Memorandum

TO:

Trina Vielhauer, Chief

Bureau of Air Regulation

FROM:

Jeff Koerner, Air Permitting North Program

DATE:

April 4, 2006

SUBJECT:

Draft Air Permit No. 0170004-012-AC

Progress Energy Florida, Inc.

Crystal River Power Plant, Units 4 and 5 Powder River Basin Coal Blend Trial Burn

Attached for your review are the following items:

- Intent to Issue Permit and Public Notice Package;
- Technical Evaluation and Preliminary Determination;
- · Draft Permit; and
- PE Certification

The draft permit authorizes the temporary trial burn of a blend of Power River Basin (PRB) coal with bituminous coal in existing Units 4 and 5 at the Crystal River Power Plant, which is located north of Crystal River and west of U.S. Highway 19 in Citrus County, Florida. The Technical Evaluation and Preliminary Determination provides a detailed description of the project, rule applicability, and emissions standards. The P.E. certification briefly summarizes the proposed project. Day #74 is May 18, 2006. I recommend your approval of the attached Draft Permit for this project.

Attachments

P.E. CERTIFICATION STATEMENT

PERMITTEE

Progress Energy Florida, Inc. Crystal River Power Plant 100 Central Avenue CX1B St. Petersburg, FL 33701 Air Permit No. 0170004-012-AC Crystal River Power Plant Existing Units 4 and 5 PRB Coal Blend Trial Burn Citrus County, Florida

PROJECT DESCRIPTION

Units 4 and 5 at the existing Crystal River Plant are dry-bottom, wall-fired units manufactured by Combustion Engineering. Each unit currently fires bituminous coal as the primary fuel with a maximum heat input capacity of 6665 MMBtu per hour (760 MW). The applicant proposes a temporary trial burn to fire a blend of subbituminous Powder River Basin coal (PRB) and bituminous coal in existing Units 4 and 5. According to the original power plant site certification, these units were originally designed to fire PRB coal blends. Although a variety of blends may be tested, blends will contain no more than 30% PRB coal by weight. The two coals will be blended off-site and shipped to the plant as a premixed blend. No more than 150,000 tons of PRB coal blends will be delivered and fired during the trial burn. The trial burn will be completed within 90 calendar days of first firing PRB coal.

The applicant indicates that the firing of the proposed PRB coal blends will likely result in carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM/PM10), sulfur dioxide (SO2) and volatile organic compounds (VOC) emissions comparable to that of the bituminous coal currently being fired. Based on standard EPA emission factors for bituminous and subbituminous coals, the firing of 150,000 tons of PRB coal blend will result in the following estimated potential emissions increases as a result of the project: 3 tons of CO; 3 tons of PM; 1 ton of PM10; 8 tons of SO2; and less than 1 ton of VOC. NOx emissions may decrease slightly (-21 tons). These predicted emissions increases are much less than the PSD significant emission rates. Therefore, this temporary project is not subject to PSD preconstruction review.

The boilers will continue to comply with all conditions of the current Title V air operation permit. Each boiler will be continuously monitored for opacity as well as NOx and SO₂ emissions. Representative tests will be conducted for CO and particulate matter emissions. The draft permit includes requirements for: trial burn notification and schedule; PRB coal blend analyses and record keeping; boiler monitoring; electrostatic precipitator monitoring; and the submittal of a trial burn report.

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

Jeffery J. Voern Jeffery F. Koerner, P.E.

Registration Number: 49441

(Date)



Department of Environmental Protection

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

Colleen M. Castille Secretary

April 5, 2006

Mr. Bernie Cumbie, Plant Manager Crystal River Power Plant Progress Energy Florida, Inc. 100 Central Avenue, CN77 St. Petersburg, FL 33701

Re: Air Construction Permit No. 0170004-012-AC Crystal River Power Plant Existing Units 4 and 5 PRB Coal Blend Trial Burn

Dear Mr. Meyer:

On March 6, 2006, you submitted an application requesting a trial burn to fire a blend of sub-bituminous Powder River Basin coal (PRB) with bituminous coal in existing Units 4 and 5 at the Crystal River Power Plant, which is located north of Crystal River and west of U.S. Highway 19 in Citrus County, Florida. The Department has reviewed your request and intends to issue an air construction permit authorizing the temporary trial burn. 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 Permitting Authority'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 Permitting Authority's intent to issue an air permit for the proposed project; the requirements for publishing a Public Notice of the Permitting Authority'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 Vielhauer, Chief Bureau of Air Regulation

Taim & Vulhaun

Enclosures

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

In the Matter of an Application for Air Permit by:

Crystal River Power Plant Progress Energy Florida, Inc. 100 Central Avenue, CN77 St. Petersburg, FL 33701 Air Permit No. 0170004-012-AC Crystal River Power Plant Existing Units 4 and 5 PRB Coal Blend Trial Burn Citrus County, Florida

Authorized Representative:
Mr. Bernie Cumbie, Plant Manager

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

Project: The applicant proposes a temporary trial burn to fire a blend of subbituminous Powder River Basin coal (PRB) and bituminous coal. Details of the project are provided in the in the application and the enclosed "Technical Evaluation and Preliminary Determination".

