-013-AC
Crystal River Power Plant
SCR Project for Units 4 and 5

This permit authorizes the construction of selective catalytic reduction (SCR) systems and alkali injection systems for existing Units 4 and 5 at the Crystal River Power Plant, which is an existing electrical generating station (SIC No. 4911) located north of Crystal River and west of U.S. 19 in Citrus County, Florida.

NOTICE AND PUBLICATION

The Department distributed an "Intent to Issue Permit" package on October 9, 2006. The applicant filed for, and received, an extension of time in which to file a petition for an administrative hearing. The extension expired on January 31, 2007. The applicant published the "Public Notice of Intent to Issue" in the Citrus County Chronicle on February 2, 2007. The Department received the proof of publication on February 16, 2007. No subsequent petitions for administrative hearings or extensions of time to petition for an administrative hearing were filed.

COMMENTS

No comments on the Draft Permit were received from the public, the Department's Southwest District Office or EPA Region 4. On February 15, 2007, the applicant submitted comments, which are summarized below with the Department's corresponding response.

Comment: The applicant believes that Specific Conditions 5 and 13 are overly prescriptive and burdensome. These conditions specify testing, calculation and reporting requirements for sulfuric acid mist (SAM) emissions. The applicant believes that the conditions should simply require an annual test in accordance EPA Methods 8 or 8A. The applicant acknowledges that a final decision remains on the alkali control system type and design. In addition, the design schedule now indicates that the flue gas desulfurization (FGD) systems will commence operation at the same time as the selective catalytic reduction (SCR) systems. The FGD project is subject to PSD preconstruction review for SAM emissions, so the SAM-related conditions specified in the SCR project will likely be superseded by the conditions representing the Best Available Control Technology (BACT) for this pollutant. Therefore, the applicant recommends including the following text in the final permit.

> "On an annual basis, the permittee must demonstrate that SAM emissions as a result of this project do not exceed the baseline annual emissions (135.4 tons/year) by the PSD significant emissions rate (7 tons/year). The permittee shall install and operate the ammonia injection system at a frequency and injection rate for SAM emissions to satisfy this requirement. Once a final control system selection has been made, a monitoring plan will be submitted to the Department for approval. This plan will allow the calculation of a representative annual emission estimate that reflects all anticipated modes of operation. [Rules 62-4.070(3) and 62-212.300(1)(e), F.A.C.]"

Response: Specific Condition 5 requires initial tests to determine the uncontrolled and controlled SAM emissions rates to determine a minimum ammonia injection rate reflecting the control of SAM emissions. The tests are to be conducted at permitted capacity while firing the highest sulfur content coal planned for operation. Specific Condition 6 requires these tests to be conducted annually. Specific Condition 13 specifies the methods used to calculate and report SAM emissions to demonstrate that the installation of SCR systems did not result in a PSD significant emissions increase. The overall intent of these conditions is to ensure that the alkali injection system is operated at a level sufficient to verify that a PSD significant emissions increase did not occur.

The Department does not believe that the permit conditions are overly prescriptive and burdensome. In fact, as the applicant mentioned, annual tests could be conducted to satisfy the permit conditions. However, more frequent testing could be conducted to establish effective ammonia injection rates for specific sets of operating conditions. This project is unlike many of the past projects that require only an annual test to demonstrate compliance because alkali must be injected at a sufficient rate to achieve the necessary reductions; it is not a passive control system.

Nevertheless, the Department is currently processing the application for the FGD project, which will specify a BACT emissions limit and appropriate testing, monitoring and reporting requirements for SAM emissions. Based on the applicant's comments, the Department revised and clarified the permit conditions as follows:

2. Alkali Injection System: The permittee shall install an alkali injection system with a control efficiency of at least 85% to control sulfuric acid mist emissions. The equipment will include tanks, piping, injectors, a control system and other ancillary equipment. The alkali injection systems shall be operable when the SCR system is initially available for service. On an annual basis, the permittee must demonstrate that SAM emissions as a result of this project do not exceed the baseline annual emissions (135.4 tons/year) by the PSD significant emissions rate (7 tons/year). The permittee shall operate the ammonia injection system at a frequency and injection rate for SAM emissions to satisfy this requirement. Once a final control system selection has been made, a monitoring plan will be submitted to the Department for approval. This plan will allow the calculation of a representative annual emission estimate that reflects all anticipated modes of operation. Sufficient performance tests shall be conducted to determine the effects of alkali injection for a given set of operating conditions.

5b. At permitted capacity and with no SCR bypass, the permittee shall conduct stack tests to determine the uncontrolled sulfuric acid mist emission rate, the controlled sulfuric acid mist emission rate, and the actual control efficiency of the installed alkali injection systems. Tests shall consist of at least three, 1-hour test runs and be conducted while firing ~~the~~ a fuel blend with ~~the highest~~ a representative sulfur content. During each test run, the permittee shall continuously monitor and record the alkali injection rate and total secondary power input to the electrostatic precipitator. The purpose of these tests is to determine actual control efficiency of the installed systems and to establish ~~a minimum~~ an effective alkali injection rate, which will be used to calculate the actual annual emissions.

6. Annual Tests: During each year the reporting for sulfuric acid mist emissions is required, the permittee shall repeat the tests specified in Condition 5. ~~The~~ Subsequent tests may be used to reestablish ~~the minimum~~ an effective alkali injection rate for a given set of operating conditions, which will be used to calculate the actual annual emissions.

13c. The permittee shall compute emissions by multiplying the appropriate controlled or uncontrolled emission factor (lb/MMBtu) by the annual heat input rate for the period over which the emissions are computed. The ~~uncontrolled~~ emissions factor ~~shall be~~ used shall correlate to ~~if~~ the ~~minimum~~ alkali injection rate for the given set of conditions ~~established for the latest test is not met~~.

CONCLUSION

Only the minor revisions described above were made to the final permit. The final action of the Department is to issue the permit with the changes described above.

FACILITY AND PROJECT DESCRIPTION

The Crystal River Power Plant is an existing electrical generating plant consisting of the following equipment: four coal-fired steam generating units with electrostatic precipitators; helper mechanical cooling towers for Units 1, 2 and Nuclear Unit 3; two natural draft cooling towers for Units 4 and 5; coal, fly ash, and bottom ash handling facilities; and, relocatable diesel-fired generators. The project includes construction of SCR systems and alkali injection systems on existing Units 4 and 5. Installation of the alkali injection systems is required to ensure that the SCR project will not result in an increase of sulfuric acid mist emissions above the PSD-significant emission rate of 7 tons per year. The applicant elects to install the SCR systems to provide full flexibility in implementing the federal cap and trade program for NOx under CAIR. Because CAIR affords a regulated facility the flexibility to evaluate market conditions to determine whether it will install controls, operate existing controls, or purchase allowances generated by other plants, the Department does not require the installation of this equipment nor its operation. The project is not subject to preconstruction review for the Prevention of Significant Deterioration (PSD) of Air Quality.

ID	Emission Unit Description
003	Unit 5 - Fossil Fuel Steam Generator
004	Unit 4 - Fossil Fuel Steam Generator

REGULATORY CLASSIFICATION

Title III: The existing facility is a major source of hazardous air pollutants (HAPs).

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

Title V: The existing facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

PSD: The existing facility is a PSD-major facility in accordance with Rule 62-212.400, F.A.C.

NSPS: Units 4 and 5 are subject to the New Source Performance Standards of Subpart D in 40 CFR 60.

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; and the Department's Final Determination.

1. Permitting Authority: All documents related to applications for permits to operate, construct, or modify emissions units regulated by this permit shall be submitted to the Bureau of Air Regulation of the Florida Department of Environmental Protection (DEP) at 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400.

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. Appendices: The following Appendices are attached as part of this permit: Appendix A (Citation Format), Appendix B (General Conditions), and Appendix C (Common Conditions).

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

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

6. Modifications: The permittee shall notify the Compliance Authority upon commencement of construction. 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. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

7. Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authorities. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

This section of the permit addresses the following emissions unit.

ID No.	Emissions Unit Description
003	Unit 5 - Fossil Fuel Steam Generator: This is a pulverized coal, dry bottom, wall-fired unit that is rated at 760 MW with a maximum heat input rate of 6665 MMBtu per hour. Allowable fuels include bituminous coal, a bituminous coal and bituminous coal briquette mixture, and used oil fuel. In addition, No. 2 distillate oil is fired as a startup fuel and natural gas is fired as both a startup fuel and low-load flame stabilization fuel. Particulate matter emissions are controlled with a high efficiency electrostatic precipitator (ESP). Emissions exhaust through a 600 feet tall stack.
004	Unit 4 - Fossil Fuel Steam Generator: This is a pulverized coal, dry bottom, wall-fired unit that is rated at 760 MW with a maximum heat input rate of 6665 MMBtu per hour. Allowable fuels include bituminous coal, a bituminous coal and bituminous coal briquette mixture, and used oil fuel. In addition, No. 2 distillate oil is fired as a startup fuel and natural gas is fired as both a startup fuel and low-load flame stabilization fuel. Particulate matter emissions are controlled with a high efficiency electrostatic precipitator (ESP). Emissions exhaust through a 600 feet tall stack.

EQUIPMENT

1. SCR System: For Units 4 and 5, the permittee is authorized to install SCR systems. In general, the SCR systems will include the following equipment. Urea-to-ammonia conversion system; ammonia flow control unit (AFCU); ammonia injection grid (AIG); TiO_2-WO_3-V_2O_5 catalyst; SCR reactor; an SCR bypass system; and other ancillary equipment.

   {Permitting Note: The following description summarizes the preliminary design of SCR systems: The SCR systems will be designed for a control efficiency of 90% reduction in NOx emissions based on a design inlet NOx rate of 0.35 lb/MMBtu with a maximum ammonia slip level of 2 to 5 ppmv. The molar ratio of ammonia-to-NOx is estimated to be approximately 0.91, which is a maximum ammonia injection rate of approximately 880 lb/hour at full load and full control. The catalyst volume will be approximately 21,000 to 25,000 cubic feet. The expected catalyst life is 24,000 hours. The SCR reactor will be placed just upstream of each unit's air heater. Within the SCR reactor, the catalyst will be arranged in three layers with an internal honeycomb structure. The system has an operational temperature range between 568° F to 715° F. Initially, catalyst will be placed in only two of the three layers. As the catalyst gradually deactivates through use, the remaining layer will be filled and eventually older layers replaced. This will be determined by periodic analysis of catalyst coupons for reactivity. The SCR system is expected to create a pressure loss of approximately 2 to 5 inches of water column. The applicant plans to prevent particulate matter from fouling and masking catalyst beds by the following methods: installing an SCR bypass duct, installing a screen to remove large particles prior to the SCR reactor, installing sonic horns above the catalyst layer to minimize ash accumulation, and minimizing oil firing whenever the SCR is in service.}
   [Applicant Request; Design]

2. Alkali Injection System: The permittee shall install an alkali injection system with a control efficiency of at least 85% to control sulfuric acid mist (SAM) emissions. The equipment will include tanks, piping, injectors, a control system and other ancillary equipment. The alkali injection systems shall be operable when the SCR system is initially available for service. On an annual basis, the permittee must demonstrate that SAM emissions as a result of this project do not exceed the baseline annual emissions (135.4 tons/year) by the PSD significant emissions rate (7 tons/year). The permittee shall operate the ammonia injection system at a frequency and injection rate for SAM emissions to satisfy this requirement. Once a final control system selection has been made, a monitoring plan will be submitted to the Department for approval. This plan will allow the calculation of a representative annual emission estimate that reflects all

anticipated modes of operation. Sufficient performance tests shall be conducted to determine the effects of alkali injection for a given set of operating conditions.

{Permitting Note: When in service, SCR catalyst will oxidize more sulfur dioxide (SO_2) to sulfur trioxide (SO_3) and increase SAM emissions. The preliminary design indicates that the alkali control systems will inject an alkali sorbent based on ammonia or sodium (i.e., Trona or sodium bisulfite). The alkali sorbent will be injected prior to the electrostatic precipitator, either before or after the air pre-heater. The alkali reacts with SAM to form salts, which are then removed by the ESP. The purpose of the alkali injection system is to ensure that any increase in sulfuric acid mist emissions related to the SCR project will be less than the PSD-significant emission rate of 7 tons/year.} [Applicant Request; Design]

3. NOx Continuous Emissions Monitoring Systems (CEMS): As necessary, the permittee is authorized to modify, calibrate, re-certify, and operate the existing NOx CEMS to accurately measure the lower NOx emission levels realized if the SCR system is in service. [Applicant Request; Design; Rule 62-4.070(3), F.A.C.]

4. 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. Operation of the SCR is not required by this permit. As necessary, the permittee shall operate the alkali injection system to ensure the project does not result in an increase of more than the PSD-significant emissions (7 tons/year) of sulfuric acid mist emissions above baseline actual emissions (135.4 tons/year). [Rules 62-210.650 and 62-212.400(12), F.A.C.]

EMISSIONS PERFORMANCE TESTING

5. Performance Tests: Within 60 days of commencing operation of each SCR/alkali injection system, the permittee shall have the following tests conducted for each unit.

   a. At permitted capacity, the permittee shall conduct tests to determine the uncontrolled NOx emissions rate, the controlled NOx emission rate, and the actual control efficiency of the installed SCR system. Tests shall consist of three, 1-hour test runs. Alternatively, the permittee may provide representative CEMS data for this demonstration. During each test run, the permittee shall continuously monitor and record the ammonia injection rate.

   b. At permitted capacity and with no SCR bypass, the permittee shall conduct stack tests to determine the uncontrolled sulfuric acid mist emission rate, the controlled sulfuric acid mist emission rate, and the actual control efficiency of the installed alkali injection systems. Tests shall consist of at least three, 1-hour test runs and be conducted while firing a fuel blend with a representative sulfur content. During each test run, the permittee shall continuously monitor and record the alkali injection rate and total secondary power input to the electrostatic precipitator. The purpose of these tests is to determine actual control efficiency of the installed systems and to establish an effective alkali injection rate, which will be used to calculate the actual annual emissions.

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

6. Annual Tests: During each year the reporting for sulfuric acid mist emissions is required, the permittee shall repeat the tests specified in Condition 5. Subsequent tests may be used to reestablish an effective alkali injection rate for a given set of operating conditions, which will be used to calculate the actual annual emissions. [Rule 62-4.070(3), F.A.C.]

7. Test Notification: The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. [Rule 62-297.310(7)(a)9, F.A.C.]

8. Test Methods: 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
7E	Determination of Nitrogen Oxide Emissions
8	Determination of Sulfuric Acid Mist Emissions
19	Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxides Emission Rates (Optional F-factor method may be used to determine flow rate and gas analysis to calculate mass emissions in lieu of Methods 1-4.)

