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BUREAU OF AIR REGULATION

**APPLICATION FOR MINOR SOURCE
AIR CONSTRUCTION PERMIT FOR THE ADDITION
FOR SELECTIVE CATALYTIC REDUCTION
AT ST. JOHNS RIVER POWER PARK
*JACKSONVILLE, FLORIDA***

Prepared For:

**St. Johns River Power Park
11201 New Berlin Road
Jacksonville, Florida 32226**

Prepared By:

**Golder Associates Inc.
6241 NW 23rd Street, Suite 500
Gainesville, Florida 32653-1500**

October 2006

043-7580-0200

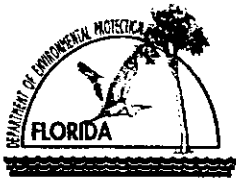
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PART I



Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air permit. Also use this form to apply for an air construction permit:

- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or
- Where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or
- Where the applicant proposes to establish, revise, or renew a plantwide applicability limit (PAL).

Air Operation Permit – Use this form to apply for:

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

Air Construction Permit & Title V Air Operation Permit (Concurrent Processing Option) – Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: JEA	
2. Site Name: St. Johns River Power Park (SJRPP)	
3. Facility Identification Number: 0310045	
4. Facility Location...: Street Address or Other Locator: 11201 New Berlin Road City: Jacksonville County: FL Zip Code: 32226	
5. Relocatable Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Existing Title V Permitted Facility? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Application Contact

1. Application Contact Name: John A. Worley, SJRPP, Superintendent	
2. Application Contact Mailing Address... Organization/Firm: SJRPP Street Address: 11201 New Berlin Road City: Jacksonville State: FL Zip Code: 32226	
3. Application Contact Telephone Numbers... Telephone: (904) 665-8729 ext. Fax: (904) 665-8719	
4. Application Contact Email Address: worlja@jea.com	

Application Processing Information (DEP Use)

1. Date of Receipt of Application: 10/12/06	3. PSD Number (if applicable):
2. Project Number(s): 0310045-017-AC	4. Siting Number (if applicable):

APPLICATION INFORMATION

Purpose of Application

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

Air Construction Permit

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

Air Operation Permit

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

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

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

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

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


Application Comment

An air construction permit application is being requested to install selective catalytic reduction (SCR) to reduce emissions of NO_x as required by FDEP Rules implementing EPA's Clean Air Interstate Rule (CAIR). The authorization for the increase is being sought as a minor source increase that will not trigger review under the FDEP Prevention of Significant Deterioration rules in 62-212.400 F.A.C. See Part II.

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name : Michael J. Brost, V.P., Electric System
2. Owner/Authorized Representative Mailing Address... Organization/Firm: JEA Street Address: 21 West Church Street City: Jacksonville State: FL Zip Code: 32202
3. Owner/Authorized Representative Telephone Numbers... Telephone: (904) 665-6537 ext. Fax: () -
4. Owner/Authorized Representative Email Address: brosmj@jea.com
5. Owner/Authorized Representative Statement: <i>I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.</i>  Signature <u>10-13-06</u> Date

APPLICATION INFORMATION

Application Responsible Official Certification

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

1. Application Responsible Official Name:
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable): <input type="checkbox"/> For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C. <input type="checkbox"/> For a partnership or sole proprietorship, a general partner or the proprietor, respectively. <input type="checkbox"/> For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official. <input type="checkbox"/> The designated representative at an Acid Rain source.
3. Application Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
4. Application Responsible Official Telephone Numbers... Telephone: () - ext. Fax: () -
5. Application Responsible Official Email Address:
6. Application Responsible Official Certification: <i>I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.</i> Signature _____ Date _____

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: Kennard F. Kosky Registration Number: 14996
2. Professional Engineer Mailing Address... Organization/Firm: Golder Associates Inc.** Street Address: 6241 NW 23rd Street, Suite 500 City: Gainesville State: FL Zip Code: 32653
3. Professional Engineer Telephone Numbers... Telephone: (352) 336-5600 ext.516 Fax: (352) 336-6603
4. Professional Engineer Email Address: kkosky@golder.com
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> <i>(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/>, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/>, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> <i>(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i> <i>Kennard F. Kosky</i> Signature _____ Date <u>10/10/06</u> (seal) <i>JK</i>

* Attach any exception to certification statement.
** Board of Professional Engineers Certificate of Authorization #00001670

APPLICATION INFORMATION

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone 17 East (km) 446.90 North (km) 3359.15		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) 30/21/52 Longitude (DD/MM/SS) 81/37/25	
3. Governmental Facility Code: 0	4. Facility Status Code: A	5. Facility Major Group SIC Code: 49	6. Facility SIC(s): 4911
7. Facility Comment : The facility includes the JEA Northside Generating Station and SJRPP.			