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

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

Notice of Intent to Issue Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of 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 Section 403.815, F.S. and Rules 62-110.106 and 62-210.350, F.A.C., you (the applicant) are required to publish at your own expense the enclosed "Public Notice of Intent to Issue Air Permit" (Public Notice). The Public Notice shall be published one time only as soon as possible in the legal advertisement section of a newspaper of general circulation in the area affected by this project. The newspaper used must meet the requirements of Sections 50.011 and 50.031, F.S. in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Permitting Authority at above address or phone number. Pursuant to Rule 62-110.106(5), 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.

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.

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the applicant or any of the parties listed below must be filed within 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 Vielhauer, Chief Bureau of Air Regulation

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this "Written Notice of Intent to Issue Air Permit" package (including the Public Notice, the Technical Evaluation and Preliminary Determination, and the Draft Permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on to the persons listed below.

Mr. Bernie Cumbie, Progress Energy*

Mr. Dave Meyer, Progress Energy

Mr. Scott Osborne, Golder Associates Inc.

Ms. Mara Nasca, SWD Office

Mr. Jim Little, EPA Region 4 Office

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.

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection

Draft Air Permit No. 0170004-012-AC

Progress Energy Florida, Inc. Crystal River Power Plant Powder River Basin Coal Blend Trial Burn Citrus County, Florida

Applicant: The applicant for this project is Progress Energy Florida, Inc. The applicant's authorized representative and mailing address is: Mr. Bernie Cumbie; Plant Manager of Crystal River Power Plant; Progress Energy Florida, Inc.; 100 Central Avenue, CN77; St. Petersburg, FL 33701.

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

Project: Units 4 and 5 at the existing Crystal River Plant are dry-bottom, wall-fired units manufactured by Combustion Engineering. Each unit currently fires bituminous coal as the primary fuel with a maximum heat input capacity of 6665 MMBtu per hour (760 MW). The applicant proposes a temporary trial burn to fire a blend of subbituminous Powder River Basin coal (PRB) and bituminous coal in existing Units 4 and 5. According to the original power plant site certification, these units were originally designed to fire PRB coal blends. Although a variety of blends may be tested, blends will contain no more than 30% PRB coal by weight. The two coals will be blended off-site and shipped to the plant as a premixed blend. No more than 150,000 tons of PRB coal blends will be delivered and fired during the trial burn. The trial burn will be completed within 90 calendar days of first firing PRB coal.

The applicant indicates that the firing of the proposed PRB coal blends will likely result in carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM/PM10), sulfur dioxide (SO2) and volatile organic compounds (VOC) emissions comparable to that of the bituminous coal currently being fired. Based on standard EPA emission factors for bituminous and subbituminous coals, the firing of 150,000 tons of PRB coal blend will result in the following estimated potential emissions increases as a result of the project: 3 tons of CO; 3 tons of PM; 1 ton of PM10; 8 tons of SO2; and less than 1 ton of VOC. NOx emissions may decrease slightly. These predicted emissions increases are much less than the PSD significant emission rates. Therefore, this temporary project is not subject to PSD preconstruction review.

The boilers will continue to comply with all conditions of the current Title V air operation permit. Each boiler will be continuously monitored for opacity as well as NOx and SO2 emissions. Representative tests will be conducted for CO and particulate matter emissions. The draft permit includes requirements for: trial burn notification and schedule; PRB coal blend analyses and record keeping; boiler monitoring; electrostatic precipitator monitoring; and the submittal of a trial burn report.

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

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

Notice of Intent to Issue 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

(Public Notice to be Published in the Newspaper)

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. 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'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.

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY			
 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 	A. Signature X. Christophy Grinted Name) B. Received by Crinted Name) C. Date of Delivery H - () D. Is delivery address different from item 1? Yes If YES, enter delivery address below:			
100 Central Avenue CN77 St. Petersburg, Florida 33701	3. Service Type Certified Mail			
Article Number (Transfer from service label)	1160 0004 3034 3984			
PS Form 3811, February 2004 Domestic F	Return Receipt 102595-02-M-1540			

3984	(Domestic Mail O) MAIL™ RE	Coverage Provided)
•			te at www.usps.come
D34	Mr. Bernie Cu	mbie, Plant Ma	hager USE
ш	Postage	\$	
1000	Certified Fee		Ptt
6	Return Receipt Fee (Endorsement Required)		Postmark Here
1760	Restricted Delivery Fee (Endorsement Required)		
	Total Postage & Fees	\$	
7005	Street, Apt. No.; or PO Box No. 100	mbie, Plant Ma Central Avenu	e CN 77
	St. Petersbur	g, Florida 33	
	PS Form 3800, June 200	2	See Reverse for Instructions