Tests shall also be conducted in accordance with the common condition specified in Section 4, Appendix C 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]

NOTIFICATIONS, RECORDS AND REPORTS

9. Design Notifications: Prior to initial operation of the alkali injection system, the permittee shall notify the Department's Bureau of Air Regulation and the Compliance Authority of the final design specifications including: alkali sorbent, storage and delivery of alkali sorbent, number of injectors, and the maximum injection rate at full load. In addition, the permittee shall notify the Department's Bureau of Air Regulation and the Compliance Authority of substantial changes to the design of the SCR or alkali injection systems. [Rule 62-4.070(3), F.A.C.]

10. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Section 4, Appendix C of this permit. For each sulfuric acid mist test run, the report shall also indicate the alkali injection rate, unit load, unit heat input rate, and total secondary power input to the electrostatic precipitator. For each NOx emissions test run, the report shall also indicate the ammonia injection rate, unit load, and unit heat input rate. [Rule 62-297.310(8), F.A.C.]

11. Operational Data: The permittee shall continuously monitor and record the alkali injection rate and the hours of SCR bypass operation. [Rule 62-4.070(3), F.A.C.]

12. Annual SAM Emissions Reports: In accordance with Rule 62-212.300(1)(e), F.A.C., the permittee shall comply with the following monitoring, reporting and recordkeeping provisions:

    a. The permittee shall monitor the SAM emissions using the most reliable information available. On a calendar year basis, the permittee shall calculate and maintain a record of the annual emissions (tons per year) for a period of 10 years after completing construction on each new control system. Emissions shall be computed in accordance with Rule 62-210.370, F.A.C.

    b. Within 60 days after each calendar year following completion of construction on each new control system, the permittee shall report to the Compliance Authority the annual emissions for each unit during the calendar year that preceded submission of the report. The report shall contain the following:

        1) The name, address and telephone number of the owner or operator of the major stationary source;

        2) The annual emissions as calculated pursuant to subparagraph 62-212.300(1)(e)1., F.A.C.;

        3) If the emissions differ from the preconstruction projection, an explanation as to why there is a difference; and

        4) Any other information that the owner or operator wishes to include in the report.

    c. The information required to be documented and maintained shall be submitted to the Compliance Authority, where it will be available for review to the general public.

    [Rule 62-212.300(1)(e), F.A.C.]

13. SAM Emissions Computation and Reporting: The permittee shall compute sulfuric acid mist (SAM) emissions in accordance with the following requirements.

    a. For each year of reporting required, emissions shall be computed based on the controlled and uncontrolled emissions factors (lb/MMBtu) determined during the required annual emissions test.

    b. With appropriate supporting test data, multiple emission factors may be used as necessary to account for variations in emission rate associated with variations in the emissions unit's operating rate or operating conditions during the period over which emissions are computed.

    c. The permittee shall compute emissions by multiplying the appropriate controlled or uncontrolled emission factor (lb/MMBtu) by the annual heat input rate for the period over which the emissions are computed. The emissions factor used shall correlate to the alkali injection rate for the given set of conditions.

    d. The permittee shall retain a copy of all records used to compute emissions pursuant to this rule for a period of five years from the date on which such emissions information is submitted to the Compliance Authority for any regulatory purpose.

    [Rule 62-210.370, F.A.C.]

Filename: 0170004-013-AC - Final Permit

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CITATION FORMATS

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 CRF 60.7]

Means: Title 40, Part 60, Section 7

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

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, 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 Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

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

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

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

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

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

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

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

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

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

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

11. This permit is transferable only upon Department approval in accordance with 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 (Not Applicable);
    b. Determination of Prevention of Significant Deterioration (Not Applicable); and
    c. Compliance with New Source Performance Standards (Not Applicable).

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.

{Permitting Note: 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. 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.]
3. 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.]
4. Excess Emissions Notifications: 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.]
5. 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.]
6. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and62-210.200, F.A.C.]
7. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20 percent opacity. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1, F.A.C.]
8. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

TESTING REQUIREMENTS

9. 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.]
10. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is

conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2), F.A.C.]

11. 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.]

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

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

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

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

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

13. Determination of Process Variables

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

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

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

14. 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.

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

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

17. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

    1. The type, location, and designation of the emissions unit tested.
    2. The facility at which the emissions unit is located.

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

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

RECORDS AND REPORTS

18. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rules 62-4.160(14) and 62-213.440(1)(b)2, F.A.C.]
19. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.]

Filename: 0170004-013-AC - Appendix

Harvey, Mary

From: Koerner, Jeff
Sent: Friday, March 02, 2007 3:35 PM
To: Harvey, Mary
Subject: Air Permit No. 0170004-013-AC, Progress Energy Crystal River Power Plant, SCR Project for Units 4 and 5

Attachments: Final Determination - 0170004-013-AC.doc; Final Notice - 0170004-013-AC (2).doc; 0170004-013-AC - Final Permit.doc; 0170004-013-AC - Appendix.doc

Mary,

Joe signed the final permit this afternoon. Attached are the electronic files for posting.

Remember, Progress Energy is one of the companies that can't receive "zipped" files through their firewall. So, we need to send them the individual "PDF" files.

Thanks!

Jeff


Final Determination - 0170004-...


Final Notice - 0170004-013-AC ...


0170004-013-AC - Final Permit....


0170004-013-AC - Appendix.doc ...

Progress Energy

February 12, 2007

RECEIVED

FEB 16 2007

BUREAU OF AIR REGULATION

Mr, Jeff Koerner, P.E.
DEP/DARM
North Permitting Section
Division of Air Resource Management
2600 Blair Stone Road MS 5500
Tallahassee, Florida 32399-2400

Re: Crystal River Power Plant – Permit Number 0170004-013-AC – Affidavit of Publication

Dear Mr. Koerner:

In accordance with Ms. Trina Vielhauer's letter to Mr. Cumbie dated October 9, 2006, we have published the public notice in the Citrus County Chronicle on February 2, 2007.

Attached is the Affidavit of Publication.

If you have any questions, please contact me at (727) 820-5295. Thank you very much for processing the Construction permit.

Best Regards,

Dave Meyer

Dave Meyer, P.E.
Senior Environmental Specialist

XC: Bernie Cumbie

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

Amanda O'Kelley

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
894-0202 FCRN PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT PUBLIC NOTICE PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT (Public Notice to be Published in the Newspaper) Florida Department of Environmental Protection Draft Air Permit No. 0170004-013-AC Progr

Court, was published in said newspaper in the issues of
February 2nd, 2007,

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.

The forgoing instrument was acknowledged before me

This 5th day of February 2007

By: Amanda O'Kelley

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

Nancy A Parke
Notary Public

NANCY A. PARKE
Comm# DD0244089
Expires 8/2[illegible]
Bonded thru (800)
Florida [illegible]

NANCY A. PARKE
Comm# DD0244089
Expires 8/2[illegible]
Bonded thru [illegible]

894-0202 FCRN
PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT
PUBLIC NOTICE

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT
(Public Notice to be Published in the Newspaper)
Florida Department of Environmental Protection
Draft Air Permit No. 0170004-013-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 is Bernie Cumble, the Plant Manager, and the mailing address is 100 Central Ave., CN77, St. Petersburg, FL, 33701.

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

Project: The plant proposes to install selective catalytic reduction (SCR) systems and alkali injection systems on existing Units 4 and 5 at the Crystal River Power Plant. Installation of the alkali injection systems is required to ensure that the SCR project will not result in an increase of sulfuric acid mist emissions above the PSD-significant emission rate of 7 tons per year. The applicant elects to install the SCR systems to provide full flexibility in implementing the federal cap and trade program for nitrogen oxides (NOx) under the Clean Air Interstate Rule (CAIR). Because CAIR affords a regulated facility the flexibility to evaluate market conditions to determine whether it will install controls, operate existing controls, or purchase allowances generated by other plants, the Department does not require the installation of this equipment nor its operation. Additional details can be provided by the Permitting Authority at the address listed below.

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 the 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 Air 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 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 fourteen (14) days from the date of publication of this Public Notice. Written comments must be provided to the Permitting Authority at the above address. Any written comments filed will be made available for public inspection. 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.

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; Fax: 850/245-2303). Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S. must be filed within fourteen (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 fourteen (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 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 how and when the petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so 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; 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, February 2, 2007.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**PROGRESS ENERGY FLORIDA, INC. –
CRYSTAL RIVER POWER PLANT,**

Petitioner,

v.

**OGC No. 06-2194
DEP Permit No. 0170004-013-AC**

**DEPARTMENT OF ENVIRONMENTAL
PROTECTION,**

Respondent.
_____/

**ORDER GRANTING SECOND REQUEST FOR
EXTENSION OF TIME TO FILE PETITION FOR HEARING**

This cause has come before the Florida Department of Environmental Protection (FDEP) upon receipt of a second request made by Petitioner, Progress Energy Florida, Inc., to grant an additional extension of time to file a petition for administrative hearing challenging the Intent to Issue DEP Permit No. 0170004-013-AC. If granted, this extension will allow time to discuss with FDEP several specific permit conditions for its facility in Citrus County, Florida. Because the request shows good cause for the extension of time,

IT IS ORDERED:

The request for an extension of time to file a petition for administrative proceeding is granted. Petitioner shall have until **January 31, 2007,** to file a petition in this matter. Filing shall be complete upon receipt by the Office of General Counsel, Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000.

DONE AND ORDERED on this 28th day of November, 2006, in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

JACK CHISOLM, Deputy General Counsel
3900 Commonwealth Boulevard - MS 35
Tallahassee, Florida 32399-3000
850-245-2242 facsimile 850-245-2302

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing has been furnished via U. S. Mail and facsimile this 28th day of November 2006, to:

Robert A. Manning
HOPPING GREEN & SAMS, P.A.
Post Office Box 6526
Tallahassee, FL 32314

Facsimile: 850/224-8551

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Patricia E. Comer, Assistant General Counsel
FL Bar 0224146
Department of Environmental Protection
3900 Commonwealth Boulevard - MS 35
Tallahassee, Florida 32399-3000
Telephone: (850) 245-2288
Facsimile: (850) 245-2302

with courtesy copies via electronic mail to:

Trina Vielhauer, FDEP – Chief, Bureau of Air Regulation
Jeff Koerner, FDEP – Project Engineer, Bureau of Air Regulation

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

October 9, 2006

{Sent by Electronic Mail – Electronic Receipt Requested}

Mr. Bernie Cumbie, Plant Manager
Progress Energy Florida, Inc.
100 Central Ave. CN77
St. Petersburg, Florida 33701

Re: Air Construction Permit No. 0170004-013-AC
Progress Energy Florida, Inc. – Crystal River Power Plant
SCR Project for Units 4 and 5

Dear Mr. Cumbie:

On April 25, 2006, you submitted an application for the construction of selective catalytic reduction (SCR) systems and alkali injection systems on existing Units 4 and 5 at the Crystal River Power Plant, which is located north of Crystal River and west of U.S. 19 in Citrus County, Florida. Enclosed are the following documents: "Technical Evaluation and Preliminary Determination", "Draft Permit", "Written Notice of Intent to Issue Air Permit", and "Public Notice of Intent to Issue Air Permit".

The "Technical Evaluation and Preliminary Determination" summarizes the Department's technical review of the application and provides the rationale for making the preliminary determination to issue a Draft Permit. The proposed "Draft Permit" includes the specific conditions that regulate the emissions units covered by the proposed project. The "Written Notice of Intent to Issue Air Permit" provides important information regarding: the Department's intent to issue an air permit for the proposed project; the requirements for publishing a Public Notice of the Department's intent to issue an air permit; the procedures for submitting comments on the Draft Permit; the process for filing a petition for an administrative hearing; and the availability of mediation. 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 L Vielhauer

Trina Vielhauer, Chief
Bureau of Air Regulation

Enclosures

SENDER: *COMPLETE THIS SECTION*

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

1. Article Addressed to:

Mr. Bernie Cumbie, Plant Manager
Progress Energy Florida
Crystal River Units 1&2
100 Central Avenue CN77
St. Petersburg, Florida 33701

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☑ Agent ☐ Addressee

B. Received by (Printed Name) [signature] C. Date of Delivery 10/12/06

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

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

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

2. Article Number *(Transfer from service label)* 7000 1670 0013 3110 0833

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

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

OFFICIAL USE

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

Postmark Here

Mr. Bernie Cumbie, Plant Manager
Progress Energy Florida
Crystal River Units 1&2
100 Central Avenue CN77
St. Petersburg, Florida 33701

PS Form 3800, May 2000 See Reverse for Instructions

7000 1670 0013 3110 0833

Comments: The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of fourteen (14) days from the date of publication of the Public Notice. Written comments must be provided to the Permitting Authority at the above address. Any written comments filed will be made available for public inspection. 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.

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 (Telephone: 850/245-2241; Fax: 850/245-2303). Petitions filed by the applicant or any of the parties listed below must be filed within fourteen (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 fourteen (14) days of publication of the attached Public Notice or within fourteen (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 fourteen (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 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 how and when each petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so 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; 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 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 L Vielhauer

Trina Vielhauer, Chief
Bureau of Air Regulation

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

In the Matter of an
Application for Air Permit by:

Progress Energy Florida, Inc.
100 Central Ave. CN77
St. Petersburg, Florida 33701

Authorized Representative:
Bernie Cumbie, Plant Manager

Draft Permit No. 0170004-013-AC
Crystal River Power Plant
SCR Project for Units 4 and 5
Citrus County, Florida

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

Project: The plant proposes to install selective catalytic reduction (SCR) systems and alkali injection systems on existing Units 4 and 5 at the Crystal River Power Plant. Installation of the alkali injection systems is required to ensure that the SCR project will not result in an increase of sulfuric acid mist emissions above the PSD-significant emission rate of 7 tons per year. The applicant elects to install the SCR systems to provide full flexibility in implementing the federal cap and trade program for nitrogen oxides (NOx) under the Clean Air Interstate Rule (CAIR). Because CAIR affords a regulated facility the flexibility to evaluate market conditions to determine whether it will install controls, operate existing controls, or purchase allowances generated by other plants, the Department does not require the installation of this equipment nor its operation. Additional details can be provided by the Permitting Authority at the address listed below. 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 the 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 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.

Public Notice: Pursuant to Sections 403.087 and 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), F.A.C., the applicant shall provide proof of publication to the Permitting Authority at the above address within seven (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.

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this "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 before the close of business on 10/9/06 to the persons listed below.

Mr. Bernie Cumbie, Progress Energy Florida, Inc. (BERNIE.CUMBIE@PGNMAIL.COM)
Mr. Dave Meyer, Progress Energy Florida, Inc. (DAVE.MEYER@PGNMAIL.COM)
Mr. Scott Osbourn, Golder Associates Inc. (SOSBOURN@GOLDER.COM)
Ms. Mara Nasca, SWD Office (MARA.NASCA@DEP.STATE.FL.US)
Mr. Gregg Worley, EPA Region 4 (WORLEY.GREGG@EPAMAIL.EPA.GOV)
Mr. Hamilton Oven, Siting Office (HAMILTON.OVEN@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.

