

Florida Department of Environmental Protection

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

Jeff Kottkamp Lt. Governor

Michael W. Sole Secretary

November 21, 2007

Electronically Sent – Received Receipt Requested.

Ms. Denise Stalls <u>DStalls@ouc.com</u> Vice President Environmental Affairs Orlando Utilities Commission 500 South Orange Avenue Post Office Box 3193 Orlando, Florida 32802

Re: DEP File No. 0950137-015-AC (PSD-FL-395) Curtis H. Stanton Energy Center Units 1 and 2 Low NO_X Burners and Overfire Air Project

Dear Ms. Stalls:

Enclosed is one copy of the draft air construction permit pursuant to the rules for the Prevention of Significant Deterioration (PSD permit) authorizing the installation of Low NO_X burners and overfire air systems on Units 1 and 2 at the Curtis H. Stanton Energy Center in Orange County. The Department's Intent to Issue PSD Permit, the Technical Evaluation, and the "Public Notice of Intent to Issue Air Construction Permit" are also included.

The Public Notice must be published one time only as soon as possible in a newspaper of general circulation in the area affected, pursuant to the requirements of Chapter 50, Florida Statutes. Proof of publication, such as a newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in denial of the permit modification.

Please submit any written comments you wish to have considered concerning the Department's proposed action to Mr. A.A. Linero, Program Administrator, at the letterhead address. If you have any questions regarding this matter, please contact Mr. Linero at (850) 921-9523.

Sincerely, Vilhaus

Trina L. Vielhauer, Chief Bureau of Air Regulation

TLV/aal

Enclosures

In the Matter of an Application for Permit by:

Orlando Utilities Commission Post Office Box 3193 Orlando, Florida 32802

Authorized Representative:
Ms. Denise Stalls, Vice President

DEP File No. 0950137-015-AC
Draft Permit PSD-FL-395
Stanton Energy Center Units 1 and 2
Low NO_X Burners and Overfire Air
Orange County, Florida

WRITTEN NOTICE OF INTENT TO ISSUE PSD PERMIT

Facility Location: The applicant, Orlando Utilities Commission, operates the Stanton Energy Center located at 5100 Alafaya Trail, Orlando, Orange County.

The Department of Environmental Protection (Department) gives notice of its intent to issue a permit pursuant to the rules for the Prevention of Significant Deterioration of Air Quality (PSD permit), copy of Draft PSD permit attached, for the proposed project as detailed in the application specified above and the enclosed Technical Evaluation and Preliminary Determination for the reasons stated below.

Project: The applicant, Orlando Utilities Commission (OUC), initially applied on February 5, 2007 to the Department for a minor source permit to install or upgrade low nitrogen oxides (NO_X) burners and overfire air equipment in the furnaces of Units 1 and 2 at the existing Curtis H. Stanton Energy Center east of Orlando in Orange County. OUC Subsequently submitted a PSD permit application on August 4, 2007.

Permitting Authority: The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, 62-212 and 62-213. This action is not exempt from permitting procedures. The Department determined that a PSD permit is required.

Notice of Intent to Issue Air Permit: The Department intends to issue this permit based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Public Notice: Pursuant to Section 403.815, F.S., and Rule 62-110.106(7)(a)1., F.A.C., you (the applicant) are required to publish at your own expense the enclosed <u>Public Notice of Intent to Issue PSD</u> Permit. The notice shall be published one time only in the legal advertisement section of a newspaper of general circulation in the area affected. Rule 62-110.106(7)(b), F.A.C., requires that the applicant cause the notice to be published as soon as possible after notification by the Department of its intended action. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting 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 Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-0114; Fax 850/ 921-9533). You must provide proof of publication within seven days of publication, pursuant to Rule 62-110.106(5), F.A.C. No permitting action for which published notice is required shall be granted until proof of publication of notice is made by furnishing a uniform affidavit in substantially the form prescribed in section 50.051, F.S. to the office of the Department issuing the permit. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rules 62-110.106(9) & (11), F.A.C.

Memorandum

Florida Department of Environmental Protection

TO:

Trina Vielhauer

FROM:

Al Linero

DATE:

November 20, 2007

SUBJECT:

Orlando Utilities Commission (OUC) - Stanton Energy Center

Low NO_X burners and Overfire Air Project

DEP File No. 0950137-015-AC

Attached is the Intent to Issue package for the installation of low NO_X burners and overfire air (OFA) equipment on OUC Stanton Units 1 and 2.

The burners shall be of a proven design which has been previously utilized to achieve similar emissions requirements when firing fuels similar to those fired at Unit 1 and Unit 2. The burners and OFA systems shall be designed specifically for low NO_x formation. Burner design shall provide accurate fuel-air ratio control and thorough mixing of fuel and air at all ratings. Burner design shall prevent flame impingement on steam generator tubes or burner tile at any time.

I recommend your approval of the attached Intent to Issue.

AAL

Attachments

DEP File No. 0950137-015-AC (PSD-FL-395) OUC Stanton Units 1 and 2 Page 2 of 3

The Department will issue the final PSD permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

Comments: The Department will accept written comments concerning the proposed permit issuance action for a period of 30 days from the date of publication of Public Notice. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the PSD permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below.

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

A petition that disputes the material facts on which the Department'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 petitioner received notice of the agency decision; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specified rules or statutes; and (g) A statement of the relief sought by the petitioner, stating precisely the action 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 Department'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.

DEP File No. 0950137-015-AC (PSD-FL-395) OUC Stanton Units 1 and 2 Page 3 of 3

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

Mediation: Mediation is not available in this proceeding.

Executed in Tallahassee, Florida.

Trina L. Vielhauer, Chief Bureau of Air Regulation

Juan Vielhaus

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Intent to Issue PSD Permit (including the Public Notice, Technical Evaluation, and the Draft PSD permit) and all copies were sent electronically (with Received Receipt) before the close of business on November 21, 2007 to the persons listed:

Denise Stalls, OUC: dstalls@ouc.com

Jim Bradner, DEP CD: james.bradner@dep.state.fl.us
Lori Cunniff, Orange County EPD: lori.cunniff@ocfl.net
Jim Little, EPA Region 4: little.james@epamail.epa.gov
Katy Forney, EPA Region 4: forney.kathleen@epa.gov

Larry Todd Newland, P.E., Black & Veatch: newlandlt@bv.com

Mike Halpin, DEP Siting: mike.halpin@dep.state.fl.us

Clerk Stamp

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

) // X (Date

PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP File No. 0950137-015-AC, PSD-FL-395

Orlando Utilities Commission (OUC)
Curtis H. Stanton Energy Center Units 1 and 2
Orange County

Applicant: The applicant for this project is the Orlando Utilities Commission (OUC). The applicant's mailing address is: OUC, Post Office Box 3193, Orlando, Florida 32802

Facility Location: The applicant operates the Stanton Energy Center located at 5100 Alafaya Trail, Orlando, Orange County.

Project: The permit authorizes installation or upgrade of low nitrogen oxides (NO_X) burners (LNB) and overfire air (OFA) systems in the furnaces of Units 1 and 2. OUC Stanton Units 1 and 2 each consist of a coal fired boiler/steam generator and steam turbine with a 468 megawatts nominal capacity rating. Each unit is equipped with an electrostatic precipitator for control of particulate matter and a wet flue gas desulfurization scrubber for sulfur dioxide (SO₂) control. Unit 2 is also equipped with LNBs, OFA and a selective catalytic reduction system. OUC proposes to install LNBs and an OFA system on Unit 1 and to upgrade the LNBs and OFA system on Unit 2. The purpose of the project is to decrease NO_X emissions from Units 1 and 2. The project is part of a continuing program at OUC to reduce emissions of SO₂ and NO_x for the purpose of complying with the Clean Air Interstate Rule (CAIR). One effect of the project is that it will cause increases of CO emissions. The Department conducted a BACT determination and is proposing a limit of 0.18 pounds of CO per million British Thermal Units of heat input to the furnace (lb/mmBtu) of Unit 1 and a limit of 0.15 lb CO/mmBtu for Unit 2. The Department requires installation of continuous emission monitoring systems for determination of compliance with the BACT limits on a 30-day averaging basis. The Department reviewed an ambient air modeling analysis submitted by OUC and concluded that the increased CO emissions will not cause or contribute to any violation of the ambient air quality standards. A full description of the project and the Department's review are available at: www.dep.state.fl.us/Air/permitting/construction/ouc-stanton LNBOFA.htm

Notice of Intent to Issue A Permit: The Department Environmental Protection (Department) gives notice of its intent to issue a permit under the requirements for the Prevention of Significant Deterioration of Air Quality (PSD permit) to OUC. A best available control technology (BACT) determination was required for emissions of carbon monoxide (CO) pursuant to Rule 62-212.400(10)(c), Florida Administrative Code (F.A.C.). The Department will issue the final PSD Permit unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

Comments: The Department will accept written comments concerning the proposed permit issuance action and requests for a public meeting for a period of 30 days from the date of publication of Public Notice of Intent to Issue PSD Permit. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to sections 120.569 and 120.57 F.S., before the deadline for filing

a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

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

A petition that disputes the material facts on which the Department'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 petitioner received notice of the agency decision; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specified rules or statutes; and (g) A statement of the relief sought by the petitioner, stating precisely the action 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 Department'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. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Project File: A complete project file is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection Bureau of Air Regulation 111 South Magnolia Drive, Suite 4 Tallahassee, Florida 32301

Telephone: 850/488-0114 Fax: 850/921-9533 Department of Environmental Protection Central District Office 3319 Maguire Boulevard, Suite 232 Orlando, Florida 32803-3767 Telephone: 407/894-7555

Fax: 407/897-5963

The complete project file includes the technical evaluation and the Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Program Administrator, South Permitting Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114, for additional information.