TECHNICAL EVALUATION & PRELIMINARY DETERMINATION

PROJECT

Draft Air Construction Permit No. 0170004-012-AC Progress Energy - Crystal River Power Plant Powder River Basin Coal Blend Trial Burn

COUNTY

Citrus County, Florida

APPLICANT

Progress Energy Florida, Inc. Crystal River Power Plant 100 Central Avenue, CN77 St. Petersburg, FL 33701

PERMITTING AUTHORITY

Florida Department of Environmental Protection Division of Air Resource Management Bureau of Air Regulation Air Permitting North Program



April 4, 2006

{Filename: TEPD - 0170004-012-AC}

1. GENERAL PROJECT INFORMATION

Facility Description and Location

Progress Energy operates the existing coal-fired Crystal River Power Plant (SIC No. 4911), which is located on Power Line Road north of Crystal River and west of U.S. Highway 19 in Citrus County, Florida. The UTM coordinates are Zone 334.3 km East, and 32.04.5 km North. This site is in an area that is in attainment (or designated as unclassifiable) for all air pollutants subject to a National Ambient Air Quality Standard (NAAQS). This facility consists of: four coal-fired fossil fuel 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; ash-handling facilities, and relocatable diesel-fired generators.

Regulatory Categories

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

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

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

PSD: The facility is a PSD-major facility pursuant to Rule 62-212.400, F.A.C.

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

Project Description

Units 4 and 5 are dry-bottom, wall-fired units manufactured by Combustion Engineering and each rated at 760 MW with a maximum heat input rate of 6665 MMBtu per hour. The units are authorized to fire bituminous coal, a bituminous coal and bituminous coal briquette mixture, used oil, No. 2 fuel oil as a startup fuel, and natural gas as a startup and low-load flame stabilization fuel. Exhaust gases from each unit exit a stack that is 600 feet tall.

On March 6, 2006, the Department received an application requesting a trial burn for a blend of up to 30% sub-bituminous Powder River Basin coal (PRB) with existing bituminous coal. The plant proposes to burn 9-10 barge loads of blended coal (approximately 150,000 tons, total) in Units 4 and 5. A variety of blends may be tested. The two coals will be blended off-site and shipped to the plant as a premixed blend.

Each boiler could fire approximately 300 tons of PRB coal blend based on: a blend of 70% bituminous coal with 30% PRB coal; a heating value of 11,117 Btu/lb; and the maximum heat input rate for the unit. The proposed amount of PRB coal blend would be fired for approximately 250 hours per boiler at full load conditions. At this rate, it would take approximately 11 days with both boilers operating at full load to burn the entire PRB coal blend. The applicant proposes a 90-day trial burn period to provide flexibility for the testing schedule and barge deliveries.

The applicant indicates that the firing of the proposed PRB coal blend will likely result in: CO and VOC emissions comparable to current coal firing; SO2 emissions comparable or lower than current coal firing; NOx emissions comparable or lower than current coal firing; and PM/PM10 emissions comparable to current coal firing (fugitives addressed by off-site blending).

The plant will continue to comply with all conditions of the current Title V air operation permit. For the duration of the trial burn, COMS/CEMS data will be monitored and recorded for opacity as well as NOx and SO2 emissions. An emissions test (EPA Method 5 or 17) will be conducted for particulate matter emissions. Daily records of the of the boiler operations when firing the PRB coal blend will be maintained and reported (i.e., fuel firing rates and heat input rates). If the trial burn results in operation not in accordance with the conditions of the permit or test protocol, the performance testing will cease as soon as possible. The trial burn will not resume until appropriate actions have been taken to correct the problem. A test report will be submitted within 45 days of completing the trial burn.

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).

Federal Regulations

This project will not impose or revise any applicable federal regulations.

General PSD Applicability

The Department regulates major air pollution sources in accordance with Florida's Prevention of Significant Deterioration (PSD) program, as approved by the EPA in Florida's State Implementation Plan and defined in 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, or 5 tons per year of lead.

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

3. DEPARTMENT REVIEW

What is "Powder River Basin (PRB)"coal?1

Powder River Basin (PRB) coal is named after the geographic region where it is mined. It includes parts of southeast Montana and northeast Wyoming and covers about 120 miles east-to-west and 200 miles north-to-south. The basin is so named because it is drained by the Powder River. The area consists of rolling grasslands with an arid climate and is sparsely populated. Figure 3.1 on the following page shows a general map of this region.

The Powder River Basin is one of the largest sources of coal mined in the United States. The relatively low sulfur and ash content of PRB coal makes it popular. In recent years, over 350 million tons of coal have been mined annually. Much of the PRB coal is transported by rail to fire power plants in the Midwest. Table 3A on the following page compares the proximate and ultimate analyses of an Appalachian coal with those of a blend of 30% PRB coal / 70% Appalachian coal.

DOWNERSHIP
STORE THANKS HAND COAT
STORE THANK

Figure 3.1 Powder River Basin. (Power Magazine; Oct. 2003) 1

Courtesy: RAG American Coal Holding Inc.