Mary F. Harvey (Clerk) 10/9/06 (Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection
Draft Air Permit No. 0170004-013-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 is Bernie Cumbie, the Plant Manager, and the mailing address is 100 Central Ave., CN77, St. Petersburg, FL, 33701.

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

Project: The plant proposes to install selective catalytic reduction (SCR) systems and alkali injection systems on existing Units 4 and 5 at the Crystal River Power Plant. Installation of the alkali injection systems is required to ensure that the SCR project will not result in an increase of sulfuric acid mist emissions above the PSD-significant emission rate of 7 tons per year. The applicant elects to install the SCR systems to provide full flexibility in implementing the federal cap and trade program for nitrogen oxides (NOx) under the Clean Air Interstate Rule (CAIR). Because CAIR affords a regulated facility the flexibility to evaluate market conditions to determine whether it will install controls, operate existing controls, or purchase allowances generated by other plants, the Department does not require the installation of this equipment nor its operation. Additional details can be provided by the Permitting Authority at the address listed below.

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.

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Notice of Intent to Issue Air 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 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 fourteen (14) days from the date of publication of this Public Notice. Written comments must be provided to the Permitting Authority at the above address. Any written comments filed will be made available for public inspection. 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.

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person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, 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 how and when the petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so 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; 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.

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Mediation: Mediation is not available for this proceeding.

TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

PROJECT

Project No. 0170004-013-AC
Crystal River Power Plant
Units 4 and 5 SCR Project

Citrus County, Florida

APPLICANT

Progress Energy Florida, Inc.
100 Central Avenue, CN77
St. Petersburg, Florida 33701

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation
Air Permitting North Program
2600 Blair Stone Road, MS #5505
Tallahassee, Florida 32399-2400

October 9, 2006

{Filename: 0170004-013-AC - TEPD}

1. GENERAL PROJECT INFORMATION

Facility Description and Location

Progress Energy Florida, Inc. operates the Crystal River Power Plant, which is an existing electrical generating plant (SIC No. 4911). The facility consists of the following equipment: four coal-fired steam generating units with electrostatic precipitators; two natural draft cooling towers for Units 4 and 5; helper mechanical cooling towers for Units 1, 2 and Nuclear Unit 3; coal, fly ash, and bottom ash handling facilities; and relocatable diesel fired generators. The nuclear unit (Unit 3) is permitted under a separate Title V permit and is not considered part of the Title V permit for the Crystal River Power plant. Also included in this facility are miscellaneous unregulated and/or insignificant emissions units and activities. The existing plant is located north of Crystal River and west of U.S. 19 in Citrus County, Florida. 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 with (or designated as unclassifiable for) all air pollutants subject to a National Ambient Air Quality Standard (NAAQS).

Regulatory Categories

Title III: The existing facility is identified as a major source of hazardous air pollutants (HAP).

Title IV: The existing facility has units subject to the acid rain provisions of the Clean Air Act.

Title V: The existing facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

PSD: The existing facility is a PSD-major facility in accordance with Rule 62-212.400, F.A.C.

NSPS: The existing facility operates units subject to the New Source Performance Standards of 40 CFR 60.

Project Description

Progress Energy Florida, Inc. submitted an application for the construction of selective catalytic reduction (SCR) systems and alkali injection systems on existing Units 4 and 5 at the Crystal River Power Plant. Installation of the alkali injection systems is required to ensure that the SCR project will not result in an increase of sulfuric acid mist emissions above the PSD-significant emission rate of 7 tons per year. The applicant elects to install the SCR systems to provide full flexibility in implementing the federal cap and trade program for nitrogen oxides (NOx) under the Clean Air Interstate Rule (CAIR). Because CAIR affords a regulated facility the flexibility to evaluate market conditions to determine whether it will install controls, operate existing controls, or purchase allowances generated by other plants, the Department does not require the installation of this equipment nor its operation.

Processing Schedule

4/25/06 Received the application for a minor source air pollution construction permit.

5/19/06 Department requested additional information.

7/26/06 Department received additional information; application complete.

2. APPLICABLE REGULATIONS

State Regulations

This project is subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The Florida Statutes authorize the Department of Environmental Protection to establish rules and regulations regarding air quality as part of the Florida Administrative Code (F.A.C.). This project is subject to the applicable rules and regulations defined in the following Chapters of the Florida Administrative Code. 62-4 (Permitting Requirements); 62-204 (Ambient Air Quality Requirements, PSD Increments, and Federal Regulations Adopted by Reference); 62-210 (Permits Required, Public Notice, Reports, Stack Height Policy, Circumvention, Excess Emissions, and Forms); 62-212 (Preconstruction Review, PSD Review and BACT, and Non-attainment Area Review and LAER); 62-213 (Title V Air Operation Permits for Major Sources of Air Pollution); 62-296 (Emission Limiting Standards); and 62-297 (Test Methods and Procedures, Continuous Monitoring Specifications, and Alternate Sampling Procedures).

General PSD Applicability

The Department regulates major air pollution sources in accordance with Florida's Prevention of Significant Deterioration (PSD) program in accordance with Rule 62-212.400, F.A.C. A PSD review is required in areas currently in attainment with the state and federal Ambient Air Quality Standards (AAQS) or areas designated as "unclassifiable" for a given pollutant. A new facility is considered "major" with respect to PSD if it emits or has the potential to emit: 250 tons per year or more of any regulated air pollutant; or 100 tons per year or more of any regulated air pollutant and the facility belongs to one of

the 28 PSD Major Facility Categories defined in Rule 62-210.200, F.A.C.; or 5 tons per year of lead.

For new projects at existing PSD-major sources, each regulated pollutant is reviewed for PSD applicability based on emissions thresholds known as the "Significant Emission Rates" defined in Rule 62-210.200, F.A.C. Pollutant emissions from the project exceeding these rates are considered "significant" and applicants must employ the Best Available Control Technology (BACT) to minimize emissions of each such pollutant and evaluate the air quality impacts. Although a facility 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.

PSD Applicability for Project

The existing Crystal River Power Plant is an existing PSD-major facility located in Citrus County, which is an area that is currently in attainment with, or designated as unclassifiable for, each pollutant with a state or federal Ambient Air Quality Standard (AAQS). Therefore, new projects must be reviewed for PSD applicability. The applicant elects to install SCR systems on Units 4 and 5 to afford it full flexibility in implementing CAIR. Installation of the SCR systems should be complete by November of 2008 (Unit 4) and April of 2009 (Unit 5). With the possible exception of sulfuric acid mist emissions, the project to install additional air pollution control equipment is not expected to result in PSD-significant emissions increases.

For the SCR project, sulfuric acid mist emissions will increase when SO_2 in the flue gas is oxidized to SO_3 across the SCR catalyst, which then forms sulfuric acid mist in the presence of water vapor. On June 20, 2006, emissions tests were conducted in accordance with EPA Method 8 to determine baseline sulfuric acid mist emissions. The test results indicate an average emission rate of 18.7 lb/hour (0.0027 lb/MMBtu), which results in baseline annual emissions of 159 tons per year. In the July 24th response to the Department, the applicant proposes to install an alkali injection system for each unit with a minimum control efficiency of 85% to reduce sulfuric acid mist emissions. The control systems will be operated to provide reasonable assurance that the SCR project will not result in a PSD-significant emission increase over the baseline sulfuric acid mist emissions of 159 tons per year. Therefore, the SCR project under review is not subject to PSD preconstruction review for any pollutant.

As a side note, the applicant also submitted a separate PSD permit application on September 5, 2006 to install new wet flue gas desulfurization (FGD) systems for Units 4 and 5. Installation of the FGD systems should be complete by November of 2009 (Unit 4) and April of 2009 (Unit 5). The application also includes alternative fuel blends with higher sulfur contents, which will result in the formation of additional sulfur dioxide and sulfur sulfuric acid mist emissions. As a result, a PSD-significant emissions increase in sulfuric acid mist emissions is predicted for the FGD project. As part of the FGD project, the applicant proposes the alkali injection systems as the Best Available Control Technology (BACT) to mitigate projected increases in sulfuric acid mist emissions from the proposed alternative fuel blends. As a result, the Department will make a BACT determination for sulfuric acid mist as part of Project No. 0170004-016-AC for the installation of FGD system.

3. PROJECT REVIEW

Selective Catalytic Reduction (SCR) System - Description

The applicant proposes to install new SCR systems on existing coal-fired Units 4 and 5. Equipment typically includes an ammonia injection grid, a mixing grid, catalyst modules, a urea-to-ammonia processing system, associated bulk storage systems, an automated control system, piping, electrical, and other ancillary equipment. Selective catalytic reduction is an add-on control technology in which ammonia is injected into the exhaust gas stream before a section of catalyst. The ammonia combines with NOx in the presence of the catalyst in a reduction reaction to form nitrogen and water. For conventional catalysts such as vanadium pentoxide, the exhaust gas temperature must be maintained between 450° F and 850° F for the reaction to proceed satisfactorily. Ammonia that escapes past the catalyst without reacting with NOx is called "ammonia slip". If a fuel contains significant amounts of sulfur, high levels of ammonia slip can lead to the formation of bisulfates and other particulate matter, which can foul the catalyst and reduce the heat transfer rates of the unit. To avoid these problems, SCR systems can be designed with very low levels of ammonia slip (< 5 ppmv) while still achieving NOx reduction efficiencies of 90% or more. SCR is a commercially available, demonstrated control technology currently employed on numerous utility boilers and combined cycle gas turbine projects worldwide.

The proposed SCR systems will be installed at the flue gas exhausts from Units 4 and 5 and upstream of the air heater for each unit. The preliminary designs of the SCR systems is for 90% reduction in NOx emissions with a designed maximum ammonia slip level of 2 to 5 ppmv. The control efficiency is based on a design inlet NOx rate of 0.35 lb/MMBtu, which is the expected NOx emission level after installation of low-NOx burners (part of the proposed FGD project). Each proposed SCR system will consist of the following equipment.

Urea-to-Ammonia Processing Unit: The project includes a system to convert urea to ammonia.

Ammonia Flow Control Unit (AFCU): The ACFU modulates the amount of ammonia gas that is mixed with heated air to achieve a 3% to 4% ammonia concentration. This is the mixture that is delivered to the ammonia injection grid. As NOx emissions vary, the AFCU adjusts the ammonia gas to the proper level for the desired NOx control. Monitored NOx emissions provide feedback for adjustment of the ammonia injection rate.

Ammonia Injection Grid (AIG): Effective ammonia distribution and NOx conversion are dependent on the velocity profile entering the AIG, which divides the flue gas into numerous zones. Each zone is equipped with a flow indicator and control valve for tuning the AIG to match the inlet NOx profile. Typically, a static mixer is installed upstream of the AIG to create flow resistance, flatten the velocity profile, and provide uniform gas flow. A second static mixer may be positioned at the injection points to impart a swirl to the diluted ammonia and promote good mixing with the flue gas. The preliminary design is for a molar ratio of ammonia-to-NOx of approximately 0.91. The mass rate of ammonia injected will vary with operating conditions such as load. However, at full load and full control, the maximum ammonia injection rate is estimated to be 880 lb/hour.

SCR Reactor: The SCR reactor will be placed just upstream of the air heater for each unit. Within the SCR reactor, the catalyst will be arranged in three layers with an internal honeycomb structure. The system has an operational temperature range between 568° F to 715° F with an optimum temperature just above 680° F. Initially, catalyst will be placed in only two of the three layers. The SCR reactor is expected to create a pressure loss of approximately 2 to 5 inches of water column.

Catalyst: The general catalyst composition will be $TiO_2 - WO_3 - V_2O_5$ with the active catalyst component being vanadium pentoxide (V_2O_5). The catalyst volume will be approximately 21,000 to 25,000 cubic feet. As the catalyst gradually deactivates through use, the remaining layer will be filled and eventually older layers replaced. This will be determined by periodic analysis of catalyst coupons for reactivity. The expected catalyst life is 24,000 hours. The applicant plans to prevent particulate matter from fouling and masking catalyst beds by the following methods: installing an SCR bypass duct, installing a screen to remove large particles prior to the SCR reactor, installing sonic horns above the catalyst layer to minimize ash accumulation, and minimizing oil firing when the SCR reactor is in service.

NOx CEMS: The existing NOx CEMS will be modified to accurately measure the lower NOx emission levels when the SCR system is in service.

SCR Bypass: The SCR design incorporates dampers and ductwork to provide the capability of bypassing the SCR system. Bypass generally occurs under the following circumstances.

- *Boiler Startup*: The SCR reactor must be heated to the minimum operating temperature before ammonia can be injected. During a boiler startup, the boiler exhaust is bypassed until a minimum load and steady state operation is achieved. The bypass dampers are gradually opened to control SCR warming and allow the system to reach the minimum SCR reactor temperature.
- *Boiler Shutdown/Problems*: Problems may occur that require personnel entry into the boiler for maintenance. By closing the bypass dampers in this situation, the SCR remains thermally isolated and warm while the boiler is cooled for entry. By keeping the SCR warm, the SCR can be returned to operation much faster.
- *SCR Catalyst Problems*: Problems with the catalyst (such as plugging or fouling) would require inspections and maintenance on the SCR itself. The bypass would be used to allow entry and work on the SCR reactor without taking the boiler off line.
- *Operation w/o NOx Control*: The plant could operate without ammonia injection for NOx control and elect to bypass the SCR reactor.

Alkali Injection System – Description

An alkali injection system will be installed for each unit concurrent with each SCR system to mitigate sulfuric acid mist emissions. From experience with previous SCR installations at other facilities, an SCR catalyst can double the conversion of SO_2 to SO_3, similarly increase the sulfuric acid mist emissions, and cause opacity problems.[1] To reduce impacts, the control systems will inject an alkali sorbent based on ammonia or sodium (i.e., Trona or sodium bisulfite). The alkali is

[1] Gary M. Blythe , "Furnace Injection of Alkaline Sorbents for Sulfuric Acid Control", Semi-Annual Technical Progress Report, October 2003, prepared for National Energy Technology Laboratory, U.S. Department of Energy.

injected prior to the electrostatic precipitator, either before or after the air pre-heater. The alkali reacts with SO_2 to form salts, which are removed by the ESP. The minimum design removal efficiency will be 85%. The applicant will install and operate the alkali injection systems such that the increase in sulfuric acid mist emissions will be less than the PSD-significant emission rate of 7 tons/year.