PERMITTEE:

Orlando Utilities Commission (OUC) 500 South Orange Avenue Orlando, Florida 32802

Authorized Representative:
Ms. Denise Stalls, Vice President
Environmental Affairs

DEP File No. 0950137-015-AC Curtis H. Stanton Energy Center Stanton Units 1 and 2 SIC No. 4911 Low NO_X burners and Overfire Air Project Orange County, Florida

Permit Expires: Month day, year

PROJECT AND LOCATION

This permit authorizes the installation of low nitrogen oxides (NO₂) burners (LNB) and an overfire air (OFA) system on Units 1 and 2 at the OUC Curtis H. Stanton Energy Center. The facility is located at 5100 Alafaya Trail, Orlando, Orange County.

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.) and Title 40, Parts 60 and 63 of the Code of Federal Regulations (CFR). The permittee is authorized to install the proposed equipment in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Florida Department of Environmental Protection (the Department).

CONTENTS

Section 1. General Information

Section 2. Administrative Requirements

Section 3. Emissions Units Specific Conditions

Section 4. Appendices

Joseph Kahn, Director (Date)
Division of Air Resource Management

FACILITY AND PROJECT DESCRIPTION

The existing facility consists of two 468 megawatt (MW) fossil fuel fired steam electric generating units (Units 1 and 2), and one 640 MW combined cycle unit. There are storage and handling facilities for solid fuels, fly ash, limestone, gypsum, slag, and bottom ash. A recently permitted nominal 285 MW integrated gasification and combined cycle unit (Unit B) is under construction and will be operational by 2012.

As noted above, the project under this permit is for the installation of LNB and OFA equipment on Units 1 and 2. The burners shall be of a proven design which has been previously utilized to achieve similar emissions requirements when firing fuels similar to those fired at Unit 1 and Unit 2. The burners and OFA systems shall be designed specifically for low NO_x formation. Burner design shall provide accurate fuel-air ratio control and thorough mixing of fuel and air at all ratings. Burner design shall prevent flame impingement on steam generator tubes or burner tile at any time.

EU ID	Emissions Unit Description
001	Fossil Fuel Fired Steam Electric Generator No. 1
002	Fossil Fuel Fired Steam Electric Generator No. 2

REGULATORY CLASSIFICATION

The facility is a potential major source of hazardous air pollutants (HAP).

The facility operates existing units subject to the Acid Rain provisions of Title IV of the Clean Air Act (CAA).

The facility is a Title V major source of air pollution in accordance with Chapter 213, Florida Administrative Code (F.A.C.)

The facility is a major Prevention of Significant Deterioration (PSD) stationary source in accordance with Rule 62-212.400, F.A.C.

The facility operates units subject to the Standards of Performance for New Stationary Sources pursuant to 40 CFR Part 60.

The facility does not operate electrical generating units subject to National Emissions Standards for Hazardous Air Pollutants pursuant to 40 Code of Federal Regulations (CFR) Part 63.

The facility is subject to the Federal Clean Air Interstate Rule (CAIR) in accordance with the Final Department Rules issued pursuant to CAIR as implemented by the Department in Rule 62-296.470, F.A.C.

The facility is subject to the Federal Clean Air Mercury Rule (CAMR) implemented by the Department in Rule 62-296.480, F.A.C.

The facility operates units that were certified under the Florida Power Plant Siting Act, 403.501-518, F.S.

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; and the Department's Technical Evaluation and Preliminary Determination.

SECTION 2. ADMINISTRATIVE REQUIREMENTS

- 1. <u>Permitting Authority</u>: The Permitting Authority for this project is the Bureau of Air Regulation in the Division of Air Resource Management of the Department. The mailing address for the Bureau of Air Regulation is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400.
- 2. <u>Compliance Authority</u>: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Central District Office. The mailing address and phone number of the Central District Office are: Department of Environmental Protection, Central District Office, 3319 Maguire Boulevard, Suite 232, Orlando Florida 32803-3767. Telephone: (407)894-7555. Fax: (407)897-5963.
- 3. <u>Appendices</u>: The following Appendices are attached as part of this permit: Appendix GC (General Conditions).
- 4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-214, 62-296, and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
- 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 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 permit authorizes specific modifications and/or new construction on the affected emissions units as well as initial operation to determine compliance with conditions of this permit. A Title V operation permit is required for regular operation of the permitted emissions unit. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after completing the required work and commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the Bureau of Air Regulation with copies to the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

This section of the permit addresses the following existing emissions units.

Emissions Units 001 and 002

Fossil Fuel Fired Steam Generators 1 and 2 are wall-fired, dry bottom boilers, firing pulverized coal as the primary fuel and No. 6 fuel oil for purposes of startup and flame stabilization. Each unit has a maximum heat input rate of 4,286 million British thermal units (mmBtu) per hour with a nominal generating capacity of 468 MW. Each unit is equipped with an electrostatic precipitator (ESP) for control of particulate matter (PM/PM₁₀), a wet flue gas desulfurization (WFGD) system for sulfur dioxide (SO₂) control, and low NO_X burners for nitrogen oxides (NO_X) control. Unit 2 is also equipped with a selective catalytic reduction (SCR) system for further control of NO_X emissions. The following parameters are continuously monitored on both units: NO_X, opacity, SO₂, carbon dioxide (CO₂), and stack gas flow rate.

APPLICABLE STANDARDS AND REGULATIONS

- 1. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting requirements or regulations. [Rule 62-210.300, F.A.C.]
- 2. The facility is subject to all of the requirements specified in Title V Air Operation Permit Renewal No. 0950137-006-AV.

GENERAL OPERATION REQUIREMENTS

- 3. <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), F.A.C.]
- 4. <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 owner or operator shall notify the Department as soon as possible, but at least within (1) working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; the 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 and the regulations. [Rule 62-4.130, F.A.C.]
- 5. Operating Procedures. Operating procedures shall include good operating practices and proper training of all operators and supervisors. The good operating practices shall meet the guidelines and procedures as established by the equipment manufacturers. All operators (including supervisors) of air pollution control devices shall be properly trained in plant specific equipment. [Rule 62-4.070(3), F.A.C.]
- 6. <u>Circumvention.</u> 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. [Rule 62-210.650, F.A.C.]

EQUIPMENT AND CONTROL TECHNOLOGY

7. Low NO_x Burners and Overfire Air Equipment. The permittee is authorized to construct, operate and maintain low NO_x burners and overfire air equipment for Units 1 and 2 as described in the application. The burners and OFA systems shall be designed specifically for low NO_x formation. The existing burner configuration, control logic, and associated auxiliary combustion equipment shall be reused in its current configuration. Any replacement burners provided for Unit 2 and any new burners provided for Unit 1 shall be mounted within the existing wind box to the maximum extent possible. Any needed wind box modifications or internal supports shall be included in the configuration. Burner design shall provide accurate fuel-air ratio control and thorough mixing of fuel and air at all ratings. Burner design shall prevent

flame impingement on steam generator tubes or burner tile at any time. Adequate burner cooling air shall be provided when the burner is out of service during steam generator operation. In addition, the burner shall be fabricated of materials designed to eliminate the thermal effects resulting in distortion of the burner during its design lifetime. Provision shall be made for burner maintenance to be performed from outside of the furnace. Both an air and coal flow monitoring system shall be provided at each burner. [Applicant Request.]

REPORTING AND NOTIFICATION REQUIREMENTS

8. Notification. Within one week of beginning construction of the low NO_x burners and overfire air project, the permittee shall notify the Compliance Authority that the project has commenced and provide a general schedule of construction activities. Within one week following the end of construction, the permittee shall notify the Compliance Authority that the project was completed.

[Rule 62-4.210, F.A.C.]

EMISSION STANDARDS

9. Carbon Monoxide (CO):

Emissions of CO from Unit 1 shall not exceed 0.018 lb/mmBtu heat input on a 30-operating day rolling average as demonstrated by the required continuous emissions monitoring system (CO-CEMS). Emissions of CO from Unit 2 shall not exceed 0.015 lb/mmBtu heat input on a 30-operating day rolling average as demonstrated by the required CO-CEMS. Emissions of CO shall not exceed these respective limits on a 3-hr average during the initial compliance demonstration. See Specific Condition 10.

[62-210.200 (BACT), and 62-212.400(PSD), F.A.C.]

EMISSIONS COMPLIANCE DEMONSTRATION

- 10. Continuous Compliance with CO limits: The applicant shall install a carbon monoxide (CO) continuous emissions monitor (CO-CEMS) and conduct the appropriate performance specification by June 30, 2008, for Unit 1, and December 31, 2008, for Unit 2, respectively. Upon certification of the CO-CEMS, compliance with the 30 operating day rolling average shall be demonstrated using data collected from the required CO-CEMS. See Specific Conditions 12. and 15. [Rule 62-4.070(3), F.A.C.]
- 11. <u>Additional Requirements Appendix CEMS</u>: Additional requirements applicable to the CO-CEMS are given in Section 4, Appendix CEMS.
- 12. <u>Initial Compliance Demonstration</u>: Within 60 days of commencing operation of each respective unit, following installation of the Low-NO_X burners and overfire air system, tests shall be conducted to determine emissions of CO and NO_X. Tests shall be conducted between 90% and 100% of permitted capacity while firing coal and fuel oil. Tests shall consist of three, 1-hour test runs. [Rule 62-297.310(7)(a)1, F.A.C.]
- 13. <u>Test Methods</u>: Required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments			
7E Determination of Nitrogen Oxide Emissions (Instrumental).				
10	Determination of Carbon Monoxide Emissions			

The methods are described in 40 CFR 60, Appendix A, and adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used for compliance testing unless prior written approval is received from the administrator of the Department's Emissions Monitoring Section in accordance with an alternate sampling procedure pursuant to 62-297.620, F.A.C. [Rules 62-204.800, F.A.C.; 40 CFR 60, Appendix A]

14. <u>Test Results</u>. Compliance test results shall be submitted to the Department's Central District Office no later than 45 days after completion of the last test run. [Rule 62-297.310(8), F.A.C.]

