

Jeb Bush  
Governor

# Department of Environmental Protection

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

David B. Struhs  
Secretary

June 9, 1999

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Walter P. Bussells  
Managing Director and CEO, JEA  
21 West Church Street  
Jacksonville, Florida 32202-3139

Re: DEP File No. PSD-FL-010(C)  
Materials Handling Modifications  
St. Johns River Power Park

Dear Mr. Bussells:

Enclosed is one copy of the, Draft PSD Permit Modification, Technical Evaluation and Preliminary Determination, and Draft BACT Determination for the referenced project in Jacksonville, Duval County. The Department's Intent to Issue PSD Permit Modification and the "PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT MODIFICATION" are also included.

The "Public Notice of Intent to Issue PSD Permit Modification" must be published 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 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 written comments you wish to have considered concerning the Department's proposed action to A. A. Linero, P.E., Administrator, New Source Review Section, at the above letterhead address. If you have any questions, please call Syed Arif at 850/921-9528.

Sincerely,

C. H. Fancy, P.E., Chief,  
Bureau of Air Regulation

Enclosures

In the Matter of an  
Application for Permit by:

Mr. Walter P. Bussells,  
Managing Director and CEO, JEA  
21 West Church Street  
Jacksonville, Florida 32202

DEP File No. PSD-FL-010(C)  
Materials Handling Modifications  
St. Johns River Power Park  
Duval County

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INTENT TO ISSUE PSD PERMIT MODIFICATION

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

The applicant, JEA (formerly Jacksonville Electric Authority), applied on February 15, 1999, to the Department for a modification of the Conditions of Approval related to materials handling in Permit PSD-FL-010 applicable to the St. Johns River Power Park.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that a PSD permit modification and a determination of Best Available Control Technology for the control of particulate matter is required to conduct the work associated with new materials handling operations.

The Department intends to issue this PSD permit modification based on the belief that reasonable assurances have been provided to indicate that operation of these emission units and activities will not adversely impact air quality, and the emissions 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., and 40 CFR 52.21.

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 PSD Permit Modification." The notice shall be published one time only in the legal advertisement section of a newspaper of general circulation in the area affected. 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. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one of significant circulation in the area that may be affected by the permit. 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, 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850-488-0114; Fax 850/922-6979). The Department suggests that you publish the notice within thirty days of receipt of this letter. 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 or other authorization. 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 revision 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 and requests for a public meeting concerning the proposed permit issuance action for a period of thirty (30) days from the date of publication of "Public Notice of Intent to Issue PSD Permit Modification." Written comments and requests for a public meeting 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.

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 a administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. 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), F.S., 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 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 (F.A.C.)

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, as well as the rules and statutes which entitle the petitioner to relief; and (f) A demand for relief.

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 28-106.302, F.A.C.

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.

Executed in Tallahassee, Florida.



C. H. Fancy, P.E., Chief  
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this INTENT TO ISSUE PSD PERMIT MODIFICATION (including the PUBLIC NOTICE, Technical Evaluation and Preliminary Determination, Draft BACT Determination, and the DRAFT PSD Permit Modification) was sent by certified mail (\*) and copies were mailed by U.S. Mail before the close of business on 6-11-99 to the person(s) listed:

- Walter P. Bussells, JEA \*
- Bert Gianazza, JEA
- Mike Bilello, Foster Wheeler
- Darrel Graziani, Foster Wheeler
- Hamilton S. Oven, Jr., DEP PPSO
- Scott Goorland, DEP OGC
- Chris Kirts, DEP NED
- Robert S. Pace, RESD
- Gregg Worley, EPA Region IV
- Ellen Porter, USFWS
- Hon. John A. Delaney, Mayor, City of Jacksonville
- Brian D. Teeple, Executive Director, Northeast Florida Regional Planning Council

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)

6-11-99  
(Date)

Z 333 618 162

US Postal Service  
**Receipt for Certified Mail**

No Insurance Coverage Provided.  
Do not use for International Mail (See reverse)

Sent to	
Walter Russell	
Street & Number	
SEA	
Post Office, State, & ZIP Code	
Jax FL	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	PSD-FI-DID(c) 6-11-99

PS Form 3800, April 1995

Is your RETURN ADDRESS completed on the reverse side?

**SENDER:**

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- Addressee's Address
- Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to: Walter P. Russell Managing Director CEO 21 W. Church St. Jacksonville, FL 32202-3139	4a. Article Number Z 333 618 162
5. Received By: (Print Name)	4b. Service Type <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified <input type="checkbox"/> Express Mail <input type="checkbox"/> Insured <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> COD
6. Signature: (Addressee or Agent) X [Signature]	7. Date of Delivery 6-14-99
	8. Addressee's Address (Only if requested and fee is paid)

Thank you for using Return Receipt Service.

PUBLIC NOTICE OF INTENT TO ISSUE PSD PERMIT MODIFICATION

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JEA St. Johns River Power Park

DEP File No. PSD-FL-010(C)

Duval County, Florida

The Department of Environmental Protection (Department) gives notice of its intent to issue a modification of Permit PSD-FL-010 to JEA under the requirements for the Prevention of Significant Deterioration of Air Quality (PSD). The permit modification is to authorize increased materials handling rates at the St. Johns River Power Park (SJRPP) located at 11201 New Berlin Road, Jacksonville, Duval County. A Best Available Control Technology (BACT) determination was required for particulate matter pursuant to Rule 62-212.400, F.A.C., and 40 CFR 52.21. The applicant's name and address are JEA (formerly Jacksonville Electric Authority), 21 West Church Street, Jacksonville, Florida 32202-3105.

The throughput of coal, petroleum coke, and limestone will be increased at SJRPP to support the requirements of two new circulating fluidized bed boilers that will be constructed at the adjacent Northside Generating Station (NGS) pursuant to Permit PSD-FL-265. The project at NGS will utilize the existing railcar rotary dumper, conveyors, transfer stations, and storage pile at SJRPP. The existing storage pile size will be increased and new stackers, reclaimers, conveyors, and transfer towers will be constructed. The materials handling project will not cause increased utilization of or emissions from the existing coal and petroleum coke-fired boilers located at SJRPP, but will generate increased emissions of particulate matter from support operations.

Air emissions at SJRPP due to higher materials handling rates and new emission points will increase by 17.4 tons per year (TPY) of total suspended particulate (TSP) matter and 6.9 TPY of particulate matter smaller than 10 microns in diameter (PM<sub>10</sub>). Particulate emissions from the materials handling operations will be controlled by: use of conditioned materials; wet suppression technologies and water sprays; full and partial enclosures; and baghouses, as appropriate.

An air quality impact analysis was conducted. Emissions from SJRPP and the adjacent Northside Generating Station will not cause or contribute to a violation of any state or federal ambient air quality standards. The maximum predicted PSD Class II increments of PM<sub>10</sub> consumed by all sources in the area, including the projects at SJRPP and at NGS, will be as follows:

<u>Averaging Time</u>	<u>Allowable Increment(μ/m<sup>3</sup>)</u>	<u>Increment Consumed(μ/m<sup>3</sup>)</u>	<u>Percent Consumed</u>
24-hour	30	24.4	81
Annual	17	13.8	81

Maximum predicted impacts are less than the applicable PSD Class I significant impact levels at the Okefenokee National Wilderness Area for PM<sub>10</sub>.

The Department will accept written comments and requests for a public meeting concerning the proposed issuance of the permit action for a period of 30 (thirty) days from the date of publication of "Public Notice of Intent to Issue PSD Permit Modification." Written comments and requests for a public meeting 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.

This PSD permitting action is being coordinated with SJRPP's Site Certification issued under the Power Plant Siting Act (PPSA), Sections 403.501-403.518, F.S. Pursuant to Condition of Certification No. XXV.B of the separate Site Certification Order for SJRPP (PA-81-13), the PPSA certification will be automatically modified to conform to amendments to SJRPP's PSD Permit (PSD-FL-010(C)). Upon

issuance of the PSD Permit Modification for SJRPP, the Department will modify the PPSA Conditions of Certification accordingly.

The Department will issue the PSD permit modification for SJRPP unless a timely petition for an administrative hearing is filed pursuant to 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, 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 (14) days of receipt of this notice of intent. Petitions filed by any person other than those entitled to written notice under Section 120.60(3) of the Florida Statutes must be filed within fourteen (14) days of publication of the public notice or within fourteen (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 (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, Florida Statutes, 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 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 facts. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; and (f) A demand for relief.

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 of the Florida Administrative Code.

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 petition 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:

Department of Environmental Protection  
Bureau of Air Regulation  
111 S. Magnolia Drive, Suite 4  
Tallahassee, Florida 32301  
Telephone: 850/488-0114  
Fax: 850/922-6979

Department Environmental Protection  
Northeast District Office  
7825 Baymeadows Way, Suite 200B  
Jacksonville, Florida 32256-7590  
Telephone: 904/448-4300  
Fax: 904/448-4366

Jacksonville Regulatory and  
Environmental Services Department  
Suite 225  
Jacksonville, Florida 32202  
Telephone: 904/630-3484  
Fax: 904-630-6338

The complete project file includes the Draft PSD Permit Modification, the applications and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, Florida Statutes. Interested persons may contact the New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850/488-0114, for additional information.