The applicant estimated baseline emissions as follows:

SAM (Unit 4) = (18.7 lb/hour) (8470 hour/year) (ton/2000 lb) = 79.2 tons/year

SAM (Unit 5) = (18.7 lb/hour) (8537 hour/year) (ton/2000 lb) = 79.8 tons/year

So, total sulfuric acid mist (SAM) emissions from Units 4 and 5 would be 159 tons/year. However, this estimate is based on test data (18.7 lb SAM/hour) collected at 103% of the maximum heat input rate. At lower operational loads, less fuel is fired and less SO_2 and SAM is generated. A more accurate method is to estimate the baseline emissions based on the test data and the actual heat input for the units. In fact, Rule 62-210.370(2)(d), F.A.C. states, "... If stack test data are used, the emission factor shall be based on the average emissions per unit of input, output, or gas volume ... The owner or operator shall compute emissions by multiplying the appropriate emission factor by the appropriate input, output or gas volume value for the period over which the emissions are computed ..." Therefore, the baseline emissions are determined to be:

SAM (Units 4 and 5) = (18.7 lb/hour) (hour/6845 MMBtu) (99,142,209 MMBtu/year) (ton/2000 lb) = 135.4 tons/year

In the above calculation, the actual heat input rate of 99,142,209 MMBtu per year for both units combined is based on the highest 2-year average heat input rate as identified by the applicant in Table A-12 of the FGD project (Project No. 0170004-016-AC). Therefore, the permit will identify the baseline actual emissions as 135.4 tons/year.

Draft Permit Requirements

The draft permit requires installation of the alkali injection system because of potential collateral sulfuric acid mist emissions increases that could result whenever the SCR reactor is in service. Although the draft permit authorizes construction of the SCR systems, it does not require installation or operation of this equipment. The applicant elects to install SCR systems on Units 4 and 5 to afford it full flexibility in implementing CAIR. Alternatively, the applicant may elect to take the SCR systems out of service and purchase allowances to meet the CAIR NOx allocations. Project No. 0170004-016-AC to add FGD systems to Units 4 and 5 may result in additional NOx emissions standards.

Although the applicant requested reporting of annual emission for a 5-year period after installation of the SCR system, Rule 62-212.300(1)(e)1, F.A.C. requires reporting of annual emission for a 10-year period, "... if the change increases the design capacity of that emissions unit or its potential to emit that PSD pollutant." Since the project increases potential emissions of sulfuric acid mist, the applicant will be required to calculate and report annual emissions for a period of 10 years after completing construction of each SCR system. In addition, the draft permit includes the following specific requirements.

- Tests shall be conducted to demonstrate the effectiveness of the controls systems as installed.
- Annual tests shall be conducted to determine uncontrolled and controlled sulfuric acid mist emissions rates.
- Records shall be maintained identifying operation of the new control systems and the alkali injection rate.
- In accordance with Rule 62-210.300(1)(e), F.A.C., annual sulfuric acid mist emissions shall be reported for 10 years to demonstrate that the SCR project did not trigger PSD preconstruction review for this pollutant.
- For purposes of reporting the annual sulfuric acid mist emission, the uncontrolled emissions factor shall be used if the minimum alkali injection rate established for the latest test is not met.

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. No air quality modeling analysis is required because the project does not result in a significant increase in emissions. Jeff Koerner is the project engineer responsible for reviewing the application and drafting the permit. 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.

DRAFT PERMIT

PERMITTEE:

Progress Energy Florida, Inc.
100 Central Avenue, CN77
St. Petersburg, Florida 33701

Authorized Representative:
Bernie Cumbie, Plant Manager

Air Permit No. 0170004-013-AC
Crystal River Power Plant
Facility ID No. 0170004
SCR Project for Units 4 and 5
Permit Expires: December 1, 2010

PROJECT AND LOCATION

This permit authorizes the construction of selective catalytic reduction (SCR) systems and alkali injection systems on existing Units 4 and 5 at the Crystal River Power Plant. The Crystal River Power Plant is an existing electrical generating station (SIC No. 4911), which is located north of Crystal River and west of U.S. 19 in Citrus County, Florida.

STATEMENT OF BASIS

Installation of the alkali injection systems is required to ensure that the SCR project will not result in an increase of sulfuric acid mist emissions above the PSD-significant emission rate of 7 tons per year. The applicant elects to install the SCR systems to provide full flexibility in implementing the federal cap and trade program for nitrogen oxides (NOx) under the Clean Air Interstate Rule (CAIR). Because CAIR affords a regulated facility the flexibility to evaluate market conditions to determine whether it will install controls, operate existing controls, or purchase allowances generated by other plants, the Department does not require the installation of this equipment nor its operation. This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.) and Title 40, Part 60 of the Code of Federal Regulations. The permittee is authorized to install the proposed equipment in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department.

CONTENTS

(DRAFT)

Joseph Kahn, P.E., Director
Division of Air Resource Management

(Date)

FACILITY AND PROJECT DESCRIPTION

The Crystal River Power Plant is an existing electrical generating plant consisting of the following equipment: four coal-fired steam generating units with electrostatic precipitators; helper mechanical cooling towers for Units 1, 2 and Nuclear Unit 3; two natural draft cooling towers for Units 4 and 5; coal, fly ash, and bottom ash handling facilities; and, relocatable diesel-fired generators. The project includes construction of selective catalytic reduction (SCR) systems and alkali injection systems on existing Units 4 and 5. Installation of the alkali injection systems is required to ensure that the SCR project will not result in an increase of sulfuric acid mist emissions above the PSD-significant emission rate of 7 tons per year. The applicant elects to install the SCR systems to provide full flexibility in implementing the federal cap and trade program for nitrogen oxides (NOx) under the Clean Air Interstate Rule (CAIR). Because CAIR affords a regulated facility the flexibility to evaluate market conditions to determine whether it will install controls, operate existing controls, or purchase allowances generated by other plants, the Department does not require the installation of this equipment nor its operation. The project is not subject to PSD preconstruction review.

ID	Emission Unit Description
003	Unit 5 - Fossil Fuel Steam Generator
004	Unit 4 - Fossil Fuel Steam Generator

REGULATORY CLASSIFICATION

Title III: The existing facility is a major source of hazardous air pollutants (HAP).

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

Title V: The existing facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.

PSD: The existing facility is a PSD-major facility in accordance with Rule 62-212.400, F.A.C.

NSPS: The existing facility operates units subject to the New Source Performance Standards of 40 CFR 60.

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; and the Department's Final Determination.

SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to applications for permits to operate, construct, or modify emissions units regulated by this permit shall be submitted to the Bureau of Air Regulation of the Florida Department of Environmental Protection (DEP) at 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400.

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. Appendices: The following Appendices are attached as part of this permit: Appendix A (Citation Format), Appendix B (General Conditions), and Appendix C (Common Conditions).

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

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

6. Modifications: The permittee shall notify the Compliance Authority upon commencement of construction. 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. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

7. Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authorities. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Unit 4 and 5

This section of the permit addresses the following emissions unit.

ID No.	Emissions Unit Description
003	Unit 5 - Fossil Fuel Steam Generator: This is a pulverized coal, dry bottom, wall-fired unit that is rated at 760 MW with a maximum heat input rate of 6665 MMBtu per hour. Allowable fuels include bituminous coal, a bituminous coal and bituminous coal briquette mixture, and used oil fuel. In addition, No. 2 distillate oil is fired as a startup fuel and natural gas is fired as both a startup fuel and low-load flame stabilization fuel. Particulate matter emissions are controlled with a high efficiency electrostatic precipitator (ESP). Emissions exhaust through a 600 feet tall stack.
004	Unit 4 - Fossil Fuel Steam Generator: This is a pulverized coal, dry bottom, wall-fired unit that is rated at 760 MW with a maximum heat input rate of 6665 MMBtu per hour. Allowable fuels include bituminous coal, a bituminous coal and bituminous coal briquette mixture, and used oil fuel. In addition, No. 2 distillate oil is fired as a startup fuel and natural gas is fired as both a startup fuel and low-load flame stabilization fuel. Particulate matter emissions are controlled with a high efficiency electrostatic precipitator (ESP). Emissions exhaust through a 600 feet tall stack.

EQUIPMENT

1. SCR System: For Units 4 and 5, the permittee is authorized to install Selective Catalytic Reduction (SCR) systems. In general, the SCR systems will include the following equipment. Urea-to-ammonia conversion system; ammonia flow control unit (AFCU); ammonia injection grid (AIG); TiO_2-WO_3-V_2O_5 catalyst; SCR reactor; an SCR bypass system; and other ancillary equipment.

   {Permitting Note: The following description summarizes the preliminary design of SCR systems. The SCR systems will be designed for a control efficiency of 90% reduction in NOx emissions based on a design inlet NOx rate of 0.35 lb/MMBtu with a maximum ammonia slip level of 2 to 5 ppmv. The molar ratio of ammonia-to-NOx is estimated to be approximately 0.91, which is a maximum ammonia injection rate of approximately 880 lb/hour at full load and full control. The catalyst volume will be approximately 21,000 to 25,000 cubic feet. The expected catalyst life is 24,000 hours. The SCR reactor will be placed just upstream of each unit's air heater. Within the SCR reactor, the catalyst will be arranged in three layers with an internal honeycomb structure. The system has an operational temperature range between 568° F to 715° F. Initially, catalyst will be placed in only two of the three layers. As the catalyst gradually deactivates through use, the remaining layer will be filled and eventually older layers replaced. This will be determined by periodic analysis of catalyst coupons for reactivity. The SCR system is expected to create a pressure loss of approximately 2 to 5 inches of water column. The applicant plans to prevent particulate matter from fouling and masking catalyst beds by the following methods: installing an SCR bypass duct, installing a screen to remove large particles prior to the SCR reactor, installing sonic horns above the catalyst layer to minimize ash accumulation, and minimizing oil firing whenever the SCR is in service.} [Applicant Request; Design]

2. Alkali Injection System: The permittee shall install an alkali injection system with a control efficiency of at least 85% to control sulfuric acid mist emissions. The equipment will include tanks, piping, injectors, a control system and other ancillary equipment. The alkali injection systems shall be operable when the SCR system is initially available for service.

   {Permitting Note: When in service, SCR catalyst will oxidize more SO_2 to SO_3 and increase sulfuric acid mist emissions. The preliminary design indicates that the alkali control systems will inject an alkali sorbent based on ammonia or sodium (i.e., Trona or sodium bisulfite). The alkali sorbent will be injected prior to the electrostatic precipitator, either before or after the air pre-heater. The alkali reacts with SO_2 to form salts, which are then removed by the ESP. The purpose of the alkali injection system is to ensure that any increase in sulfuric acid mist emissions related to the SCR project will be less than the PSD-significant emission rate of 7 tons/year.} [Applicant Request; Design]

3. NOx CEMS: As necessary, the permittee is authorized to modify, calibrate, re-certify, and operate the existing NOx CEMS to accurately measure the lower NOx emission levels realized if the SCR system is in service. [Applicant Request; Design; Rule 62-4.070(3), F.A.C.]

4. 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. Operation of the SCR is not required by this permit. As necessary, the permittee shall operate the alkali injection system to ensure the project does not result in an increase of more than the PSD-significant emissions (7 tons/year) of sulfuric acid mist emissions above baseline actual emissions (135.4 tons/year). [Rules 62-210.650 and 62-212.400(12), F.A.C.]

EMISSIONS PERFORMANCE TESTING

5. Performance Tests: Within 60 days of commencing operation of each SCR/alkali injection system, the permittee shall have the following tests conducted for each unit.

   a. At permitted capacity, the permittee shall conduct tests to determine the uncontrolled NOx emissions rate, the controlled NOx emission rate, and the actual control efficiency of the installed SCR system. Tests shall consist of three, 1-hour test runs. Alternatively, the permittee may provide representative CEMS data for this demonstration. During each test run, the permittee shall continuously monitor and record the ammonia injection rate.

   b. At permitted capacity and with no SCR bypass, the permittee shall conduct stack tests to determine the uncontrolled sulfuric acid mist emission rate, the controlled sulfuric acid mist emission rate, and actual control efficiency of the installed alkali injection systems. Tests shall consist of three, 1-hour test runs and be conducted while firing the fuel blend with the highest sulfur content. During each test run, the permittee shall continuously monitor and record the alkali injection rate and total secondary power input to the electrostatic precipitator. The purpose of these tests is to determine actual control efficiency of the installed systems and to establish a minimum alkali injection rate, which will be used to calculate the actual annual emissions.

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

6. Annual Tests: During each year the reporting for sulfuric acid mist emissions is required, the permittee shall repeat the tests specified in Condition 5. The tests may be used to reestablish the minimum alkali injection rate, which will be used to calculate the actual annual emissions. [Rule 62-4.070(3), F.A.C.]

7. Test Notification: The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. [Rule 62-297.310(7)(a)9, F.A.C.]

8. Test Methods: 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
7E	Determination of Nitrogen Oxide Emissions
8	Determination of Sulfuric Acid Mist Emissions
19	Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxides Emission Rates (Optional F-factor method may be used to determine flow rate and gas analysis to calculate mass emissions in lieu of Methods 1-4.)

Tests shall also be conducted in accordance with the common condition specified in Section 4, Appendix C 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]

NOTIFICATIONS, RECORDS AND REPORTS

9. Design Notifications: Prior to initial operation of the alkali injection system, the permittee shall notify the Bureau of Air Regulation and the Compliance Authority of the final design specifications including: alkali sorbent, storage and delivery of alkali sorbent, number of injectors, and the maximum injection rate at full load. In addition, the permittee shall notify the Bureau of Air Regulation and the Compliance Authority of substantial changes to the design of the SCR or alkali injection systems. [Rule 62-4.070(3), F.A.C.]

10. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements

specified in Section 4, Appendix C of this permit. For each sulfuric acid mist test run, the report shall also indicate the alkali injection rate, unit load, unit heat input rate, and total secondary power input to the electrostatic precipitator. For each NOx emissions test run, the report shall also indicate the ammonia injection rate, unit load, and unit heat input rate. [Rule 62-297.310(8), F.A.C.]

11. Operational Data: The permittee shall continuously monitor and record the alkali injection rate and the hours of SCR bypass operation. [Rule 62-4.070(3), F.A.C.]

12. Annual SAM Emissions Reports: In accordance with Rule 62-212.300(1)(e), F.A.C., the permittee shall comply with the following monitoring, reporting and recordkeeping provisions:

    a. The permittee shall monitor the sulfuric acid mist (SAM) emissions using the most reliable information available. On a calendar year basis, the permittee shall calculate and maintain a record of the annual emissions (tons per year) for a period of 10 years after completing construction on each new control system. Emissions shall be computed in accordance with Rule 62-210.370, F.A.C.

    b. Within 60 days after each calendar year following completion of construction on each new control system, the permittee shall report to the Compliance Authority the annual emissions for each unit during the calendar year that preceded submission of the report. The report shall contain the following:

        1) The name, address and telephone number of the owner or operator of the major stationary source;

        2) The annual emissions as calculated pursuant to subparagraph 62-212.300(1)(e)1., F.A.C.;

        3) If the emissions differ from the preconstruction projection, an explanation as to why there is a difference; and

        4) Any other information that the owner or operator wishes to include in the report.

    c. The information required to be documented and maintained shall be submitted to the Compliance Authority, where it will be available for review to the general public.

