

Jeb Bush
Governor

Department of Environmental Protection

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

David B. Struhs
Secretary

October 7, 2002

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Brenda Brickhouse, Plant Manager
Bartow Plant
Florida Power Corporation
Post Office Box 14042
St. Petersburg, Florida 33733

Re: DEP File No. 1030011-007-AC
Bartow Plant Unit 1, Pinellas County
Electrostatic Precipitator Redesign/Rebuild

Dear Ms. Brickhouse:

Enclosed is one copy of the Draft Permit for the redesign and rebuild of two of the fields in the existing electrostatic precipitator at the Bartow Plant Unit 1 in Pinellas County. The Department's Intent to Issue Air Construction Permit 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 Chapter 50, Florida Statutes. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within 7 (seven) days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

Please submit any other written comments you wish to have considered concerning the Department's proposed action to me at the above letterhead address. If you have any questions please call me at 850/921-9523.

Sincerely,

A. A. Linero, P.E.
Bureau of Air Regulation

AAL/al

Enclosures

"More Protection, Less Process"

Printed on recycled paper.

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

Brenda Brickhouse
 Plant Manager, Bartow Plant
 Florida Power Corporation
 PO Box 14042
 St. Petersburg, FL 33733

2. 7001 0320 0001 3692 7874

PS Form 3811, July 1999

Domestic Return Receipt

102595-00-M-0952

COMPLETE THIS SECTION ON DELIVERY

A. Received by (Please Print Clearly) B. Date of Delivery

C. Signature Agent
 Addressee

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

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 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

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7001 0320 0001 3692 7874

Postage	\$	Postmark Here
Certified Fee		
Return Receipt Fee (Endorsement Required)		
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Total Postage & Fees	\$	

Sent To **Brenda Brickhouse**
 Street, Apt. No., or PO Box **PO Box 14042**
 City, State, ZIP+4 **St. Pete FL 33733**

PS Form 3800, January 2001 See Reverse for Instructions

In the Matter of an
Application for Permit by:

Ms. Brenda Brickhouse
Manager, Bartow Plant
Florida Power Corporation
Post Office Box 14042
St. Petersburg, Florida 33733

DEP File No. 1030011-007-AC
Florida Power Corporation Bartow Plant
Unit 1 Electrostatic Precipitator Project
Pinellas County

INTENT TO ISSUE AIR CONSTRUCTION PERMIT

The Department of Environmental Protection (Department) gives notice of its intent to issue an Air Construction Permit to Gulf Power Company for the proposed project, detailed in the application specified above, for the reasons stated below.

Florida Power Corporation submitted a project description on September 25, 2002 (received October 1) to the Department for the redesign and rebuild of two mechanical fields within the existing electrostatic precipitator (ESP) on Unit 1 at the Bartow Plant in Pinellas County.

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, and 62-212. The above actions are not exempt from permitting procedures. Although no significant net emissions increases are projected to result from the proposed project, the Department has determined that an Air Construction Permit is required.

The Department intends to issue this air construction permit based on the belief that reasonable assurances have been provided to indicate that project will not cause significant net emissions increases from the unit that would otherwise require a review under the rules for the Prevention of Significant Deterioration under Chapters 62-212.400, F.A.C.

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 Public Notice of Intent to Issue Air Construction 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/ 922-6979). 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.

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

The Department will accept written comments concerning the proposed permit issuance action for a period of 14 (fourteen) days from the date of publication of the enclosed Public Notice. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If 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.

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 fourteen 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 fourteen days of publication of the public notice or within fourteen 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 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 action or proposed action; (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; 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. Mediation is not available in this proceeding.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.

The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section 120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.