TECHNICAL EVALUATION  
AND  
PRELIMINARY DETERMINATION

JEA

St. Johns River Power Park & St. Johns River Coal Terminal  
Materials Handling & Storage Operations  
Associated with the Northside Generating Station Units 1 and 2 Repowering  
Incorporating BACT Determination by Reference  
Jacksonville, Duval County  
Florida

PSD-FL-010(C)

State of Florida  
Department of Environmental Protection  
Division of Air Resources Management  
Bureau of Air Regulation

June 9, 1999



**1. APPLICATION INFORMATION**

**1.1 Applicant Name and Address**

JEA  
21 West Church Street  
Jacksonville, Florida 32202  
Authorized Representative: Walter P. Bussells, Managing Director & Chief Executive Officer

**1.2 Reviewing and Process Schedule**

02-15-99: Date of Receipt of Northside Generating Station Application  
05-06-99: Date of Receipt of St. Johns River Power Park Application  
06-9-99: Intent Issued

**2. FACILITY INFORMATION**

**2.1 Facility Location**

The St. Johns River Power Park (SJRPP) and the St. Johns River Coal Terminal (SJRCT) which serves it are located in Duval County on the north shore of the St. Johns River, approximately 10 miles west of the Atlantic Ocean and 9 miles north-east of the Jacksonville downtown area (Figure TE-1). SJRPP is approximately 60 kilometers and 97 kilometers from the Okefenokee and Wolf Island National Wilderness Areas, respectively. Both of these areas are designated Class I PSD Areas. The UTM coordinates of SJRPP are Zone 17; 447.1 km E; 3,366.5 km N.

**2.2 Standard Industrial Classification Codes (SIC)**

Industry Group No.	49	Electric, Gas, and Sanitary Services
Industry No.	4911	Electric Services

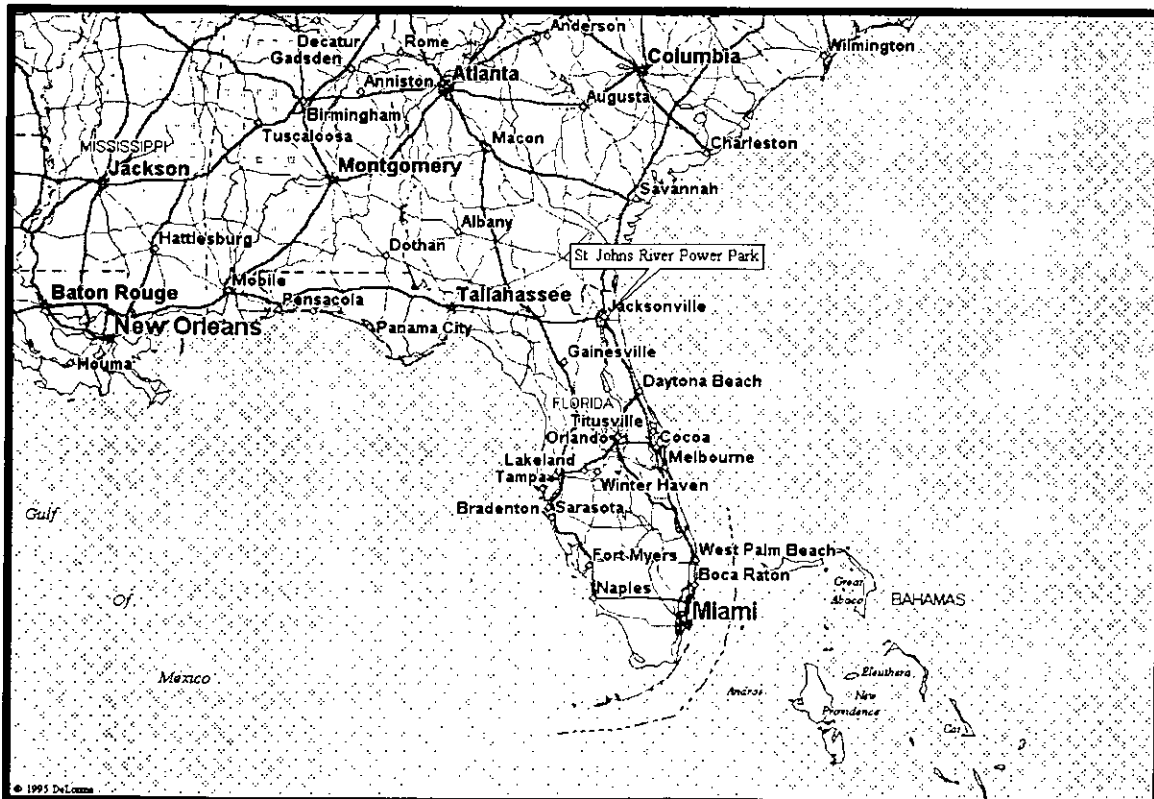
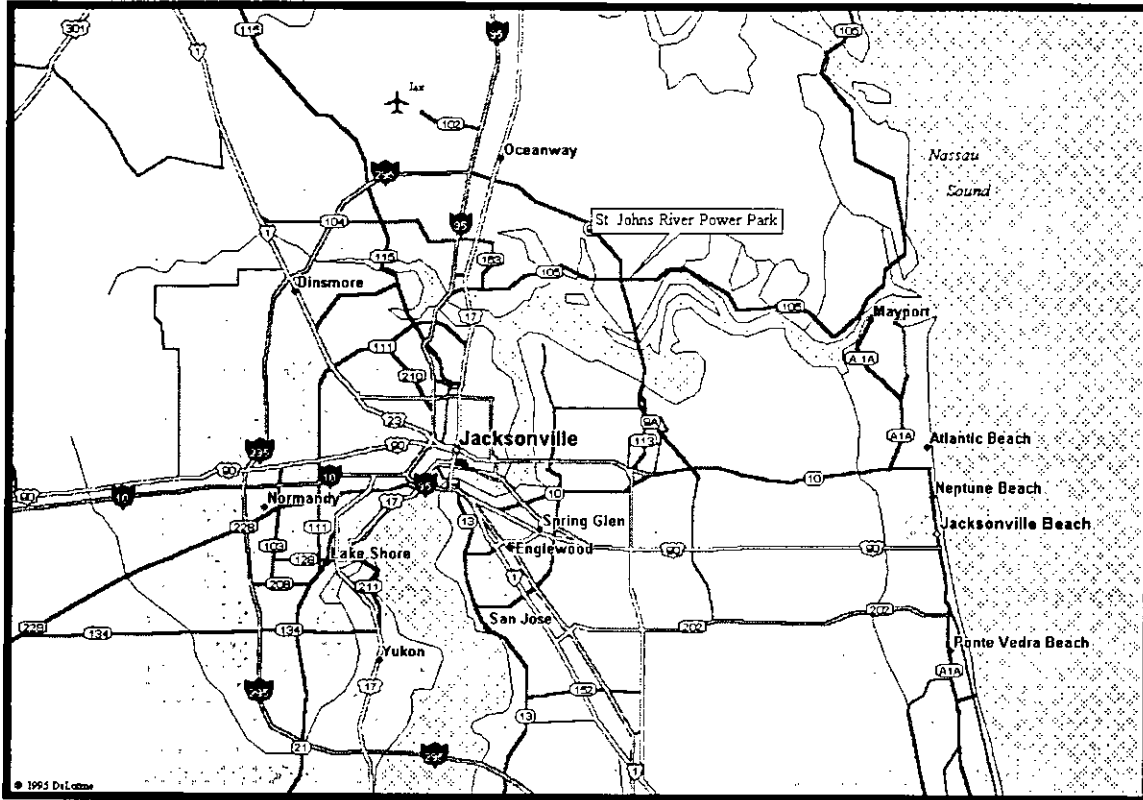
**2.3 Facility Category**

SJRPP and the adjacent Northside Generating Station (NGS) are collectively classified as a major facility under the Prevention of Significant Deterioration (PSD) program. SJRPP and NGS are also considered a single major source under the Title V Operating Permit program and have been assigned the facility identification number 310045 in the Department database (ARMS system). SJRPP and NGS are both subject to the Acid Rain program and have been assigned ORIS Codes 0207 and 0067, respectively.

SJRPP is identified within an industry included on the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. The proposed changes to the materials handling and storage operations at SJRPP and SJRCT, together with changes being made at NGS are considered a "major modification" with respect to Rule 62-212.400, Prevention of Significant Deterioration, based on potential emission increases at rates above the PSD Significant Emission Rates listed in Table 212.400-2, F.A.C., for Particulate Matter (PM/PM<sub>10</sub>). The NGS Units 1 and 2 Repowering Project is being permitted concurrently but separately.

For Particulate Matter (PM/PM<sub>10</sub>), a determination of Best Available Control Technology (BACT) is required for new and modified materials handling operations at SJRPP & SJRCT. The Department's computation of the net emission increases for purposes of the application of BACT took into account the available emission reductions associated with the permanent shutdown of the existing NGS Unit 1 and 2 steam generators.

**Figure TE-1  
Local & Regional Maps**



3. **PROJECT DESCRIPTION**

This amended permit addresses the following emissions units:

EMISSION UNIT NO.	SYSTEM	EMISSION UNIT DESCRIPTION
023 <sup>(1)</sup>	Materials Handling	<p>SJRPP Materials Handling Operations - Handling and storage of coal, petroleum coke, and limestone (Fugitive Emissions).</p> <p>NGS Repowering Base Case - Figure TE-2 includes the existing and new facilities to be located on SJRPP property associated with the NGS Repowering Project. NSPS Subpart Y</p> <p>NGS Repowering Alternate 1 - Figure TE-3 includes the new and existing facilities to be located on SJRPP and SJRCT property associated with the NGS Repowering Project. NSPS Subparts Y &amp; OOO.</p>
043	Materials Handling	SJRPP Rotary Railcar Dumper - One unit handling 4,000 TPH and 7.55 million TPY.
<p>Note (1) A separate PSD permit and BACT Determination are being issued to address the Northside Units 1 and 2 Repowering Project as it will exist at the NGS.</p>		

Each materials handling and storage operation will employ one or more control strategies to limit emissions of particulate matter to meet specific emission limitations and/or visible emissions limits. The control strategies include the following:

Control Strategy	Description
Best Operating/Design Practices	Control strategy focuses on "Pollution Prevention" by designing systems, which minimize particulate matter emissions. Typical practices include reduced conveyor speeds to avoid dust entrainment, minimizing the number of transfer points, use of partial and total enclosures when practicable, material conditioning, wet suppression techniques and water sprays.
Total or Partial Enclosures	Control strategy focuses on reduction or elimination of fugitive particulate matter emissions. Depending upon the source, potential additional control strategies may be employed to further reduce unconfined emissions including; wet suppression, water sprays, and dust collection systems.