Facility Contact

1. Facility Contact Name: John A. Worley, Superintendent
2. Facility Contact Mailing Address... Organization/Firm: SJRPP Street Address: 11201 New Berlin Road City: Jacksonville State: FL Zip Code: 32226
3. Facility Contact Telephone Numbers: Telephone: (904) 665-8729 ext. Fax: (904) 665-8719
4. Facility Contact Email Address: worlja@jea.com

Facility Primary Responsible Official

Complete if an "application responsible official" is identified in Section I. that is not the facility "primary responsible official."

1. Facility Primary Responsible Official Name:
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: () - ext. Fax: () -
4. Facility Primary Responsible Official Email Address:

FACILITY INFORMATION

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a "major source" and a "synthetic minor source."

1. <input type="checkbox"/> Small Business Stationary Source	<input type="checkbox"/> Unknown
2. <input type="checkbox"/> Synthetic Non-Title V Source	
3. <input checked="" type="checkbox"/> Title V Source	
4. <input checked="" type="checkbox"/> Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. <input type="checkbox"/> Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. <input type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)	
7. <input type="checkbox"/> Synthetic Minor Source of HAPs	
8. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. <input checked="" type="checkbox"/> One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. <input type="checkbox"/> One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. <input type="checkbox"/> Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment: SJRPP Units 1 and 2 are subject to 40 CFR Part 60 Subpart Da	

FACILITY INFORMATION

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
PM/PM ₁₀	A	N
NO _x	A	N
SAM	A	N

FACILITY INFORMATION

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>6/20/2003</u>
2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>6/20/2003</u>
3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>6/20/2003</u>

Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable (existing permitted facility)
2. Description of Proposed Construction or Modification: <input checked="" type="checkbox"/> Attached, Document ID: <u>Part II</u>
3. Rule Applicability Analysis: <input checked="" type="checkbox"/> Attached, Document ID: <u>Part II</u>
4. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable (no exempt units at facility)
5. Fugitive Emissions Identification (Rule 62-212.400(2), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
6. Preconstruction Air Quality Monitoring and Analysis (Rule 62-212.400(5)(f), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
7. Ambient Impact Analysis (Rule 62-212.400(5)(d), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
8. Air Quality Impact since 1977 (Rule 62-212.400(5)(h)5., F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
9. Additional Impact Analyses (Rules 62-212.400(5)(e)1. and 62-212.500(4)(e), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

FACILITY INFORMATION

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.):
 Attached, Document ID: _____ Not Applicable (no exempt units at facility)

Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities (Required for initial/renewal applications only):
 Attached, Document ID: _____ Not Applicable (revision application)
2. Identification of Applicable Requirements (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought):
 Attached, Document ID: _____
 Not Applicable (revision application with no change in applicable requirements)
3. Compliance Report and Plan (Required for all initial/revision/renewal applications):
 Attached, Document ID: _____
Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.
4. List of Equipment/Activities Regulated under Title VI (If applicable, required for initial/renewal applications only):
 Attached, Document ID: _____
 Equipment/Activities On site but Not Required to be Individually Listed
 Not Applicable
5. Verification of Risk Management Plan Submission to EPA (If applicable, required for initial/renewal applications only) :
 Attached, Document ID: _____ Not Applicable
6. Requested Changes to Current Title V Air Operation Permit:
 Attached, Document ID: _____ Not Applicable

Additional Requirements Comment

See Part II.

EMISSIONS UNIT INFORMATION

Section [1] of [1]
SJRPP Units 1 and 2

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application - Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION

Section [1] of [1]
SJRPP Units 1 and 2

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)
- The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.
 - The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)
- This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).
 - This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.
 - This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section:
Units 1 and 2

3. Emissions Unit Identification Number: 016 and 017

4. Emissions Unit Status Code: A	5. Commence Construction Date:	6. Initial Startup Date: 12/86	7. Emissions Unit Major Group SIC Code: 49	8. Acid Rain Unit? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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9. Package Unit:
Manufacturer: _____ Model Number: _____

10. Generator Nameplate Rating: **679.6 MW**

11. Emissions Unit Comment:

Initial Startup Date for Unit 1 as the commercial operation date. Unit 2 began commercial operation in March 1988. Generator Nameplate Rating is nominal.