A. A. Linero, P.E.
Bureau of Air Regulation


CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Intent to Issue Air Construction Permit (including the DRAFT permit) was sent by certified mail (*) and copies were mailed by U.S. Mail before the close of business on 10/8/02 to the persons listed:

Brenda Brickhouse, FPC*
J. Michael Kennedy, FPC
Kay Prince, EPA
Beverly Spagg, EPA
Jerry Kissel, DEP SWD
Peter Hessling, Pinellas County DEM

Clerk Stamp

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


(Clerk) October 8, 2002
(Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP File No. 1030011-007-AC

Florida Power Corporation Bartow Plant Unit 1
Redesign and Rebuild of Electrostatic Precipitator Fields

Pinellas County

The Department of Environmental Protection (Department) gives notice of its intent to issue an Air Construction Permit to Florida Power Corporation (FPC). The permit will authorize the redesign and rebuild of two mechanical fields within the existing electrostatic precipitator (ESP) on Unit 1 at the Bartow Plant in Pinellas County. A Best Available Control Technology (BACT) determination was not required. The applicant's name and address are Florida Power Corporation, Post Office Box 14042, St. Petersburg, Florida 33733.

FPC Unit 1 is a nominal 120-megawatt residual fuel oil-fired unit. According to the company, the ESP was originally designed to control particulate emissions and opacity from a discontinued fuel that was a mixture of 50 percent coal and 50 percent oil. FPC proposes to redesign the ESP and rebuild two mechanical sections with more durable rigid discharge electrodes instead of wires. Following the redesign and rebuild, particulate emissions and opacity from Unit 1 are expected to be less than or equal to emissions prior to the project. According to FPC, the revised design is also more durable and less maintenance-intensive. The project will be conducted during a planned outage between October and December of 2002.

The Department has reasonable assurance that the project will not result in significant net emission increases from the unit that would otherwise require a review under the rules for the Prevention of Significant Deterioration at Section 62-212.400, F.A.C. or 40 CFR 52.21.

The Department will issue the FINAL Permit, in accordance with the conditions of the DRAFT Permit, unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of 14 (fourteen) days from the date of publication of this Public Notice of Intent to Issue Air Construction Permit. Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If 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.

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 fourteen days of receipt of this notice of intent. Petitions filed by any persons other than

Notice for Newspaper

those entitled to written notice under section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen 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 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 action or proposed action; (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; 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.

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:

Dept. of Environmental Protection Bureau of Air Regulation 111 S. Magnolia Drive, Suite 4 Tallahassee, Florida 32301 Telephone: 850/488-0114 Fax: 850/922-6979	Dept. of Environmental Protection Southwest District Office 3804 Coconut Palm Drive Tampa, Florida 33619-8218 Telephone: 813/744-6100 Fax: 813/744-6084	Pinellas County Department of Environmental Management 300 South Garden Avenue Clearwater, Florida 33756 Telephone: 727/464-4422 Fax: 727/464-4420
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The complete project file includes the technical evaluation and the Draft Permit, and the information submitted by the Gulf Power, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Program Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114, for additional information. The draft permit and technical evaluation can be accessed at www.dep.state.fl.us/air/permitting/construct.htm

DRAFT PERMIT

PERMITTEE

Brenda Brickhouse
Florida Power – Bartow Power Plant
P.O. Box 14042
St. Petersburg, FL 33733

Permit No. 1030011-007-AC Expires: May 1, 2003 Facility ID No. 1030011 (SIC No. 4911) Unit 1 ESP Redesign Project
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PROJECT AND LOCATION

This permit authorizes the rebuild of the electrostatic precipitator (ESP) for the existing Unit 1 boiler at the Florida Power Bartow Plant. The ESP was originally designed to control particulate matter from a fuel mixture of 50% coal and 50% fuel oil. Unit 1 no longer fires coal as an authorized fuel. The project includes a redesign of the existing ESP to improve the particulate matter collection efficiency when firing the primary fuel of No. 6 fuel oil. The facility is located on Weedon Island in St. Petersburg, Pinellas County, Florida. The map coordinates are: UTM Zone 17, 342.4 km East and 3082.6 km North (Latitude: 27° 52' 10" North and Longitude: 82° 35' 59" West.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the work specified in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department. This permit supplements all other air construction and operation permits for the subject emissions unit and does not alter any requirements from such previously issued air permits.

APPENDICES

The following appendices are attached as part of this permit.
Appendix GC - Construction Permit General Conditions

(DRAFT)

Howard L. Rhodes, Director
Division of Air Resources Management

SECTION I. FACILITY INFORMATION (DRAFT)

FACILITY DESCRIPTION

The existing facility is an electrical generating plant consisting of three fossil fuel fired steam generators subject to Phase II Acid Rain, a pipeline heating boiler, four gas turbine peaking units and diesel generators that can be relocated at various Florida Power plants, as needed.