Conditioned Materials	Control strategy focuses on reduction of the particulate matter emission potential by controlling the moisture content of a material. Conditioned materials are those containing a moisture content of 3.5% by weight or more.
Wet Suppression	Control strategy focuses on the direct application of water and/or chemical wetting agents to the materials, increasing moisture content, and/or reducing emission potential.
Water Sprays	Control strategy focuses on minimizing particulate matter emitted from an operation by entrainment within water droplets or fogs sprayed into the fugitive emissions.
Dust Collection System	Control strategy is associated with the use of partial and /or total enclosures requiring removal of particulates from the enclosed area for health or safety reasons. Dust collection systems exhaust through an AQCS, which may be vented to the outside atmosphere.

For fugitive particulate matter emissions from the materials handling and storage operations, the specific conditions of the amended PSD permit will reflect the following visible emissions limitations:

- 10% Opacity - Ship Unloading Operations (Shiphold & Receiving Hoppers); SJRPP Railcar Rotary Dumper Building; SJRPP Storage Piles; SJRPP Stackers, and Reclaimers; SJRPP Ship Unloader; and SJRPP Stacker/Reclaimer Conveyors;
- 5% Opacity - SJRCT Enclosed Materials Surge Pile; SJRPP Transfer Towers & Stations; SJRPP Fuel Transfer Building; SJRPP Covered Conveyors.

For the materials handling and storage operations equipped with a dust collection system and AQCS, the specific conditions of the PSD permit will reflect a 5% opacity limitation from the dust collection system exhaust. The Department is granting a stack test waiver under Rule 62-297.310(7)(c), F.A.C. for each dust collection system equipped with a baghouse based on JEA's design specification of 0.01 gr/dscf. The waiver is applicable only to those systems, which emit less than 5 TPY of particulate matter (PM/PM<sub>10</sub>).

Based on the information presented in the application, the NGS Repowering Project and proposed changes at SJRPP and SJRCT associated with the repowering will trigger PSD review for PM/PM<sub>10</sub> since emissions will increase by more than their respective significant emissions rates. For PM<sub>2.5</sub>, the project increases were considered significant since "any" increase triggers PSD review. However, current EPA guidance on PM<sub>2.5</sub> instructs reviewing agencies to use PM<sub>10</sub> as a surrogate until additional rules are promulgated and the standard is not currently enforceable based on a recent U.S. Circuit Court of Appeals case (American Trucking Association vs EPA & EPA Memorandum Regarding "Interim Implementation of NSR Requirements for PM<sub>2.5</sub>, dated October 24, 1997).

JEA has also requested clarifications on the existing materials handling operations for SJRPP and SJRCT with the submittal of an application package on May 6, 1999. All changes to the existing SJRPP PSD permit are combined within a single permit revision.

#### 4.0 PROCESS DESCRIPTION

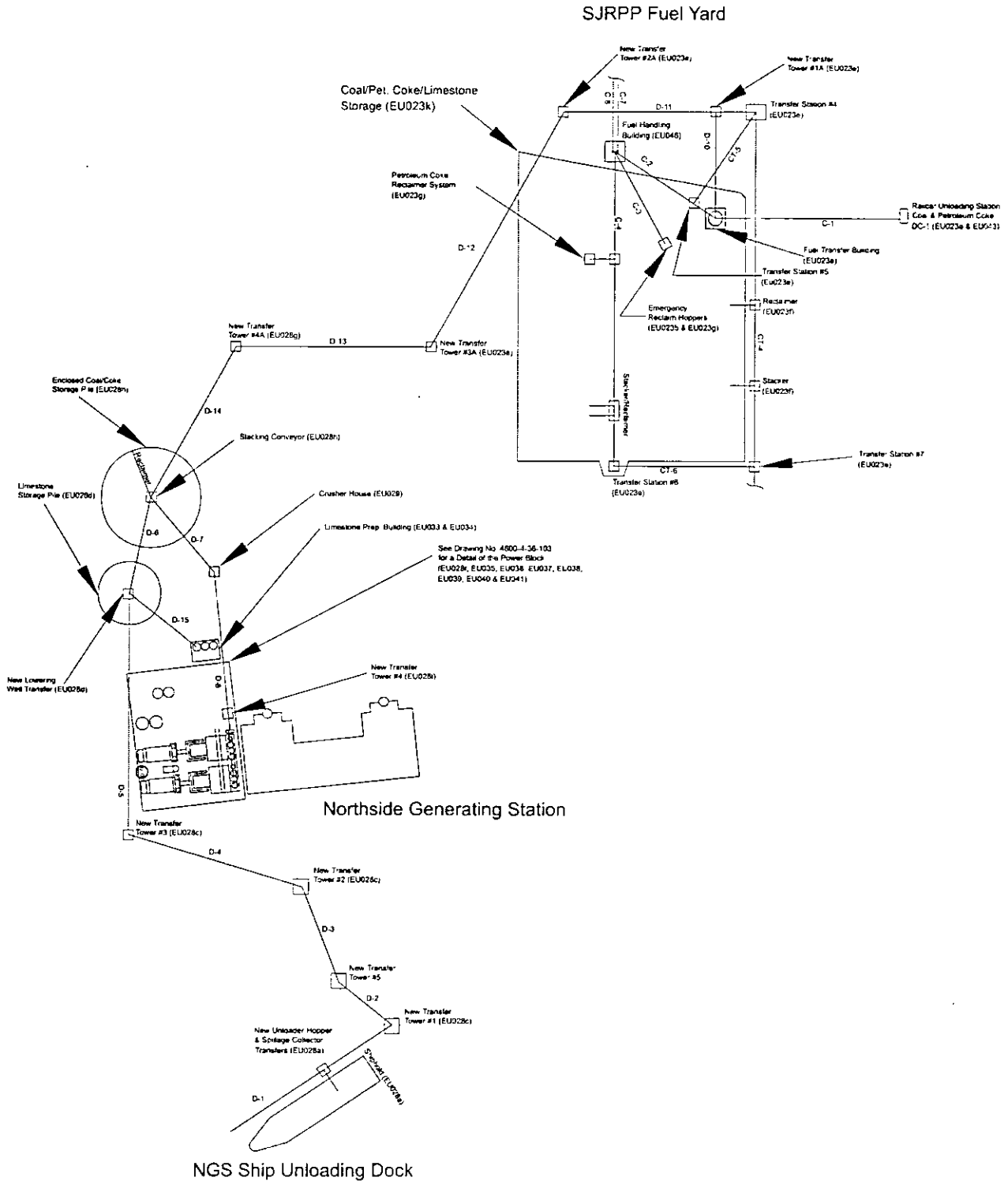
The proposed NGS Repowering Project may include use of the existing SJRPP and SJRCT materials handling and storage operations as well as the construction of new operations. The proposed changes to the SJRPP and SJRCT will involve the handling and storage of coal, petroleum coke, and limestone. Within the application, JEA has identified two scenarios, which are presented in Figures TE-2 and TE-3.

Figure TE-2 presented JEA's Base Case which involves the construction of a new ship unloading facility near the existing NGS fuel dock supported by the existing SJRPP Rotary Railcar Unloader. Figure TE-3 presents JEA's NGS Repowering Alternate 1 which involves the construction of an additional ship unloader, conveyors, and enclosed materials surge pile at the existing SJRCT already serving SJRPP. In addition, Alternate 1 would include the construction of new conveyors, transfers, a stacker, reclaimers, and a slight expansion of the storage pile at SJRPP. NGS Repowering Alternate 1 would increase the annual throughput of coal/petroleum coke at SJRPP from 5.13 million tons to 7.55 million tons per year and limestone from 0.60 million tons to 2.05 million tons per year. As with the Base Case, NGS Repowering Alternate 1 will be supported in addition by the existing SJRPP Rotary Railcar Unloader.