Table 3A. Coal Analyses (As Received)²

Parameter	Appalachian Coal	PRB Coal	70% / 30% PRB Coal Blend
,	Proximate Ar	nalysis	
% Moisture	7.97	26.47	13.52
% Ash	10.25	6.12	8.91
% Volatile Matter	28.83	39.47	32.89
% Fixed Carbon	52.91	27.94	44.68
	Ultimate An	alysis	
% Moisture	7.97	26.47	13.52
% Carbon	65.14	49.47	61.16
% Hydrogen	4.66	3.67	4.4
% Nitrogen	0.98	0.69	0.89
% Chlorine	0.08	0.01	0.06
% Sulfur	0.73	0.24	· 0.56
% Ash	10.25	6.12	8.91
% Oxygen	10.19	12.83	10.50
Heating Value, Btu/lb	12,239	8692	11,117
	Trace Met	als	
Arsenic, ppm	3.39	0.25	2.45
Lead, ppm	6.41	1.11	4.82
Mercury, ppm	0.10	0.02	0.08

.•

What are the disadvantages of firing PRB coal? 1

Compared to most eastern coals, PRB coal: has a higher moisture content; is more friable; has a lower heating value per pound; and has a lower ash-softening temperature. These characteristics generally mean more fouling and slagging of the boiler surfaces as well as fugitive dust and fire control problems. Some of these problems may be mitigated by the relatively low blending rates proposed in the application. However, some blended coals may have chemical interactions leading to corrosion and additional tube wastage.

What are the advantages of firing PRB coal? 1

As shown above in Table 3A, PRB coal often contains lower sulfur, which can be beneficial when trying to lower sulfur dioxide emissions. In addition, the higher moisture content may help to lower NOx emissions. However, the main attraction is the much lower cost, even considering that PRB coal must be transported long distances from it origin. The following figure provides a "delivered cost" comparison with other coals.

Figure 3.2 2002 Average Prices and Specifications of Coal Delivered to Eastern Utilities (Power Magazine; October 2003)

Table 2. 2002 average prices and specs of coal delivered to eastern utilities

Materia grande de la companya della companya de la companya della	Dally and strate		
Central Appalachia	1.53	12,414	1.49
Southern PRB	1.064	8,763	0.61
Illinois Basin	1.12	11,262	4,40
Northern Appalachia: Northeast	1.16	12,532	3.67
Northern Appalachia: Ohio	1,103	11,997	5.57
Southern Appalachia	1.62	12,071	2.06
Central Rockies	1.474	11,872	0.94

As shown in the above table, the delivered cost of PRB coal is approximately 30% less than other western coals and approximately 35% less than some eastern coals.

What are the expected emissions impacts from firing PRB coal?

The plant currently fires an eastern Appalachian coal, which is a bituminous coal. PRB coal is a subbituminous coal. To estimate impacts from the trial project, the Department used standard EPA emission factors for bituminous and subbituminous coals. The following table provides a comparison summary of the expected emissions. For full details of the comparison, see the Attachments at the end of this Technical Evaluation and Preliminary Determination.

Table 3B. Emissions Comparison

Pollutant	lb/ton		lb/hour		lb/MMBtu		tons/trial		Difference	
	Bit.	Blend	Bit.	Blend	Bit.	Blend	Bit.	Blend	tons/trial	
CO	0.50	0.50	136.1	149.9	0.020	0.022	34.1	37.5	3.4	
NOx	12.00	10.62	3267.4	3183.5	0.490	0.478	817.5	796.5	-21.0	
PM	0.82	0.79	223.3	235.9	0.033	0.035	55.9	59.0	3.1	
PM10	0.20	0.19	54.5	57.3	0.008	0.009	13.6	14.3	0.7	
SO ₂	27.70	25.27	7542.3	7575.1	1.132	1.137	1887.0	1895.3	8.3	
VOC	0.06	0.06	16.3	18.0	0.002	0.003	4.1	4.5	0.4	

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Notes:

- 1. Emissions are based on EPA's general emission factors for firing bituminous and subbituminous coals in dry bottom, wall-fired boilers. See Tables 1.1-3, 1.1-4, 1.1-19 in EPA's emission factor reference document (AP-42).³
- 2. PRB coal blend consists of 30% subbituminous coal and 70% bituminous coal.
- 3. Total emissions from the project (tons/trial) are based on firing 150,000 tons of PRB blended coal.²
- 4. For comparison purposes, an equivalent amount of bituminous coal based on representative heating values would be 136,249 tons.

Based on these "average" emissions factors, the predicted differences in actual emissions are very small and impacts from the temporary project will be minimal. The estimated emissions increased will be well below the PSD significant emissions rates. Therefore, the project is not subject to PSD preconstruction review.