PROJECT

The proposed project affects the following existing emissions unit:

ID No.	Emission Unit Description
001	Unit 1 is a 120 MW fossil fuel fired steam generator

REGULATORY CLASSIFICATION

Title III: Based on the initial Title V permit, the facility is a major source of hazardous air pollutants.

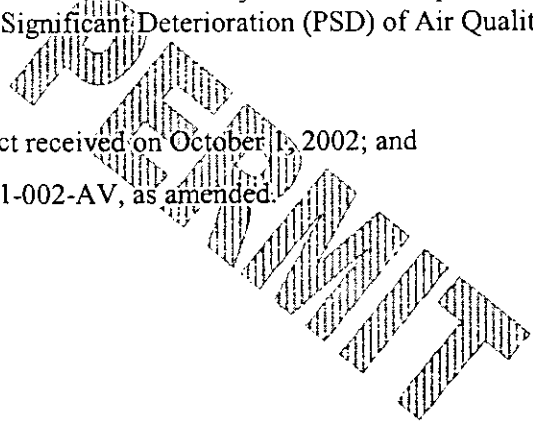
Title IV: The facility operates emissions units that are subject to the Phase II, Federal Acid Rain Program.

Title V: The facility is classified as a "major" source of air pollution with respect to Title V of the Clean Air Act because emissions of at least one regulated criteria air pollutant exceeds 100 tons per year.

PSD: The project is located in an area designated as "attainment" or "unclassifiable" for each pollutant subject to a National Ambient Air Quality Standard. The facility is considered a "fossil fuel fired steam electric plant of more than 250 million BTU per hour of heat input" which is one of the 28 PSD source 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 PSD-major source of air pollution with respect to Rule 62-212.400, F.A.C., the Prevention of Significant Deterioration (PSD) of Air Quality.

RELEVANT DOCUMENTS

- Application and information for Unit 1 ESP project received on October 1, 2002; and
- Current Title V Air Operation Permit No. 1030011-002-AV, as amended.



SECTION II. ADMINISTRATIVE REQUIREMENTS (DRAFT)

GENERAL AND ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: All documents related to applications for permits to construct, modify or operate this emissions unit shall be submitted to the Bureau of Air Regulation (BAR), Florida Department of Environmental Protection (DEP), at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400 and phone number 850/488-0114. Copies of these documents shall be submitted to each Compliance Authority.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Southwest District Office at 3804 Coconut Palm Drive, Tampa, Florida 33619-8218. Copies of all such documents shall also be submitted to the Air Quality Division of the Pinellas County Department of Environmental Management at 300 South Garden Avenue, Clearwater, Florida 33756.
3. General Conditions: The owner and operator are subject to, and shall operate under, the attached General Conditions listed in *Appendix GC* of this permit. General Conditions are binding and enforceable pursuant to Chapter 403 of the Florida Statutes. [Rule 62-4.160, F.A.C.]
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise indicated in this permit, the construction and operation of this project shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403 of the Florida Statutes (F.S.); and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The permittee shall use the applicable forms listed in Rule 62-210.900, F.A.C. and follow the application procedures in Chapter 62-4, F.A.C. Issuance of this permit does not relieve the facility owner or operator from compliance with any applicable federal, state, or local permitting or regulations. [Rules 62-204.800, 62-210.300 and 62-210.900, F.A.C.]
5. Permit Expiration: For good cause, the permittee may request that this air construction permit be extended. Such a request shall be submitted to the Department's Bureau of Air Regulation at least sixty (60) days prior to the expiration of this permit. [Rules 62-4.070(4), 62-4.080, and 62-210.300(1), F.A.C.]
6. 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.]
7. Modifications: No emissions unit or facility subject to this permit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
8. Title V Permit: This permit authorizes construction of the proposed project and initial operation to determine compliance with Department rules. Upon completion of construction of this project, a Title V operation permit revision is required for regular operation of the new equipment. The permittee shall apply for a revised Title V operation permit prior to expiration of this permit. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results, and such additional information as the Department may by law require. [Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

EU 001. Unit 1 – 120 MW Fossil Fuel Fired Steam Generating Unit

The proposed project affects the following existing unit:

ID No.	Emission Unit Description
001	Unit 1 is a front-fired, fossil fuel steam-generating unit that produces a nominal 120 MW of electric power. It began commercial service in 1958 and is a Phase II Acid Rain Unit. Authorized fuels include No. 6 fuel oil, distillate oil, and on-specification used oil fuel. The maximum heat input rate is 1220 MMBtu per hour. Particulate matter emissions are controlled by an electrostatic precipitator originally manufactured by General Services, Inc. Stack opacity is continuously monitored and recorded.