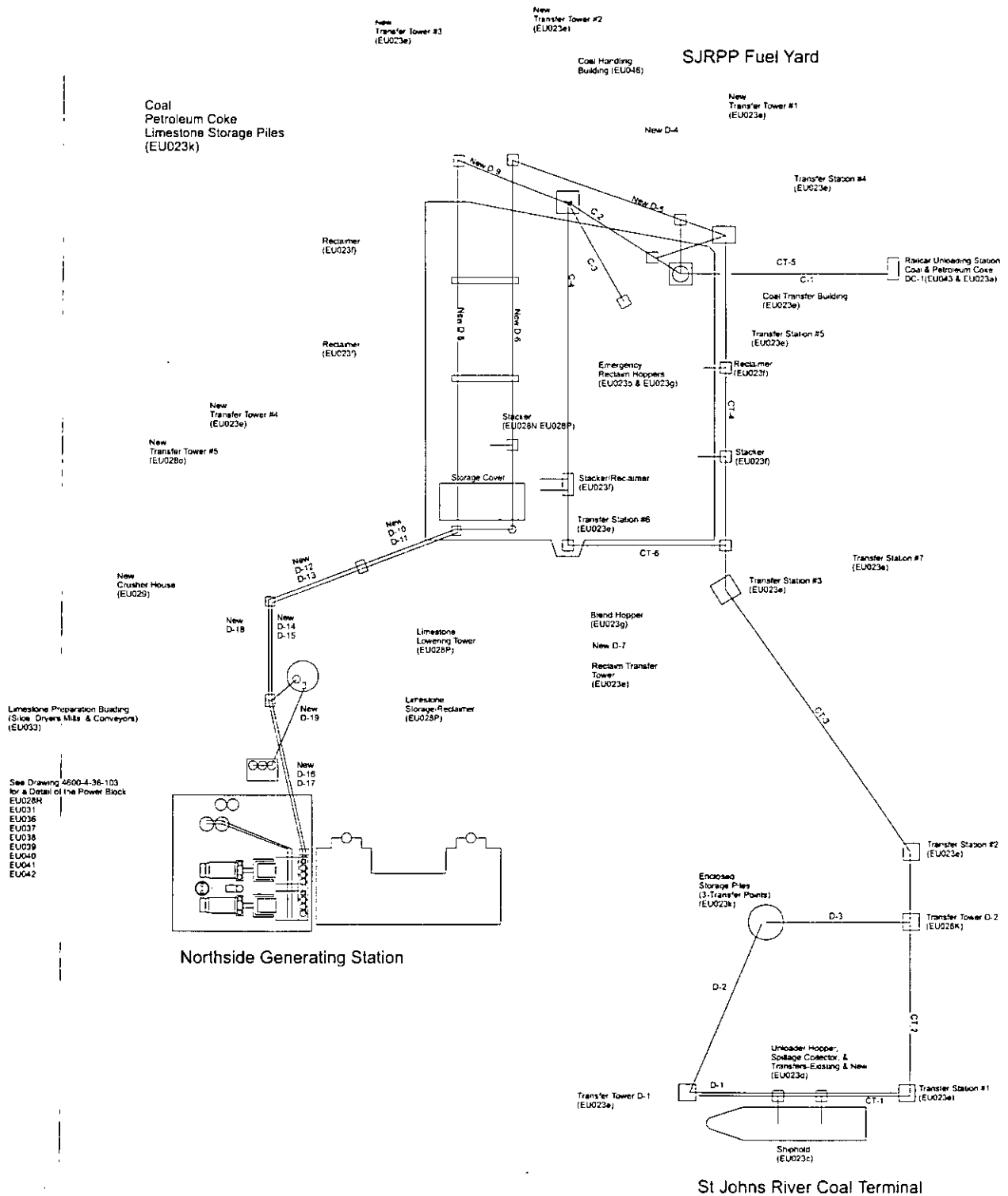
From the SJRCT, the materials would be transferred to either the existing SJRPP storage pile or the new NGS limestone storage pile by use of a conveyor system. The conveyors would transport the materials at a maximum rate of 1,500 TPH to the storage piles. From the SJRPP storage pile, coal and petroleum coke would be reclaimed and conveyed to NGS at a maximum rate of 700 TPH.

As noted, the existing SJRPP Rotary Railcar Dumper will support NGS. Under both scenarios the potential throughput of the SJRPP Rotary Railcar Dumper will be increased from 5.13 million tons (SJRPP Requirement) to 7.55 million tons per year. Under the Base Case, coal and petroleum coke can be delivered to the enclosed NGS fuel storage pile at a maximum rate of 1,500 TPH on a new conveyor system connecting SJRPP and NGS. Under NGS Repowering Alternate 1, coal and petroleum coke can be delivered to the existing SJRPP storage pile at a maximum rate of 4,000 TPH, reclaimed and conveyed to NGS at a maximum rate of 1,500 TPH on a new conveyor system.

# Figure TE-2 Materials Handling & Storage Operations, Base Case



# Figure TE-3 Materials Handling & Storage Operations, Alternate 1



**5. RULE APPLICABILITY**

The modification is subject to preconstruction review requirements and emission limiting standards under the provisions of Chapter 403, Florida Statutes, and Chapters 62-4, 62-204, 62-210, 62-212, 62-214, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.).

SJRPP and SJRCT are located in Duval County, an area designated as maintenance for ozone and particulate matter (Downtown Area), and attainment for all other criteria pollutants in accordance with Rule 62-204.360, F.A.C. The modifications are subject to review under Rule 62-212.400., F.A.C., Prevention of Significant Deterioration (PSD), because the potential emission increases associated with the NGS Repowering Project for PM/PM<sub>10</sub> exceed the significant emission rates given in Chapter 62-212, Table 62-212.400-2, F.A.C.

This PSD review includes a determination of Best Available Control Technology (BACT) for PM/PM<sub>10</sub>. A determination of Maximum Achievable Control Technology (MACT) was not required since the materials handling and storage operations are not major emitters of hazardous air pollutants. An analysis of the air quality impacts from the proposed project upon soils, vegetation and visibility is required along with air quality impacts resulting from associated commercial, residential, and industrial growth.

The operations affected by this PSD permit amendment shall comply with all applicable provisions of the Ordinance Code of the City of Jacksonville, Title X Environmental Affairs and the Rules of the Jacksonville Environmental Protection Board (as applicable), the Florida Administrative Code (including applicable portions of the Code of Federal Regulations incorporated therein), and specifically the following Chapters and Rules:

**5.1 Local Regulations**

<b>Chapter/Rule</b>	<b>Description</b>
Chapter 360	Environmental Regulation (as applicable)
Chapter 362	Air and Water Pollution (as applicable)
Chapter 376	Odor Control (as applicable)
Rule 1	Part VII Fees and Collection of Fees (as applicable)
Rule 1	Part VIII Investigations (as applicable)
Rule 2	Part I General Provisions (as applicable)

**5.2 State Regulations**

<b>Chapter/Rule</b>	<b>Description</b>
Chapter 62-4	Permits
Rule 62-204.220	Ambient Air Quality Protection
Rule 62-204.240	Ambient Air Quality Standards
Rule 62-204.260	Prevention of Significant Deterioration Increments
Rule 62-204.800	Federal Regulations Adopted by Reference
Rule 62-210.300	Permits Required
Rule 62-210.350	Public Notice and Comments
Rule 62-210.370	Reports
Rule 62-210.550	Stack Height Policy
Rule 62-210.650	Circumvention
Rule 62-210.700	Excess Emissions
Rule 62-210.900	Forms and Instructions
Rule 62-212.300	General Preconstruction Review Requirements



Chapter/Rule	Description
Rule 62-212.400	Prevention of Significant Deterioration
Rule 62-213	Operation Permits for Major Sources of Air Pollution
Rule 62-296.320	General Pollutant Emission Limiting Standards
Rule 62-297.310	General Test Requirements
Rule 62-297.401	Compliance Test Methods

### 5.3 Federal Rules

Regulation	Description
40 CFR 60	NSPS Subparts A, Y, and OOO (applicable sections)

## 6. SOURCE IMPACT ANALYSIS

### 6.1 Emission Limitations

The proposed modifications will result in emissions of particulate matter (PM, PM<sub>10</sub>, & PM<sub>2.5</sub>), a PSD pollutant (Table 212.400-2). The applicant's proposed net increases of particulate matter (PM & PM<sub>10</sub>) and remaining PSD pollutants in annual emissions including increases associated with the NGS Repowering Project are summarized in Table TE-1. The net emissions increases form the basis of the source impact review. The Department's proposed permitted allowable particulate matter emissions for the modifications at SJRPP and SJRCT are summarized in the Draft BACT documents and will be summarized in amended conditions to the SJRPP PSD Permit (PSD-FL-010(C)).

Table TE-1

NET EMISSIONS INCREASES OF PSD POLLUTANTS								
Pollutants	Unit 1 Decreases <sup>1</sup>	Repowered Unit 1 <sup>2</sup>	Repowered Unit 2 <sup>2</sup>	Limestone Dryers/Mills <sup>2</sup>	Materials Handling <sup>3</sup>	Net Increase	PSD Significance	PSD REVIEW ?
CO	-122.0	1,533	1,533	119	0	3,063	100	Yes
NO <sub>x</sub> <sup>4</sup>	-1,359.7	1,090	1,090	50.7	0	871	40	Yes
SO <sub>2</sub> <sup>4</sup>	-6,574.8	1,816	1,816	1.29	0	-2,941	40	No
PM <sup>4</sup>	-201.1	133	133	0.0022	34	99	25	Yes
PM <sub>10</sub>	-143.2	133	133	0.0011	8	131	15	Yes
Ozone(VOC)	-17.1	61.3	61.3	1.39	0	107	40	Yes
Lead	-0.03187	0.3	0.3	0.000023	0	0.57	0.6	No
Mercury	-0.00243	0.13	0.13	0.00076	0	0.26	0.1	Yes
Total Fluorides (HF)	-0.78482	1.9	1.9	0.0068	0	3.02	3	Yes
Sulfuric Acid Mist	-196.8	4.8	4.8	0.0098	0	-187	7	No

NOTES:

- Recent NGS Actual Annual Emissions based on the two year average starting 9/96 and ending 8/98.
- Based on proposed BACT and requested emission limits on NGS Repowering Units.
- Materials Handling includes existing and proposed equipment at SJRCT, SJRPP, and NGS.
- Requested multi-unit emissions caps for stack emissions from Units 1, 2, and 3: NO<sub>x</sub> - 3,600 TPY; PM - 881 TPY; and SO<sub>2</sub> - 12,284 TPY at NGS.