CONTINUOUS MONITORING REQUIREMENTS

15. <u>Performance Specifications and Quality Assurance</u>: The acceptability of the CO-CEMS shall be evaluated by conducting the appropriate performance specification, as follows.

The CO monitor shall be certified pursuant to 40 CFR 60, Appendix B, Performance Specification 4 or 4A within 180 calendar days of commencing operation following installation of the low NO_X burners and overfire air system. Quality assurance procedures shall conform to the requirements of 40 CFR 60, Appendix F. The required RATA tests shall be performed using EPA Method 10 in Appendix A of 40 CFR 60 and shall be based on a continuous sampling train. The CO monitor span values shall be set appropriately, considering the expected range of emissions and corresponding emission standards.

[Rules 62-4.070(3), 62-210.200(BACT), F.A.C.]

16. CEMS Data Requirements for CO BACT Standard:

- a. Data Collection: The CO-CEMS shall monitor and record emissions during all operations and whenever emissions are being generated, including during episodes of startups, shutdowns, and malfunctions. All data shall be used, except for invalid measurements taken during monitor system breakdowns, repairs, calibration checks, zero adjustments, and span adjustments.
- b. Operating Hours and Operating Days: An hour is the 60-minute period beginning at the top of each hour. Any hour during which an emissions unit is in operation for more than 15 minutes is an operating hour for that emission unit. A day is the 24-hour period from midnight to midnight. Any day with at least one operating hour for an emissions unit is an operating day for that emission unit.
- c. Valid Hourly Averages: The CO-CEMS shall be designed and operated to sample, analyze, and record data evenly spaced over the hour at a minimum of one measurement per minute. All valid measurements collected during an hour shall be used to calculate a 1-hour block average that begins at the top of each hour.
 - 1) Hours that are not operating hours are not valid hours.
 - 2) For each operating hour, the 1-hour block average shall be computed from at least two data points separated by a minimum of 15 minutes. If less than two such data points are available, there is insufficient data, the 1-hour block average is not valid, and the hour is considered as "monitor unavailable."
- d. Rolling 30-day average: Compliance shall be determined after each operating day by calculating the arithmetic average of all the valid hourly averages from that operating day and the prior 29 operating days.
- e. Monitor Availability: The quarterly excess emissions report shall identify monitor availability for each quarter in which the unit operated. Monitor availability for the CO-CEMS shall be 95% or greater in any calendar quarter in which the unit operated for more than 760 hours. In the event the applicable availability is not achieved, the permittee shall provide the Department with a report identifying the problems in achieving the required availability and a plan of corrective actions that will be taken to achieve 95% availability. The permittee shall implement the reported corrective actions within the next calendar quarter. Failure to take corrective actions or continued failure to achieve the minimum monitor availability shall be violations of this permit.

[Rules 62-4.070(3) and 62-210.200(BACT), F.A.C.]

CEMS FOR ANNUAL EMISSIONS REPORTING

17. CO-CEMS Annual Emissions Requirement: The owner or operator shall use data from the CO-CEMS when calculating annual emissions for purposes of computing actual emissions, baseline actual emissions, and net emissions increase, as defined at Rule 62-210.200, F.A.C., and for purposes of computing emissions pursuant to the reporting requirements of Rule 62-210.370(3), F.A.C. In computing the emissions of a pollutant, the owner or operator shall account for the emissions during periods of startup and shutdown of the emissions unit.

[Rules 62-210.200, and 62-210.370(3), F.A.C.]

REPORTING AND RECORD KEEPING REQUIREMENTS

18. Emissions Performance Test Reports: A report indicating the results of any required emissions performance test shall be submitted to the Compliance Authority no later than 45 days after completion of the last test run. The test report shall provide sufficient detail on the tested emission unit and the procedures used to allow the Department to determine if the test was properly conducted and if the test results were properly computed. At a minimum, the test report shall provide the applicable information listed in Rule 62-297.310(8)(c), F.A.C. and in Appendix GC of this permit. [Rule 62-297.310(8), F.A.C.].

19. Excess Emissions Reporting:

- a. Malfunction Notification: If emissions in excess of a standard (subject to the specified averaging period) occur due to malfunction, the permittee shall notify the Compliance Authority within (1) working day of: the nature, extent, and duration of the excess emissions; the cause of the excess emissions; and the actions taken to correct the problem. The Department may request a written summary report of the incident.
- b. SIP Quarterly Report: Within 30 days following the end of each calendar-quarter, the permittee shall submit a report to the Compliance Authority summarizing periods of CO emissions in excess of the BACT permit standard following the NSPS format in 40 CFR 60.7(c), Subpart A. In addition, the report shall summarize the CO-CEMS system monitor availability for the previous quarter.
- c. NSPS Reporting: Within 30 days following the calendar quarter, the permittee shall submit the written reports required by 40 CFR 60 Subpart Da (Standards of Performance for Fossil-Fuel Fired Steam Generators) for the previous semi-annual period to the Compliance Authority.

{Note: If there are no periods of excess emissions as defined in 40 CFR, Part 60, Subpart Da, a statement to that effect may be submitted with the SIP Quarterly Report to suffice for the NSPS Semi-Annual Report.}

[Rules 62-4.130, 62-204.800, 62-210.700(6) and 62-212.400(BACT), F.A.C., and 40 CFR 60.7]

- 20. <u>Annual Operating Report</u>: The permittee shall submit an annual report that summarizes the actual operating hours and emissions from this facility in accordance with 62-210.370. Annual operating reports shall be submitted to the Compliance Authority by March 1st of each year. [Rule 62-210.370(2), F.A.C.]
- 21. Monthly CO-CEMS Report: Upon certification of the CO-CEMS the permittee shall submit, on a monthly basis, a report in electronic file format which includes Unit 1 and Unit 2 CO, NO_X, and heat input data. The report shall be submitted by the 15th of each month by mailing a compact disc to the Department's Bureau of Air Regulation (BAR) Permitting South Section and shall include all hourly readings from the previous month. Alternatively, upon contacting the Bureau's project engineer, the file may be emailed to the appropriate BAR personnel.

SECTION 4. APPENDICES

APPENDIX BD

The Department establishes the following standards as the best available control technology (BACT) for the OUC Stanton Energy Center Units 1 and 2:

Emissions of CO from Unit 1 shall not exceed 0.018 lb/mmBtu heat input on a 30-operating day rolling average as demonstrated by the required continuous emissions monitoring system (CO-CEMS). Emissions of CO from Unit 2 shall not exceed 0.015 lb/mmBtu heat input on a 30-operating day rolling average as demonstrated by the required CO-CEMS. Emissions of CO shall not exceed these respective limits on a 3-hr average during the initial compliance demonstration.

UNITS 1 AND 2 CO EMISSION STANDARDS AND CO-CEMS

- Emissions of CO from Unit 1 shall not exceed 0.018 lb/mmBtu heat input on a 30-operating day rolling average as demonstrated by the required continuous emissions monitoring system (CO-CEMS). Emissions of CO from Unit 2 shall not exceed 0.015 lb/mmBtu heat input on a 30-operating day rolling average as demonstrated by the required CO-CEMS. Emissions of CO shall not exceed these respective limits on a 3-hr average during the initial compliance demonstration. [62-210.200 (BACT) and 62-212.400(PSD), F.A.C.]
- 2. CEMS Required for Demonstrating Compliance: The owner or operator shall properly install, calibrate, maintain and operate a continuous emissions monitoring system (CEMS) to measure and record emissions of CO in the units of parts per million (ppm) and convert the reading to lb/mmBtu. The owner or operator shall comply with the conditions of Appendix CEMS for the CO-CEMS required to be installed by this permit as the compliance method for a SIP-based emission standard.
- 3. CEMS Required for Reporting Annual Emissions: The owner or operator shall use data from the CO-CEMS when calculating annual emissions for purposes of computing actual emissions, baseline actual emissions and net emissions increase, as defined at Rule 62-210.200, F.A.C., and for purposes of computing emissions pursuant to the reporting requirements of Rules 62-210.370(3) and 62-212.300(1)(e), F.A.C. The owner or operator shall follow the procedures in Appendix CEMS for calculating annual emissions.

CEMS OPERATION PLAN

4. CEMS Operation Plan: The owner or operator shall create and implement a plan for the proper installation, calibration, maintenance and operation of the CO-CEMS required by this permit. The owner or operator shall submit the CEMS Operation Plan to the Bureau of Air Monitoring and Mobile Sources for approval at least 60 days prior to CEMS installation. The CEMS Operation Plan shall become effective 60 days after submittal or upon its approval. If the CEMS Operation Plan is not approved, the owner or operator shall submit a new or revised plan for approval.

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

INSTALLATION, PERFORMANCE SPECIFICATIONS AND QUALITY ASSURANCE

- 5. <u>Timelines</u>: The owner or operator shall install the CO-CEMS required by this permit and conduct the appropriate performance specification for the CO-CEMS no later than June 30, 2008, for Unit 1, and December 31, 2008, for Unit 2, respectively.
- 6. <u>Installation</u>: The CO-CEMS shall be installed such that representative measurements of emissions or process parameters from the facility are obtained. The owner or operator shall locate the CEMS by following the procedures contained in the applicable performance specification of 40 CFR Part 60, Appendix B.
- 7. Span Values and Dual Range Monitors: The owner or operator shall set appropriate span values for the CEMS. The owner or operator shall install dual range monitors if required by and in accordance with the CEMS Operation Plan.
- 8. <u>Moisture Correction</u>: If necessary, the owner or operator shall determine the moisture content of the exhaust gas and develop an algorithm to enable correction of the monitoring results to a dry basis (0% moisture).