    [Rule 62-212.300(1)(e), F.A.C.]

13. SAM Emissions Computation and Reporting: The permittee shall compute sulfuric acid mist (SAM) emissions in accordance with the following requirements.

    a. For each year of reporting required, emissions shall be computed based on the controlled and uncontrolled emissions factors (lb/MMBtu) determined during the required annual emissions test.

    b. With appropriate supporting test data, multiple emission factors may be used as necessary to account for variations in emission rate associated with variations in the emissions unit's operating rate or operating conditions during the period over which emissions are computed.

    c. The permittee shall compute emissions by multiplying the appropriate controlled or uncontrolled emission factor (lb/MMBtu) by the annual heat input rate for the period over which the emissions are computed. The uncontrolled emissions factor shall be used if the minimum alkali injection rate established for the latest test is not met.

    d. The permittee shall retain a copy of all records used to compute emissions pursuant to this rule for a period of five years from the date on which such emissions information is submitted to the Department or Compliance Authority for any regulatory purpose.

    [Rule 62-210.370, F.A.C.]

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SECTION 4. APPENDICES
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SECTION 4. APPENDIX A
CITATION FORMATS

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 CRF 60.7]

Means: Title 40, Part 60, Section 7

SECTION 4. APPENDIX B
GENERAL CONDITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

13. This permit also constitutes:

    a. Determination of Best Available Control Technology (Not Applicable);
    b. Determination of Prevention of Significant Deterioration (Not Applicable); and
    c. Compliance with New Source Performance Standards (Not Applicable).

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.

SECTION 4. APPENDIX C
COMMON CONDITIONS

{Permitting Note: 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. 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.]
3. 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.]
4. 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.]
5. VOC or OS Emissions: No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]
6. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and62-210.200(203), F.A.C.]
7. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20 percent opacity. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1, F.A.C.]
8. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

TESTING REQUIREMENTS

9. 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.]
10. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is

conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. [Rule 62-297.310(2), F.A.C.]

11. 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.]

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

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

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

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

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

13. Determination of Process Variables

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

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

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

14. 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.

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

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

17. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report, other than for an EPA or DEP Method 9 test, shall provide the following information:

    1. The type, location, and designation of the emissions unit tested.
    2. The facility at which the emissions unit is located.

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

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

RECORDS AND REPORTS

18. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least five (5) years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rules 62-4.160(14) and 62-213.440(1)(b)2, F.A.C.]
19. Annual Operating Report: The permittee shall submit an annual report that summarizes the actual operating rates and emissions from this facility. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.]

Filename: 0170004-013-AC - Appendix

Progress Energy

Bernie M. Cumbie
Manager, Fossil Plant &
Fuel Operations

July 24, 2006

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

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

Dear Mr. Koerner,

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

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

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

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

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

3. Sulfuric Acid Mist Emissions: The application indicated an increase of SO_3 emissions with this installation of the SCR units. Quantify the estimated SO_3 and H_2SO_4 emissions due to the installation the SCR units.

   It is expected that approximately 0.5% of the existing SO_2 in the flue gas stream that flows through the SCR (i.e., 0.25% per catalyst layer) will be converted to SO_3. It's uncertain how much of this SO3 will be converted to SAM (H_2SO_4), especially in the absence of an FGD downstream. However, in order to provide a conservative estimate for this application, it's assumed that all SO_3 generated could be converted to emissions of SAM.

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

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

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

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

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

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

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

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

5. Selective Catalytic Reduction (SCR) System: Identify the following SCR design parameters: general catalyst composition (material); catalyst structure (honeycomb, plate, etc.); approximate catalyst volume (ft^3); catalyst operational temperature range (° F); molar ratio of ammonia/NOx; design inlet and outlet NOx emission rates (lb/MMBtu); and design control efficiency. What are the baseline NOx emissions for determining the design control efficiency? Describe the ammonia distribution, flow control, and monitoring systems. What are the general procedures for startup and shutdown of the SCR system? What critical operating parameters and levels must be attained before commencing ammonia injection? Explain how the control system will monitor, adjust, and inject ammonia at a given rate. What are the estimated ammonia injection rates at 50%, 75%, and 100% of the maximum coal-firing rate? What is the target ammonia slip level based on the design criteria NOx reduction? Describe the design and operating techniques used to prevent particulate matter from fouling and masking the catalyst beds. Provide the catalyst vendor's recommendations describing catalyst maintenance procedures and schedule. In response to catalyst deactivation, describe the process of gradually adding catalyst until it is necessary for complete replacement.

The current SCR design parameters are as follows:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Sincerely,

Bernie M. Cumbie
Plant Manager/Responsible Official

Attachments

ATTACHMENT 1

FDEP AIR APPLICATION FORMS

Department of
Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

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

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

Air Operation Permit – Use this form to apply for:

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

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

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: **PROGRESS ENERGY FLORIDA, INC.**	
2. Site Name: **CRYSTAL RIVER POWER PLANT**	
3. Facility Identification Number: **0170004**	
4. Facility Location...: Street Address or Other Locator: **NORTH OF CRYSTAL RIVER, WEST OF U.S. 19** City: **CRYSTAL RIVER** County: **CITRUS** Zip Code: **34428**	
5. Relocatable Facility? ☐ Yes ☒ No	6. Existing Title V Permitted Facility? ☒ Yes ☐ No

Application Contact

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

Application Processing Information (DEP Use)

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

APPLICATION INFORMATION

Purpose of Application

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

Air Construction Permit

☒ Air construction permit.

Air Operation Permit

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

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

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

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

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

Application Comment

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

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

APPLICATION INFORMATION

Scope of Application

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

Application Processing Fee

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

APPLICATION INFORMATION

Owner/Authorized Representative Statement

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

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

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

Signature

7/24/06
Date

APPLICATION INFORMATION

Application Responsible Official Certification

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

1. Application Responsible Official Name:

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

3. Application Responsible Official Mailing Address...
   Organization/Firm:
   Street Address:
   City: State: Zip Code:

4. Application Responsible Official Telephone Numbers...
   Telephone: ( ) - ext. Fax: ( ) -

5. Application Responsible Official Email Address:

6. Application Responsible Official Certification:

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

   Signature Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: **SCOTT OSBOURN**
   Registration Number: **57557**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Golder Associates Inc.****
   Street Address: **5100 West Lemon St., Suite 114**
   City: **Tampa** State: **FL** Zip Code: **33609**
3. Professional Engineer Telephone Numbers...
   Telephone: (**813**) **287-1717** ext.**211** Fax: (**813**) **287-1716**
4. Professional Engineer Email Address: **SOSBOURN@GOLDER.COM**
5. Professional Engineer Statement:

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

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

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

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

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

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

Signature Date 7/24/06

(seal)

SCOTT OSBOURN LICENSE NO. 57557 STATE OF FLORIDA PROFESSIONAL ENGINEER

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

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

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

Facility Contact

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

Facility Primary Responsible Official

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

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

Facility Regulatory Classifications

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

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

FACILITY INFORMATION

List of Pollutants Emitted by Facility

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

FACILITY INFORMATION

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

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

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

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

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

Additional Requirements for Air Construction Permit Applications

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

FACILITY INFORMATION

Additional Requirements for FESOP Applications

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

Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities (Required for initial/renewal applications only):
   ☐ Attached, Document ID:____ ☐ Not Applicable (revision application)

2. Identification of Applicable Requirements (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought):
   ☐ Attached, Document ID:____
   ☐ Not Applicable (revision application with no change in applicable requirements)

3. Compliance Report and Plan (Required for all initial/revision/renewal applications):
   ☐ Attached, Document ID:____
   Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.

4. List of Equipment/Activities Regulated under Title VI (If applicable, required for initial/renewal applications only):
   ☐ Attached, Document ID:____
   ☐ Equipment/Activities On site but Not Required to be Individually Listed
   ☐ Not Applicable

5. Verification of Risk Management Plan Submission to EPA (If applicable, required for initial/renewal applications only) :
   ☐ Attached, Document ID:____ ☐ Not Applicable

6. Requested Changes to Current Title V Air Operation Permit:
   ☐ Attached, Document ID:____ ☐ Not Applicable

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

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

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

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

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

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

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

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

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

Emissions Unit Description and Status

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

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

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

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

2. Description of Emissions Unit Addressed in this Section:

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

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

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A	**9/1/06**		**49**	☒ Yes ☐ No

9. Package Unit:
   Manufacturer: Model Number:

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

11. Emissions Unit Comment:

    PULVERIZED COAL DRY BOTTOM BOILER, WALL-FIRED.

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:

Electrostatic Precipitator - High Efficiency (95.0 – 99.9%)

Proposed:

Selective Catalytic reduction (SCR)
Alkali Injection System

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

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

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

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

Emission Point Description and Type

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

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 4

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

Segment Description and Rate: Segment 2 of 4

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

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 3 of 4

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

Segment Description and Rate: Segment 4 of 4

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

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
CO			NS
NOX	139		EL
SAM	032/070		NS
PM	010		EL
PM10	010		NS
SO2			EL
VOC			NS

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

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

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

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

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

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

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

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 3

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

Allowable Emissions Allowable Emissions 2 of 3

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

Allowable Emissions Allowable Emissions 3 of 3

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

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

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

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

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

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

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

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

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions **1** of **1**

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

Allowable Emissions Allowable Emissions ____ of ____

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

Allowable Emissions Allowable Emissions ____ of ____

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

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

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM_{10} – Particulate Matter**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **667** lb/hour **2,919** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.1 lb/MMBtu** Reference: **Permit**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **PM_{10} is assumed to be equal to PM.**	
11. Potential Fugitive and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

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

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **SO_2 – Sulfur Dioxide**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **7,998** lb/hour **35,031** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **1.2 lb/MMBtu** Reference: **Permit**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **lb/hr = 6,665 MMBtu/hr * 1.2 lb/MMBtu = 7,998 lb/hr** **TPY = 7,998 lb/hr * 8760 hr/yr * 1 ton/2000 lb = 3,5031 TPY**	
11. Potential Fugitive and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions 1 of 3

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

Allowable Emissions Allowable Emissions 2 of 3

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

Allowable Emissions Allowable Emissions 3 of 3

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

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

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

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

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

G. VISIBLE EMISSIONS INFORMATION

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

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE20 – Visible Emissions**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: **27** % Maximum Period of Excess Opacity Allowed: **6** min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment: **Unit has opacity monitor.**	

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor **1** of **5**

1. Parameter Code: **EM – Emission**	2. Pollutant(s): **SO_2**
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: **TECO/Enviroplan** Model Number: **43B**	Serial Number: **43B-46236-275**
5. Installation Date: **04-APR-94**	6. Performance Specification Test Date: **04-DEC-94**
7. Continuous Monitor Comment: **40 CFR 75, SO_2**	

Continuous Monitoring System: Continuous Monitor **2** of **5**

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

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor **3** of **5**

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

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

1. Parameter Code: **CO_2 – Carbon Dioxide**	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: **TECO/Enviroplan** Model Number: **41H**	Serial Number: **41H-45738-274**
5. Installation Date: **04-APR-94**	6. Performance Specification Test Date: **04-DEC-94**
7. Continuous Monitor Comment: **40 CFR 75**	

H. CONTINUOUS MONITOR INFORMATION

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

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

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

Continuous Monitoring System: Continuous Monitor _____ of _____

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

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Attach 3** ☐ Previously Submitted, Date

2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: ____ ☒ Previously Submitted, Date **06/30/04**

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

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

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

6. Compliance Demonstration Reports/Records
   ☒ Attached, Document ID: **Attach 2**
   Test Date(s)/Pollutant(s) Tested: **6/20/06 -- SAM Emissions**
   ☐ Previously Submitted, Date:
   Test Date(s)/Pollutant(s) Tested: ____
   ☐ To be Submitted, Date (if known): ____
   Test Date(s)/Pollutant(s) Tested: ____
   ☐ Not Applicable
   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

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

EMISSIONS UNIT INFORMATION
Section [1]
EU 003 - FFSG, Unit 5

Additional Requirements for Air Construction Permit Applications

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

Additional Requirements for Title V Air Operation Permit Applications

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

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

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

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

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

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

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

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

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

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

Emissions Unit Description and Status

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

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

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

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

2. Description of Emissions Unit Addressed in this Section:

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

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

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A	**9/1/06**		**49**	☒ Yes ☐ No

9. Package Unit:
   Manufacturer: Model Number:

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

11. Emissions Unit Comment:

    PULVERIZED COAL DRY BOTTOM BOILER, WALL-FIRED.

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:

Electrostatic Precipitator - High Efficiency (95.0 – 99.9%)

Proposed:

Selective Catalytic reduction (SCR)
Alkali Injection System

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

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

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

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

Emission Point Description and Type

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

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment **1** of **4**

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

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

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

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 3 of 4

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

Segment Description and Rate: Segment 4 of 4

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

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
CO			NS
NOX	139		EL
SAM	032/070		NS
PM	010		EL
PM10	010		NS
SO2			EL
VOC			NS

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

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

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

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions ____ of ____

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

Allowable Emissions Allowable Emissions ____ of ____

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

Allowable Emissions Allowable Emissions ____ of ____

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

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

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **NO_X – Nitrogen Oxides**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **3,332.5** lb/hour **14,596** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.5 lb/MMBtu** Reference: **Permit, Acid Rain annual limit.**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

lb/hr = 6,665 MMBtu/hr * 0.5 lb/MMBtu = 3,332.5 lb/hr.
TPY = 3,332.5 lb/hr * 8760 hrs/yr * 1 ton/2000 lb = 14,596 TPY

11. Potential Fugitive and Actual Emissions Comment:

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions **1** of **3**

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

Allowable Emissions Allowable Emissions **2** of **3**

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

Allowable Emissions Allowable Emissions **3** of **3**

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

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

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

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

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions ____ of ____

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

Allowable Emissions Allowable Emissions ____ of ____

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

Allowable Emissions Allowable Emissions ____ of ____

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

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

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

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

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions **1** of **1**

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

Allowable Emissions Allowable Emissions ____ of ____

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

Allowable Emissions Allowable Emissions ____ of ____

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

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

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **PM_{10} – Particulate Matter**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **667** lb/hour **2,919** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **0.1 lb/MMBtu** Reference: **Permit**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **PM_{10} is assumed to be equal to PM.**	
11. Potential Fugitive and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

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

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

1. Pollutant Emitted: **SO_2 – Sulfur Dioxide**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **7,998** lb/hour **35,031** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: **1.2 lb/MMBtu** Reference: **Permit**	7. Emissions Method Code: **0**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **lb/hr = 6,665 MMBtu/hr * 1.2 lb/MMBtu = 7,998 lb/hr** **TPY = 7,998 lb/hr * 8760 hr/yr * 1 ton/2000 lb = 3,5031 TPY**	
11. Potential Fugitive and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions **1** of **3**