## 6.2 Emission Summary

The total annual particulate matter emissions as a result of the materials handling and storage operations modification for SJRPP and SJRCT in support of NGS Units 1 and 2 repowering are 17.4 TPY of total suspended particulate matter and 6.9 TPY of PM<sub>10</sub>.

## 6.3 Control Technology

The applicant has proposed various control strategies to reduce particulate matter emissions from the materials handling and storage operations. These are summarized in Table TE-2 below. A full discussion of the available control strategies is presented in the Draft Best Available Control Technology (BACT) Determination (see Permit Appendix BD). The Draft BACT is incorporated into this evaluation by reference.

**Table TE-2**

Emissions Unit(s)	Pollutant	Control Strategy/Technology
Materials Handling Operations (Emission Unit 023)	PM/PM <sub>10</sub>	Best Operating/Design Practices Partial or Total Enclosures Conditioned Materials Wet Suppression Water Sprays
Materials Handling Operations (Emissions Unit 43)	PM/PM <sub>10</sub>	Dust Collection System Fabric Filter/Baghouse 0.01 gr/dscf & no visible emissions (5% opacity)

## 6.4 Air Quality Analysis

### 6.4.1 Introduction

The modifications will result in a net increase in particulate matter emissions at levels in excess of PSD significant amounts. The air quality impact analyses required by the PSD regulations include:

- An analysis of existing air quality;
- A significant impact analysis;
- A PSD increment analysis for PM<sub>10</sub>;
- An Ambient Air Quality Standards (AAQS) analysis for PM<sub>10</sub>; and
- An analysis of impacts on soils, vegetation, and visibility and of growth-related air quality impacts.

For PM no analyses by the applicant are required since there are no longer any AAQS's nor PSD significant impact levels or increments for the pollutant. The analysis for particulate matter is covered under the pollutant PM<sub>10</sub>. For PM<sub>10</sub> the significant impact analyses performed by the applicant predicted maximum off-site impacts of greater than the significance levels of 5 µg/m<sup>3</sup>, 24-hour average, and 1 µg/m<sup>3</sup>, annual average in the vicinity of the facility but less than 0.3 µg/m<sup>3</sup>, 24-hour average, and 0.2 µg/m<sup>3</sup>, annual average, at the PSD Class I areas. As a result, the applicant was required to perform a PSD Class II Increment Consumption Analysis, AAQS Analysis, and an Additional Impact Analysis at the PSD Class I areas. A PSD Class I increment consumption analysis was not required.

Based on the analyses performed, the Department has reasonable assurance that the proposed changes at SJRCT and SJRPP, as described in this report and subject to the conditions of approval proposed herein, will not cause or significantly contribute to a violation of any AAQS or PSD increment. A discussion of the required analyses follows.

**6.4.2 Analysis of Existing Air Quality and Determination of Background Concentrations**

Preconstruction ambient air quality monitoring is required for all pollutants subject to PSD review unless otherwise exempted or satisfied. This monitoring requirement may be satisfied by using previously existing representative monitoring data, if available. An exemption to the monitoring requirement may be obtained if the maximum air quality impact resulting from the projected emissions increase, as determined by air quality modelling, is less than a pollutant-specific de minimis concentration. In addition, if an acceptable monitoring method for the specific pollutant has not been established by EPA, monitoring may not be required.

If preconstruction ambient monitoring is exempted, determinations of background concentrations for PSD significant pollutants with established AAQS may still be necessary for use in any required AAQS analysis. These concentrations may be established from the required preconstruction ambient air quality monitoring analysis or from previously existing representative monitoring data. These background ambient air quality concentrations are added to pollutant impacts predicted by modelling and represent the air quality impacts of sources not included in the modelling.

Potential PM<sub>10</sub> impacts from the project are predicted to be 9.6 µg/m<sup>3</sup> on a 24-hour average which is less than the de minimis level of 10 µg/m<sup>3</sup>; therefore, preconstruction ambient air quality monitoring is not required for these pollutants. However, previously existing representative PM<sub>10</sub> monitoring data from monitors in North Florida were used to establish background concentrations for use in the AAQS analysis. These values are shown in the Table TE-3

**TABLE TE-3**

<b>BACKGROUND CONCENTRATIONS FOR USE IN AAQS ANALYSES</b>		
<b>Pollutant</b>	<b>Averaging Time</b>	<b>Background Concentration (µg/m<sup>3</sup>)</b>
PM <sub>10</sub>	Annual	26
	24-hr	56

**6.4.3 Models and Meteorological Data Used in Significant Impact, PSD Increment and AAQS Analyses**

The EPA-approved Industrial Source Complex Short-Term (ISCST3) dispersion model was used to evaluate the pollutant emissions from the proposed project and other existing major facilities. The model determines ground-level concentrations of inert gases or small particles emitted into the atmosphere by point, area, and volume sources. The model incorporates elements for plume rise, transport by the mean wind, Gaussian dispersion, and pollutant removal mechanisms such as deposition. The ISCST3 model allows for the separation of sources, building wake downwash, and various other input and output features. 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 in each modelling scenario. Direction-specific downwash parameters were used for all sources for which downwash was considered.

The applicant conducted preliminary modelling for the purpose of determining the worst case fuel/load scenarios for the repowered NGS Units 1 and 2 for each applicable averaging time. Preliminary modelling runs were conducted using one year of meteorological data at three loads (100%, 75% and 50%) for both coal and petroleum coke fuels. Thus, a total of 6 preliminary modelling runs were conducted. As a result of these runs, the applicant determined that the 100% load produced the "worst case" predicted ground-level ambient air quality impacts for the short-term averaging periods (1-hr, 3-hr, 8-hr and 24-hr) for all pollutants. The worst case scenario was modelled in conjunction with the materials handling and storage operations.

Meteorological data used in the ISCST3 model for all modeling (except the preliminary "worst case" determination modelling) consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service (NWS) stations at Jacksonville, Florida (surface data) and Waycross, Georgia (upper air data). The 5-year period of meteorological data was from 1984 through 1988. These NWS stations were selected for use in the study because they are the primary weather stations closest 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.

Because five years of data are used in ISCST3, the highest-second-high (HSH) short-term predicted concentrations were compared with the appropriate AAQS or PSD increments. For the annual averages, the highest predicted yearly average was compared with the standards. For determining the project's significant impact area in the vicinity of the facility and if there are significant impacts from the project on any PSD Class I area, both the highest short-term predicted concentrations and the highest predicted yearly averages were compared to their respective significant impact levels.

#### 6.4.4 Significant Impact Analysis

Initially, the applicant conducted modelling using only the proposed project's worst case emission scenario for each pollutant and applicable averaging time. A total of 863 receptors were placed along the site boundary and within 10 km of the facility, which is located in a PSD Class II area. A total of 10 receptors were placed along the boundary of the Okefenokee National Wilderness Area (NWA) and a receptor was placed in the Wolf Island National Wilderness Area (NWA). Both of these areas are PSD Class I areas. They are located approximately 61 km and 102 km, respectively, from the project at their closest points. For each pollutant subject to PSD and also subject to PSD increment and/or AAQS analyses, this modelling compared maximum predicted impacts due to the project with PSD significant impact levels to determine whether significant impacts due to the project were predicted in the vicinity of the facility or in the two Class I areas. The tables below show the results of this modelling. The radius of significant impact, if any, and applicable averaging time is also shown in tables TE-4 and TE-5.

TABLE TE-4

MAXIMUM PROJECT AIR QUALITY IMPACTS FOR COMPARISON TO THE PSD CLASS II SIGNIFICANT IMPACT LEVELS IN THE VICINITY OF THE FACILITY					
Pollutant	Averaging Time	Maximum Predicted Impact ( $\mu\text{g}/\text{m}^3$ )	Significant Impact Level ( $\mu\text{g}/\text{m}^3$ )	Significant Impact (Yes/No)	Radius of Significant Impact (km)
PM <sub>10</sub>	Annual	2.1	1	Yes	4.0

**TABLE TE-5**

<b>MAXIMUM PROJECT IMPACT IN THE OKEFENOKEE AND WOLF ISLAND NWA'S FOR COMPARISON TO THE PSD CLASS I SIGNIFICANT IMPACT LEVELS</b>				
<b>Pollutant</b>	<b>Averaging Time</b>	<b>Maximum Predicted Impact (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Significant Impact (Yes/No)</b>	<b>Radius of Significant Impact (km)</b>
PM <sub>10</sub>	Annual	0.001	No	0.2
	24-hr	0.09	No	0.3

As shown in the tables, the maximum predicted air quality impacts due to PM<sub>10</sub> emissions from the proposed project are greater than the significant impact levels in the vicinity of the facility. Therefore, the applicant was required to do further PM<sub>10</sub> modelling in the vicinity of the facility, within the applicable significant impact area, to determine the impacts of the project along with all other sources in the vicinity of the facility. The significant impact area is based upon the predicted radius of significant impact. Full impact modelling is modelling that considers not only the impact of the project but the impacts of the existing facility and other major sources, including background concentrations, located within the vicinity of the project.

**6.4.5 Receptor Networks for PSD Increment and AAQS Analyses**

For the AAQS and PSD Class II analyses, receptor grids normally are based on the size of the significant impact area for each pollutant. The size of the significant impact areas for the required PM<sub>10</sub> analyses was 4.0 km radius, as discussed in the significant impact analysis section above.