ADMINISTRATIVE REQUIREMENTS

1. Previous Permit Conditions: This permit authorizes the redesign of the existing Unit 1 electrostatic precipitator. The following conditions are in addition to those of any other air construction or operation permits. [Rule 62-4.210, F.A.C.]

CONSTRUCTION ACTIVITIES

2. ESP Redesign Project: The permittee is authorized to redesign the existing electrostatic precipitator (ESP) from three mechanical fields to two mechanical fields. The original design was based on a primary fuel mixture of 50% coal and 50% fuel oil. As coal is no longer an authorized fuel, the new design will be based on No. 6 fuel oil. The preliminary ESP inlet design conditions include:

Gas Flow Rate: 488,000 acfm (308,830 dscfm)

Gas Temperature: 250° F to 320° F

Gas Pressure: -2 to -4 inches w.c.

Gas moisture content: 6% to 8% by volume

The redesign leaves the first mechanical field vacant to provide uniform gas flow to the second and third mechanical fields. A new perforated plate will be added to the inlet to the second mechanical field. The gas passage width will be increased to allow for more durable rigid discharge electrodes that will replace current wire electrodes. New transformer rectifiers will be installed to provide the increased voltage required for the new rigid electrodes. The preliminary design is based on the following critical operating parameters:

Total Collecting Plate Area: 92,711 square feet (based on actual 11 inch gas passage width)

Treatment length: 21 feet

Aspect Ratio: 0.57

Specific Collecting Area (SCA): 190 square feet per 1000 acfm (based on 11 inch gas passage width)

Gas Velocity: 4.0 feet per second

Treatment Time: 5.2 seconds

The redesigned ESP is expected to provide emission rates equal to or better than the original design and lower than reported in recent stack tests. Reliability and availability should also increase with the rebuilt ESP. The project is not expected to result in any operational or capacity increases. It is estimated that the project will be completed within approximately eight weeks. [Applicant Request]

3. Unconfined Particulate Emissions: During the construction period, unconfined particulate emissions shall be minimized by dust suppressing techniques such as covering, enclosing, applying water or chemicals to the affected areas, or any combination of techniques, as necessary. [Rule 62-296.320(4)(c), F.A.C.]

SECTION III. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

EU 001. Unit 1 – 120 MW Fossil Fuel Fired Steam Generating Unit

NOTIFICATIONS AND REPORTS

4. **Notifications:** Within one week of beginning construction, the permittee shall notify the Compliance Authority that the project has commenced and provide a general schedule of construction activities. Within one week of completing construction, the permittee shall notify the Compliance Authority that the project has concluded and provide a general schedule of bringing the unit back on line. [Rule 62-4.210, F.A.C.]
5. **PSD Applicability Report:** The permittee shall maintain information demonstrating that the project did not result in any significant net emissions increase of particulate matter, which is defined in Rule 62-212.400(2)(c), F.A.C. as follows:

Net Emissions Increase. A modification to a facility results in a net emissions increase when, for a pollutant regulated under the Act, the sum of all of the contemporaneous creditable increases and decreases in the actual emissions of the facility, including the increase in emissions of the modification itself and any increases and decreases in quantifiable fugitive emissions, is greater than zero.

Significant Net Emissions Increase. A significant net emissions increase of a pollutant regulated under the Act is a net emissions increase equal to or greater than the applicable significant emission rate listed in Table 212.400-2, Regulated Air Pollutants – Significant Emission Rates.