Conclusion

The applicant's request for a temporary trial burn to gather emissions and operational data is acceptable and is not reasonably expected to result in PSD-significant emissions increases. The draft permit includes the following requirements:

- Provide a preliminary schedule for conducting the trial burn.
- Record the amount and blend ratio of PRB coal blend delivered.
- Retain a "certificate of analysis" for each shipment (proximate and ultimate analysis).
- Take actual samples of the PRB coal blend and analyze (proximate and ultimate analyses).
- Finish trial burn within 90 days of initial firing of the PRB coal blend.
- Fire no more than 150,000 tons of PRB coal blend during the authorized trial burn period.
- Comply with all requirements in current Title V air operation permit. If the trial burn results in operation not in accordance with the conditions of the permit or test protocol, the performance testing will cease as soon as possible. The trial burn shall not resume until appropriate actions have been taken to correct the problem.
- Conduct emissions tests for each boiler at permitted capacity (3 runs each) to determine CO and particulate
 matter emissions when firing the blend with the highest PRB coal percentage delivered during the trial burn.
 VOC emissions are typically very low for these types of units and VOC tests will not be required. Instead,
 CO emissions test data will provide information on the relative combustion efficiency of the units.
- Maintain records of the daily boiler operations when firing the PRB coal blend (i.e., fuel firing rates and heat input rates).
- Continuously monitor and record opacity, NOx emissions, and SO2 emissions with existing monitoring systems when firing the PRB coal blend.
- Sample and analyze fly ash resistivity for baseline versus PRB coal firing. (Different coals have different compositions, which can lead to changes in fly ash resistivity. In turn, this can result in less control of particulate matter from an existing electrostatic precipitator.)
- Evaluate the performance of the existing electrostatic precipitators (ESPs). Monitor the total ESP secondary power input. Identify any adjustments or improvements that may be necessary.
- For comparison purposes, identify the current corresponding baseline monitoring values (for firing only bituminous coal) or collect baseline data during the trial burn period.
- Submit of a final report summarizing the trial burn.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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.

5. REFERENCES

Article, "Burning PRB Coal", by Dr. Robert Peltier, P.E. and Ken Wicker, POWER Magazine (powermag.platts.com), October 2003.

Air Permit Application No. 0170004-012-AC, Progress Energy Florida, Inc.'s Crystal River Power Plant, Request for Trial Burn to Fire Powder River Basin Coal Blended with Appalachian Coal, March 2006.

³ "Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources (AP-42)", Section 1.1 Bituminous and Subbituminous Coal Combustion (dry bottom, wall-fired boilers), U.S. Environmental Protection Agency, September 1998.

Progress Energy - Crystal River Units 4 and 5 Project: Trial Burn of PRB Coal Blend Project No. 0170004-012-AC ATTACHMENT A-1

Estimated Emissions for Trial Project Based on AP-42 Emission Factors for Bituminous and Subbituminous Coals

Pollutant	lb/ton			lb/hour			ib/MMBtu		
FUNCTION	Bit.	Sub.	Blend	Bit.	Sub.	Blend	Bit.	Sub.	Blend
CO	0.50	0.50	0.50	136.1	191.7	149.9	0.020	0.029	0.022
NOx	12.00	7.40	10.62	3267.4	2837.1	3183.5	0.490	0.426	0.478
PM	0.82	0.71	0.79	223.3	272.2	235.9	0.033	0.041	0.035
PM10	0.20	0.17	0.19	54.5	65.2	57.3	0.008	0.010	0.009
SO ₂ a	27.70	19.60	25.27	7542.3	7514.6	7575.1	1.132	1.127	1.137
VOC	0.06	0.06	0.06	16.3	23.0	18.0	0.002	0.003	0.003

[&]quot;Blend" is a coal consisting of 70% bituminous coal blended with 30% bituminous coal.

- a. The factor for bituminous coal is 10A and the factor for subbituminous coal is 2.4A. The fuel ash content (A) for bituminous coal is assumed at 10.25% and for subbituminous coal at 8.91% sulfur by weight. Assumed 99.2% control by ESP.
- b. The factor for bituminous coal is 38S and the factor for subbituminous coal is 35S. The fuel sulfur content (S) for bituminous coal is assumed at 0.73% and for subbituminous coal at 0.56% sulfur by weight.
- c. Emission factors are from AP-42: Table 1.1-3 (CO, NOx, and SO₂); Table 1.1-4 (PM and PM₁₀); and Table 1.1-19 (VOC).

 Reference: EPA's "Compilation Of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, (AP-42)"; Section 1.1; Bituminous and Subbituminous Coal Combustion; dry botton, wall-fired boilers; 9/98

	MMBtu/hr	Btu/lb	ton/hour	
Bituminous	6665	12239	272.29	<<
Subbituminous	6665	8692	383.40	<< Coal firing rates based on maximum heat input rate and fuel heating values.
70%/30% Blend	6665	11117	299.77	<<

Progress Energy - Crystal River Units 4 and 5 Project: Trial Burn of PRB Coal Blend Project No. 0170004-012-AC ATTACHMENT A-2