EMISSIONS UNIT INFORMATION

Section [1] of [1]
SJRPP Units 1 and 2

Emissions Unit Control Equipment

1. Control Equipment/Method(s) Description:

Existing low NO_x Burners (LNB), Electrostatic Precipitators (ESP) and Flue Gas Desulfurization (FGD).
Proposed: selective catalytic reduction with ammonia injection.

2. Control Device or Method Code(s): 025, 010, 039, and 139, 032

EMISSIONS UNIT INFORMATION

Section [1] of [1]
 SJRPP Units 1 and 2

C. EMISSION POINT (STACK/VENT) INFORMATION
 (Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: NA		2. Emission Point Type Code: V	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code:	6. Stack Height: feet	7. Exit Diameter: feet	
8. Exit Temperature: °F	9. Actual Volumetric Flow Rate: acfm	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: <p style="text-align: center;">There are no changes in the emission point information as a result of this application.</p>			

EMISSIONS UNIT INFORMATION

Section [1] of [1]
 SJRPP Units 1 and 2

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type): Co-firing up to 30 percent petroleum coke with coal		
2. Source Classification Code (SCC): 10100202		3. SCC Units: tons
4. Maximum Hourly Rate: 238	5. Maximum Annual Rate: 2,084,486.4	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 2.65	8. Maximum % Ash: 9	9. Million Btu per SCC Unit: 25.82
10. Segment Comment: Based on 30% petroleum coke and 70% coal by weight at 6,144 MMBtu/hr maximum heat input (34.39% petroleum and 65.61% coal on a heat input basis; 12,910 Btu/lb). Sulfur content based on 1.2% sulfur coal and 6% sulfur petroleum coke. Maximum rates are for each unit. NOTE: SCC code for petroleum coke is 10100801.		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type): Coal		
2. Source Classification Code (SCC): 10100202		3. SCC Units: tons
4. Maximum Hourly Rate: 245.7	5. Maximum Annual Rate: 2,152,857.4	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: Variable	8. Maximum % Ash: 9	9. Million Btu per SCC Unit: 25
10. Segment Comment: Maximum rates are for each unit.		

EMISSIONS UNIT INFORMATION

Section [1] of [1]
 SJRPP Units 1 and 2

POLLUTANT DETAIL INFORMATION

Page [1] of [2]
 Particulate Matter

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: PM		2. Total Percent Efficiency of Control: 99+%	
3. Potential Emissions: 184.32 lb/hour 321.7 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.03 lb/MMBtu Reference: Permit 0310045-011-AV. Condition D6		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input checked="" type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Potential Emissions = 0.03 lb/MMBtu x 6,144 MMBtu/hr = 184.32			
11. Pollutant Potential/Estimated Fugitive Emissions Comment: Annual emissions based on actual emissions for 2002-2001. See Part II			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

Section [1] of [1]
 SJRPP Units 1 and 2

Page [1] of [2]
 Particulate Matter

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.03 lb/MMBtu	4. Equivalent Allowable Emissions: 184.32 lb/hour 321.7 tons/year
5. Method of Compliance: EPA Method 5B; 40 CFR 52.21(b)21(v) and (b)33; See Part II	
6. Allowable Emissions Comment (Description of Operating Method): No increase in representative actual annual emissions plus the PSD significant emission rate will occur as a result of the addition of SCR.	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

Section [1] of [1]
 SJRPP Units 1 and 2

Page [2] of [2]
 Sulfuric Acid Mist

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL/ESTIMATED FUGITIVE EMISSIONS**

(Optional for unregulated emissions units.)