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

Allowable Emissions Allowable Emissions **2** of **3**

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

Allowable Emissions Allowable Emissions **3** of **3**

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

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

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

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

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

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

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

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

Allowable Emissions Allowable Emissions _____ of _____

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

G. VISIBLE EMISSIONS INFORMATION

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

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: **VE20 – Visible Emissions**	2. Basis for Allowable Opacity: ☒ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: **20** % Exceptional Conditions: **27** % Maximum Period of Excess Opacity Allowed: **6** min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment: **Unit has opacity monitor.**	

Visible Emissions Limitation: Visible Emissions Limitation _____ of _____

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: ☐ Rule ☐ Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor **1** of **5**

1. Parameter Code: **EM – Emission**	2. Pollutant(s): **SO_2**
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: **TECO/Enviroplan** Model Number: **43B**	Serial Number: **43B-46186-275**
5. Installation Date: **04-APR-94**	6. Performance Specification Test Date: **04-DEC-94**
7. Continuous Monitor Comment: **40 CFR 75, SO_2**	

Continuous Monitoring System: Continuous Monitor **2** of **5**

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

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor **3** of **5**

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

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

1. Parameter Code: **CO_2 – Carbon Dioxide**	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: **TECO/Enviroplan** Model Number: **41H**	Serial Number: **41H-45740-274**
5. Installation Date: **04-APR-94**	6. Performance Specification Test Date: **04-DEC-94**
7. Continuous Monitor Comment: **40 CFR 75**	

H. CONTINUOUS MONITOR INFORMATION

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

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

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

Continuous Monitoring System: Continuous Monitor _____ of _____

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

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☒ Attached, Document ID: **Attach 3** ☐ Previously Submitted, Date

2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   ☐ Attached, Document ID: ____ ☒ Previously Submitted, Date **06/30/04**

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

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

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

6. Compliance Demonstration Reports/Records
   ☒ Attached, Document ID: **Attach 2**
   Test Date(s)/Pollutant(s) Tested: **6/20/06 -- SAM Emissions**
   ☐ Previously Submitted, Date:
   Test Date(s)/Pollutant(s) Tested: ____
   ☐ To be Submitted, Date (if known): ____
   Test Date(s)/Pollutant(s) Tested: ____
   ☐ Not Applicable
   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

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

EMISSIONS UNIT INFORMATION
Section [2]
EU 004 - FFSG, Unit 4

Additional Requirements for Air Construction Permit Applications

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

Additional Requirements for Title V Air Operation Permit Applications

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

Additional Requirements Comment

ATTACHMENT 2

EPA REFERENCE METHOD 8 TEST RESULTS

Sulfuric Acid Mist Engineering Study
Test Report

Progress Energy
Crystal River, Unit 4
Crystal River, Florida

C.E.M. Solutions Project No. 2648

Testing Completed: June 2006

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

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

Statement of Validity

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

Jeremy A. Johnson
President, C.E.M. Solutions, Inc.

Project Background

Name of Source Owner:	Progress Energy
Address of Owner:	One Power Plaza 263 13th Avenue South St. Petersburg, Fl. 33701
Source Identification:	Oris Code: 628 Facility ID: 0170004 Emissions Unit: 004
Location of Source:	Citrus County, Florida
Type of Operation:	SIC Code: 4911
Tests Performed:	Method 1 – Traverse Points Method 3A – Determination of Oxygen and Carbon Dioxide Method 8 - Determination of Sulfuric Acid and Sulfur Dioxide
Test Supervisor:	Mr. Jeremy Johnson
Date Tests Conducted:	June 20, 2006
Site Test Coordinator:	Mr. James T. Long

C.E.M. Solutions, Inc Test Personnel

Project Field Manager:	Mr. Jeremy A. Johnson
Test Engineer:	Mr. Joseph Conti
Test Technician:	Mr. Charles Horton

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Appendices

1.0 Introduction

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

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

Target pollutants include:

- Sulfuric Acid Mist (H_2SO_4), including SO_3

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

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

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

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

2.0 Facility Description

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

2.1 Process Equipment

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

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

3.0 Test Program/Operating Conditions

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

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

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

- Fuel flow rate (Klbs/hr)

Fuel analysis was completed by Progress Energy.

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

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

4.0 Test Methods

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

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

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

Table 1 summarizes the EPA test methods utilized:

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

USEPA Method	Description
1	Sample and Velocity Traverses for Stationary Sources
2	Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot)
3A	Gas Analysis for Determining Dry Molecular Weight (O_2/CO_2 gas analysis) Instrumental Method
4	Moisture Content in Stack Gases
8	Sulfur Acid (including sulfuric acid mist and SO_3)

4.1 Sample and Velocity Traverses

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

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

4.2 Stack Gas Velocity and Volumetric Flow Rate

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

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

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

4.2.1 Method 2 Quality Assurance/Quality Control Procedures

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

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

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

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

4.3 Determining Sample Gas Dry Molecular Weight

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

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

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

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

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

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

4.3.1 Method 3A Quality Assurance/Quality Control Procedures

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

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

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

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

4.4 Moisture Content Determination

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

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

4.4.1 Method 4 Quality Assurance/Quality Control Procedures

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

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

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

4.5 Determination of Sulfur Acid Mist

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

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

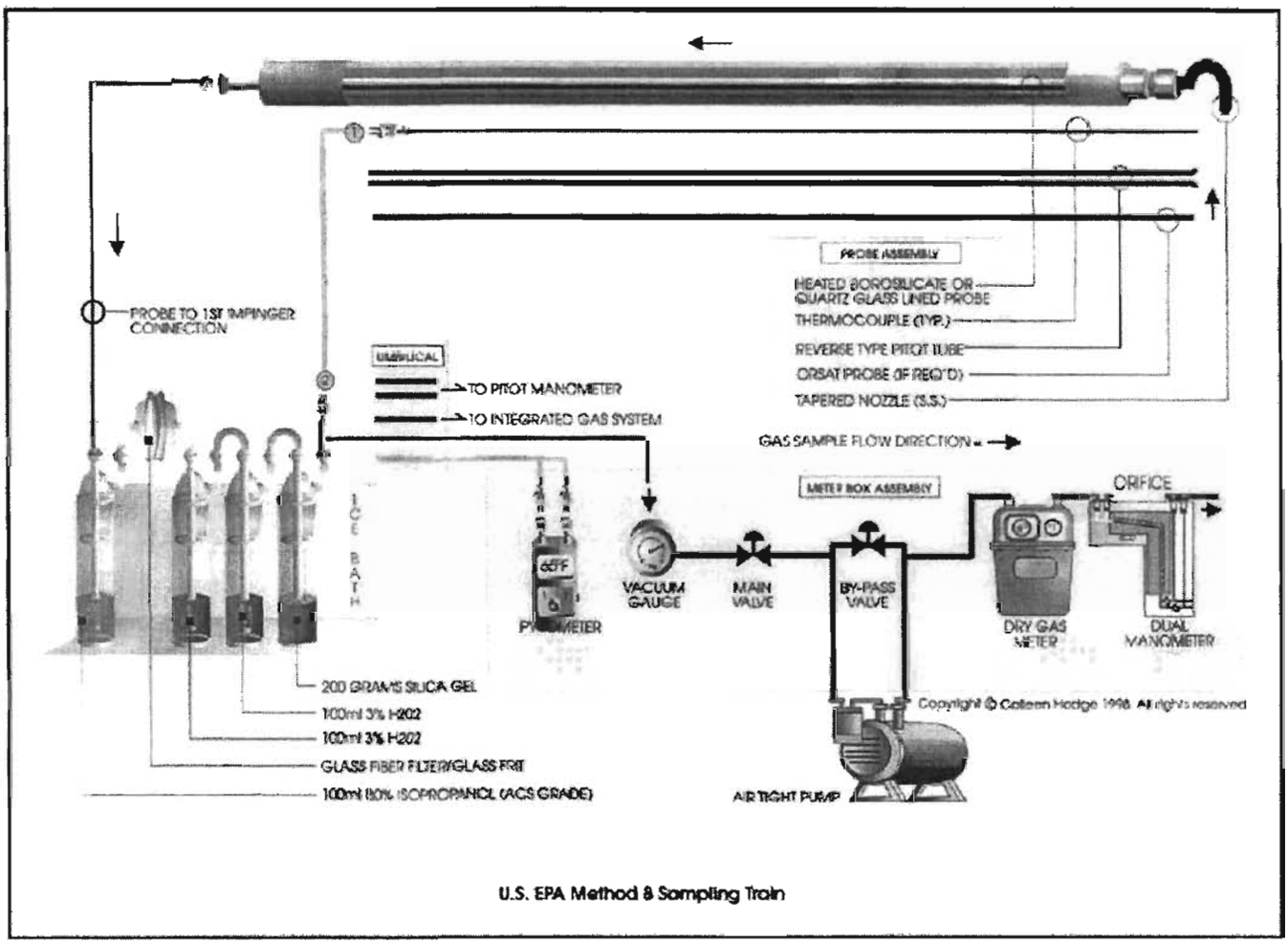
The impinger train is comprised of four Greenburg-Smith impingers. The first and third impingers have the standard tip, while the second and fourth are modified by replacing the standard tip with a ½" ID glass tube located approximately ½" from the bottom of the impinger.

The first impinger is loaded with 100 ml of 80 percent ACS grade isopropanol. A glass filter and filter housing is located between the first and third impinger. The second and third impingers contain 100 ml each of 3% H_2O_2 (hydrogen peroxide). A known, pre-weighed amount of indicating silica gel is contained in the fourth impinger.

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

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

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



4.5.1 Sampling Train Operation/Test Run Durations

During each sampling run, isokinetic sampling was maintained between 90 and 110 percent isokinetic as summarized in Table 2. The temperature of the sample probe was maintained to 248 °F ±25 °F. The sampling rate did not exceed 1.0 cfm.

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

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

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

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

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

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

4.5.2 Sample recovery

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

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

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

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

4.5.3 Sample Analysis

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

The analytical report can be viewed in Appendix B.

4.5.4 Method 8 Quality Assurance/Quality Control Procedures

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

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

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

5.0 H_2SO_4 Test Results

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

Summaries of the test results are presented in Table 3.

