



Progress Energy

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

December 11, 2008

Mr. Jeffrey Koerner, P.E.
Air Quality Division
Department of Environmental Protection
2600 Blair Stone Road,
MS 5000
Tallahassee, Florida 32399-2400

RECEIVED

DEC 30 2008

BUREAU OF AIR REGULATION

Re: Application for Permit Revision
Crystal River Units 4 and 5

Dear Mr. Koerner:

Enclosed please find one original and three copies of an application for revision of permit number 017004-016-AC governing the construction of the clean air projects at Progress Energy Florida's (PEF) Crystal River Power Plant Units 4 and 5. This application covers a number of issues which Progress staff and consultants have previously discussed with you. Specifically, these include:

- The requirement for use of a carbon monoxide continuous emission monitoring system at Unit 5 during the interim construction period;
- Revisions relating to description of the gypsum storage and handling systems onsite; and
- Consistency with regard to applicable timeframes for testing following the installation and startup of elements of the pollution control systems.

In addition to these issues, PEF seeks the agency's concurrence with our understanding regarding the applicability of Condition 12 regarding excess emissions to the operation of the alkali injection system for sulfuric acid mist (SAM) mitigation.

Finally, we enclose a table (Table 1) outlining our understanding of the applicability dates and triggers for the new limits imposed by this permit. This table is for your information. Although we are not requesting formal concurrence, we would appreciate any comments you may have regarding our understanding.

PEF looks forward to working with you regarding this matter. We hope to meet with you to discuss specific details of the issues listed here early in January. If you would like to discuss any issues regarding this application, please contact Mr. David Meyer in our St. Petersburg office by telephone at (727) 820-5295 or via email at dave.meyer@prnmail.com.

Sincerely,

Larry E. Hatcher
Plant Manager/Responsible Official
Enclosures

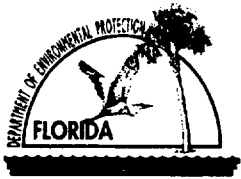
Progress Energy Florida, Inc.
15760 W. Powerline Street
Crystal River, FL 34428

TABLE 1 – EMISSIONS LIMIT APPLICABILITY

Emissions Type	Current Permit Limit	New Permit Limit	Unit 4 New Limit Date	Unit 5 New Limit Date	Notes
Nitrogen Oxide (NOx)	0.50 lb/MMBTU	0.47 lb/mmbtu	End of Unit 4 2008 fall outage measured at existing CEMS	End of Unit 5 2009 Spring Outage by existing CEMS	Based upon a 12 month <u>rolling</u> average
Sulfur Dioxide (SO2)	1.2 lb/MMBTU	0.27 lb/mmbtu - Including SU/SD/M 1944.0 lb/hr - Excluding SU/SD/M	Within 60 days of Construction Completion of FGD (End of Unit 4 2010 spring outage) measured at new CEMS	Within 60 days of Construction Completion of FGD(End of Unit 5 2009 Fall outage) measured by new CEMS	mmBtu/hr based upon a 30 day <u>rolling</u> average lb/hr based on a 24 hour (midnight to midnight) rolling block average
Sulfuric Acid Mist (SAM)	none	0.009 lb/mmbtu <u>and</u> 64.8 lb/hr	Within 60 days of Construction Completion of AMM (End of Unit 4 2010 spring outage) measured Compliance Stack test	Within 60 days of Construction Completion of AMM (End of Unit 5 2009 Spring outage) measured Compliance Stack test	This new limit is in effect because current SAM emissions will increase by greater than 7 tons/year due to burning higher sulfur coal. Annual test required to determine compliance. No continuous monitor. Retest with each 0.5% sulfur increase. Required to develop SAM estimation curves, and AMM Monitoring Plan
Particulate Matter	0.1 lb/MMBTU	0.030 lb/mmbtu <u>and</u> 216.0 lb/hour	Within 60 days of Construction Completion of ESP Upgrades (End of Unit 4 2010 spring outage)	Within 60 days of Construction Completion of ESP Upgrades (End of Unit 5 2009 Spring outage)	Annual test required to determine compliance. No continuous monitor. PM Compliance Stack Test required after LNB installation,, but at existing limit (0.1).

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

APPLICATION FORMS



Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

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

- For any required purpose at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air operation permit;
- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment new source review, or maximum achievable control technology (MACT);
- To assume a restriction on the potential emissions of one or more pollutants to escape a requirement such as PSD review, nonattainment new source review, MACT, or Title V; or
- To establish, revise, or renew a plantwide applicability limit (PAL).

Air Operation Permit – Use this form to apply for:

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

To ensure accuracy, please see form instructions.