Total Emissions Estimated for Trial Project

Pollutant	Bitum	inous	70%/30% F	Difference	
Foliutarit	EF - lb/ton	tons/trial	EF - lb/ton	tons/trial	tons/trial
CO	0.50	34.1	0.50	37.5	3.4
NOx	12.00	817.5	10.62	796.5	-21.0
PM	0.82	55.9	0.79	59.0	3.2
PM10	0.20	13.6	0.19	14.3	0.7
SO ₂ ^a	27.70	1,887.0	25.27	1,895.3	8.2
VOC	0.06	4.1	0.06	4.5	0.4

- a. The factor for bituminous coal is 10A and the factor for subbituminous coal is 2.4A. The fuel ash content (A) for bituminous coal is assumed at 10.25% and for subbituminous coal at 8.91% sulfur by weight. Assumed 99.2% control by ESP.
- b. The factor for bituminous coal is 38S and the factor for subbituminous coal is 35S. The fuel sulfur content (S) for bituminous coal is assumed at 0.73% and for subbituminous coal at 0.56% sulfur by weight.
- c. Emission factors are from AP-42: Table 1.1-3 (CO, NOx, and SO₂); Table 1.1-4 (PM and PM₁₀); and Table 1.1-19 (VOC). Reference: EPA's "Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, (AP-42)"; Section 1.1; Bituminous and Subbituminous Coal Combustion; dry botton, wall-fired boilers; 9/98
- d. Total emissions from the project (tons/trial) are based on firing 64,000 tons of PRB blended coal.

	MMBtu/hr	Btu/lb	tons/trial	
Bituminous	6665	12,239	136,249	< Amount of bituminous coal that would have been fired.
70%/30% Blend	6665	11,117	150,000	< Requested amount of PRB beInded coal

PERMITTEE:

Progress Energy Florida, Inc. Crystal River Power Plant 100 Central Avenue, CN77 St. Petersburg, FL 33701

Authorized Representative:

Mr. Bernie Cumbie, Plant Manager

Air Permit No. 0170004-012-AC Crystal River Power Plant Existing Units 4 and 5 PRB Coal Blend Trial Burn Citrus County, Florida Permit Expires: {1 year}

PROJECT AND LOCATION

Progress Energy Florida, Inc. operates the existing Crystal River Plant (Facility ID No. 0170004), which is located north of Crystal River and west of U.S. Highway 19 in Citrus County, Florida. The Crystal River Plant is an existing coal-fired power plant (SIC No. 4922). This permit authorizes the temporary trial burn of a blend of Power River Basin (PRB) coal with bituminous coal in existing Units 4 and 5.

STATEMENT OF BASIS

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.). The permittee is authorized to perform the proposed work in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department.

CONTENTS

Section 1. General Information

Section 2. Administrative Requirements

Section 3. Emissions Units Specific Conditions

Section 4. Appendices

(DRAFT)	
Michael G. Cooke, Director	(Date)

FACILITY AND PROJECT DESCRIPTION

The Crystal River Plant is an existing coal-fired power plant consisting of: four coal-fired fossil fuel 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); ash-handling facilities, and re-locatable diesel-fired generators.

This permit authorizes the temporary trial burn of a blend of Power River Basin (PRB) subbituminous coal with bituminous coal in existing Units 4 and 5. Although the permit restricts the blend to no more than 30% PRB coal, a variety of other PRB coal blends will be tested. The two coals will be blended off-site and shipped to the plant as a premixed blend. The trial burn is limited to no more than 150,000 tons of PRB coal blend and must be completed within 90 days after first firing the PRB coal blend. Emissions and operational testing will be conducted during the trial burn. The project will primarily affect existing coal-fired Unit 4 (EU-004) and Unit 5 (EU-003) as well as the coal/ash handling and storage. No new equipment is necessary to conduct the trial burn.

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. The plant currently operates under the terms and conditions of Title V air operation Permit No. 0170004-009-AV.

SECTION 2. ADMINISTRATIVE REQUIREMENTS

- 1. Permitting Authority: All documents related to applications for permits to construct, modify, or operate emissions units shall be submitted to the Bureau of Air Regulation of the Florida Department of Environmental Protection (DEP) at 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400. Copies of all such documents shall be submitted to the Compliance Authority.
- 2. <u>Compliance Authority</u>: 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. <u>Appendices</u>: The following Appendices are attached as part of this permit: Appendix A (Citation Formats), 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. <u>Modifications</u>: 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. <u>Title V Permit</u>: This project authorizes limited temporary use of a fuel not currently authorized to allow for the gathering of emissions and operational data. The facility shall remain in compliance with the terms and conditions of the current Title V air operation permit. As this is a temporary authorization, an application to revise the Title V air operation permit is not required. [Rules 62-4.030, 62-4.050, 62-4.070, 62-4.220, and Chapter 62-213, F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Units 4 and 5

This section addresses the following emissions units as described in the Title V air operation permit.