Both preliminary and refined modelling runs were performed for these analyses. In the refined runs, additional receptors (11 x 11, 121 point receptor grid) spaced 100 meters apart were placed over critical receptors identified during preliminary AAQS and PSD increment modelling. The results of these analyses are discussed below.

**6.4.6 PSD Increment Analysis**

The PSD increment represents the amount that new sources in an area may increase ambient ground level concentrations of a pollutant. The results of the PSD Class II increment analysis presented in Table TE-6 show that all of the maximum predicted multi-source impacts are less than the allowable Class II increments.

**TABLE TE-6**

<b>PSD CLASS II INCREMENT ANALYSIS</b>				
<b>Pollutant</b>	<b>Averaging Time</b>	<b>Maximum Predicted Impact (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Impact Greater than Allowable Increment (Yes/No)</b>	<b>Allowable Increment (<math>\mu\text{g}/\text{m}^3</math>)</b>
PM <sub>10</sub>	Annual	13.8	No	17
	24-hr	24.4	No	31

#### 6.4.7 AAQS Analysis

For pollutants subject to an AAQS review, the total impact on ambient air quality is obtained by adding a "background" concentration to the maximum modelled concentration. This "background" concentration takes into account all sources of a particular pollutant that are not explicitly modelled. The results of the AAQS analysis are summarized in Table TE-6. As shown in this table, emissions from the proposed facility are not expected to cause or significantly contribute to a violation of any AAQS.

TABLE TE-6

AMBIENT AIR QUALITY IMPACTS						
Pollutant	Averaging Time	Major Sources Impact ( $\mu\text{g}/\text{m}^3$ )	Background Concentration ( $\mu\text{g}/\text{m}^3$ )	Total Impact ( $\mu\text{g}/\text{m}^3$ )	Total Impact Greater than AAQS	Florida AAQS ( $\mu\text{g}/\text{m}^3$ )
PM <sub>10</sub>	Annual	16.3	26	42.3	No	50
	24-hr	35.3	56	91.3	No	150

#### 6.5 Additional Impacts Analysis

##### 6.5.1 Impacts on Soils, Vegetation, Wildlife, and Visibility

The maximum ground-level concentrations predicted to occur for PM<sub>10</sub> as a result of the modifications, including background concentrations and all other nearby sources, will be below the associated AAQS. The AAQS are designed to protect both the public health and welfare. As such, this project is not expected to have a harmful impact on soils and vegetation in the PSD Class II area. An air quality related values (AQRV) analysis was done by the applicant for the Class I areas. No significant impacts on these areas are expected.

##### 6.5.2 Growth-Related Air Quality Impacts

There may be some temporary residential growth associated with the Northside Repowering Project, but there is little potential for new industrial development nearby as a result of it. Although it is not possible to reliably quantify the emissions and impacts resulting from this project, they are expected to be small and well-distributed throughout the area.

#### 7. CONCLUSION

Based on the foregoing technical evaluation of the application and additional information submitted by the applicant, the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations, provided the Department's BACT determination is implemented.

*Syed Arif, P.E., Review Engineer*  
*Cleve Holladay, Meteorologist*

**DRAFT**

**APPENDIX BD  
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

**St. Johns River Power Park  
Permit No. (PSD-FL-010(C))  
Jacksonville, Duval County, Florida**

**BACKGROUND**

The applicant, JEA (formerly known as the Jacksonville Electric Authority), has proposed to modify its materials handling facilities and operations at the St. Johns River Power Park (SJRPP) and St. Johns River Coal Terminal (SJRCT) to accommodate repowering of the adjacent Northside Generating Station (NGS) Units 1 and 2 at NGS. These units are being repowered with coal and petroleum coke fired Circulating Fluidized Bed (CFB) boilers. The proposed project will result in "significant increases" with respect to Table 62-212.400-2, Florida Administrative Code (F.A.C.) for emissions of particulate matter (PM and PM<sub>10</sub>) at SJRPP. The project is therefore subject to review under the Prevention of Significant Deterioration (PSD) program and a determination of Best Available Control Technology (BACT) is required in accordance with Rule 62-212.400, F.A.C. for PM/PM<sub>10</sub> for the new and modified facilities and operations at SJRPP.

New and existing materials handling and storage facilities and operations at SJRPP and SJRCT will be utilized to support the NGS Repowering Project. At SJRCT, the proposed project will include the use of the existing ship unloader, conveyors and transfer stations. In addition, a new ship unloader, conveyors, transfer towers and an enclosed storage pile will be constructed. At SJRPP, the proposed project will utilize the existing railcar rotary dumper, conveyors, transfer stations, and storage pile. In addition, the existing storage pile will be increased in size and new stackers, reclaimers, conveyors and transfer towers constructed.

Descriptions of the process, project, air quality effects, and rule applicability for the new and modified materials handling facilities and operations at SJRPP are given in the Technical Evaluation and Preliminary Determination dated May XX, 1999 for both SJRPP and NGS. This BACT determination addresses only the facilities and operations within the SJRPP property boundary. Facilities and operations associated with the Repowering Project within the NGS property boundary are addressed within a separate BACT determination and new permit (PSD-FL-265).

**DATE OF RECEIPT OF A BACT APPLICATION:**

The application was received on February 15, 1999, revised on May 4, 1999, and included a BACT proposal prepared by the applicant.

**REVIEW GROUP MEMBERS:**

Syed Arif, Review Engineer

**BACT DETERMINATION REQUESTED BY THE APPLICANT:**

Materials Handling & Storage Operations - Particulate Matter

<b>Handling &amp; Storage Operation</b>	<b>Control Technologies</b>	<b>Projected Project Emission Levels</b>
Ship Unloading Operations		
Shiphold	1, 4 & 6	10% Opacity
Receiving Hoppers	1, 3, 4 & 6	10% Opacity
Receiving Conveyors	1, 4 & 6	10% Opacity
Conveyors	1, 4 & 6	5% Opacity
Transfer Towers	1, 2, 4 & 6	5% Opacity
Stackers/Reclaimers		
SJRCT Enclosed Storage Pile	1, 3, 4 & 6	5% Opacity
SJRPP Existing Storage Pile	1, 3, 4 & 6	10% Opacity
Storage Piles		
SJRCT Enclosed Storage Pile	1, 3, 4 & 6	5% Opacity

## APPENDIX BD BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

### Materials Handling & Storage Operations - Particulate Matter

Handling & Storage Operation	Control Technologies	Projected Project Emission Levels
SJRPP Existing SJRPP Storage Pile	1, 3 & 6	10% Opacity
Rotary Railcar Dumper		
Building Fugitives	1, 3, 4 & 6	10% Opacity
Fuel Transfer Building	1, 3, 4 & 6	10% Opacity
Underground Transfer Points	1, 3, 4, & 5	5% Opacity
Control Strategies:		
<ol style="list-style-type: none"> <li>1. Conditioned Materials</li> <li>2. Wet Suppression, as needed</li> <li>3. Water Sprays, as needed</li> <li>4. Enclosures (Total, Partial, Covers, &amp; Wind Screens)</li> <li>5. Fabric Filter</li> <li>6. Best Operating Practices</li> </ol>		

### **BACT DETERMINATION PROCEDURE:**

In accordance with Chapter 62-212, F.A.C., this BACT determination is based on the maximum degree of reduction of each pollutant emitted which the Department of Environmental Protection (Department), on a case-by-case basis taking into account energy, environmental and economic impacts and other costs, determines is achievable through application of production processes and available methods, systems, and techniques. In addition, the regulations state that, in making the BACT determination, the Department shall give consideration to:

- Any Environmental Protection Agency determination of BACT pursuant to Section 169, and any emission limitation contained in 40 CFR Part 60 - Standards of Performance for New Stationary Sources or 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.
- All scientific, engineering, and technical material and other information available to the Department.
- The emission limiting standards or BACT determination of any other state.
- The social and economic impacts of the application of such technology.

The EPA currently stresses that BACT should be determined using the "top-down" approach. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical emission unit or emission unit category. If it is shown that this level of control is technically or economically infeasible for the emission unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic impacts.

For the proposed SJRPP materials handling and storage operations, the applicable New Source Performance Standards (NSPS) include the following:

- 40 CFR Part 60, Subpart Y - Standards of Performance for Coal Preparation Plants.
- 40 CFR Part 60, Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants

No National Emission Standards for Hazardous Air Pollutants (NESHAPs) exist for coal, petroleum coke or limestone materials handling systems. A determination of the Maximum Achievable Control Technology (MACT) was not required since the materials handling and storage operations are not major emitters of HAPs.

### **STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES:**

The materials handling and storage operations, with the exception of the open storage piles, are subject to 40 CFR Part 60, Subpart Y when handling coal. For these operations, Subpart Y prohibits visible emissions of 20 percent opacity or greater from any coal processing and conveying equipment, coal storage system (except open storage), or coal transfer and loading systems. The applicant has proposed visible emissions limitations of 5 and 10 percent



## APPENDIX BD BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

opacity on the various operations, as appropriate. The proposed BACT levels are more stringent than the existing NSPS requirements of Subpart Y.

The materials handling and storage operations, with the exception of the open storage piles and truck dumping operations, are also subject to 40 CFR Part 60, Subpart OOO when handling limestone. For these operations, the proposed BACT levels are more stringent than the existing NSPS requirements of Subpart OOO and include a 5% opacity limit on the Limestone Conveyors, Transfer Points, and Enclosures.