- {Permitting Note: The CEMS Operation Plan will contain additional CEMS-specific details and procedures for installation.}
- 9. <u>Performance Specifications</u>: The owner or operator shall evaluate the acceptability of the CO-CEMS by conducting the appropriate performance specification, as follows. CEMS determined to be unacceptable shall not be considered installed for purposes of meeting the timelines of this permit. For CO monitors, the owner or operator shall conduct Performance Specification 4 or 4A of 40 CFR part 60, Appendix B.
- 10. Quality Assurance: The owner or operator shall follow the quality assurance procedures of 40 CFR Part 60, Appendix F. The required relative accuracy test audit (RATA) tests for the CO-CEMS shall be performed using EPA Method 10 in Appendix A of 40 CFR part 60 and shall be based on a continuous sampling train.
- 11. Substituting RATA Tests for Compliance Tests: Data collected during CEMS quality assurance RATA tests can substitute for annual stack tests, and vice versa, at the option of the owner or operator, provided the owner or operator indicates this intent in the submitted test protocol and follows the procedures outlined in the CEMS Operation Plan.

CALCULATION APPROACH

- 12. <u>CEMS Used for Compliance</u>: Once adherence to the applicable performance specification for each CEMS is demonstrated, the owner or operator shall use the CEMS to demonstrate compliance with the applicable emission standards as specified by this permit.
- 13. <u>CEMS Data</u>: Each CEMS shall monitor and record emissions during all periods of operation and whenever emissions are being generated, including during episodes of startups, shutdowns, and malfunctions. All data shall be used, except for invalid measurements taken during monitor system breakdowns, repairs, calibration checks, zero adjustments and span adjustments, and except for allowable data exclusions as per Condition 20 of this appendix.
- 14. Operating Hours and Operating Days: For purposes of this appendix, the following definitions shall apply. An hour is the 60-minute period beginning at the top of each hour. Any hour during which an emissions unit is in operation for more than 15 minutes is an operating hour for that emission unit. A day is the 24-hour period from midnight to midnight. Unless otherwise specified by this permit, any day with at least one operating hour for an emissions unit is an operating day for that emission unit.
- 15. <u>Valid Hourly Averages</u>: The CO-CEMS shall be designed and operated to sample, analyze and record data evenly spaced over the hour at a minimum of one measurement per minute. All valid measurements collected during an hour shall be used to calculate a 1-hour block average that begins at the top of each hour.
 - a. Hours that are not operating hours are not valid hours.
 - b. For each operating hour, the 1-hour block average shall be computed from at least two data points separated by a minimum of 15 minutes. If less than two such data points are available, there is insufficient data, the 1-hour block average is not valid, and the hour is considered as "monitor unavailable."
- 16. <u>Calculation Approaches</u>: The owner or operator shall implement the calculation approach specified by this permit for the CO-CEMS, as follows: For the 30-day rolling CO average, compliance shall be determined after each operating day by calculating the arithmetic average of all the valid hourly averages from that operating day and the prior 29 operating days.

MONITOR AVAILABILITY

17. Monitor Availability: The quarterly excess emissions report shall identify monitor availability for each quarter in which the unit operated. Monitor availability for the CO-CEMS shall be 95% or greater in any calendar quarter in which the unit operated for more than 760 hours. In the event the applicable availability is not achieved, the permittee shall provide the Department with a report identifying the problems in achieving the required availability and a plan of corrective actions that will be taken to achieve 95% availability. The permittee shall implement the reported corrective actions within the next calendar quarter. Failure to take corrective actions or continued failure to achieve the minimum monitor availability shall be violations of this permit.

EXCESS EMISSIONS

18. Definitions:

- a. Startup is defined as the commencement of operation of any emissions unit which has shut down or ceased operation for a period of time sufficient to cause temperature, pressure, chemical or pollution control device imbalances, which result in excess emissions.
- b. Shutdown means the cessation of the operation of an emissions unit for any purpose.
- c. Malfunction means any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner.
- 19. 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.
- 20. <u>Data Exclusion Procedures for SIP Compliance</u>: As per the procedures in this condition, limited amounts of CEMS emissions data may be excluded from the corresponding compliance demonstration, provided that best operational practices to minimize emissions are adhered to and the duration of data excluded is minimized. The data exclusion procedures of this condition apply only to SIP-based emission limits.
 - a. Excess Emissions. Data in excess of the applicable emission standard may be excluded from compliance calculations if the data are collected during periods of permitted excess emissions (for example, during startup, shutdown or malfunction). The maximum duration of excluded data is 2 hours in any 24-hour period, unless some other duration is specified by this permit.
 - b. Limited Data Exclusion. If the compliance calculation using all valid CEMS emission data, as defined in Condition 13 of this appendix, indicates that the emission unit is in compliance, then no CEMS data shall be excluded from the compliance demonstration.
 - c. Event Driven Exclusion. The underlying event (for example, the startup, shutdown or malfunction event) must precede the data exclusion. If there is no underlying event, then no data may be excluded. Only data collected during the event may be excluded.
 - d. Reporting Excluded Data. The data exclusion procedures of this condition are not necessarily the same procedures used for excess emissions as defined by federal rules. Quarterly or semi-annual reports required by this permit shall indicate not only the duration of data excluded from SIP compliance calculations but also the number of excess emissions as defined by federal rules.

21. <u>Notification Requirements</u>: The owner or operator shall notify the Compliance Authority within one working day of discovering any emissions that demonstrate noncompliance for a given averaging period. Within one working day of occurrence, the owner or operator shall notify the Compliance Authority of any malfunction resulting in the exclusion of CEMS data. For malfunctions, notification is sufficient for the owner or operator to exclude CEMS data.

ANNUAL EMISSIONS

- 22. <u>CEMS Used for Calculating Annual Emissions</u>: All valid data, as defined in Condition 13 of this appendix, shall be used when calculating annual emissions.
 - a. Annual emissions shall include data collected during startup, shutdown and malfunction periods.
 - b. Annual emissions shall include data collected during periods when the emission unit is not operating but emissions are being generated (for example, when firing fuel to warm up a process for some period of time prior to the emission unit's startup).
 - c. Annual emissions shall not include data from periods of time where the monitor was functioning properly but was unable to collect data while conducting a mandated quality assurance/quality control activity such as calibration error tests, RATA, calibration gas audit or relative accuracy audit (RAA). These periods of time shall be considered missing data for purposes of calculating annual emissions.
 - d. Annual emissions shall not include data from periods of time when emissions are in excess of the calibrated span of the CEMS. These periods of time shall be considered missing data for purposes of calculating annual emissions.
- 23. Accounting for Missing Data: All valid measurements collected during each hour shall be used to calculate a 1-hour block average. For each hour, the 1-hour block average shall be computed from at least two data points separated by a minimum of 15 minutes. If less than two such data points are available, the owner or operator shall account for emissions during that hour using site-specific data to generate a reasonable estimate of the 1-hour block average.
- 24. Emissions Calculation: Hourly emissions shall be calculated for each hour as the product of the 1-hour block average and the duration of pollutant emissions during that hour. Annual emissions shall be calculated as the sum of all hourly emissions occurring during the year.

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

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

- 8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
 - a. A description of and cause of non-compliance; and

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

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

- 9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
- 10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
- 11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
- 12. This permit or a copy thereof shall be kept at the work site of the permitted activity.
- 13. This permit also constitutes:
 - a. Determination of Best Available Control Technology (Not Applicable);
 - b. Determination of Prevention of Significant Deterioration (Not Applicable);
 - c. Compliance with National Emission Standards for Hazardous Air Pollutants (Not Applicable); and
 - d. 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.

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.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Orlando Utilities Commission
Curtis H. Stanton Energy Center Units 1 & 2

Low Nitrogen Oxides Burners and Overfire Air Project

Orange County

DEP File No. 0950137-015-AC, PSD-FL-395



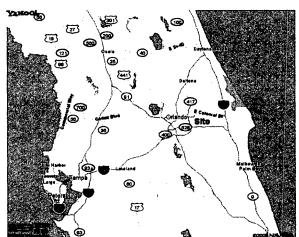
Florida Department of Environmental Protection
Division of Air Resource Management
Bureau of Air Regulation
Permitting South

November 21, 2007

1. GENERAL FACILITY DESCRIPTION

Facility Description and Location

The OUC Curtis H. Stanton Energy Center is located in Orange County, Southeast of Orlando and North of Highway 528 at 5100 South Alafaya Trail. The site is located 144 km southeast from the Chassahowitzka National Wildlife Area; the nearest Federal Prevention of Significant Deterioration (PSD) Class I Area. The UTM coordinates for this site are 483.6 km East and 3151.1 North. The location of the OUC Stanton Energy Center is shown in Figure 1.



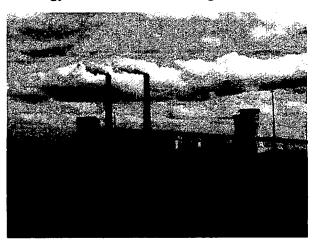


Figure 1. OUC Curtis H. Stanton Energy Center Location and Stanton Units 1 and 2.

The OUC Stanton Energy Center presently consists of two fossil fuel-fired steam electrical generating units and a combined cycle unit. Fossil fuel-fired steam electric generating Units 1 and 2 (468 megawatts-MW each) began operation in 1987 and 1996 while Combined Cycle Unit A (640 MW) began operation in 2003.