ID No.	Brief Description
003	Fossil fuel steam generator Unit 4 (EU-004) and Unit 5 (EU-003) are identical dry bottom wall-fired boilers
and 004	rated at 760 MW (6665 MMBtu/hr). Each unit is currently authorized to fire bituminous coal, a bituminous coal and bituminous coal briquette mixture, and used oil, with No. 2 fuel oil as a startup fuel, and natural gas as a startup and low-load flame stabilization fuel. Emissions from each boiler exhaust through individual stacks that are 600 feet tall. Emissions from each boiler are controlled with a high-efficiency electrostatic precipitator.

TEMPORARY AUTHORIZATION AND RESTRICTIONS

- 1. PRB Coal Blend: The permittee is temporarily authorized to fire a blend of Powder River Basin (PRB) coal with bituminous coal. A variety of PRB coal blends may be tested, but the blends shall not exceed 30% PRB coal by weight. PRB coal blends shall be blended off site and delivered by ship to the plant as a premixed blend. This permit does not authorize the permanent firing of PRB coal blends. [Application No. 0170004-012-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]
- 2. Trial Test Burn Duration: PRB coal blends shall only be fired in existing Units 4 and 5. PRB coal blends shall be fired in a similar manner to the bituminous coal currently in use at the plant. The permittee shall provide at least a one-day advance notice (by phone, fax, or email) to the Compliance Authority prior to the initial firing of PRB coal. Once any PRB coal blend is fired, the permittee shall complete the trial burn within 90 calendar days. No more than 150,000 tons of PRB coal blend shall be burned during the trial burn. In addition, the trial burn shall be completed prior to the expiration date of this permit. The permittee shall not fire PRB coal blends either before or after the authorized trial burn period. Within five calendar days of completing the trial burn, the permittee shall notify the Compliance Authority (by phone, fax, or email) that the trial burn has been completed. **Permitting Note: The purpose of this temporary authorization is to gather operational and emissions data related to firing PRB coal blends for the evaluation of overall impacts.** [Application No. 0170004-012-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

EMISSIONS LIMITING AND PERFORMANCE STANDARDS

- 3. Performance Requirements: The permittee shall provide the Compliance Authority with a preliminary schedule for conducting the trial burn and performance tests and shall update this schedule as necessary. During the trial burn, the permittee shall comply with all current terms and conditions in Title V air operation Permit No. 0170004-009-AV. If the trial burn results in operation that is not in accordance with the conditions of the Title V permit or the test protocol, the performance testing will cease as soon as possible. The permittee shall immediately notify the Compliance Authority (by phone, fax, or email) of any non-compliance issue. The trial burn shall not resume until appropriate actions have been taken to correct the problem. [Application No. 0170004-012-AC; Rule 62-4.070(3), F.A.C.]
- 4. <u>Fugitive Dust</u>: The permittee shall take reasonable precautions to prevent fugitive dust emissions from the unloading, storage, and handling of PRB coal blends. These shall be the same reasonable precautions specified in the current Title V air operation Permit No. 0170004-009-AV to prevent fugitive dust emissions from the unloading, storage, and handling of bituminous coal currently in use at the plant. [Application No. 0170004-012-AC; Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

MONITORING AND TESTING

- 5. <u>Monitoring of Operations</u>: When firing PRB coal blends, the permittee shall conduct the following monitoring.
 - a. The permittee shall record the amount and blend ratio of each PRB coal blend delivered to the plant.

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Units 4 and 5

A "certificate of analysis" (including the proximate and ultimate analysis) shall be retained for each delivery of PRB coal blend.

- b. On at least three separate days, the permittee shall take samples of the PRB coal blend being fired. A proximate and ultimate analysis shall be provided for each sample taken. Samples taken on different emissions testing days may satisfy this requirement.
- c. The permittee shall maintain daily records of the boiler operations including: the PRB blend ratio fired; the fuel mass firing rate; the heat input rate; steam production, temperature and pressure; and the MW generated.
- d. The permittee shall test the ESP fly ash for resistivity. At least two samples shall be taken on separate operating days. The samples shall be taken during the tests for particulate matter and after the boiler has fired a sufficient amount of PRB coal blend to ensure that the collected sample is representative of firing PRB coal blend. Each sample shall be analyzed for resistivity. If resistivity data is not available for baseline coal firing, at least two samples shall be taken and analyzed for resistivity when firing baseline coal for purposes of comparison.
- e. The permittee shall monitor and record the electrostatic precipitator (ESP) secondary voltage and secondary current and calculate and record the total ESP secondary power input.
- f. The permittee shall continuously monitor and record opacity, nitrogen oxides (NOx) emissions and sulfur dioxide (SO₂) emissions with existing monitoring systems.

For comparison purposes, the permittee shall identify the current corresponding baseline monitoring values (for bituminous coal firing) or collect baseline data during the trial burn period. [Rule 62-4.070(3), F.A.C.]