Potential/Estimated Fugitive Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: SAM		2. Total Percent Efficiency of Control: 30+%	
3. Potential Emissions: lb/hour 1,316.9 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: Reference:		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input checked="" type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:			
11. Pollutant Potential/Estimated Fugitive Emissions Comment: Annual emissions based on actual emissions for 2002-2001. See Part II			

EMISSIONS UNIT INFORMATION

Section [1] of [1]
 SJRPP Units 1 and 2

POLLUTANT DETAIL INFORMATION

Page [2] of [2]
 Sulfuric Acid Mist

**F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION -
 ALLOWABLE EMISSIONS**

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 1,316.9 tons/yr	4. Equivalent Allowable Emissions: lb/hour 1,316.9 tons/year
5. Method of Compliance: Annual Operating Reports; See Part II	
6. Allowable Emissions Comment (Description of Operating Method): No increase in representative actual annual emissions plus the PSD significant emission rate will occur as a result of the addition of SCR.	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions ____ of ____

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

Section [1] of [1]
SJRPP Units 1 and 2

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 2

1. Visible Emissions Subtype: VE20	2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: 20 % Exceptional Conditions: 27 % Maximum Period of Excess Opacity Allowed: 6 min/hour	
4. Method of Compliance: COMS	
5. Visible Emissions Comment: 40 CFR 60.42a(b)	

Visible Emissions Limitation: Visible Emissions Limitation 2 of 1

1. Visible Emissions Subtype: VE99	2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: 100 % Maximum Period of Excess Opacity Allowed: 60 min/hour	
4. Method of Compliance: COMS	
5. Visible Emissions Comment: Excess emissions resulting from startup, shutdown, and malfunction for no more than 2 hours in any 24 hour period. Rule 62-210.700(1)	

EMISSIONS UNIT INFORMATION

Section [1] of [1]
SJRPP Units 1 and 2

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 1 of 1

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment: Units 1 and 2 have continuous opacity monitors (COMS) and continuous emissions monitors (CEMS) for sulfur dioxide and nitrogen oxides. There will be no changes in the existing COMS and CEMS as a result of the addition of SCR systems.	

Continuous Monitoring System: Continuous Monitor ____ of ____

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

EMISSIONS UNIT INFORMATION

Section [1] of [1]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

<p>1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date 6/20/2003</p>
<p>2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date 6/20/2003</p>
<p>3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date 6/20/2003</p>
<p>4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____</p> <p><input checked="" type="checkbox"/> Not Applicable (construction application)</p>
<p>5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____</p> <p><input checked="" type="checkbox"/> Not Applicable</p>
<p>6. Compliance Demonstration Reports/Records</p> <p><input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____</p> <p><input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____</p> <p><input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____</p> <p><input checked="" type="checkbox"/> Not Applicable</p> <p>Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.</p>
<p>7. Other Information Required by Rule or Statute</p> <p><input checked="" type="checkbox"/> Attached, Document ID: Part II <input type="checkbox"/> Not Applicable</p>

EMISSIONS UNIT INFORMATION

Section [1] of [1]

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(6) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(5)(h)6., F.A.C., and Rule 62-212.500(4)(f), F.A.C.) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
2. Compliance Assurance Monitoring <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
3. Alternative Methods of Operation <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
4. Alternative Modes of Operation (Emissions Trading) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
5. Acid Rain Part Application <input type="checkbox"/> Certificate of Representation (EPA Form No. 7610-1) <input type="checkbox"/> Copy Attached, Document ID: _____ <input type="checkbox"/> Acid Rain Part (Form No. 62-210.900(1)(a)) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> New Unit Exemption (Form No. 62-210.900(1)(a)2.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date: _____ <input type="checkbox"/> Not Applicable

EMISSIONS UNIT INFORMATION

Section [1] of [1]

Additional Requirements Comment

See Part II.

PART II

TABLE OF CONTENTS

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1.0 INTRODUCTION

St. Johns River Power Park (SJRPP) is seeking authorization from the Florida Department of Environmental Protection (FDEP) to install selective catalytic reduction (SCR) in Units 1 and 2 to meet the requirements of EPA's Clean Air Interstate Rule (CAIR) as implemented by FDEP in Rule 62-296.470 Florida Administrative Code (F.A.C.). In addition, the addition of SCR will have the co-benefits of reducing emissions of mercury to meet EPA's Clean Air Mercury Rule (CAMR) implemented by FDEP in Rule 62-296.480 F.A.C. The primary purpose of the project will be to decrease nitrogen oxides (NO_x) emissions from Units 1 and 2 to meet the annual and ozone season NO_x CAIR allocations. While the addition of SCR will substantially decrease emissions of NO_x, there is the potential for collateral increases in emissions of sulfuric acid mist (SAM) and particulate matter (PM). The potential increase of SAM emissions is a result of the oxidation of sulfur dioxide (SO₂) to sulfur trioxide (SO₃) that is emitted as SAM after the flue gas desulfurization (FGD) system. Potential increases in SAM emissions will be minimized through the injection of ammonia to react with SO₃ prior to the electrostatic precipitator (ESP). The reactants, primarily ammonium sulfate, will be collected in the ESP. The potential increase in PM from the reaction of ammonia and SO₃ will be collected in the ESP and FGD system. There will be no emissions over the PSD significant emission rates from the installation of SCR. There are no other planned changes in Units 1 and 2.