Identification of Facility

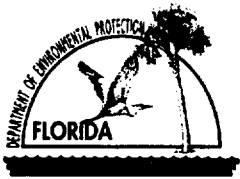
1. Facility Owner/Company Name: PROGRESS ENERGY, INC.DBA FLORIDA POWER CORP..	
2. Site Name: CRYSTAL RIVER POWER PLANT	
3. Facility Identification Number: 0170004	
4. Facility Location... Street Address or Other Locator: NORTH OF CRYSTAL RIVER, WEST OF U.S. 19 City: CRYSTAL RIVER County: CITRUS Zip Code: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

Application Contact

1. Application Contact Name: DAVE MEYER, SENIOR ENVIRONMENTAL SPECIALIST	
2. Application Contact Mailing Address... Organization/Firm: PROGRESS ENERGY FLORIDA Street Address: 299 FIRST AVENUE, NORTH, PEF 903 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 E-mail Address: DAVE.MEYER@PGNMAIL.COM	

Application Processing Information (DEP Use)

1. Date of Receipt of Application: 12/30/08	3. PSD Number (if applicable): 383 A
2. Project Number(s): 0170004-022-AE	4. Siting Number (if applicable):



Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

Purpose of Application

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

Air Construction Permit

- ☒ Air construction permit.
- ☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).
- ☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

Air Operation Permit

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

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

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

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

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

Application Comment

This application and attachments serve to request revisions to permit language associated with Air Permit No. 0170004-016-AC. This construction permit was to address upgrades to further improve the environmental performance of the existing Units 4 and 5 (EU Nos. 004 and 003, respectively) by installing new/upgraded air emission control devices. Specifically, the referenced AC permit addressed the following:

- **Install low-NO_x burners;**
- **Add SCR systems for nitrogen oxide (NO_x) removal;**
- **Add alkali injection systems for SO₃ control;**
- **Add FGD systems for sulfur dioxide (SO₂) control;**
- **Upgrade existing ESPs;**
- **Construct a new stack to accommodate the new Project configuration; and**
- **Install a single carbon burn out (CBO™) unit to reburn fly ash generated, if needed.**

This permit application is to request changes to the current permit language with respect to:

- **The use of a carbon monoxide (CO) continuous emission monitoring system (CEMS). This is necessary due to the construction schedule and the transition to a new stack;**
- **Revisions relating to the gypsum storage and handling systems onsite that will more accurately describe the actual modifications being undertaken; and**
- **Consistency with regard to applicable timeframes for testing following the installation and startup of elements of the pollution control systems; and**

In addition, PEF requests the Department's concurrence on the definition of allowable excess emissions related to required maintenance and potential malfunction of the sulfuric acid mist (SAM) control system.

Finally, this application also serves to request that the Department include permit language that references the applicability of NSPS Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants, with respect to the installation of the limestone system. While the applicability of this standard was an oversight, it does not affect the currently permitted standards, which are more stringent than the referenced NSPS standards.

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Processing Fee
004	FFSG, Unit 4	AC1F	NA
003	FFSG, Unit 5	AC1F	NA

Application Processing Fee

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

Owner/Authorized Representative Statement**Complete if applying for an air construction permit or an initial FESOP.**


1. Owner/Authorized Representative Name : LARRY HATCHER, PLANT MANAGER
2. Owner/Authorized Representative Mailing Address... Organization/Firm: PROGRESS ENERGY FLORIDA Street Address: 299 FIRST AVENUE, NORTH, 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 E-mail Address: LARRY.HATCHER@PGNMAIL.COM
5. Owner/Authorized Representative Statement: <i>I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.</i> <div style="display: flex; justify-content: space-between;"><div> Signature</div><div><u>12/19/08</u> Date</div></div>

Application Responsible Official Certification

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

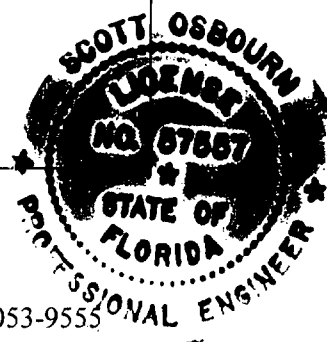
1. Application Responsible Official Name:
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable): <input type="checkbox"/> For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C. <input type="checkbox"/> For a partnership or sole proprietorship, a general partner or the proprietor, respectively. <input type="checkbox"/> For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official. <input type="checkbox"/> The designated representative at an Acid Rain source, CAIR source, or Hg Budget source.
3. Application Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
4. Application Responsible Official Telephone Numbers... Telephone: () - ext. Fax: () -
5. Application Responsible Official E-mail Address:
6. Application Responsible Official Certification: 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

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. Fax: (813) 287-1716
4. Professional Engineer E-mail Address: SOSBOURN@GOLDER.COM
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> <i>(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/>, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/>, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> <i>(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i> <div style="display: flex; justify-content: space-between;"><div>Signature  (seal)</div><div>Date <u>12/22/08</u></div></div>

* Attach any exception to certification statement

** Board of Professional Engineers Certificate of Authorization #00001670



ATTACHMENT 1
Application Background

ATTACHMENT 1

This permit application is to request changes to the current permit language with respect to:

- The use of a carbon monoxide (CO) continuous emission monitoring system (CEMS);
- Revisions relating to the gypsum storage and handling systems onsite; and
- Consistency with regard to applicable timeframes for testing following the installation and startup of elements of the pollution control systems.