- 6. Notifications: The permittee shall provide the Compliance Authority with a written preliminary schedule for conducting any emissions tests (by letter, fax, or email). The preliminary schedule shall be updated as necessary. The permittee shall provide the Compliance Authority with at least 5 days advance notice (by phone, fax, or email) prior to conducting any emissions tests. [Rule 62-4.070(3), F.A.C.]
- 7. <u>Test Methods</u>: Any required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
1 - 4	Traverse Points, Velocity and Flow Rate, Gas Analysis, and Moisture Content
5 or 17	Determination of Particulate Matter (PM) Emissions
6	Determination of Sulfur Dioxide (SO2) Emissions
7E	Determination of Nitrogen Oxide (NOx) Emissions
9	Visual Determination of the Opacity
10	Determination of Carbon Monoxide (CO) 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 requirements specified in 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]

8. <u>Emissions Testing - Baseline</u>: Each boiler shall have representative baseline emission levels for carbon monoxide (CO) based on actual tests data collected when firing only the bituminous coal currently in use.

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Units 4 and 5

Such tests shall consist of at least three runs conducted at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum heat input rate allowed by the permit. Test results shall be reported in units of ppmvd @ 7% oxygen, lb/MMBtu, and lb/hour. If such representative CO emissions data does not exist at the time of the trial burn, each boiler shall be tested to determine the CO emissions. {Permitting Note: Baseline emissions data is already available for opacity, nitrogen oxides (NOx) emissions and sulfur dioxide (SO₂) based on continuous monitoring data and for particulate matter based on annual tests.} [Rule 62-4.070(3), F.A.C.]

9. Emissions Testing - PRB Coal Blend: Each boiler shall be tested to determine emission levels of carbon monoxide (CO) and particulate matter (PM) when firing the PRB coal blend with the highest PRB coal content fired during the trial burn. Each test shall consist of three runs conducted at permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum heat input rate allowed by the permit. Particulate matter (PM) tests shall include three test runs under normal test conditions including soot blowing. Test results shall be reported in units of ppmvd @ 7% oxygen (gases), lb/MMBtu, and lb/hour. During the day of each required emissions testing, the permittee shall obtain a sample of the PRB coal blend as fired. A proximate and ultimate analysis shall be provided for each sample taken. If only one boiler fires the PRB coal blend during the trial burn, that unit shall conduct two series of tests to determine emission levels of carbon monoxide (CO) and particulate matter (PM) when firing the PRB coal blend. (Permitting Note: Emissions levels for opacity, nitrogen oxides (NOx) emissions and sulfur dioxide (SO₂) will be determined by the continuous monitoring data collected during the trial burn.) [Rule 62-4.070(3), F.A.C.]

RECORDS AND REPORTS

- 10. Emissions Tests Reports: The permittee shall prepare and submit reports for all emissions tests in accordance with the requirements specified in Appendix C of this permit. For each test run, the report shall also indicate the following: the PRB blend ratio, the fuel firing rate, the heat input rate, the average ESP secondary power input, the opacity, the NOx emission rate, and the SO₂ emission rate. [Rule 62-297.310(8), F.A.C.]
- 11. <u>Trial Burn Report</u>: Within 60 days of completing the trial burn, the permittee shall submit a final report summarizing the trial burn to the Bureau of Air Regulation and the Compliance Authority. The trial burn report shall include, but not be limited to, the following information:
 - Actual schedule and overall description of the trial burn;
 - Summary of PRB blends evaluated (amounts delivered; blend ratio; and proximate/ultimate analyses);
 - Discussion of operational issues of PRB coal including: coal unloading, handling, storage and firing; fugitive dust; soot blowing; ESP performance and adjustments; and ash handling and storage;
 - Comparison of baseline operations versus operation with PRB coal blend;
 - Evaluation of current equipment compatibility with PRB coal blend;
 - Summary of continuous emissions monitoring data;
 - Summary of boiler operating data;
 - Summary of emissions test results, actual test schedule, and procedures used;
 - Comparison of baseline emissions with emissions from firing PRB coal blend (short-term and long-term); and,
 - Discussion of emissions changes as described in Appendix C of 40 CFR 60.

Rules 62-4.070(3), 62-210.200(PTE) and 62-212.400, F.A.C.

SECTION 4. APPENDICES

CONTENTS

Appendix A. Citation Formats

Appendix B. General Conditions

Appendix C. Common Conditions

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

SECTION 4. APPENDIX B

GENERAL CONDITIONS

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

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

EMISSIONS AND CONTROLS

- 1. <u>Plant Operation Problems</u>: 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. <u>Circumvention</u>: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]
- 3. <u>General Visible Emissions</u>: 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.]
- 4. <u>Unconfined Particulate Emissions</u>: 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

- 5. 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.]
- 6. 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.]
- 7. <u>Calculation of Emission Rate</u>: 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.]
- 8. 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.

SECTION 4. APPENDIX C

COMMON CONDITIONS

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.]

9. 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.]

- 10. <u>Sampling Facilities</u>: 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.
- 11. <u>Test Notification</u>: 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.]
- 12. 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.]
- 13. <u>Test Reports</u>: 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.

SECTION 4. APPENDIX C

COMMON CONDITIONS

- 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

14. <u>Records Retention</u>: 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.]