Table 1. OUC Curtis H. Stanton Energy Center SIC Codes

STANDARD INDUSTRIAL CLASSIFICATION CODES (SIC)						
Industry Group No.	49	Electric, Gas, and Sanitary Services				
Industry No.	4911	Electric Services				

Key Regulatory Categories

The key regulatory provisions applicable to Stanton Unit s 1 and 2 are:

Title I, Part C, Clean Air Act (CAA): The facility is located in an area that is designated as "attainment", "maintenance", or "unclassifiable" for each pollutant subject to a National Ambient Air Quality Standard. It is classified as a "fossil fuel-fired steam electric plant of more than 250 million BTU per hour of heat input", which is one of the 28 Prevention of Significant Deterioration (PSD) Major Facility Categories with the lower PSD applicability threshold of 100 tons per year. Potential emissions of at least one regulated pollutant exceed 100 tons per year, therefore the facility is classified as a "major stationary source" of air pollution with respect to Rule 62-212.400 F.A.C., Prevention of Significant Deterioration of Air Quality.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

Title I, Section 111, CAA: Units 1 and 2 are subject to Subpart Da (Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978) of the New Source Performance Standards in 40 CFR 60.

Title I, Section 112, CAA: The facility is a "Major Source" of hazardous air pollutants (HAP).

Title IV, CAA: The facility operates units subject to the Acid Rain provisions of the Clean Air Act.

Title V, CAA: The facility is a Title V or "Major Source of Air Pollution" in accordance with Chapter 62-213, F.A.C. because the potential emissions of at least one regulated pollutant exceed 100 tons per year (TPY). Regulated pollutants include pollutants such as carbon monoxide (CO), nitrogen oxides (NO_X), particulate matter (PM/PM₁₀), sulfur dioxide (SO₂), and volatile organic compounds (VOC).

CAIR: The facility is subject to the Federal Clean Air Interstate Rule (CAIR) in accordance with the Final Department Rules issued pursuant to CAIR as implemented by FDEP in Rule 62-296.470, Florida Administrative Code (FAC).

CAMR: The facility is subject to the Federal Clean Air Mercury Rule (CAMR) implemented by the Department in Rule 62-296.480, F.A.C.

Siting: The facility was originally certified pursuant to the power plant siting provisions of Chapter 62-17, F.A.C.

Application Processing Schedule

- 02/05/07: Received application to construct, install or improve low NO_X burners (LNB), overfire air (OFA), forced oxidation, ash loadout system and scrubber on Units 1 and 2.
- 03/07/07: Application determined incomplete. Sent request for additional information (RAI).
- 08/09/07: Received partial responses to RAI.
- 09/04/07: Received additional responses to RAI including Best Available Control Technology (BACT) proposal for carbon monoxide (CO), revised application pages for PSD application, air dispersion modeling, etc.
- 09/06/07: Separated out requests into different projects including the present one for the LNB and OFA systems.
- 09/20/07: Received PSD permit fee of \$7,500 to process the application for the LNB and OFA systems. Determined it is complete.
- 11/21/07: Distributed public notice package including the draft PSD permit for the LNB and OFA project.

Description of Units 1 and 2 and Original NO_X and CO Control Equipment

Unit No. 1 consists of a coal-fueled Babcock and Wilcox boiler/steam generator (Model RB 611) and steam turbine, which drives a generator with a nameplate rating of 468 Megawatts. Fuel oil No. 6 is used for startup and flame stabilization. Biogas from a nearby landfill is also combusted. Air pollution control equipment consists of an electrostatic precipitator (ESP) for PM/PM₁₀ and a wet flue gas desulfurization (WFGD) system, i.e., a scrubber for SO₂.

The initial requirements for Unit 1 were from the BACT determination and permit PSD-FL-084 issued for Units 1 and 2 in May 1982. Unit 1 is also subject to the requirements of Subpart Da.

The specific controls for NO_X and CO were described in the technical evaluation as follows:

"The applicant has proposed to reduce NO_X emissions by combustion control, not combustion control. The boiler manufacturer will guarantee that the NO_X emissions from the proposed boilers will meet the NSPS" i.e. the Subpart Da limit of 0.6 pounds per million Btu heat input (lb/mmBtu) on a 30-day basis).

"Good operation practice and excess air control will reduce CO emissions to minimum levels. There will be no post-combustion CO control for the proposed boiler" (also no limits were specified)."

Unit No. 2 consists of a coal-fueled Babcock and Wilcox boiler/steam generator (Model RB 621) and steam turbine, which drives a generator with a nameplate rating of 468 Megawatts. Fuel oil No. 6 is used for startup and flame stabilization. Biogas from a nearby landfill is also combusted. Air pollution control equipment includes an ESP for PM/PM₁₀ and a scrubber for SO₂. In addition, Unit 2 includes low NO_X burners (LNB), overfire air (OFA) and a selective catalytic reduction (SCR) system for NO_X control. The more stringent requirements for Unit 2 are from a modification of PSD-FL-084 dated December 1991.

The Unit 2 NO_X limitation is Unit 2 is 0.17 lb/mmBtu on a 30-day basis by SCR per the BACT determination accompanying the modification of PSD-FL-084. There is a CO limitation applicable to Unit 2 of 0.15 lb/mmBtu based on "the use of combustion controls to minimize incomplete combustion". In its analysis, EPA noted some lower CO determinations between 0.02 and 0.11 lb/mmBtu. However in view of the use of LNB, EPA concluded:

"In regards to changing boiler conditions, the major impact would be environmental, i.e., decreasing CO and VOC could cause a resultant increase in NO_X emissions. The emissions levels proposed by the applicant, 0.15 lb/mmBtu for CO and 0.015 lb/mmBtu for VOC is based upon the utilization of low NO_X burners."

Each unit has five elevations, each containing six dual register burners for a total of 30 burners per unit. The following figure shows the key additional equipment (LNB, OFA, SCR) on Unit 2.

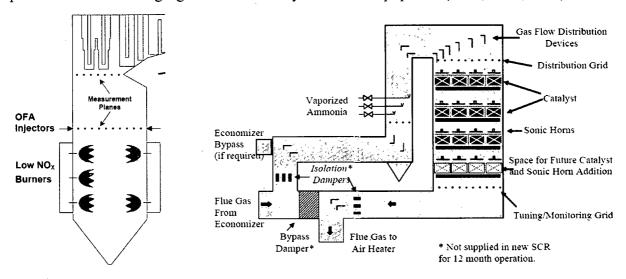


Figure 2. An opposed wall-fired furnace and an SCR system such as in OUC Unit 2

2. PRINCIPLES OF LOW NO_X BURNERS AND OVERFIRE AIR

The following discussion is largely based on information provided by the applicant's consultant, Black & Veatch (B&V) as well as a cooperative study by the Department of Energy (DOE) and Sunflower Electric Power Cooperative (SEPC) of Kansas and the Department's analysis.

LNB systems control the formation and emission of NO_X through a form of staged combustion. The basic NO_X reduction principles for LNB are to control and balance the fuel and airflow to each burner also to control the amount and position of secondary air in the burner zone so that fuel devolatization and high temperature zones are not oxygen rich. Mixing of the fuel and the air by the burner is controlled in such a way that ignition and initial combustion of the coal takes place under oxygen deficient conditions, while a portion of the combustion air is mixed in a delayed fashion along the length of the flame.

The objective of this process is to drive the fuel bound nitrogen (FBN) out of the coal as quickly as possible, under conditions where no oxygen is present, and where it will form molecular nitrogen (N_2) , rather than oxidized to NO_X . Any N_2 escaping the initial fuel rich region has a greater opportunity to be converted to NO_X as the combustion process is completed.

The net result of staged combustion is usually longer and/or wider flames, due to this delayed mixing process. This is also one of the main reasons why low NO_X combustion is normally associated with the potential for *increased carbon in ash and higher CO emissions*, as the combustion process begins to encroach on cooled boiler surfaces. This is particularly true of wall fired boiler systems, where, compared to tangential firing, the combustion process must be confined to well defined flame zones, and is less able to make maximum use of the available burner zone volume.

Under conditions in which the target NO_X level is not achieved by LNB, it may be necessary to further stage the combustion. In this case, not all the air required for combustion is introduced through the LNB. The remaining air required for complete combustion is introduced at a higher elevation in the boiler where the temperature is lower, thus limiting the production of additional NO_X . This is the principle of OFA operation. The OFA is necessary to achieve the desired levels of carbon burnout and to limit CO emissions.

There are varying designs and degrees of aggressiveness with which LNB and percentage of OFA that can be practiced. It is even possible to add additional burners at higher elevation in the furnace to effect the process of *reburn* to further reduce NO_X and then to follow up with additional OFA.

3. PROPOSED LOW NO_X BURNER AND OVERFIRE AIR PROJECTS

To provide full flexibility in implementing the federal cap and trade program for NO_X under the Clean Air Interstate Rule (CAIR), the applicant proposes to install a LNB and OFA on Unit 1 and to perform modifications and improvements on the existing LNB and OFA systems in Unit 2. The work on Unit 1 will be conducted during an early 2008 outage while the work on Unit 2 will occur during an outage in late 2008.

The exact scope of work was not specified and the selected vendor, Siemens, has some latitude in achieving the technical specifications. The key vendor guarantee for each LNB/OFA is 0.28 lb NO_x/mmBtu for each unit after the LNB/OFA project at full load and exclusive of an SCR system.

In recent years, NO_X emissions from Unit 1 have been approximately 0.41 lb/mmBtu. The expectation is that the LNB/OFA project will substantially decrease NO_X emissions. Recent emissions of NO_X from Unit 2 have been approximately 0.16 lb/mmBtu with the existing LNB/OFA/SCR control strategy. The LNB/OFA improvements for Unit 2 will make it easier to achieve the emission limit of 0.17 lb/mmBtu and allow achievement of even lower emissions.

The project will also facilitate achievement of lower emissions based on OUC's CAIR strategy and to comply with a separate NO_X cap on Units 1 and 2 required by the permit PSD-FL-373 by the startup of Stanton Unit B. The specific condition requires that:

"The combined NO_X emissions from existing coal fired boiler steam electric generating Stanton Unit 1 and Stanton Unit 2 shall not exceed 8,300 tons per year on a 12-month rolling total beginning the first month of first fire of Unit B and thereafter. Total NO_X emissions shall be based on data collected from the Unit 1 and Unit 2 NO_X CEMS and the rolling 12-month total from each unit shall be computed in accordance with Condition 46 of this subsection."