In addition to these issues, PEF seeks the agency's concurrence with our understanding regarding the applicability of Condition 12 regarding excess emissions to the operation of the alkali injection system for sulfuric acid mist (SAM) mitigation.

The permit language revisions requested by PEF are included in Attachment 2 of this application package. PEF's requests are related to a number of factors that have changed since the issuance of the current permit. Specifically:

- Schedule changes for the installation of various elements of the pollution control project have resulted in a situation in which Unit 5 will have a very short operating window between the installation of the low NOx burners and tie-in of the scrubber to the new stack;
- The design of the limestone and gypsum storage and handling systems have changed slightly from the design that was assumed for the initial air construction permit application;
- PEF has identified an apparent inconsistency in the requirements for applicability of the conditions; and
- A detailed review of the operations and maintenance requirements associated with the SAM mitigation system has raised concerns regarding the "continuous" compliance

obligation in the currently permitted SAM emission limits and the allowable excess emissions provision in the permit.

Revised Schedule

The current permit was based on the initial approximate schedule for the Clean Air Project modifications which was developed to maintain the reliability of Units 4 and 5 and minimize down time, and was shown in the air application as follows:

Proposed Modification	Commence Construction	Commence Operation
Unit 4 SCR – tie in	September 2006	November 2008
Unit 5 SCR – tie in	December 2006	April 2009
Unit 4 Alkali – tie in	September 2006	November 2008
Unit 5 Alkali – tie in	December 2006	April 2009
Unit 4 LNB – tie in	March 2008	November 2008
Unit 5 LNB – tie in	March 2009	April 2009
Unit 4 FGD – tie in	December 2006	November 2009
Unit 5 FGD – tie in	December 2006	April 2009

The FGD systems for Units 4 and 5 were anticipated to commence construction as early as December 2006. As PEF completed contract negotiations with the control equipment contractors, it became clear that the initial schedule summarized above was untenable. Specifically, there were problems implementing both the SCR and FGD portions of Unit 5 during the Spring 2009 outage. These projects are currently in the construction phase. The proposed construction tie in outages and outage completion schedule is summarized below:

Proposed Modification	Commence Tie In Outage	Outage Completion (Operation Of Modification Begins)
Unit 4 SCR – tie in	February 2010	May 2010
Unit 5 SCR – tie in	February 2009	May 2009
Unit 4 Alkali – tie in	February 2010	May 2010
Unit 5 Alkali – tie in	February 2009	May 2009
Unit 4 LNB – tie in	November 2008	December 2008
Unit 5 LNB – tie in	February 2009	May 2009
Unit 4 FGD – tie in	February 2010	May 2010
Unit 5 FGD – tie in	November 2009	December 2009

Unit 4 ESP Upgrade	February 2010	May 2010
Unit 5 ESP Upgrade	February 2009	May 2009

This change in schedule, while necessary, has resulted in some minor issues in the implementation of the permit and its requirements. These issues and PEF's requests for modifications to the permit are discussed in the sections below.

CO CEMS Installation Schedule

PEF is requesting revisions to the CO CEMS conditions because the revised schedule results in a short window, at CR 5, between installation of the low NOx burners and tie-in of the scrubber to the new stack. The current permit language requires that CO CEMS be installed and operational on Unit 5 upon completion of installation of the low NOx burners (estimated at May 15, 2009, see above). Under the original schedule, the start up of the low NOx burners would have coincided with the FGD tie-in and the CEMS would have been installed on the new stack. Since the tie-in of the FGD system will now not be complete when the low NOx burners begin operation, the CO CEMS would be installed on the existing stack. After the tie-in of the FGD, a new CO CEMS will need to be installed on the new stack. The outage for the FGD tie in is scheduled for October 23, 2009. Thus this CEMS unit will be in place for only five months. In order to monitor CO for this short a period of time, it would be necessary to install a temporary CO monitor in the existing stack, and then purchase a new monitor for the new stack. Installing and certifying this temporary CO monitor unit is very burdensome and PEF believes that reasonable assurance of compliance can be provided by other means. Therefore, PEF requests a permit revision to waive the CEMS requirement during this short period of time, until the tie-in to the new stack is complete. In support of this request, it should be noted that Unit 4 will have operational CO CEMS as early as December 2008. The two units are very similar and the CO CEMS data collected can be considered representative of Unit 5 operation. Unit 5 will be tested for CO emissions to demonstrate compliance with the limits set forth in the permit, using EPA Reference Method 10, upon completion of the low NOx burner installation. The data from this test will also serve to demonstrate similarity in emissions to Unit 4, providing further assurance that the Unit 4 data may be considered representative for Unit 5 during this period.