The permittee shall submit an annual report to the Department of such information for a period of 5 years representative of normal post-change operations of the unit (within the period not longer than 10 years following the change). For an existing electric utility steam-generating unit, actual emissions of the unit following a physical or operational change shall equal the representative actual annual emissions of the unit following the physical or operational change. The following definition of “representative actual annual emissions” found in 40 CFR 52.21(b)(33) is adopted and incorporated by reference in Rule 62-204.800, F.A.C.

Representative actual annual emissions means the average rate, in tons per year, at which the source is projected to emit a pollutant for the two-year period after a physical change or change in the method of operation of a unit, (or a different consecutive two-year period within 10 years after that change, where the Administrator determines that such period is more representative of normal source operations), considering the effect any such change will have on increasing or decreasing the hourly emissions rate and on projected capacity utilization. In projecting future emissions the Administrator shall:

- (i) Consider all relevant information, including but not limited to, historical operational data, the company's own representations, filings with the State or Federal regulatory authorities, and compliance plans under title IV of the Clean Air Act; and
- (ii) Exclude, in calculating any increase in emissions that results from the particular physical change or change in the method of operation at an electric utility steam generating unit, that portion of the unit's emissions following the change that could have been accommodated during the representative baseline period and is attributable to an increase in projected capacity utilization at the unit that is unrelated to the particular change, including any increased utilization due to the rate of electricity demand growth for the utility system as a whole.

Each required annual report shall be submitted to the Department prior to March 1st and shall quantify operations for the previous calendar year(s).

[Rules 62-204.800, 62-210.200(11) and 62-212.400(2), F.A.C.; and 40 CFR 52.21(b)(33)]

SECTION IV. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

Appendix GC - Construction Permit General Conditions

- G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
- G.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 or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
- G.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.
- G.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.
- G.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.
- G.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:
- Have access to and copy and records that must be kept under the conditions of the permit;
 - Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - 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.

- G.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 description of and cause of non-compliance; and
 - 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.

- G.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.

SECTION IV. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT)

Appendix GC - Construction Permit General Conditions

- G.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.
- G.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.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.13 This permit also constitutes:
- (a) Determination of Best Available Control Technology (not applicable to project);
 - (b) Determination of Prevention of Significant Deterioration (not applicable to project); and
 - (c) Compliance with New Source Performance Standards (not applicable to project).
- G.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.
- G.15 When requested by the Department, the permittee shall within a reasonable time furnish any information required by law, which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.



Florida Power

A Progress Energy Company

RECEIVED

OCT 01 2002

September 25, 2002

BUREAU OF AIR REGULATION

Mr. Scott Sheplak
Bureau of Air Regulation – Title V Section
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399

Dear Mr. Sheplak:

Re: Redesign of Bartow Unit 1 Electrostatic Precipitator

Florida Power is requesting DEP's approval of a redesign of the Bartow Unit 1 electrostatic precipitator (ESP). As you know, the ESP was originally designed to control particulate emissions and opacity from a fuel that was a mixture of 50% coal and 50% oil. The unit no longer burns this fuel, nor is it permitted to use it. Unit 1 burns #6 fuel oil, a fuel for which the ESP was not designed.

Florida Power proposes to redesign the ESP to one that is better suited to controlling emissions from #6 oil fuel. The attached report by BHA, which is a firm that specializes in ESP design, describes the new design, which will use more durable rigid discharge electrodes rather than wires. The BHA report also discusses the results of a study of the efficiency of the revised design in comparison with the current ESP, as it controlled the original coal/oil mixture and in comparison with the performance on the current fuel. In both cases, the performance of the revised design is expected to equal or exceed the current ESP. An additional benefit associated with the revised design is that it will be more durable and less maintenance-intensive.

Also enclosed in this submittal are completed Responsible Official and Professional Engineer certification forms. Originally, this work was scheduled to be completed during the spring 2003 outage. However, an opportunity to complete the work during the next eight weeks has surfaced, so your prompt review and approval would be much appreciated. Thank you for your consideration of this request, and feel free to contact Mike Kennedy at (727) 826-4334 if you have any questions.

I, the undersigned, am the responsible official as defined in Chapter 62-210.200, F.A.C., of the Title V source for which this document is being submitted. I hereby certify, based on the information and belief formed after reasonable inquiry, that the statements made and data contained in this document are true, accurate, and complete.