4. EFFECTS OF THE LNB AND OFA PROJECT ON CO EMISSIONS

Operating the burners with lesser amounts of air in the lower furnace will tend to increase the formation of carbon monoxide (CO). The presence of CO is one of the key drivers in reducing NO_X formation in conventional power plants. The OFA compensates for the lesser air during initial combustion. However the total time of turbulent contact and the temperature will be reduced and less carbon burnout will be achieved compared with the present arrangement.

The following table provides the manufacturer guarantees for the project.

Table 1. Performance after the LNB and OFA Project excluding Unit 2 SCR system

	Guaranteed Emissions (lb/mmBtu)						
Parameter	Un	it 1	Unit 2				
	40% Load	100% Load	40% Load	100% Load			
NO_X	0.25	0.28	0.25	0.28			
CO*	~0.09	~0.17	0.15	0.15			
CO*	100 ppm	200 ppm	175 ppm	175 ppm			

^{*} CO is guaranteed in lb/mmBtu and parts per million at 3.5 percent oxygen (ppm)

The LNB and OFA systems to reduce NO_X place constraints on CO guarantees if not on CO emissions. This was recognized by EPA when issuing the CO BACT determination for Unit 2 in 1991. While there are few data demonstrating the relation between NO_X and CO at units in Florida, the Department reviewed the previously-mentioned SEPC/DOE showing a relation for an opposed wall-fired unit equipped with LNB (but not OFA) and burning Powder River Basin

(PRB) coal. The relation shown in the following figure would not apply for OUC's bituminous coal-fueled units, but the trends would likely be similar.

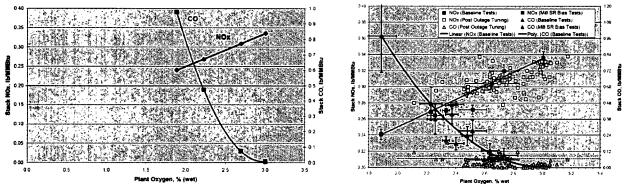


Figure 3. Baseline testing and optimization of first generation LNB system at SEPC

SEPC was subject to a CO emissions limit of 0.15 lb/mmBtu. Baseline tests using the early LNB system are summarized ion the left hand side of the figure. These showed that CO emissions rise rapidly for relatively small decreases in NO_X . An optimization program to improve the NO_X reduction characteristics of the LNB within the CO constraint was conducted. The results are shown on the right and it was possible to suppress CO emissions at excess O2 values less than approximately 2.5%.

The vendor guarantee for the OUC LNB/OFA project includes a specification for unburned carbon (UBC) in the fly ash. UBC in the Unit 1 fly ash is guaranteed to increase no more than 20% above the baseline prior to the LNB/OFA project, while UBC is guaranteed to be less than or equal to the baseline value for Unit 2.

The following table is the applicant's estimate of *baseline actual emissions* for CO and NO_X during a 2 year period (2004-2005) within the most recent five years of operation (2001-2006). CO emissions were calculated based on a low emissions factor from EPA's publication AP-42 wherein an emission factor in the range of 0.02 to 0.03 lb/mmBtu is given. Such emission factors were likely developed before the widespread implementation of LNB and OFA.

Table 2. Baseline actual emissions and projected actual emissions after LNB/OFA project

Pollutant	Baseline Emissions	Projected Emissions	Increase (decrease)	
NO _X (TPY)	9,325	<8,300	(>1,024)	
CO (TPY)	753	5,975	5,222	

The NO_X values are the actual measurements from the continuous emissions monitoring systems (CEMS) on Units 1 and 2. The future projected actual emissions were calculated by the applicant on the basis of meeting the NO_X emission cap as required by the PSD permit for Stanton Unit B and the *requested* CO limits of 0.18 and 0.15 lb/mmBtu for Units 1 and 2 respectively.

5. REGULATIONS THAT APPLY TO THE PROJECT

State Regulations

This project is subject to the applicable environmental laws specified in Section 403 of the F.S. The Florida Statutes authorize the Department of Environmental Protection to establish rules and regulations regarding air quality as part of the F.A.C. This project is subject to the applicable rules and regulations defined in the following Chapters of the Florida Administrative Code. These include: 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); 62-213 (Title V Air Operation Permits for Major Sources of Air Pollution); 62-296 (Emission Limiting Standards); and 62-297 (Test Methods and Procedures, Continuous Monitoring Specifications, and Alternate Sampling Procedures).

General PSD Applicability

The Department regulates major air pollution sources in accordance with Florida's Prevention of Significant Deterioration (PSD) program set forth 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 defined in Rule 62-210.200, F.A.C.; or 5 tons per year of lead.

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

Although a facility may be "major" with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several regulated pollutants that exceed the Significant Emission Rates.

PSD Applicability for the Project

The OUC Stanton Plant is a major facility under Department Rules. The applicant estimated annual emissions increases of 5,222 TPY of CO. The CO emissions increase will be greater than 100 TPY and a review pursuant to the PSD rules and a BACT determination for CO are required for this project.

It is noted that since 1992 and until 2005 there was an exemption from PSD Review for increases in emissions of pollutants caused by installation of "Pollution Control Projects" (PCP). The purpose of the exemption as applied to power plants was primarily to exempt from the PSD rules increases caused by projects intended to reduce emissions of SO₂ and NO_X such as required for compliance with the Acid Rain regulations.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

It was generally agreed that as long as PCP were on balance "environmentally beneficial" and no national ambient air quality standards were exceeded and substantial decreases in acid rain pollutants were realized, then significant emissions of collateral emissions such as CO were allowable. Therefore, during that period of time quite a number of PCP were conducted that caused significant collateral increases of CO and (in the case of some SCR projects) sulfuric acid mist that were not subjected to PSD or a BACT determination.

6. BACT DETERMINATION FOR CO

BACT Methodology.

A determination of the "Best Available Control Technology (BACT)" is required for each of these pollutants, which is defined in Rule 62-212.200, F.A.C. as:

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

- 1. Energy, environmental and economic impacts, and other costs;
- 2. All scientific, engineering, and technical material and other information available to the Department; and
- 3. The emission limiting standards or BACT determinations of Florida and any other state; determines is achievable through application of production processes and available methods, systems and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of each such pollutant.

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

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

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

CO BACT Evaluation Provided by the Applicant

OUC provided information on recent BACT determinations for coal-fueled units throughout the country for numerous new projects. The CO BACT determinations ranged from 0.1 to 0.25 lb CO/mmBtu and typically about 0.15 lb/mmBtu. Such new projects also provide for the inclusion of NO_X control methods such as LNB and OFA.

TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

OUC also reviewed and rejected the possibility of installing thermal or catalytic oxidation systems on the basis of technical infeasibility, impacts on other pollutants (e.g. conversion of SO₂ to SO₃) and the claim that such equipment has not been installed elsewhere. OUC proposes combustion controls as the method to achieve their BACT proposals of 0.18 and 0.15 lb/mmBtu for Unit 1 and 2 respectively.

Department Evaluation

The Department does not necessarily agree with the evaluation of the applicant. Some of the same arguments regarding oxidation catalyst erosion and conversion of SO₂ to SO₃ are typically made for SCR systems. The Department does not necessarily agree with those arguments and solutions are often found to mitigate the claimed effects. However, the Department agrees that oxidation catalyst is not appropriate for this project.

Thermal oxidation systems have been installed at other facilities although the Department did not find examples for coal-fueled power plants. For example TXI installed a regenerative thermal oxidation (RTO) system at a coal-fueled cement plant in Midlothian, Texas. However, a reheat system is required and the system was very expensive (~\$15,000,000) for a much smaller gas stream than Units 1 and 2. Also, the CO emissions from that facility are inherently very high due to carbonaceous matter in the raw materials that evolves CO prior to pyroprocessing.

Structural changes can also be made to increase the residence time following the OFA system and before some of the convective passes. Those changes are not indicated for this project. The Department does not rule out consideration of greater burn out residence times or oxidation catalyst on modifications in general or on new units.

In recent years, a number of BACT determinations have been made for new units by other state agencies. However they often, although not always, are based on supplier statements and there is usually little or no supporting data. There has not been consistency in the associated averaging time. Some of those proposals or determinations are summarized in the Table 3.

Operating the furnace with very high CO emissions can cause the fly ash to contain excessive carbon as indicated by greater "loss on ignition" (LOI) properties. This can have ramifications on the salability of the fly ash and the fate of any additional mercury (Hg) collected on the higher LOI fly ash.

The Department will set BACT limits of 0.18 and 0.15 lb CO/mmBtu for Units 1 and 2 on a 30-day basis. These values can be achieved by good combustion practices within the constraints of the multi-pollutant controls on the unit. The value for Unit 1 will be a little greater than the value for Unit 2. This will provide more flexibility to reduce NO_X emissions from Unit 1 which does not have an SCR system. The BACT limit for Unit 2 is the same as originally set by EPA in the 1991 PSD permit modification.

The Department will require installation of a continuous emission monitoring system (CEMS). CEMS have been used throughout the industry as a cost-effective means for documenting compliance with BACT limits. There will be a requirement for the CEMS to be installed and certified by June 30, 2008, for Unit 1, and December 31, 2008, for Unit 2, respectively.

Table 3. Recent BACT Emission Limits for Carbon Monoxide. Averaging periods vary.