PEF has provided proposed revisions to the permit language. These are provided in a “track-change” format in Attachment 2. PEF requests that these changes be approved by the agency and incorporated into the revised permit.

Limestone and Gypsum Transfer and Storage System Descriptions

Regarding the gypsum system, PEF requests that the description of the system be updated to reflect minor changes made to the design. Golder had previously calculated emissions from the transfer and storage of gypsum at the Crystal River site, including initial conservative assumptions which account for some of the proposed system revisions. Based on the assumptions available to date, the difference in PM/PM₁₀ emissions potential appears to be less than one ton per year (TPY), which is an insignificant amount. Regarding the additional truck traffic that would result from US Gypsum’s request to use the Crystal River access road for their inbound and outbound truck traffic, Golder had already assumed an additional 150 truck trips associated with the proposed wallboard plant in the initial application. At the time, this was assumed to be a conservative assumption in the event that a conveying system would not be used to transport the gypsum to the wallboard facility. The current projection for the additional truck traffic will not exceed the value used in the previous air modeling. Based on these findings, Golder has concluded that it is not necessary to re-run the air modeling, but that some permit language revisions would be required. These are provided in a “track-change” format in Attachment 2. PEF requests that these changes be approved by the agency and incorporated into the revised permit.

Applicability Trigger

Condition 15 “Compliance by CEMS” requires that compliance with the limits set forth in the permit be demonstrated by collection of continuous monitoring data for CO, NO_x and SO₂ and that the monitors be certified within 60 days of *re-establishing commercial operation*. In contrast, Conditions 16 and 19 require that compliance and/or performance tests for SAM, ammonia slip, PM, and VOC be conducted within 60 days of *completion of construction of the pollution control equipment*. The modifications covered by this permit are for the installation of the pollution control equipment. PEF believes that it is therefore reasonable to base the requirements for compliance on completion of construction of the pollution control devices. For

several reasons, including the phased nature of the construction in accordance with the schedule shown above, the need to operate these units to maintain reliability in the electrical grid, and the complexities of adding pollution controls to these existing units, it is possible that the units may return to operation before the pollution control devices are 100 percent operational. Final tuning, commissioning and completion of the pollution control devices may be required following the return to service of the emissions units. In recognition of this issue, PEF requests that the language of Condition 15 be changed to make it consistent with the language in Conditions 16 and 19. Revised language would read as shown here and in redline/strikeout format in Attachment 2.

15. *Compliance by CEMS:* *Compliance with the standards for opacity and emissions of CO, NO_x, and SO₂ shall be demonstrated with data collected from the required continuous monitoring systems. Within 60 days after initial performance testing, tuning and calibration on the pollution control systems, the permittee shall certify proper operation of each required monitor.*

Sulfuric Acid Mist (SAM or SO₃) Mitigation (AMM) System

PEF is also concerned with the “continuous” compliance obligation in the currently permitted SAM emission limits of 0.009 lb/MMBtu and 64.8 lb/hr (based on stack test results using EPA Methods 8 or 8A). These limits are contained in Condition 8.c. The development of a CAM Plan and reporting requirements to demonstrate continuous compliance are also provided in Conditions 16 and 25.c, respectively. The concern has to do with the allowable excess emissions provision in Condition 12, which states:

In accordance with Rule 62-210.700(6), F.A.C., excess emissions due to startup, shutdown or malfunction have been considered in establishing the sets of emissions standards of this permit. No other periods of excess emissions are authorized. [Rule 62-210.700(6), F.A.C.]

PEF believes that this statement is appropriate for the standards based on CEMS listed in Condition 9 of the permit. However, for standards based on consistent operation such as the SAM mitigation system, a different consideration may be appropriate. PEF requests that FDEP confirm that Condition 12 applies specifically to the pollutants addressed in Condition 9. PEF

will work with the agency to determine appropriate monitoring of system operation related to the SAM mitigation system including necessary maintenance intervals and the potential for resulting periods of excess emissions as a part of the development of the operating protocol required by Condition 16.e and the monitoring requirements of Condition 25.c.

PEF believes that the FDEP had already contemplated this approach. For example, in Condition 10, the permit contains language specific to the SAM mitigation (alkali injection) system, as follows:

Circumvention: No person shall circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly. The SCR and FGD systems shall operate as necessary to comply with the emissions standards of this permit. The alkali injection system and ESP shall operate in accordance with the automated controls system as determined by subsequent performance and compliance testing.