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

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

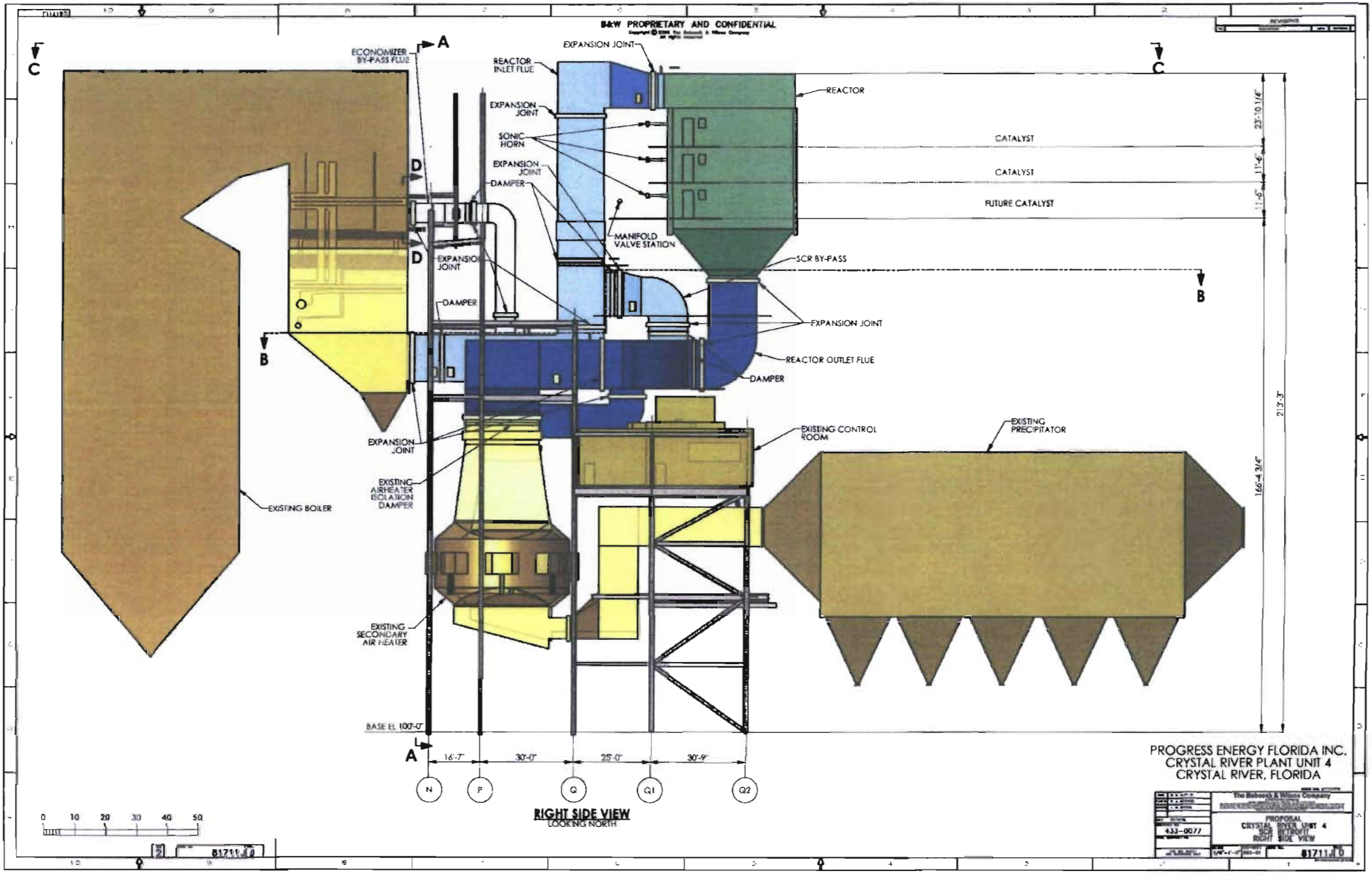
METHOD 8 - DETERMINATION OF SULFURIC ACID MIST EMISSIONS - RESULTS

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

Historical Data						
Run Number		M8-1	M8-2	M8-3	Average	
Run Start Time		13:17	15:56	17:56		hh:mm
Run Stop Time		14:17	16:56	18:56		hh:mm
Meter Calibration Factor	(Y)	1.011	1.011	1.011		
Pitot Tube Coefficient	(C_p)	0.840	0.840	0.840		
Actual Nozzle Diameter	(D_n)	0.192	0.192	0.192		in
Stack Test Data						
Initial Meter Volume	(V_{mi})	511.477	566.324	618.078		ft^3
Final Meter Volume	(V_{mf})	551.915	608.215	660.325		ft^3
Total Meter Volume	(V_m)	40.438	41.891	42.247	41.525	ft^3
Total Sampling Time	(Θ)	60.0	60.0	60.0	60.0	min
Average Meter Temperature	(t_m)	102.5	105.0	105.8	104.4	°F
Average Stack Temperature	(t_s)	300.6	302.0	301.2	301.3	°F
Barometric Pressure	(P_b)	29.65	29.65	29.59	29.63	in Hg
Stack Static Pressure	(P_g)	0.00	-0.75	-0.75	-0.50	in H_2O
Absolute Stack Pressure	(P_s)	29.65	29.59	29.53	29.59	in Hg
Average Orifice Pressure Drop	(ΔH)	1.46	1.56	1.54	1.52	in H_2O
Absolute Meter Pressure	(P_m)	29.76	29.76	29.70	29.74	in Hg
Avg Square Root Pitot Pressure	($\Delta p^{1/2}$)	1.26	1.29	1.29	1.28	$(in\ H_2O)^{1/2}$
Moisture Content Data						
Impingers 1-3 Water Volume Gain	(V_i)	36.6	67.1	67.1	56.9	ml
Impinger 4 Silica Gel Weight Gain	(W_i)	29.1	23.0	38.0	30.0	g
Total Water Volume Collected	(V_{lc})	65.8	90.1	105.2	87.0	ml
Standard Water Vapor Volume	(V_w)	3.095	4.243	4.950	4.096	scf
Standard Meter Volume	(V_m)	38.167	39.372	39.567	39.035	dscf
Calculated Stack Moisture	(B_{ws})	7.5	9.7	11.1	9.4	%
Saturated Stack Moisture	($B_{ws(sat)}$)	100.00	100.0	100.0	100.0	%
Reported Stack Moisture Content	(B_{ws})	7.5	9.7	11.1	9.4	%
Gas Analysis Data						
Carbon Dioxide Percentage	(%CO_2)	12.7	12.9	12.7	12.8	%
Oxygen Percentage	(%O_2)	6.6	6.5	6.6	6.6	%
Carbon Monoxide Percentage	(%CO)	0.0	0.0	0.0	0.0	%
Nitrogen Percentage	(%N_2)	80.7	80.6	80.7	80.7	%
Dry Gas Molecular Weight	(M_d)	30.30	30.32	30.30	30.31	lb/lb-mole
Wet Stack Gas Molecular Weight	(M_s)	29.37	29.13	28.93	29.14	lb/lb-mole
Calculated Fuel Factor	(F_o)	1.126	1.116	1.126	1.123	
Fuel F-Factor	(F_d)	0	0	0	0	dscf/mmBtu
Percent Excess Air	(%EA)	0.4	0.4	0.4	0.4	%
Volumetric Flow Rate Data						
Average Stack Gas Velocity	(v_s)	84.40	87.16	87.28	86.28	ft/sec
Stack Cross-Sectional Area	(A_s)	628.65	628.65	628.65		ft^2
Actual Stack Flow Rate	(Q_{as})	3183549	3287524	3291914	3254329	acfm
Wet Standard Stack Flow Rate	(Q_{sw})	131405	135193	135247	133948	wkscfh
Dry Standard Stack Flow Rate	(Q_{sd})	2025814	2034019	2003459	2021097	dscfm
Dry Standard Stack Flow Rate	(Q_{sd})	121548855	122041118	120207512	121265828	dscfh
Percent of Isokinetic Rate	(I)	98.2	100.9	102.9	100.7	%
Emission Rate Data						
Mass of H2SO4 in Catch	(m_f)	2.38	2.75	3.06	2.73	mg
H2SO4 Emission Rate	(E)	0.00000014	0.00000015	0.00000017	0.00000015	lb/dscf
	(E)	16.7	18.8	20.5	18.7	lbs/hr
(Pt 75 App F Sec. 5.2.) Heat Input	(HI)	6877	6842	6816	6845	mmBtu/Hr

ATTACHMENT 3

SCR PROCESS FLOW DIAGRAM



RIGHT SIDE VIEW
LOOKING NORTH

PROGRESS ENERGY FLORIDA INC.
CRYSTAL RIVER PLANT UNIT 4
CRYSTAL RIVER, FLORIDA

0 10 20 30 40 50

81711-D

ATTACHMENT 4

SCR BID SPECIFICATIONS

APPENDIX 9.1
TECHNICAL DESIGN INFORMATION
for
CATALYST MODULES

	SCR Design Basis		**Pre-WFGD SCR Operation**
Boiler Load	Maximum	Minimum	Maximum
Boiler Heat Input (MMBTU/hr)	6800	1800	6800
Fuel Type	Bituminous Coal (Highland No. 9)		Pre-WFGD SCR Operation Fuels (Note 2)
Gas Flow – Wet (lb/hr)	6,691,692	2,557,099	6,622,322
Gas Flow – Wet (Nm^3/hr)	2,291,779	885,524	2,245,688
Flue Gas Composition:			
CO_2 (vol. %, wet)	14.1	9.8	14.8
H_2O (vol. %, wet)	9.7	7.3	7.9
N_2 (vol. %, wet)	73.3	74.5	74.5
O_2 (vol. %, wet)	2.67	8.2	2.7
SO_2 (ppmvd @ actual O_2)	2867	1915	566
SO_3 (ppmvd @ actual O_2)	28.7	19.5	5.8
HCl (ppmvd @ actual O_2)	209	141	79
Flue Gas Molecular Weight – Wet (lb/lb mole)	29.51	29.23	29.72
Inlet NOx (ppmvd@ 3% O2)	254	251	298
Inlet NOx (lb/MM BTU heat input)	0.35	0.35	0.41
Particulate Loading (gr/dscf)	3.6	2.4	5.8
Flue Gas Temperature (°F)	690 - 715	620	690 - 715
Flue Gas Pressure (inwg)	-9	-3	-9
Required NOx Reduction (%) – Base	90	90	90 or Bidder to State
Required Outlet NOx (lb/10^6 BTU heat input)	0.035	0.035	0.041 or Bidder to State
Required NH_3 Slip (ppmvd @ 3% O_2)	≤2	≤2	≤2
Number of Reactors	1	1	1
Reactor Orientation	Vertical Gas Flow		Vertical Gas Flow
Catalyst Design Life	24,000 hours		24,000 hours
Reagent	Ammonia (NH3) mixture, from urea		
Maximum Catalyst Pressure Drop	Bidder to State		Bidder to State
Ammonia Consumption (lb/hr pure NH_3)	Bidder to State		Bidder to State

Velocity Distribution (%RMS)	15		15
NH_3 : NO_x distribution (%RMS)	5		5
Temperature distribution (± °F)	**30**		**30**

Notes:

1) Sonic Horns will be installed to keep the catalyst clean.

2) Flue gas composition for the "Pre-WFGD SCR Operation case is based on Kanawha Eagle Coal. Guarantees for this case are to be made for the range of fuels found in the "Pre-WFGD SCR Operation Fuels Table."

3) Maximum load flue gas conditions are based on 18% excess air at the economizer outlet. Rev 3

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

July 24, 2006

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Bernie Cumbie
Plant Manager
Progress Energy
100 Central Ave. CN77
St. Petersburg, FL 33701

Re: **Request for Additional Information – Reminder: Project 1070004-013-AC**

Dear Mr. Cumbie,

On April 25, 2006, the Department received your application for an air construction permit to construct SCR systems on units 4 and 5 at the Crystal River Plant located in Citrus County, Florida. The application was deemed incomplete and the Department requested additional information on May 18, 2006 that would allow continued processing of your application. To date, we have not received the requested additional information. Rule 62-4.055(1) of the Florida Administrative Code requires the following:

> *"The applicant shall have ninety days after the Department mails a timely request for additional information to submit that information to the Department. If an applicant requires more than ninety days in which to respond to a request for additional information, the applicant may notify the Department in writing of the circumstances, at which time the application shall be held in active status for one additional period of up to ninety days. Additional extensions shall be granted for good cause shown by the applicant. A showing that the applicant is making a diligent effort to obtain the requested additional information shall constitute good cause. Failure of an applicant to provide the timely requested information by the applicable deadline shall result in denial of the application."*

In addition, no air dispersion modeling has been performed in the vicinity of this facility recently (at least not in the last ten years), please provide air dispersion modeling which will show that the Class II AAQS and PSD Class II increments are not being exceeded for PM10, SO2 and NO2 even though these pollutants may not be PSD significant. For predicting Class II impacts, please use the 2001-2005 Tampa AERMET dataset which the Department will provide to you. In addition, CALPUFF modeling results for the Chassahowitzka National Wilderness Area, submitted by Seminole Electric for its proposed Unit #3, indicate that the SO2 emissions from Progress Energy's Crystal River facility are predicted to violate the 3-hour and 24-hour PSD Class I increments. Please perform a Class I modeling analysis for SO2, using the 2001-2003 CALMET meteorological dataset provided by the Department, to show that the projected scrubber project will not result in predicted SO2 impacts greater than the Class I increments.

It has been more than 45 days since our request for additional information (copy attached). You are reminded that the permit processing time clock has stopped for this project and that we will not continue our review until we receive the additional information. If you require a period of time in addition to the 90 days allowed by rule, please submit a written request indicating the amount of time necessary. If you fail to provide the additional information or request additional time to submit the additional information, the Department will deny your application for air permit. If you have any questions regarding this matter, please call the project engineer, Bobby Bull, at 850/921-9585.

Sincerely,

for Jeffery F. Koerner, P.E.
Air Permitting South Program

JFK/rlb

cc: Mara Nasca, DEP-SWD
Dave Meyer, Progress
Scott Osbourn, Golder

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

July 18, 2006

CERTIFIED MAIL- Return Receipt Requested

Mr. Bernie Cumbie
Plant Manager
Progress Energy
100 Central Ave. CN77
St. Petersburg, FL 33701

Re: Request to Construct SCR systems on Units 4 and 5

Dear Mr. Cumbie,

On May 18, 2006, the Department sent a request for additional information for your application received on April 25, 2006, requesting permission to construct SCR systems on Units 4 and 5. The Department requested the information be submitted 45 days from May 18, 2006. At this time, the Department has not received a response from you. If the Department does not receive this the requested information by August 16, 2006, the Department will deny your permit application request. The following information was requested in the May 18, 2006 is needed to process your application:

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

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

3. Sulfuric Acid Mist Emissions: The application indicated an increase of SO3 emissions with this installation of the SCR units. Quantify the estimated SO3 and H_2SO_4 emissions due to the installation the SCR units.

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

5. Selective Catalytic Reduction (SCR) System: Identify the following SCR design parameters: general catalyst composition (material); catalyst structure (honeycomb, plate, etc.); approximate catalyst volume (ft^3); catalyst operational temperature range (° F); molar ratio of ammonia/NOx; design inlet and outlet NOx emission rates (lb/MMBtu); and design control efficiency. What are the baseline NOx emissions for determining the design control efficiency? Describe the ammonia distribution, flow control, and monitoring systems. What are the general procedures for startup and shutdown of the SCR system? What critical operating parameters and levels must be attained before commencing ammonia injection? Explain how the control system will monitor, adjust, and inject ammonia at a given rate. What are the estimated ammonia injection rates at 50%, 75%, and 100% of the maximum coal-firing rate? What is the target ammonia slip level based on the design criteria NOx reduction?

Describe the design and operating techniques used to prevent particulate matter from fouling and masking the catalyst beds. Provide the catalyst vendor's recommendations describing catalyst maintenance procedures and schedule. In response to catalyst deactivation, describe the process of gradually adding catalyst until it is necessary for complete replacement.

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

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

Permits applicants are advised that Rule 62-4.055(1), F.A.C. requires applicants to respond to requests for information within 90 days. If you have any questions regarding this request for additional information, please contact Bobby Bull at Robert.Bull@dep.state.fl.us or (850) 921-9585.

Sincerely,

Jeffery F. Koerner
North Permitting Administrator

JFK/rlb

cc: Mara Nasca, DEP-SWD
Dave Meyer, Progress
Scott Osbourn, Golder

SENDER: *COMPLETE THIS SECTION*

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- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Bernie Cumbie, Plant Manager
Progress Energy Florida
Crystal River Units 1&2
100 Central Avenue CN77
St. Petersburg, Florida 33701

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) M. Mahen C. Date of Delivery 2/31

D. Is delivery address different from item 1? ☐ Yes
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☐ Insured Mail ☐ C.O.D.

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

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Progress Energy Florida
Crystal River Units 1&2
100 Central Avenue CN77
St. Petersburg, Florida 33701

PS Form 3800, May 2000 See Reverse for Instructions

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

May 18, 2006

CERTIFIED MAIL- Return Receipt Requested

Mr. Bernie Cumbie
Plant Manager
Progress Energy
100 Central Ave. CN77
St. Petersburg, FL 33701

Re: Request to Construct SCR systems on Units 4 and 5

Dear Mr. Cumbie,

The Department received your application on April 25, 2006, requesting permission to construct SCR systems on Units 4 and 5. At this time, the application is deemed incomplete. The following information is needed to process your application:

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

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

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Sincerely,

Jeffery F. Koerner
North Permitting Administrator

JFK/rlb

cc: Mara Nasca, DEP-SWD
Dave Meyer, Progress
Scott Osbourn, Golder

SENDER: *COMPLETE THIS SECTION*

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1. Article Addressed to:

Mr. Bernie Cumbie, Plant Manager
Progress Energy Florida
Crystal River Units 1&2
100 Central Avenue CN77
St. Petersburg, Florida 33701

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) [illegible] C. Date of Delivery 5/28

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☐ Insured Mail ☐ C.O.D.

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Progress Energy Florida
Crystal River Units 1&2
100 Central Avenue CN77
St. Petersburg, Florida 33701

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PS Form 3800, May 2000 See Reverse for Instructions

Progress Energy

April 21, 2006

Mr. Jeff Koerner
FDEP
North Permitting Section
Division of Air Resource Management
2600 Blair Stone Road MS 5500
Tallahassee, Florida 32399-2400

Re: Crystal River Facility – Title V Permit 0170004-009-AV
Units 4 & 5 SCR Air Construction Permit Application

Dear Mr. Koerner:

Attached is an original and three copies of an air construction permit application to install a Selective Catalytic Reduction (SCR) system at Crystal River Units 4 & 5. The SCR system is being installed in order to meet obligations under the Clean Air Interstate Rule (CAIR) and the Clean Air Mercury Rule (CAMR).

Thank you for your help in this matter. Please contact me at (727) 820 5295 if you have any questions.

Sincerely,

Dave Meyer for
Senior Environmental Specialist

XC: Mr. Bob Soich (cover Letter)

P.O. Box 14042, CX1B • St. Petersburg • Florida 33733-4042 • (727) 820-5151
A Progress Energy Company

AIR CONSTRUCTION PERMIT
CRYSTAL RIVER ENERGY COMPLEX
UNITS 4 AND 5

Submitted to:

Florida Department of Environmental Protection

Submitted on behalf of:

Progress Energy Florida
100 Central Avenue
St. Petersburg, Florida 33701

Submitted by:

Golder Associates Inc.
5100 West Lemon Street
Suite 114
Tampa, Florida 33609

Distribution:

4 Copies	-	Florida Department of Environmental Protection
1 Copy		Progress Energy Florida
1 Copy	-	Golder Associates Inc.