Facility	Capacity MW	Unit Type	Permit or Application	Date	State	Primary Fuel	Limit lb/mmBtu
Montana-Dakota Utilities	175	CFB	Permit	Jun-05	ND	Lignite	0.15
Omaha Public Power District	660	PC	Permit	Mar-05	NE	PRB	0.15
Xcel Energy – Comanche	750	PC	Permit	Mar-05	СО	Subbit	0.13
Longleaf Energy Associates, LLC	1200	PC	Application	Jan-05	GA	PRB or Bitum.	0.15
NEVCO Energy (Sevier Power)	270	CFB	Permit	Oct-04	UT	Subbit	0.12
City Pub Serv. of San Antonio	750	PC	Permit	Oct-04	тх	PRB	0.15
Intermountain Power	950	PC	Permit	Oct-04	UT	Subbit	0.15
Intermountain Power	950	PC	Permit	Oct-04	UT	Bitum.	0.15
WPSC Weston Unit 4	500	PC	Permit	Jul-04	WI	Subbit	0.15
Sandy Creek (LS Power)	800	PC	Permit	Jun-04	TX	PRB	0.15
Longview Power, LLC	600	PC	Permit	Mar-04	wv	Bitum 2.5% S	0.11
Hastings Utilities	220	PC	Permit	Mar-04	NE	PRB	0.15
Steag Desert Energy	1500	SCPC	Application	Feb-04	NM	Subbit	0.10
Elm Road Gen. Station	615	SCPC	Permit	Jan-04	WI	Pitt.#8	0.12

PC = pulverized coal Bitum = bituminous coal

SC = supercritical CFB = circulating fluidized bed Subbit = sub bituminous coal

PRB - Powder River Basin coal Pitt = Pittsburgh coal

AIR QUALITY IMPACT ANALYSIS

Introduction

The proposed project will increase emissions of carbon monoxide (CO) at levels in excess of PSD significant amounts. CO is a criteria pollutant and has Ambient Air Quality Standards (AAQS), significant impact levels and de minimis monitoring levels defined for it.

Major Stationary Sources in Orange County

The current largest stationary sources of CO in Orange County are listed below. The information is from annual operating reports submitted to the Department.

Table 4. Largest Sources of CO in Orange County (2006)

Owner	Site Name	Tons per year	
Orlando Utilities Commission	Stanton (Unit 4 Proposed Project)	5,128	
Orlando Utilities Commission	Stanton Energy Center (Existing)	716	
FL Gas Transmission Co.	FGTC Station 18, Orange Co.	71	
Kinder Morgan Energy Partners	Central Florida Pipeline	49	
Middlesex Asphalt	Orange Co. Plant #1	29	
Walt Disney World	Walt Disney World Complex	26	

Air Quality and Monitoring in Orange County

Orange County currently operates twelve monitors at five sites measuring PM₁₀, PM_{2.5}, ozone, CO, lead, SO₂ and NO₂. The 2006 monitoring network is shown in the figure below. There are two PM fine monitors at the Winter Park site.

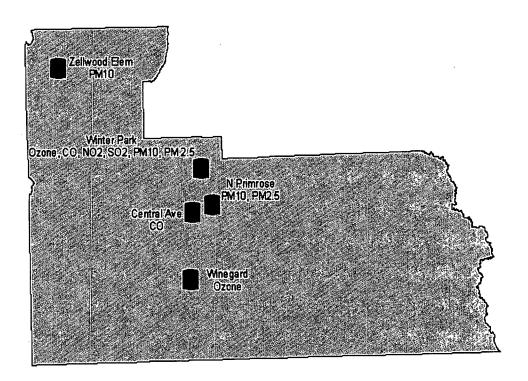


Figure 4. Orange County Ambient Air Monitoring Network

Measured ambient air quality information is summarized in the following table.

Table 5. Ambient Air Quality Concentrations Nearest to Project Site (2006)

		Averaging	Ambient Concentration				
Pollutant	Location	Period	High	2nd High	Mean	Standard	Units
DM	Orlando	24-hour	42	38		150°	ug/m ³
PM_{10}	Orlando	Annual			20	50 ^f	ug/m³
DM (Oulanda	24-hour	34	25		35 ^d	ug/m³
PM _{2.5}	Orlando	Annual			11*	15 ^e	ug/m³
		3-hour	10	9		500 a	ppb
SO_2	Winter	24-hour	3	3		100°	ppb
	Park	Annual			1	20 ^b	ppb
NO ₂	WinterPark	Annual			8	53 b	ppb
СО	Orlando	1-hour	3	2		35 ^a	ppm
CO		8-hour	2	2		9 a	ppm
Ozone	Orlando -	1-hour	.102	.089		0.12 ^a	ppm
Ozone	Orlando	8-hour	.083	.082		0.08 ^g	ppm

^{*}Annual data from Winter Park monitor. Orlando annual data did not satisfy summary criteria.

The highest measured values of all pollutants are all less than the respective National Ambient Air Quality Standards (NAAQS), including ozone. Although the 8-hour ozone concentrations in the table above suggest a violation of the standard, the three year average of the fourth-highest daily maximum of 8-hour concentrations for 2006 was 0.079 ppm, which is in compliance with the standard.

Air Quality Impact Analysis

Significant Impact Analysis

Significant Impact Levels (SILs) are defined for CO. A significant impact analysis is performed on CO to determine if the proposed project can cause an increase in ground level concentrations greater than the SILs.

In order to conduct a significant impact analysis, the applicant uses the proposed project's emissions at worst load conditions as inputs to the models. The models used in this analysis and any required subsequent modeling analyses are described below. The highest predicted short-

a - Not to be exceeded more than once per year

b - Arithmetic mean

c - Not to be exceeded more than an once per year on average over three years

d- Three year average of the 98th percentile of 24-hour concentrations

e- Three year average of the weighted annual mean

f- EPA has revoked Annual Standard

g- Three year average of the fourth-highest daily maximum of 8-hour concentrations

term concentrations predicted by this modeling are compared to the appropriate SILs for the PSD Class II Areas (vicinity of the proposed project).

For the Class II analysis, receptors extending out to 15 kilometers (km) from the center of the facility were chosen for predicting maximum concentrations in the vicinity of the project. Receptors along the property boundary were spaced 50 meters (m) apart. Receptors extending out to 3 km had 100m spacing. Receptors from 3 to 6 km had 250m spacing and beyond 6km, a spacing of 500m was used for this analysis.

If this modeling at worst-load conditions shows ground-level increases less than the SILs, the applicant is exempted from conducting any further modeling. If the modeled concentrations from the project exceed the SILs, then additional modeling including emissions from all major facilities or projects in the region (multi-source modeling) is required to determine the proposed project's impacts compared to the AAQS or PSD increments.

The applicant's initial CO air quality impact analyses for this project indicated that maximum predicted impacts from all pollutants are less than the applicable SILs for the Class II area. These values are tabulated in the table below and are compared with existing ambient air quality measurements from the local ambient monitoring network.

Table 6. Maximum Projected Air Quality Impacts from the OUC Stanton modification for Comparison to the PSD Class II Significant Impact Levels

Pollutant	Averaging Time	Max Predicted Impact (ug/m³)	Significant Impact Level (ug/m³)	Baseline Concentrations (ug/m³)	Ambient Air Standards (ug/m³)	Significant Impact?
	8-Hour	33	500	3,450	10,000	NO
СО	1-Hour	68	2000	2,300	40,000	NO

Maximum predicted impacts from the project for CO are much less than the respective AAQS and the baseline concentrations in the area. CO concentrations are also less than the respective significant impact levels that would otherwise require more detailed modeling efforts.

Preconstruction Ambient Monitoring Requirements

A preconstruction monitoring analysis is done for those pollutants with listed de minimis impact levels. These are levels, which, if exceeded, would require pre-construction ambient monitoring. For this analysis, as was done for the significant impact analysis, the applicant uses the proposed project's emissions at worst load conditions as inputs to the models. As shown in the following table, the maximum predicted impacts for CO with a listed de minimis impact level was less than this level. Therefore, no pre-construction monitoring is required for CO.

Table 7. Maximum Air Quality Impacts for Comparison to the De Minimis Ambient Impact Levels.

Pollutant	Averaging Time	Max Predicted Impact (ug/m³)	De Minimis Level (ug/m³)	Baseline Concentrations (ug/m³)	Impact Greater Than De Minimis?
СО	8-hour	33	575	3,450	NO

Based on the preceding discussions, the only additional detailed air quality analyses required by the PSD regulations for this project is the following:

• An analysis of impacts on soils, vegetation, visibility, and of growth-related air quality modeling impacts.

Models and Meteorological Data Used in the Air Quality Analysis

PSD Class II Area: The AERMOD modeling system was used to evaluate the pollutant emissions from the proposed project in the surrounding Class II Area. The AERMOD modeling system incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including the treatment of both surface and elevated sources, and both simple and complex terrain. AERMOD contains two input data processors, AERMET and AERMAP. AERMAP is the terrain processor and AERMET is the meteorological data processor.

A series of specific model features, recommended by the EPA, are referred to as the regulatory options. The applicant used the EPA recommended regulatory options. Direction-specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project all satisfied the good engineering practice (GEP) stack height criteria.

AERMET meteorological data prepared by the Department used in the AERMOD model consisted of a concurrent 5-year period of hourly surface weather observations from the Orlando International Airport and twice-daily upper air soundings from the National Weather Service at Ruskin (Tampa). The 5-year period of meteorological data was from 1999 through 2003. These stations were selected for use in the study because they are the closest primary weather stations to the study area and are most representative of the project site. The surface observations included wind direction, wind speed, temperature, cloud cover, and cloud ceiling.

In reviewing this permit application, the Department has determined that the application complies with the applicable provisions of the stack height regulations as revised by EPA on July 8, 1985 (50 FR 27892). Portions of the regulations have been remanded by a panel of the U.S. Court of Appeals for the D.C. Circuit in NRDC v. Thomas, 838 F. 2d 1224 (D.C. Cir. 1988). Consequently, this permit may be subject to modification should EPA revise the regulation in response to the court decision. This may result in revised emission limitations or may affect other actions taken by the source owners or operators.