The AMM system design is relatively new to the utility industry, compared to more common pollution control equipment, such as flue gas desulfurization systems. While the AMM systems have been used in the power industry for approximately eight years, during most of that time the equipment has been in seasonal utilization (ozone season), which then allowed for scheduled annual maintenance downtime. During the last two to three years, these systems have been pressed into year-round service as part of increased nitrogen oxide emission regulation in the utility industry. However, the reliability of these systems, the necessary maintenance intervals for year-round service and the impacts on potential periods of excess emissions are still being demonstrated and are not fully developed by the industry.

In addition, some of the equipment is common to both units with no redundancy, therefore; when scheduled maintenance is performed on one unit during a scheduled outage, the operating unit SAM emissions will be affected, because the AMM system would be taken out of service for the minimum time needed to perform OEM recommended maintenance. At Crystal River North (Units 4 and 5), only one unit is typically scheduled for an outage at a time – PEF generally must operate either Unit 4 or Unit 5 (or both) to meet its obligation to maintain electrical reliability. PEF will keep critical spare parts on hand and will optimize maintenance practices and maintenance opportunities to keep any out of service time to a minimum.

The individual components provided by Wahlco as part of the AMM System are typical of the equipment provided for power plant pollution control systems, including valves, pumps, instruments, etc. As such, the failure rates for individual components should be comparable to systems which have much longer utility service records. It is important to note that redundancy has been built into many of the systems and most customers, including PEF, have developed contingency plans, including identification of critical spare parts and routine equipment inspections to reduce potential system downtimes.

Wahlco Inc. will supply equipment for the urea to ammonia conversion system associated with the AMM System consisting of the following major components:

- AMM Urea Solution Day Tank;
- AMM Hydrolyzer Feed Pump Skid;
- AMM Hydrolyzer Skid A;
- AMM Hydrolyzer Skid B;
- AMM Hydrolyzer Blowdown Tank;
- Unit 4 AMM AFCU Skid;
- Unit 5 AMM AFCU Skid
- Urea Steam Saturator
- Condensate Cooler Unit Assembly
- Urea Auxiliary Steam Supply Line

These project components have been specified, designed, engineered and fabricated to provide robust and reliable operation. In addition, most of the equipment on these skids including pumps, blowers, valves and instrumentation, has redundant features built into the design specifically to improve system availability. However, some of the equipment is common to both units and some have no redundancy, therefore; when scheduled maintenance is performed on a system during a scheduled unit outage, the operating unit SAM emissions will be affected, because the AMM system would be taken out of service for the minimum time needed to perform the OEM recommended maintenance. These components include the following:

- AMM Urea Solution Day Tank (common)
- AMM Hydrolyzer Blowdown Tank (common)
- Condensate Cooler Unit Assembly (common)
- Urea Steam Saturator (common)
- Urea Auxiliary Steam Supply Line (common)
- AMM AFCU Skid - Air Duct Heater Units (unit specific)
- AMM AFCU Skid - Dilution Heater Eurotherm Controller Unit (unit specific)

The urea-to-ammonia system equipment has been designed to allow for proper preventative maintenance to provide long term reliability. Many of the current system users schedule annual maintenance periods to perform inspections, service and maintenance of the equipment. The items serviced include:

- Inspection and cleaning of the Hydrolyzer and removal of the steam bundle tubing assembly from the Hydrolyzer Vessel (5 -7 days)
- Inspection and servicing of the pump equipment (1-2 days)
- Inspection and servicing of the blower equipment (1-2 days)
- Inspection and cleaning the Condensate Recovery spray nozzles (1-2 days)
- Inspection and cleaning of the Condensate Cooler cooling fins assembly (1-2 days)
- Inspection and testing the instrumentation and valve control components (2-4 days)

Some of these activities require the equipment to be removed from service and cooled down from high operating temperatures before servicing. Some of these activities will affect the ability for PEF to operate both units' AMM systems. In addition, this list does not include periods of excess emissions that may be associated with start up and shutdown of the coal fired units. As noted above, PEF will keep critical spare parts on hand and will optimize maintenance practices, routine inspections and maintenance opportunities to reduce out of service time. However, it should be noted that PEF's projected annual out of service time for the AMM system for each unit (based on the above summary) is 240 hours (10 days) or 2.7 percent, providing 97.3 percent availability.

PEF requests the Department's concurrence that appropriate allowances for necessary maintenance and system downtime be addressed in the operating protocol required by Condition 16.e and the monitoring requirements of Condition 25.c. PEF would be pleased to meet with the agency in the near future to further discuss the details surrounding this issue.

As previously stated, the industry is still collecting Best Practices in system design due to the limited number of years the technology has been in service. Earlier vintage systems that are in service have been operated on a seasonal basis (Ozone Season). This allowed for scheduled maintenance on various components without affecting plant operations and/or emissions. As additional operating experience is gained, PEF will continue to work to minimize excess emissions.

ATTACHMENT 2

Requested Permit Revision Language

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Unit 4, Unit 5 and CBO Unit - Pollution Control Projects

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

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

EMISSIONS LIMITATIONS AND PERFORMANCE STANDARDS

8. Standards Based on Stack Tests: Including the emissions from the CBO unit, emissions from each Unit 4 or Unit 5 shall not exceed the following standards based on stack tests.