### **DETERMINATIONS BY EPA AND STATES:**

#### **BACKGROUND ON MATERIALS HANDLING OPERATIONS**

The proposed NGS Repowering Project may involve the handling and storage of coal, petroleum coke, and limestone at SJRPP and SJRCT. Within the application, JEA identified two scenarios associated with the handling, storage and processing of coal, petroleum coke and limestone.

JEA's Base Case for the NGS Repowering Project involves the construction of a new ship unloading facility near the existing NGS fuel dock supported by the existing Rotary Railcar Dumper at SJRPP, which could be connected to the NGS by a new conveyor. JEA's Alternate 1 involves the construction of additional equipment at SJRCT including a second ship unloader, additional conveyors and transfer points and an enclosed storage pile as well as additional conveyors and transfer points, stackers and reclaimers, and slightly expanding the existing storage pile at SJRPP. From the SJRCT, enclosed storage pile and ship unloader, limestone will be conveyed directly to the NGS Limestone Storage Pile. From the SJRPP, enclosed storage pile and ship unloader, coal and petroleum coke will be conveyed to the SJRPP storage pile, reclaimed and conveyed to the NGS.

The existing SJRPP Rotary Railcar Dumper will support the NGS Repowering Project under both scenarios, increasing the potential fuel throughput of the SJRPP Rotary Railcar Dumper from 5.13 million tons (SJRPP Requirement) to 7.55 million tons per year. Under the Base Case, coal and petroleum coke will be delivered to the enclosed NGS fuel storage pile at a maximum rate of 1,500 TPH on a new conveyor system connecting SJRPP and NGS. Under Alternate 1, coal and petroleum coke will be delivered to the existing SJRPP storage pile at a maximum rate of 4,000 TPH, reclaimed and conveyed to NGS at a maximum rate of 1,500 TPH on a new conveyor system.

### **CONTROL TECHNOLOGIES:**

#### **PARTICULATE MATTER (PM/PM<sub>10</sub>) CONTROL TECHNOLOGIES**

Particulate matter emissions will be generated by the materials handling and storage operations and are typically controlled by one or more strategies. Typical strategies include but are not limited to the following:

1. Handling and storing bulk materials in a wet or semi-wet condition. These materials are considered "conditioned materials" and will typically have moisture contents greater than 3.5 percent.
2. Direct application of water and/or chemicals to bulk materials for purposes of increasing moisture content and/or stabilizing small particles is considered a "Wet Suppression" technique.
3. Indirect application of water to materials for purposes of knocking down fugitive dust once it is released from the operation is considered the use of "Water Sprays."
4. Total or partial enclosures, or wind breaks/guards to reduce or eliminate particulate emissions or causes of such emissions.
5. Best operating practices includes design features and operating practices to reduce or eliminate the causes of fugitive dust emissions.
6. Dust collection systems which collect and control particulate emissions from partial or totally enclosed operations with the use of an add-on AQCS.

The most stringent control technology is the total enclosure of the emissions unit or activity which is generating the particulate matter. However, in some cases this approach is not practical based on either economic or safety reasons and the available control strategies must be implemented.

## APPENDIX BD BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

For dry materials handling activities which are totally or partially enclosed and require industrial ventilation (Dust Collection System) for health or safety reasons and which accordingly are vented to the outside, the use of an add-on AQCS is typically required as BACT. The most stringent control technology applied to dust collection systems is the use of a fabric filter. The most stringent emission limitation associated with materials handling operation AQCS's is a grain loading of 0.01 gr/dscf and a 5% opacity standard. For the underground transfer points associated with the Railcar Rotary Dumper's underground transfer points, a dust collection system and a fabric filter are employed to control PM/PM<sub>10</sub> emissions and comply with the 5% opacity standard.

For the materials handling and storage operations (Emissions Unit 23) which do not require ventilation for health or safety reasons, the applicant has proposed the use of control strategies 1-5 listed above, or combinations thereof. Implementation of the control strategies will ensure that the 5% and 10% opacity limitations are met from the operations.

For the transfer towers, SJRCT enclosed storage pile operations and conveyors, the applicant has proposed the use of conditioned materials, wet suppression, best operating practices and covers, as needed, to ensure that visible emissions do not exceed 5 percent opacity from the operations.

For the Ship Unloading Operations, the Railcar Rotary Dumper Building, the fuel transfer building, and the existing SJRPP storage pile, the applicant has proposed the use of conditioned materials and water sprays, as needed, in addition to the partial enclosures of the shiphold, the Railcar Rotary Dumper, the fuel transfer building and the ship unloading hoppers, to ensure that visible emissions do not exceed 10 percent opacity from the operations.

For the Ship Unloader Conveyors (CT-1 & D-1), the applicant has proposed the use of conditioned materials and wind screens to ensure that visible emissions do not exceed 10 percent opacity from the operations.

Information provided by the applicant indicated the economic impact associated with the use of additional dust collection systems equipped with a fabric filter would require an additional capital investment of about \$83,600 and annual operating costs of about \$37,900 per system. The economics were based on the individual transfer operations with less than 2 transfer points and transfer rates of 1,500 TPH and 2.42 million TPY of coal and petroleum coke, and initial particulate matter emissions of 3.9 TPY. With potential reductions of 99 percent over the proposed controls, the use of a dust collection system and fabric filter resulted in an estimated incremental cost of about \$9,770 per ton. The \$9,770/ton incremental cost is excessive by comparison with the Department's Indiantown BACT Determination which reported costs of \$9,244/ton as excessive. Therefore, BACT for the materials handling operations at SJRPP and SJRCT supporting transfer operations is the use of conditioned materials, partial enclosures, water sprays, and/or wet suppression, as needed.

### DEPARTMENT BACT DETERMINATION

Following are the BACT limits determined for the materials handling operations at SJRPP and SJRCT supporting the NGS Repowering Project. The emission limits and the applicable averaging times, will be identified in a new Table 6 of the amended SJRPP PSD Permit.

Materials Handling & Storage Operations - Particulate Matter

Handling & Storage Operation	Control Technologies	Proposed BACT Limits
Ship Unloading Operations		
Shiphold	1, 4 & 6	10% Opacity
Receiving Hoppers	1, 3, 4 & 6	10% Opacity
Receiving Conveyors	1, 4 & 6	10% Opacity
Conveyors	1, 4 & 6	5% Opacity
Transfer Towers	1, 2, 4 & 6	5% Opacity
Stackers/Reclaimers		
SJRCT Enclosed Storage Pile	1, 3, 4 & 6	5% Opacity
SJRPP Existing Storage Pile	1, 3 & 6	10% Opacity
Storage Piles		
SJRCT Enclosed Storage Pile	1, 3, 4 & 6	5% Opacity
SJRPP Existing Storage Pile	1, 3 & 6	10% Opacity

## APPENDIX BD BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)

### Materials Handling & Storage Operations - Particulate Matter

Handling & Storage Operation	Control Technologies	Proposed BACT Limits
Rotary/Railcar Dumper		
Building Fugitives	1, 3, 4 & 6	10% Opacity
Fuel Transfer Building	1, 3, 4 & 6	10% Opacity
Underground Transfer Points	1, 3, 4, & 5	5% Opacity
Control Strategies:		
<ol style="list-style-type: none"> <li>1. Conditioned Materials</li> <li>2. Wet Suppression, as needed</li> <li>3. Water Sprays, as needed</li> <li>4. Enclosures (Total, Partial, Covers, &amp; Wind Screens)</li> <li>5. Dust Collection System - AQCS</li> <li>6. Best Operating Practices</li> </ol>		

### RATIONALE FOR DEPARTMENT'S DETERMINATION

- Visible emissions of 10 percent (%) or less from the ship unloading operations (Shiphold & Receiving Hopper), the ship unloading conveyors, the fuel transfer building, and the existing SJRPP storage pile are as stringent as or more stringent than other BACT determinations made by the Department for materials handling operations. The handling of conditioned materials, the use of partial enclosures and wind screens, and best operating practices are the most stringent control technologies available and therefore constitute BACT.
- A 5% opacity standard from the transfer points, covered conveyors, and enclosed storage pile is as stringent as or more stringent than other BACT determinations made by the Department for materials handling operations. The handling of conditioned materials, partial enclosures, covers, wet suppression and best operating practices are BACT.
- Visible emissions of 10 % and 5% opacity from the Railcar Rotary Dumper building and dust collection system, respectively, are as stringent as or more stringent than the NSPS requirements of 40 CFR Part 60, Subpart Y and other BACT determinations. The use of enclosures and water sprays for fugitive controls from the building and the dust collection system and a fabric filter for the transfer points represent the most stringent control technology available and therefore constitute BACT.
- For the individual transfer points, BACT for particulate matter (PM/PM<sub>10</sub>) was determined to be the use of conditioned materials, partial enclosures, and wet suppression, as needed. The use of dust collection systems equipped with fabric filters to further control particulate matter (PM/PM<sub>10</sub>) emissions was evaluated by the applicant based on the US. Environmental Protection Agency's Cost Control Manual and additional information from a baghouse vendor. Total capital costs of \$83,600, annualized costs of \$37,900 per year, and incremental costs of about \$9,700 per ton to control particulate matter emissions were estimated for each transfer point. The \$9,770/ton incremental cost is excessive in comparison with the Department's Indiantown BACT Determination which found costs of \$9,244/ton as excessive.

### COMPLIANCE PROCEDURES

For the existing materials handling and storage operations, the compliance procedures are addressed in the amended PSD Permit. For the proposed new materials handling and storage operations the compliance procedures are addressed below.