Additional Impacts Analysis

Impact on Soils, Vegetation, and Wildlife:

The proposed project is in response to the addition of control technologies on Units 1 and 2. These controls will provide emissions reductions for NO_X , which will improve the current impact on soils, vegetation and wildlife from the Stanton facility. These reductions of NO_X will also reduce a source of ozone formation in the vicinity of the project. With regards to the increase in CO emissions, the maximum ground-level concentrations predicted to occur for CO as a result of the proposed project will be considerably less than the Significant Impact Levels and the respective AAQS. The Significant Impact Levels are more stringent that the AAQS, which are health-based standards that are also in place to protect sensitive populations.

Growth-Related Impacts Due to the Proposed Project:

The size of the project is relatively small. There will relatively no increase in the labor force due to the proposed project.

Growth-Related Air Quality Impacts since 1977:

According to the applicant, the U.S. Census Bureau reported a population of approximately 1 million for Orange County. The population has grown by approximately 50% between 1980 and 2000. Despite the population and obvious mobile source growth, the County is in attainment with all ambient air quality standards.

Specifically for CO, there has not been an exceedance of the standards since 1988 for the entire State of Florida. Since 1993, the highest reported 1-hour concentration for CO in Orlando was 26,450 compared to a 40,000 AAQS and the highest reported 8-hour concentration was 8,050 compared to a 10,000 AAQS. These highest concentrations of CO occurred in 1996.

7. 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.

From:

Harvey, Mary

Sent:

Wednesday, November 21, 2007 2:20 PM

To:

'dstalls@ouc.com'; Bradner, James; 'lori.cunniff@ocfl.net'; 'little.james@epamail.epa.gov';

'forney.kathleen@epa.gov'; 'newlandIt@bv.com'; Halpin, Mike

Cc:

Linero, Alvaro; Adams, Patty; Gibson, Victoria

Subject:

Orlando Utilities Commission - DEP File #0950137-015-AC (PSD-FL-395)

Attachments: COVER015.pdf; INTENT015.pdf; NOTICE015.pdf; TECHNICAL015.pdf; DPERMIT015.pdf

Tracking: Recipient Delivery Read dstalls@ouc.com' 1 Bradner, James Read: 11/21/2007 2:20 PM Hori.cunniff@ocfl.net' ittle.james@epamail.epa.gov' "forney.kathleen@epa.gov" newlandlt@bv.com' Halpin, Mike

> Linero, Alvaro Adams, Patty

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Gibson, Victoria

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Thank you,

DEP, Bureau of Air Regulation

From:

Newland, Larry T. (Todd) [NewlandLT@bv.com] undisclosed-recipients

To:

Sent:

Subject:

Wednesday, November 21, 2007 2:24 PM
Read: Orlando Utilities Commission - DEP File #0950137-015-AC (PSD-FL-395)

Your message

To:

NewlandLT@bv.com

Subject:

was read on 11/21/2007 2:24 PM.

From: Newland, Larry T. (Todd) [NewlandLT@bv.com]

Sent: Wednesday, November 21, 2007 2:25 PM

To: Harvey, Mary

Subject: RE: Orlando Utilities Commission - DEP File #0950137-015-AC (PSD-FL-395)

Confirmed.

From: Harvey, Mary [mailto:Mary.Harvey@dep.state.fl.us]

Sent: Wednesday, November 21, 2007 2:20 PM

To: dstalls@ouc.com; Bradner, James; lori.cunniff@ocfl.net; little.james@epamail.epa.gov;

forney.kathleen@epa.gov; Newland, Larry T. (Todd); Halpin, Mike

Cc: Linero, Alvaro; Adams, Patty; Gibson, Victoria

Subject: Orlando Utilities Commission - DEP File #0950137-015-AC (PSD-FL-395)

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

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DEP, Bureau of Air Regulation

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From:

Halpin, Mike

To:

Harvey, Mary

Sent:

Wednesday, November 21, 2007 2:28 PM

Subject:

Read: Orlando Utilities Commission - DEP File #0950137-015-AC (PSD-FL-395)

Your message

To:

'dstalls@ouc.com'; Bradner, James; 'lori.cunniff@ocfl.net'; 'little.james@epamail.epa.gov'; 'forney.kathleen@epa.gov';

'newlandIt@bv.com'; Halpin, Mike

Cc:

Subject:

Linero, Alvaro; Adams, Patty; Gibson, Victoria Orlando Utilities Commission - DEP File #0950137-015-AC (PSD-FL-395)

Sent:

11/21/2007 2:20 PM

was read on 11/21/2007 2:28 PM.

From:

Stalls, Denise M. [DStalls@ouc.com]

To:

Sent:

Subject:

Harvey, Mary
Wednesday, November 21, 2007 2:51 PM
Read: Orlando Utilities Commission - DEP File #0950137-015-AC (PSD-FL-395)

Your message

To:

DStalls@ouc.com

Subject: .

was read on 11/21/2007 2:51 PM.

From:

Adams, Patty

To:

Harvey, Mary

Sent:

Wednesday, November 21, 2007 4:00 PM

Subject:

Read: Orlando Utilities Commission - DEP File #0950137-015-AC (PSD-FL-395)

Your message

To:

'dstalls@ouc.com'; Bradner, James; 'lori.cunniff@ocfl.net'; 'little.james@epamail.epa.gov'; 'forney.kathleen@epa.gov';

Cc:

'newlandlt@bv.com'; Halpin, Mike Linero, Alvaro; Adams, Patty; Gibson, Victoria

Subject:

Orlando Utilities Commission - DEP File #0950137-015-AC (PSD-FL-395)

Sent:

11/21/2007 2:20 PM

was read on 11/21/2007 4:00 PM.

From: Bradner, James

Sent: Monday, November 26, 2007 7:43 AM

To: Harvey, Mary

Subject: RE: Orlando Utilities Commission - DEP File #0950137-015-AC (PSD-FL-395)

Thanks!

From: Harvey, Mary

Sent: Wednesday, November 21, 2007 2:20 PM

To: 'dstalls@ouc.com'; Bradner, James; 'lori.cunniff@ocfl.net'; 'little.james@epamail.epa.gov';

'forney.kathleen@epa.gov'; 'newlandlt@bv.com'; Halpin, Mike

Cc: Linero, Alvaro; Adams, Patty; Gibson, Victoria

Subject: Orlando Utilities Commission - DEP File #0950137-015-AC (PSD-FL-395)

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Thank you,

DEP, Bureau of Air Regulation

From:

Lori.Cunniff@ocfl.net Harvey, Mary

To:

Sent:

Subject:

Monday, November 26, 2007 8:52 AM Read: Orlando Utilities Commission - DEP File #0950137-015-AC (PSD-FL-395)

Your message

To:

Lori.Cunniff@ocfl.net

Subject:

was read on 11/26/2007 8:52 AM.

From:

Forney.Kathleen@epamail.epa.gov

Sent:

Wednesday, November 21, 2007 2:25 PM

To:

Harvey, Mary

Cc:

Little.James@epamail.epa.gov

Subject:

Re: Orlando Utilities Commission - DEP File #0950137-015-AC (PSD-FL-395)

Thanks

Katy R. Forney Air Permits Section EPA - Region 4 61 Forsyth St., SW Atlanta, GA 30024

Phone: 404-562-9130 Fax: 404-562-9019

> "Harvey, Mary" <Mary.Harvey@dep .state.fl.us>

> 11/21/2007 02:20 PM

То

<dstalls@ouc.com>, "Bradner, James" <James.Bradner@dep.state.fl.us>, <lori.cunniff@ocfl.net>, James Little/R4/USEPA/US@EPA, Kathleen Forney/R4/USEPA/US@EPA, <newlandlt@bv.com>, "Halpin, Mike"

<Mike.Halpin@dep.state.fl.us>

CC "Linero, Alvaro" <Alvaro.Linero@dep.state.fl.us>, "Adams, Patty" <Patty.Adams@dep.state.fl.us>, "Gibson, Victoria" <Victoria.Gibson@dep.state.fl.us> Subject

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From:

Bradner, James

To:

Harvey, Mary

Sent:

Wednesday, November 21, 2007 2:21 PM

Subject:

Read: Orlando Utilities Commission - DEP File #0950137-015-AC (PSD-FL-395)

Your message

To:

'dstalls@ouc.com'; Bradner, James; 'lori.cunniff@ocfl.net'; 'little.james@epamail.epa.gov'; 'forney.kathleen@epa.gov';

'newlandIt@bv.com'; Halpin, Mike

Cc:

Linero, Alvaro; Adams, Patty; Gibson, Victoria

Subject:

Orlando Utilities Commission - DEP File #0950137-015-AC (PSD-FL-395)

Sent:

11/21/2007 2:20 PM

was read on 11/21/2007 2:20 PM.

From: Bradner, James

Sent: Wednesday, November 21, 2007 2:21 PM

To: Harvey, Mary

Subject: RE: Orlando Utilities Commission - DEP File #0950137-015-AC (PSD-FL-395)

Received. Have a safe and happy Thanksgiving!

From: Harvey, Mary

Sent: Wednesday, November 21, 2007 2:20 PM

To: 'dstalls@ouc.com'; Bradner, James; 'lori.cunniff@ocfl.net'; 'little.james@epamail.epa.gov';

'forney.kathleen@epa.gov'; 'newlandlt@bv.com'; Halpin, Mike

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Thank you,

DEP, Bureau of Air Regulation

mayor voling in resources the anaemad december may, and may may

From:

Linero, Alvaro

To:

Harvey, Mary

Sent:

Wednesday, November 21, 2007 2:22 PM

Subject:

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Your message

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'newlandlt@bv.com'; Halpin, Mike

Cc:

Linero, Alvaro; Adams, Patty; Gibson, Victoria

Subject:

Orlando Utilities Commission - DEP File #0950137-015-AC (PSD-FL-395)

Sent:

11/21/2007 2:20 PM

was read on 11/21/2007 2:22 PM.