- a. *Ammonia Slip*: As determined by EPA Method CTM-027 (or equivalent), the ammonia slip shall not exceed 5 ppmv based on a 3-run test average conducted at permitted capacity.
- b. *PM/PM₁₀ Emissions*: As determined by EPA Method 5 or 5b, PM emissions shall not exceed 0.030 lb/MMBtu and 216.0 lb/hour based on a 3-run test average conducted at permitted capacity.
- c. *SAM emissions*: As determined by EPA Method 8 or 8A, SAM emissions shall not exceed 0.009 lb/MMBtu and 64.8 lb/hour based on a 3-run test average conducted at permitted capacity.
- d. *VOC Emissions*: As determined by EPA Method 25A, VOC emissions shall not exceed 0.004 lb/MMBtu and 28.8 lb/hour based on a 3-run test average conducted at permitted capacity. Optionally, EPA Method 18 may be conducted concurrently in order to deduct non-regulated VOC emissions such as methane and ethane.
- e. *Opacity*: As determined by EPA Method 9, the stack opacity shall not exceed 10% based on a 6-minute block average, except for one 6-minute period per hour of not more than 20%.

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

9. Standards Based on CEMS: Including the emissions from the CBO unit, emissions from Units 4 and 5 each shall not exceed the following standards based on data collected by the CEMS.

- a. *NOx Emissions*: As determined by CEMS data, NOx emissions shall not exceed 0.47 lb/MMBtu of heat input based on a 12-month rolling average for all periods of operation including startup, shutdown and malfunction. [Application No. 01 70004-016-AC; Rules 62-4.070(3) and 62-2 12.400(12), F.A.C.]
- b. *SO₂ Emissions*: As determined by CEMS data, SO₂ emissions shall not exceed 0.27 lb/MMBtu of heat input based on a 30-day rolling average for all periods of operation including startup, shutdown and malfunction. As determined by CEMS data, SO₂ emissions shall not exceed 1944.0 lb/hour based on a 24-hour block average excluding startup, shutdown and malfunction of the FGD system. [Application No. 0170004-016-AC; Rules 62-4.070(3) and 62-212.400(12), F.A.C.]
- c. *CO Emissions (Interim)*: As determined by CEMS data, CO emissions shall not exceed 0.17 lb/MMBtu of heat input based on a 30-day rolling average excluding periods of startup, shutdown and malfunction. As determined by CEMS data, CO emissions shall not exceed 1156.0 lb/hour based on a 30-day rolling average for all periods of operation including startup, shutdown and malfunction. [Rule 62-2 12.400 (BACT), F.A.C.]
- d. *CO Emissions (Final)*: Within 24 months of commencing commercial operation of each unit with the new low-NOx burners, or, when 24 months of CO emissions data has been collected, the permittee shall submit an application proposing a revised (lower) final BACT standard. The final standard shall be based on actual CO emissions data collected for initial operation after completing installation of the new low-NOx burners. There may be separate standards proposed for different fuels. [Rule 62-212.400(BACT), F.A.C.]

10. Circumvention: No person shall circumvent any air pollution control device, or allow the emission of air

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Unit 4, Unit 5 and CBO Unit - Pollution Control Projects

pollutants without the applicable air pollution control device operating properly. The SCR and FGD systems shall operate as necessary to comply with the emissions standards of this permit. The alkali injection system and ESP shall operate in accordance with the automated controls system as determined by subsequent performance and compliance testing. [Rules 62-2 10.650 and 62-2 12.400(BACT), F.A.C.]

11. Excess Emissions - Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. All such preventable emissions shall be included in any compliance determinations based on CEMS data. [Rule 62-21 0.700(4), F.A.C.]

12. Excess Emissions - Allowed: In accordance with Rule 62-210.700(6), F.A.C., excess emissions due to startup, shutdown or malfunction have been considered in establishing the sets of emissions standards of this permit. No other periods of excess emissions are authorized. [Rule 62-210.700(6), F.A.C.]

CONTINUOUS EMISSIONS MONITORING REQUIREMENTS

13. Existing CEMS/COMS: For Units 4 and 5, the permittee shall continue to calibrate, operate, and maintain continuous monitoring equipment to measure and record opacity, NOx and SO2 in terms of the applicable standards. The permittee shall either relocate the existing CEMS to the new stack configurations or replace the monitoring systems. Due to the wet stack, the existing COMS shall be relocated or new COMS installed in the ductwork after the ESP and prior to the wet FGD system. Each COMS and CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The monitors shall be installed, operated and maintained in accordance with the existing requirements of 40 CFR 60.45, as well as the provisions of the federal acid rain program. [Rule 62-4.070(3), F.A.C.]