Sincerely,

A handwritten signature in black ink, appearing to read "Brenda Brickhouse". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Brenda Brickhouse
Plant Manager/Responsible Official
Bartow Plant

Enclosure

4. Professional Engineer Statement:

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

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

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

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

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

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

Signature

Date

(seal)

* Attach any exception to certification statement.

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official: Brenda Brickhouse
2. Owner/Authorized Representative or Responsible Official Mailing Address: Organization/Firm: Florida Power, Bartow Plant Street Address: P.O. Box 14042 City: St. Petersburg State: FL Zip Code: 33733
3. Owner/Authorized Representative or Responsible Official Telephone Numbers: Telephone: (727) 827 - 6105 Fax: (727) 827 - 6102
4. Owner/Authorized Representative or Responsible Official Statement: <i>I, the undersigned, am the owner or authorized representative*(check here [], if so) or the responsible official (check here [X], if so) of the Title V source addressed in this application, whichever is applicable. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof. I understand that a permit, if granted by the Department, cannot be transferred without authorization from the Department, and I will promptly notify the Department upon sale or legal transfer of any permitted emissions unit.</i> _____ Signature Date

* Attach letter of authorization if not currently on file.

Professional Engineer Certification

1. Professional Engineer Name: <i>CARLOS ROLLAN</i> Registration Number: <i>23022</i>
2. Professional Engineer Mailing Address: Organization/Firm: <i>HARRIS GROUP INC</i> Street Address: <i>8659 BAYPINE ROAD</i> City: <i>JACKSONVILLE</i> State: <i>FL</i> Zip Code: <i>32256</i>
3. Professional Engineer Telephone Numbers: Telephone: <i>(904) 739 - 1115</i> Fax: <i>(904) 739 - 1117</i>

4. Professional Engineer Statement:

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

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

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

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

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

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



Signature

9/25/02

Date

(seal)

* Attach any exception to certification statement.

Harris Group Inc.

September 26, 2002

BHA Group, Inc.
8800 East 63rd Street
Kansas City, Missouri 64133

Attention: Mr. Bob Taylor, Vice president - Engineering

Subject: **Engineering Review of BHA Report to Florida Power Corporation
Bartow Station Unit 1 ESP Rebuild Performance Review
Harris Group Inc. Ref. Number 65080.00**

Dear Mr. Taylor:

Attached is BHA Report to Florida Power Corporation dated August 26, 2002. We have reviewed this report and find it consistent with the earlier version.

Upon review of the above documentation HGI concludes that the methodology and approach taken by BHA to analyze the performance of Bartow Unit 1 ESP following a modification is reasonable, and in accordance with proven industry standards. HGI believes it is reasonable to expect that the predicted performance of the ESP after the rebuild, with Unit 1 firing only the fuel oil used in the BHA analysis, can be achieved.

The professional review conducted by HGI does not constitute any guarantee of performance as predicted by BHA. It is understood by HGI that the documents provided by BHA are not intended or issued for construction purposes.

Should there be any questions concerning the intent of this letter, please do not hesitate to contact me directly.

Sincerely,



Carlos Rollan, P.E.

cc: Mr. Michael Kennedy, FPC
Tom Davis
Project File



Communications:
P.O Box 58090
Jacksonville, FL 32241-8090
(904) 739-1115
Fax (904) 739-1117
www.harrisgroup.com

Office:
Corporate Plaza (Bldg. #3)
8659 Baypine Road
Jacksonville, FL 32256



**Florida Power
Bartow Station Unit 1
ESP Rebuild Performance Review**



August 26, 2002

We have reviewed expected performance of the Buell "BAB" model electrostatic precipitator utilized to collect particulate from the Unit 1 oil fired boiler. The intent of this review is to compare expected emission levels of the Unit 1 electrostatic precipitator when rebuilt with two mechanical fields, using the original process design values.

Summary

When burning #6 Fuel Oil as compared to the original design fuel, the following comparisons can be made:

- The dust loading at the inlet to the Unit 1 electrostatic precipitator is about 1/60th of the original design value using 50% COM.
- If two of the original fields in the existing electrostatic precipitator are rebuilt, emissions will be lower than the original design values.
- Mass emissions and opacity from the electrostatic precipitator when rebuilt with two fields will be lower than current emissions and opacity values.