April 2006

053-9555

TABLE OF CONTENTS

LIST OF APPENDICES

1.0 INTRODUCTION

Progress Energy Florida (PEF) is considering numerous environmentally-beneficial upgrades to Units 4 and 5 at the Crystal River Energy Complex. Due to the scheduling of the various upgrades that are under consideration, this application only addresses the installation of selective catalytic reduction (SCR) systems on Units 4 and 5. Construction is anticipated to commence in September of 2006, thereby becoming the critical path item for permitting. The additional upgrades summarized below will be addressed in a second application package at a later date and are provided for information only. This application is for the construction of the Units 4 and 5 SCR systems only.

Units 4 and 5 were permitted under the Power Plant Siting Act (PPSA) in 1978 (PA 77-09), and installed the Best Available Control Technology. These units are also subject to New Source Performance Standards (40 CFR Part 60, Subpart D). The Crystal River facility is currently authorized to operate under FDEP Title V Air Operation FINAL Permit No. 0170004-009-AV, with an effective date of January 1, 2005 and expiration date of December 31, 2009.

1.1 Background

The Crystal River Energy Complex is located North of Crystal River and West of U.S. Highway 19 in Citrus County, Florida. PEF currently operates four solid fuel-fired steam boilers (Emission Units (EU) ID Nos. 001, 002, 003 and 004) at the Crystal River Energy Complex. In addition to the four solid fuel-fired boilers, the site's emission sources include natural draft and mechanical draft cooling towers; solid fuel handling and storage activities; and fly ash and bottom ash handling and storage facilities.

Currently under consideration are upgrades to further improve the environmental performance of the existing Units 4 and 5 (EU ID Nos. 004 and 003, respectively) by installing new/upgraded air emission control devices and a new fly ash beneficiation system. Specifically, PEF is considering the addition of new emission control technologies, as well as upgrades to existing control equipment, as follows:

- Install low-NO_X burners;
- Add SCR systems for nitrogen oxide (NO_X) removal;

- Add flue gas desulfurization (FGD) systems for sulfur dioxide (SO_2) control; and
- Install a carbon burn out (CBO) unit to reburn fly ash generated.

These proposed activities would accomplish substantial environmental goals, namely: (1) allow for the reduction of NO_X and SO_2 emissions to meet the expected allowance allocations under the Clean Air Interstate Rule (CAIR), effective in 2009 and 2010, (2) allow for the reduction of mercury emissions to meet the expected allowance allocations under the Clean Air Mercury Rule (CAMR), effective in 2010 and (3) maximize the reuse of fly ash, and thereby minimize the landfilling of this material.

Due to the timing of these various upgrades that are under consideration, this application only addresses the installation of SCR systems on Units 4 and 5. Construction is anticipated to commence in September of 2006, thereby becoming the critical path item for permitting. The additional upgrades summarized above may be addressed in a second application package at a later date. This application contains the information required by Rule 62-213.420(3), F.A.C., including FDEP Form No. 62-210.900(1), Effective: 02/02/06, Application for Air Permit – Long Form.

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

1.2 Proposed Control Equipment Upgrades and Additions

As mentioned above, PEF is considering specific additions and upgrades to Units 4 and 5. This application specifically addresses the installation of SCR systems to control NOx emissions from Units 4 and 5.

1.2.1 Schedule

The proposed schedule for SCR system installations was developed to minimize Unit 4 and 5 down time, and is proposed (approximately) as follows:

Proposed Modification	Commence Construction	Commence Operation
Unit 4 SCR	September 2006	November 2008
Unit 5 SCR	September 2006	April 2009

To maintain reliability and minimize unit down time, PEF is planning to commence construction on the SCR for Unit 4 in September 2006, and it will be operational by November 2008. PEF plans to also commence construction on the SCR for Unit 5 as early as September 2006, and it is proposed to be operational by April 2009. In addition, the FGD systems for Units 4 and 5 are anticipated to commence construction as early as December 2006. If this schedule holds, a second application package that addresses both FGD systems will be filed within a month or two of this initial application package to ensure that construction can commence by the December 2006 date. The reason that these additional control systems are not addressed at this time is due to the lack of specific engineering design data that would allow for the appropriate air quality modeling analysis to be conducted.

1.2.2 SCR System

PEF is proposing to install SCR control systems on Units 4 and 5. The SCR systems will be placed at the exit of the Units 4 and 5 boilers and upstream of each unit's air heater. Upstream of each SCR system's catalyst will be an ammonia injection grid and a mixing grid to facilitate a homogeneous mixture of ammonia and flue gas. Ammonia used in the SCRs will be provided from the plant's proposed urea-to-ammonia processing system and associated bulk storage tank systems.

A urea-to-ammonia system will be used for the SCR system. A urea-to-ammonia system stores liquid urea (typically a 40-50 percent solution) and hydrolyzes or thermally decomposes the urea into NH_3, H_2O and CO_2. Urea will be transported to the site via truck or rail as a 70 percent liquid solution that will be mixed with de-mineralized water and stored as a 40-50 percent wet solution in storage tanks. The concentration of the urea solution will be controlled by level and density controls, with make up water being supplied from the de-mineralized water system. The urea solution from the storage tanks is then pumped to the hydrolyzer where steam is used to decompose the urea solution into ammonia and carbon dioxide. The ammonia gas is then mixed with heated air in the ammonia flow control units and sent to the ammonia injection grid.

These SCR systems will allow PEF to substantially reduce NO_X emissions from Crystal River Units 4 and 5. Installation of the SCR systems will allow PEF flexibility in meeting its annual obligation under the Clean Air Interstate Rule by controlling NO_X emissions and thereby reducing dependence on allowances and exposure to the price volatility of the allowance markets. The SCR systems will also provide a co-benefit of assisting the proposed future FGD systems in reducing mercury emissions, assisting PEF in meeting its annual obligation under the Clean Air Mercury Rule by reducing emissions as opposed to relying on the purchase of allowances. In sum, the proposed SCR systems will assist PEF in reliably meeting its current and pending regulatory obligations.

2.0 REGULATORY APPLICABILITY ANALYSIS

Various regulatory programs were assessed regarding their potential to affect the development of the Crystal River Units 4 and 5 SCR system installation project, including:

- Prevention of Significant Deterioration (PSD) requirements at Rule 62-212.400, F.A.C;
- Ambient Air Quality Standards and PSD Increments at Rules 62-204.240 and 62-204.260, respectively;
- Federal New Source Performance Standards (NSPS) for electric utility steam generating units (40 CFR Part 60, Subpart D);
- Florida air pollution control regulations requiring a permit to construct; and
- The effects of the EPA's recently promulgated Clean Air Interstate Rule (CAIR).

2.1 Ambient Air Quality Standards and PSD Increments

The federal Clean Air Act (CAA) requires that National Ambient Air Quality Standards (NAAQS) be set for "criteria" pollutants, defined as air contaminants that have been demonstrated to have the potential for widespread adverse impacts on human health. In response, the EPA has identified six criteria pollutants and established corresponding NAAQS. These pollutants are SO_2, NO_2, PM_{10}, CO, ozone (O_3) and lead (Pb). In addition, the EPA promulgated a new NAAQS for particulate matter sized 2.5 microns and less ($PM_{2.5}$) on July 17, 1997. Compliance with the $PM_{2.5}$ standard at the federal level is not yet required (the EPA policy is to use compliance with PM_{10} as a surrogate). The NAAQS are designed to protect the public health and welfare with an adequate margin of safety. EPA has classified the area that the Crystal River site is located as an attainment area for all of the criteria pollutants. The FDEP has also established Ambient Air Quality Standards for the criteria pollutants. This proposed project will result in no emission increase of any criteria pollutant and, in fact, will result in a substantial decrease in NOx emissions. Consequently, modeling was not required to address impacts on the NAAQS or on PSD Class I or Class II increments.

2.2 Prevention of Significant Deterioration

Crystal River is classified as an existing major facility. A modification to an existing major facility that results in a significant net emissions increase equal to or exceeding the significant emissions rates (SER) listed in Section 62-212.400, Table 212.400-2, F.A.C., is classified as a major modification and will be subject to the PSD New Source Review (NSR) preconstruction permitting program for those pollutants that exceed the PSD SERs. EPA has approved Florida's State Implementation Plan (SIP), which contains PSD regulations; therefore, PSD approval authority has been granted to the FDEP.

The procedures for determining applicability of the PSD NSR permitting program to the Crystal River Units 4 and 5 SCR installation project are specified in Rule 62-212.400(2), F.A.C. For each regulated pollutant, PSD is triggered as a result of a modification at an existing unit if the difference between the projected actual emissions and the baseline actual emissions equals or exceeds the significant emissions rate for that pollutant, as defined at Rule 62-210.200(243), F.A.C.

As described previously, the "project" for PSD review purposes consists of the installation of SCR systems on Units 4 and 5 to reduce NO_X emissions. The installation of an SCR system can result in additional SO_3 emissions due to the catalytic effect on the sulfur contained in the fuel. If an FGD system is located downstream of the SCR, there is the possibility for increased formation of sulfuric acid mist (H_2SO_4 or SAM), which is a PSD-affected pollutant. As this application addresses only the SCR installation (and not the FGD), an increase in SAM emissions would not be anticipated and is, therefore, not addressed. The addition of an alkali injection system, or any other type of control for reducing SO_3 formation in the SCR catalyst and subsequent SAM formation in the FGD, will be addressed in a second application package.

Projected actual emissions for the project will not exceed the PSD significant emission rates for SO_2, NO_x, PM/PM_{10}, CO, VOCs, mercury and H_2SO_4. Therefore, PSD review is not applicable for these pollutants.

The recent Department rulemaking with respect to NSR reform provides for consideration of startup and shutdown emissions, as well as fugitive emissions, in NSR applicability determinations (FDEP Rule 210.200(34)(a)(1), Definitions). PEF does not anticipate that the Units 4 and 5 emissions characteristics during startup and shutdown operations, or the number of startups and shutdowns,

post-change will be any different than current operations. An established startup and shutdown procedure is followed by plant personnel. Specific SCR operational considerations will be incorporated into these existing procedures.

2.3 New Source Performance Standards

Crystal River Units 4 and 5 are affected facilities under NSPS Subpart D. The proposed upgrades to Units 4 and 5 do not constitute a modification or reconstruction, so applicability of the emission standards to Units 4 and 5 in Subpart D is unchanged by the proposed project.

2.4 CAIR and CAMR- Future Considerations

On May 12, 2005, EPA promulgated a rule to reduce emissions of SO_2 and NO_X from electric generating units located in 29 eastern states, including Florida. This rule was codified as a revision to Subpart G of 40 CFR Part 51. The stated objective of the Clean Air Interstate Rule (CAIR), is to assist eastern states in achieving attainment with the new, more stringent $PM_{2.5}$ and the 8-hour ozone NAAQS by reducing precursor emissions in upwind areas. PEF is proposing to install the SCR system control NO_X emissions and thereby reduce dependence on allowances and exposure to the price volatility of the allowance markets. Compliance of the Crystal River site with Florida's CAIR implementing regulations will be addressed following their finalization, in a separate subsequent application package as required by rules that the Department is planning to promulgate in 2006.

In addition to CAIR, EPA also promulgated a rule to limit mercury emissions from all new and existing coal-fired utility boilers on May 18, 2005. This rule was codified as a revision to Subpart B of 40 CFR Part 60. This Clean Air Mercury Rule (CAMR) will set an initial nation-wide cap on mercury emissions from coal-fired boilers of 38 tons per year (TPY) beginning in 2010, with an additional decrease to 15 TPY by 2018. PEF is proposing to install the SCRs and FGD systems, in part, to achieve the co-benefit of controlling mercury emissions and thereby reduce dependence on allowances and exposure to the price volatility of the allowance markets. Compliance of the Crystal River site with the CAMR rule will be addressed in a separate subsequent application package as required by rules that the Department is planning to promulgate in 2006.

APPENDIX A

APPLICATION FOR AIR PERMIT- LONG FORM

Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

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

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

Air Operation Permit – Use this form to apply for:

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

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

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: **PROGRESS ENERGY FLORIDA, INC.**	
2. Site Name: **CRYSTAL RIVER POWER PLANT**	
3. Facility Identification Number: **0170004**	
4. Facility Location...: Street Address or Other Locator: **NORTH OF CRYSTAL RIVER, WEST OF U.S. 19** City: **CRYSTAL RIVER** County: **CITRUS** Zip Code: **34428**	
5. Relocatable Facility? ☐ Yes ☒ No	6. Existing Title V Permitted Facility? ☒ Yes ☐ No

Application Contact

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

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	4-25-06
2. Project Number(s):	0170004-013-AC
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

APPLICATION INFORMATION

Purpose of Application

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

Air Construction Permit

☒ Air construction permit.

Air Operation Permit

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

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

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

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

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

Application Comment

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

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

APPLICATION INFORMATION

Scope of Application

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

Application Processing Fee

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

APPLICATION INFORMATION

Owner/Authorized Representative Statement

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

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

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

Bernie McCumbie — Signature

4/19/06 — Date

APPLICATION INFORMATION

Application Responsible Official Certification

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

1. Application Responsible Official Name:

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

3. Application Responsible Official Mailing Address...
   Organization/Firm:
   Street Address:
   City: State: Zip Code:

4. Application Responsible Official Telephone Numbers...
   Telephone: ( ) - ext. Fax: ( ) -

5. Application Responsible Official Email Address:

6. Application Responsible Official Certification:

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

   Signature Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: **SCOTT OSBOURN**
   Registration Number: **57557**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Golder Associates Inc.****
   Street Address: **5100 West Lemon St., Suite 114**
   City: **Tampa** State: **FL** Zip Code: **33609**
3. Professional Engineer Telephone Numbers...
   Telephone: **(813) 287-1717** ext.**211** Fax: **(813) 287-1716**
4. Professional Engineer Email Address: **SOSBOURN@GOLDER.COM**
5. Professional Engineer Statement:

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

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

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

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

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

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

Signature

4/18/06
Date

(seal)

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

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

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

Facility Contact

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

Facility Primary Responsible Official

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

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

FACILITY INFORMATION

Facility Regulatory Classifications

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

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

FACILITY INFORMATION

List of Pollutants Emitted by Facility

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

FACILITY INFORMATION

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

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

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

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

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

Additional Requirements for Air Construction Permit Applications

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

FACILITY INFORMATION

Additional Requirements for FESOP Applications

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

Additional Requirements for Title V Air Operation Permit Applications

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

Additional Requirements Comment