#### Materials Handling and Storage Operations

Emissions Unit/Activity	EPA Method(s)	Duration of VE Test	Frequency	Material
New Shiphold Operations (EU 23c)	9	30 min	I only	C or PC
New Ship Unloader Hoppers & Spillage Conveyors (EU23d)	9	3 hr	I only	C & LS

**DRAFT**

July xx, 1999

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Walter Bussells  
Managing Director and CEO  
JEA  
21 West Church Street  
Jacksonville, FL 32202

Re: Permit Amendment--Materials Handling Operations  
St. Johns River Power Park; Duval County  
PSD Permit No. PSD-FL-010(C)

Dear Mr. Bussells:

The Department hereby amends the specific conditions related to materials handling operations in the subject Final Determination (dated March 12, 1982) pursuant to 40 CFR 52.21--Prevention of Significant Deterioration (PSD Permit). The PSD Permit, previously amended on October 28, 1986 and on October 11, 1996, is further amended as follows:

Condition 3 FROM: First Paragraph: no change.

Second Paragraph: Opacity tests shall be performed for emission points three (3) through nineteen (19) of revised Table 6 for compliance purposes. If the opacity limits are not met for those sources that exhaust through a stack, permit compliance shall be determined on the basis of mass emission rate tests.

TO: Second Paragraph: Opacity tests shall be performed for the emission points in Part C of revised Table 6 for compliance purposes, initial only using a Method 9 test. If the opacity limits are not met for those sources that exhaust through a stack, permit compliance shall be determined on the basis of mass emission rate tests. In addition to these initial tests, a Method 9 test shall be conducted annually for the limestone silos, non-saleable ash silos, and saleable ash silos.

Conditions 3A, 3B & 3C: No change.

Tables 2 and 6: Replaced with new Table 6.

**APPENDIX BD  
BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION (BACT)**

Materials Handling and Storage Operations

Emissions Unit/Activity	EPA Method(s)	Duration of VE Test	Frequency	Material
New Conveyors (EU 23)	9	3 hr	I only	C & LS
New Transfer Towers (EU 23e)	9	3 hr	I only	C & LS
SJRCT Enclosed Storage Building (EU223k)	9	30 min	I only	C or PC
SJRPP Storage Pile - New Stacking & Reclaiming Operations (EU23k)	9	30 min	I only	C or PC
C - Coal I - Initial LS - Limestone PC - Petroleum Coke				

**DETAILS OF THE ANALYSIS MAY BE OBTAINED BY CONTACTING:**

Syed Arif, Review Engineer, New Source Review Section  
Department of Environmental Protection  
Bureau of Air Regulation  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Recommended By:

Approved By:

\_\_\_\_\_  
C. H. Fancy, P.E., Chief  
Bureau of Air Regulation

\_\_\_\_\_  
Howard L. Rhodes, Director  
Division of Air Resources Management

\_\_\_\_\_  
Date:

\_\_\_\_\_  
Date:

DRAFT

SJRPP PSD PERMIT  
PSD-FL-010(C)

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Table 6 – Part A

Emissions Unit	SO <sub>2</sub>	NO <sub>x</sub>	PM	Opacity (%)
Steam Generating Boiler No. 1 (6,144 MMBtu/hr maximum heat input)	4,669 lb/hr 0.76 lb/mmBtu (30-day rolling average)	3,686 lb/hr 0.6 lb/mmBtu	184 lb/hr 0.03 lb/mmBtu	20
Steam Generating Boiler No. 2 (6,144 MMBtu/hr maximum heat input)	4,669 lb/hr 0.76 lb/mmBtu (30-day rolling average)	3,686 lb/hr 0.6 lb/mmBtu	184 lb/hr 0.03 lb/mmBtu	20
Cooling Towers			67 lb/hr (each tower)	N/A

**DRAFT**

Mr. Walter Bussells  
JEA  
July xx, 1999  
Page 2

010. A copy of this amendment letter shall be attached to and shall become a part of Permit PSD-FL-

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION

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Howard L. Rhodes, Director  
Division Air Resources Management

**DRAFT**

SJRPP PSD PERMIT

PSD-FL-010(C)

Table 6 – Part B

Existing Materials Handling Operations	PM/PM <sub>10</sub> (lb/hr)	Opacity (%)
Railcar Rotary Dumper – Building Emissions	0.15/0.07	10
Conveyor C-3 Tunnel Ventilation – 6,400 cfm	0.32/0.02	5
Conveyor C-3 Tunnel Ventilation – 6,400 cfm	0.32/0.02	5
Conveyor C-3 Tunnel Ventilation – 21,600 cfm	0.10/0.05	5
Shiphold	0.54/0.26	10
Unloader Hopper and Spillage Collector Transfers	0.28/0.13	10
Ship Unloader Hopper, Transfer to CT-1, Spillage Conveyor	1.0/0.48	10
Transfer Station No. 1	0.04/0.02	5
Transfer Station No. 2	0.04/0.02	5
Transfer Station No. 3	0.05/0.02	5
Transfer Station No. 4	0.04/0.02	5
Transfer Station No. 5	0.04	5
Transfer Station No. 6	0.04	5
Transfer Station No. 7	0.04	5
Transfer Point 9GC-04 to 9GC-05	0.007	5
Stacker/Reclaimer (Stacker Mode)	2.29	10
Stacker	1.15	10
Reclaimer	0.43	10
Petroleum Coke Reclaimer System	0.32	10
Emergency Reclaim Hoppers – Loadout	0.29	10
Limestone Reclaim Hopper	0.14	10
Limestone Railcar Dumper	0.005	10
Limestone Loadout	0.005	10
Limestone Truck Loadout & Transfer	0.1	10
Limestone Storage Pile #1 – Existing	0.26/0.26	10
Limestone Storage Pile #2 - Fuel Yard	0.12	10
Coal Pile	0.26/0.26	10
Petroleum Coke Pile	0.71/0.71	10
Gypsum Storage Pile (Non-Commercial)	0.07	10
Fly Ash Loadouts 1A	0.06	10
Fly Ash Loadouts 1B	0.06	10
Fly Ash Loadouts 2A	0.06	10
Fly Ash Loadouts 2B	0.06	10
Bottom Ash Loadouts 1A	0.09	10
Bottom Ash Loadouts 1B	0.09	10
Bottom Ash Loadouts 2A	0.09	10
Bottom Ash Loadouts 2B	0.09	10
Gypsum Dewatering Building	0.04	5
Gypsum Storage Enclosure	0.008	5
Gypsum Truck Loadout	0.28	5
Solid Waste Disposal Area	0.31	10
Unpaved Road, By-Product Transport	0.58	10
Rotary Railcar Unloader, Fuel Transfer Points (DC-1)	0.17/0.08	5
Fuel Transfer Building	0.65/0.31	10
Fuel Handling Building (DC-3)	0.24	5
Unit #1 Fuel Storage Bins (DC-4)	0.009	5
Unit #2 Fuel Storage Bins (DC-5)	0.009	5
Railcar Unloader, Limestone Transfer Points (LDC-1)	0.02	5
Limestone Loadout Facility (LDC-2)	0.006	5



**DRAFT**SJRPP PSD PERMIT  
PSD-FL-010(C)

Table 6 – Part C

New Materials Handling Operations	PM/PM <sub>10</sub> (lb/hr)	Opacity (%)
Hopper Belt, Spillage Conveyors, and DC-1 Transfer Points - New Ship Unloader	0.13/0.06	10
Shiphold – New	0.54/0.26	10
Unloader Hopper and Spillage Collector Transfers - New Ship Unloader	0.28/0.13	10
Enclosed Pile – Vehicle Activities	0.04/0.01	5
Enclosed Storage Pile - 3 Transfer Points	0.13/0.06	5
Transfer Tower D-1	0.04/0.02	5
Transfer Tower D-2	0.04/0.02	5
New Blend Hopper	0.12/0.06	5
New Transfer Tower #1-NGS	0.09/0.04	5
New Transfer Tower #2-NGS	0.09/0.04	5
New Stacker	0.66/0.31	10
NGS Reclaimer	0.52/0.24	10
SJRPP Reclaimer	0.52/0.24	10
New Reclaim Transfer Tower	0.04/0.02	5
New Transfer Tower #3-NGS	0.08/0.04	5
New Transfer Tower #4-NGS	0.06/0.03	5

## Notes:

1. PM<sub>10</sub> limits apply only to new and modified emission points. If only one standard is listed, the standard applies to PM emissions.
2. The total coal and petroleum coke throughput rate shall not exceed 7.62 million tons per year and the total limestone throughput rate shall not exceed 2.05 million tons per year for SJRPP and Northside Generating Station combined.

Florida Department of  
**Environmental Protection**

**Memorandum**

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TO: Clair Fancy

THRU: Al Linero *al*

FROM: Syed Arif *Syed Arif*

DATE: June 7, 1999

SUBJECT: JEA St. Johns River Power Park  
PSD-FL-010(C) Material Handling Revisions

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Attached is the Public Notice and draft permit revision to authorize increased material handling throughput rates (for coal, petroleum coke, and limestone) as well as some changes in the materials handling operations at the above referenced facility. The changes are based on updated information and to support the installation of two new coal- and petroleum coke-fired circulating fluidized bed boilers to be located at the adjacent Northside Generating Station in Duval County.

A Best Available Control Technology determination was required for particulate matter pursuant to Rule 62-212.400, F.A.C. Particulate matter (TSP/PM<sub>10</sub>) emissions from the material handling operations will be controlled by use of conditioned materials, wet suppression technologies and water sprays, full and partial enclosures, and fabric filters (baghouses), as appropriate.

I recommend your approval and signature.

SA/a

Attachments