14. CO CEMS Installation: For Units 4 and 5, the permittee shall properly install, calibrate, operate and maintain CEMS to measure and record CO emissions in the terms of the applicable standard. Each CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The permittee shall locate the CEMS by following the procedures contained in the applicable performance specification of 40 CFR Part 60, Appendix B. The permittee shall install each CEMS required by this permit and conduct the appropriate performance specification for each CEMS within 60 calendar days of achieving permitted capacity as defined in Rule 62-297.310(2), F.A.C., but no later than 180 calendar days after initial startup. [Rules 62-4.070(3) and 62-2 12.400(BACT), F.A.C.]

14.a. CO CEMS Waiver: The CO CEMS for Unit 4 will be installed in accordance with the requirements and schedule detailed in Condition 14 above. Units 4 and 5 are similar, and data collected for Unit 4 should be representative of Unit 5 performance. Regarding Unit 5, due to construction scheduling, there will be an approximate 5 month lag between installation of the low NOx burners and the tie-in to the new FGD stack. Therefore, CO compliance testing will be conducted on Unit 5 after installation of the low NOx burners. However, installation of and monitoring by CO CEMS can be deferred until Unit 5 tie-in to the new stack is complete [Applicant Request].

15. Compliance by CEMS: Compliance with the standards for opacity and emissions of CO, NOx, and SO2 shall be demonstrated with data collected from the required continuous monitoring systems. Within 60 days after completing construction on the pollution control systems of reestablishing commercial operation of each unit, the permittee shall certify proper operation of each required monitor, except for Condition 14.a. above. The permittee shall comply with the conditions of Appendix F (Standard Continuous Monitoring Requirements) of this permit as the compliance method for the corresponding emissions standards. [Rules 62-4.070(3) and 62-212.400(BACT), F.A.C.]

PRELIMINARY PERFORMANCE TESTING REQUIREMENTS

16. Preliminary SAM Performance Tests: Within 60 days after completing construction on the pollution control systems, the permittee shall conduct a series of preliminary performance tests on either unit to determine the SAM

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

B. Material handling Activities for Limestone and Gypsum

This section of the permit addresses the following emissions unit

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

Process Description

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

~~Limestone received from the quarry conveyor will be transported to the unloading conveyor by the transfer conveyor. Limestone received by trucks will be transferred to the unloading conveyor by the truck unloading feeders. The delivered limestone will be conveyed to a covered storage pile via conveyor and a stacking conveyor equipped with dual discharge overhead traveling tripper. From the storage pile, the material is reclaimed using a single full portal scraper reclaim and conveyed by a conveyor to a crusher building where the material is sized using crushers. One or more feed conveyors will receive limestone from the crushers and distribute the material to the three limestone day silos. Two A plant feed conveyors and four silo feed conveyors are provided to receive limestone from the crushers and distribute material to the three limestone day silos.~~

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

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

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

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

B. Material handling Activities for Limestone and Gypsum

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

AUTHORIZED CONSTRUCTION

1. Equipment: The permittee is authorized to construct the following processes to support the FGD system: limestone storage and handling, limestone preparation, limestone slurry injection, and gypsum dewatering, transfer and storage. [Application No. 01 70004-016-AC; Rules 62-4.070(3), 62-212.300 and 62- 212.400(PSD), F.A.C.]

2. Air Pollution Control Equipment and Techniques: To comply with the standards of this permit, the permittee shall design, install, operate and maintain the following air pollution control equipment.

Process Activity	Emissions Point No.	Control Device Flow Rate	Outlet Dust Loading Specification
Dry Limestone Handling System			
Limestone conveyors (general)	---	enclosed covered	---
Limestone stacking-reclaim conveyor (discharge to)	---	dust suppressant	---
Dump trucks	---	covered	---
Truck unloading feeders w/integral hoppers	EP-000	dust collectors aefm	0.010 grains/dscf
Limestone storage		covered pile	---
Limestone crushing and sizing	EP-000	enclosed building w/baghouse aefm	0.010 grains/dscf
Limestone silo feed conveyors	EP-000	dust collectors aefm	0.010 grains/dscf
Limestone day silos (3) , up to (4)	EP-000	dust collector baghouse aefm	0.010 grains/dscf
Limestone Preparation System			
Wet ball mill grinders and misc. equipment	---	enclosure /wet	---
Gypsum Dewatering System			
Gypsum dewatering system	---	enclosure/wet	---
Gypsum Handling System			
Gypsum handling system	---	enclosure/wet	---
<u>Gypsum Handling Pad</u>	---	<u>water spray</u>	---

Initial and replacement bags shall be selected based on the above design outlet dust loading specification. [Application No. 01 70004-016-AC; Rules 62-4.070(3), 62-2 12.300 and 62-212.400(BACT), F.A.C.]