Background

The objective of this review is to determine if it is reasonable to expect emissions and opacity from a rebuild covering two mechanical fields of the existing casing to be equal to or less than current measured values.

In addition, the review will determine if the emissions resulting from rebuilding two of the three mechanical fields will result in emissions equal to or lower than the original design values.

Fuel Discussion

When originally designed, the Unit 1 ESP was intended to burn a blend of coal and oil fuels. The original vendor designed the Unit 1 electrostatic precipitator to achieve emission guarantees based fuel comprised of 50% coal and 50% #6 Fuel Oil. This fuel was characterized as 50% COM (50% coal oil / mixture).

Presently, Bartow Station does not burn a blended fuel. Number 6 Fuel Oil constitutes 100% of the boiler heat input. The following table presents a comparison of the critical fuel characteristics for both the original design 50% COM blend and current fuel.

Comparison of Fuel Sources		
	Original 50% COM	Current #6 Fuel Oil
Constituent	Percent by weight	Percent by weight
Heating value, BTU/lb.	14,750	17,678
Ash content, %	6.05	0.1

The values shown above reflect the original design fuel and the fuel presently burned in Unit 1 Bartow Station. As seen from the table, the ash content of the Fuel Oil is significantly lower than the original value used for the precipitator design. A more relevant comparison would utilize the ash content relative to the heating value of the fuel. This is a better indication of the amount of ash created during the combustion process. The following table reflects the ash content value of each fuel:

Comparison of Fuel Ash Content		
	Original 50% COM	Current #6 Fuel Oil
Ash content of fuel, lb/mmBTU	4.4	0.057
Conversion of ash to flyash, %	80	100
Flyash at inlet to ESP, lb/mmBTU	3.53	0.057

The ash content of the fuel is obtained by dividing the pounds of ash per pound of fuel by the corresponding heating value per pound of fuel. When calculated in this manner, the ash content represents 100 percent of the ash contained in the fuel.

In a pulverized coal fired boiler, approximately 70% to 80% of the ash contained in the coal enters the electrostatic precipitator as flyash. The balance of the ash exits the boiler as bottom ash. To arrive at the expected inlet dust loading for the original design, we utilized a conversion ratio of 80% ash to flyash.

A higher percentage of ash converts to flyash when burning #6 Fuel Oil. As a result, we utilized a conversion ratio of 100% ash to flyash for #6 Fuel Oil.

As seen in the table, the original design utilized dust loading at the inlet to the electrostatic precipitator about 60 times greater than presently experienced while burning #6 Fuel Oil. Emissions from an electrostatic precipitator are proportional to the amount of dust present at the inlet.

The process conditions utilized for the original electrostatic precipitator design are shown in the table below. Recent stack test data indicates that they are still valid for current operation.

Unit 1 ESP Inlet Design Conditions		
Description	Value	Units
Gas volume, actual	488,000	Actual ft ³ /min
Gas volume, standard	308,830	Dry standard ft ³ /min
Gas temperature	250 to 320	°F

Gas pressure	-2 to -4	Inches w.c.
Gas moisture content	6 to 8	% by volume

Applying these process conditions to the dust loading shown in the previous table, produces the data shown in the following table:

Comparison of Inlet Dust Loading		
	Original 50% COM	Current #6 Fuel Oil
Boiler heat input, mm BTU/hr	1,220	1,220
Inlet loading, gr./acf	1.03	0.016
Inlet loading, gr./ dscf	1.63	0.025

The inlet loading values were obtained by dividing the mass flow rate of ash by the gas volume in which it is suspended. Emission levels expected from the precipitator are a function of the inlet dust loading data provided above and the precipitator configuration. When rebuilt as proposed using two mechanical fields with one field left vacant, the Unit 1 electrostatic precipitator will have the following configuration:

Unit 1 - Two Mechanical Field Upgrade		
Description	Value	Units
Number of casings	1	Each
Number of chambers per casing	2	Each
Gas passage width	11	Inches
Number of passages per chamber	30	Each
Number of mechanical fields	2	Each
Field 1	Vacant	Feet
Field 2	9 wide by 36.79 tall	Feet
Field 3	12 wide by 36.79 tall	Feet
Number of energized fields	5 per casing	Each
Field 1	45 kV, 240A, 45kV,1800 ma	
Current density	136 μ A/ft. ² over two bus sections	
Field 2	45 kV, 240A, 45kV,1800 ma	
Current density	136 μ A/ft. ² over two bus sections	
Field 3	45 kV, 240A, 45kV,1800 ma	
Current density	68 μ A/ft. ² over four bus sections	
Field 4	45 kV, 240A, 45kV,1800 ma	
Current density	68 μ A/ft. ² over four bus sections	
Field 5	45 kV, 240A, 45kV,1800 ma	
Current density	136 μ A/ft. ² over two bus sections	

Critical Operating Parameters		
Total collecting plate area	92,711	Ft. ² (Actual 11" GP spacing)
Total collecting plate area	114,343	Ft. ² (9" GP spacing equiv.)
Treatment length	21	Ft.
Aspect ratio	0.57	

Specific collecting area, SCA	190	Ft. ² /1000 ACFM (11" basis)
Gas velocity	4.0	Ft./sec.
Treatment time	5.2	Sec.

Results of Evaluation

The expected emission levels from the Unit 1 electrostatic precipitator rebuilt with two mechanical fields were estimated using industry accepted predictive computer models. The model results are shown in the following table. In addition, the original guaranteed emission levels are listed for comparison.

Comparison of Design Versus Expected Emission Levels		
	Original guarantee 50% COM	Estimated for #6 Fuel Oil
Outlet dust loading, gr./acf	0.02	0.004 to 0.0047
Opacity, %	No guarantee	4 to 6

As shown in the table, there was no opacity guarantee provided with the original design. In terms of mass emissions, the expected emission levels using #6 Fuel Oil are less than those expected from the original design. Another important comparison occurs between expected performance of the Unit 1 electrostatic precipitator and recent stack test data.

Comparison of Current Versus Expected Emission Levels		
	August 2001 Stack Test	Estimated for #6 Fuel Oil
Outlet dust loading, gr./acf	N/A	0.004 to 0.005
Outlet dust loading, gr./dscf	0.0140 to 0.02	0.006 to 0.007
Opacity, %	6.7 to 8.1	4 to 6

The tables show that the Unit 1 electrostatic precipitator when rebuilt with two mechanical fields and experiencing the design inlet process conditions will provide emissions lower than the current values measured during stack testing. The expected opacity values are also lower than those recorded during the mass emission testing.

Rebuild Approach

The proposed rebuild would occur in the second and third mechanical fields. The first mechanical field would be left vacant. The intent is to use the vacant first field as an expansion chamber ensuring uniform gas flow into the rebuilt second and third fields. A new perforated plate will be provided at the inlet to the second field.

The expected performance is based on a rebuild utilizing rigid discharge electrodes. It will be necessary to increase the gas passage width to eleven inches to accommodate the rigid electrodes. The key to increasing gas passage width and maintaining performance is to have transformer rectifiers that allow secondary voltage levels to increase to the new levels required by a rigid electrode.

The rebuild proposed is based on utilizing the ESP-3 collecting panel in our modular

Buell rebuild configuration. The existing roof box beams will be reused in the proposed rebuild. The internal pivot points supporting the existing collecting plate frames will be reused as well. Rapping density will be decreased to provide more uniform plate cleaning. Collecting plate rapping will utilize EGR rappers.

Summary

Rebuilding two of the three mechanical contained in the Unit 1 electrostatic precipitator will provide emissions and opacity that are equal to or better than the original design values. In addition, the expected emission and visible emission values are lower than those recorded during the August 2001 stack test. Another benefit of the two-field rebuild is that reliability and availability will be greatly improved compared to the existing precipitator.

We look forward to further discussions concerning this work and appreciate this opportunity to support you. If you should have any questions or comments, please feel free to contact us at 800-821-2222.

Sincerely,

BHA GROUP, INC.

Bob Taylor
Vice President-Engineering

D-022E2A1-1.7

REVIEWED BY: CARLOS ROLLAN, P.E.
September 25, 2002
FLORIDA PE 23022