3. Fugitive Dust Emissions: The dry limestone handling and storage operations shall be enclosed to the extent practicable and confined to prevent fugitive dust emissions. During the construction period, fugitive dust emissions

shall be minimized by techniques such as covering, confining and/or the application of water or dust suppressants to the affected areas, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

EMISSIONS LIMITATIONS AND PERFORMANCE STANDARDS

4. Capacities: None of the emissions units in this subsection are restricted by hours of operation (8760 hours/year).
{*Permitting Note: For information purposes, maximum limestone processing rate is estimated at 100 tons per day.*}
[Application No. 0170004-016-AC; Rule 62-210.200(PTE), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

B. Material handling Activities for Limestone and Gypsum

5. Opacity Standard: As determined by EPA Method 9, visible emissions from each baghouse and dust collector exhaust point shall not exceed 5% opacity based on a 6-minute average. [Application No. 01 70004-016-AC; Rule 62-212.400(BACT), F.A.C.]

6. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]

COMPLIANCE TESTING REQUIREMENTS

7. Initial Compliance Tests: Each baghouse exhaust shall be tested to demonstrate initial compliance with the specified opacity standard. The initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the unit. [Rule 62-297.3 10(7)(a)l, F.A.C.]

8. Annual Compliance Tests: During each federal fiscal year (October 1st to September 30th), each baghouse exhaust point shall be tested to demonstrate compliance with the specified opacity standard. [Rule 62-297.3 10(7)(a)4, F.A.C.]

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

10. Test Method: Opacity tests shall be conducted in accordance with EPA Method 9, which is described in 40 CFR 60, Appendix A_ and adopted by reference in Rule 62-204.800, F.A.C. Tests shall also comply with the applicable requirements of Rule 62-297.310_ F.A.C. summarized in Appendix D (Common Testing Requirements) of this permit. [Rules 62-204.800 and 62-297.100, F.A.C.: 40 CFR 60, Appendix A]

11. Test Procedures: Tests shall be conducted in accordance with all applicable requirements of Chapter 62-297, F.A.C. The minimum observation period for a visible emissions compliance test shall be 30 minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. The permittee shall record the actual processing rate for the emissions unit being tested. [Rules 62-297.3 10(4) and (5), F.A.C.]

12. Common Testing Requirements: All required emissions tests shall be conducted in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. The minimum observation period for a visible emissions compliance test shall be 30 minutes. The observation period shall include the period during which the highest opacity can reasonably be expected to occur. The permittee shall record the actual processing rate for the emissions unit being tested. [Rule 62-297.310, F.A.C.]

RECORDS AND REPORTS

13. Final Design Notification: Within 90 days of completing the FGD system design provide the final details for the limestone and gypsum material handling activities including a process flow diagram and all control equipment specifications. It may be necessary to modify this air construction permit. [Application No. 01 70004-016-AC; Rule 62-4.070(3), F.A.C.]

14. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Compliance Authority on the results of each such test. The required test report shall be filed with the Compliance Authority as soon as practical, but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Compliance Authority to determine if the test was properly conducted and the test results properly computed. [Rule 62-297.3 10(8), F.A.C.]

SECTION 4. APPENDIX E
SUMMARY OF FINAL BACT DETERMINATIONS

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

- a. Records of the design outlet dust loading specifications for new and replacement fabric filter bags; and
- b. For each month, record the total limestone processed for the month and the previous 12 months.
- c. After the ESP for use as part of the Compliance Assurance Monitoring Plan under Title V. Operation of the ESP shall be based upon COMS data collected during satisfactory PM emissions compliance tests.
- d. Operation of the alkali injection system shall be determined by the automated control system, which shall be set in accordance with the preliminary performance and compliance tests for SAM emissions.
- e. Concurrently with EPA Method 25A, EPA Method 18 may be used as an optional method to deduct emissions of methane and ethane from the THC emissions measured by Method 25A.
- f. The CBO fluidized bed combustor is also subject to the following applicable NSPS Subpart Dc provisions for boilers: the firing of fuel with no more than 0.5% sulfur by weight percent based on a certification from the fuel supplier (applies at all times, including periods of startup, shutdown, and malfunction); and no more than 20% opacity based on a 6-minute average, except for one 6-minute period per hour of not more than 27% opacity (applies at all times, except during periods of startup, shutdown, or malfunction). Since the flue gas exhaust from the CBO unit is directed back into the boiler ductwork for control, the CBO unit will achieve the same standards as Units 4 and 5, which are more stringent than the applicable NSPS.
- g. "SU" means startup; "SD" means shutdown; and "M" means malfunction.

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

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

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

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

Fly ash from Units 4 and 5 will be conveyed pneumatically to the CBO feed fly ash silo (EU-025). Ash will be fed from this silo to the fluidized bed combustor (EU-024) for processing. Exhaust from the feed fly ash silo will vent through a baghouse prior to discharge to the atmosphere. Product ash will be pneumatically conveyed to storage