SJRPP is located at 11201 New Berlin Road, Jacksonville, Duval County, Florida, and is adjacent to the JEA Northside Generating Station. Both facilities are covered under one Title V Permit [Final Title V Permit No. 0310045-011-AV].

Golder Associates Inc. (Golder) was contracted to prepare the necessary air permit application seeking authorization to install SCR on Units 1 and 2. The air permit application consists of the appropriate applications form [Part I; DEP Form 62-210.900(1)], a technical description of the project (Part II Section 2.0), and rule applicability for the project (Part II, Section 3.0).

2.0 PROJECT DESCRIPTION

Selective Catalytic Reduction (SCR) System will be designed for operation over load ranges of 50 percent of full load (approximately 300 MW) and higher. The minimum temperature required for the injected ammonia vapor to react with the NO_x in the SCR reactor is approximately 630 degrees Fahrenheit ($^{\circ}\text{F}$) and will be finalized in accordance with catalyst manufacturer's recommendations. The minimum temperature corresponds to the lowest expected temperature at low load.

Selective Catalytic Reduction is a process that uses catalyst to promote the conversion of nitrogen oxides (NO_x) to nitrogen and water in the flue gas. This conversion occurs between the boiler economizer and the air heaters in a specially designed ductwork section, called the SCR Reactor that contains the catalyst. Ammonia vapor, mixed with dilution air, is injected into the flue gas upstream of the catalyst and is thoroughly mixed with the flue gas prior to its admittance to the catalyst. As the flue gas passes over the catalyst, the nitrogen monoxide (NO) and nitrogen dioxide (NO_2) combine with the ammonia (NH_3) to form nitrogen (N_2) and water (H_2O).

Each unit will have two SCR reactors. Each SCR reactor will consist of a steel reactor box designed to support the SCR catalyst modules and to properly distribute flue gas through the catalyst layers. Flue gas flow will be vertically downward through the catalyst. Flue gas ductwork will be provided from the economizer outlet to the air heater inlet including an SCR bypass duct and associated dampers. The SCR inlet duct will include a large particle ash (LPA) screen, static flue gas mixer, and ammonia injection grid. Ash hoppers will be located below the inlet diverter damper and LPA screen.

Figure 2-1 presents a schematic diagram of the SCR system showing the inlet duct from the economizer, the ammonia injection grid and SCR catalyst. Bypass dampers are installed primarily for startup and maintenance. A photograph of the existing SJRPP boilers showing the air heaters and ESP is shown in Figure 2-2. The physical appearance of the SCR systems is illustrated in Figures 2-3 and 2-4.

Ammonia is introduced in the SCR as a mixture of anhydrous ammonia and air. The air/ammonia vapor mixture is produced in ammonia vaporization equipment and supplied to the ammonia injection grid header. The air/ammonia vapor mixture is distributed across the entire duct cross section using the ammonia injection grid (AIG). The AIG consists of a series of stacked layers of parallel pipes, each with nozzles that inject the mixture into a particular section of the SCR reactor inlet duct. The

pipes will extend the entire width of the ductwork and contain a sufficient number of nozzles with orifices sized for the particular ammonia distribution requirement. If necessary, as determined by the physical flow model test of the SCR reactor and associated ductwork, a static mixer may be required upstream of the ammonia injection grid to help reduce the stratification of temperature and chemical composition of the flue gas flow out of the economizers.

Anhydrous ammonia will be delivered to the site by tank truck and unloaded into one of two bulk storage tanks. In addition, provisions for delivery by rail will be provided. Liquid anhydrous ammonia will be transferred from the storage tanks to ammonia vaporizers. After vaporization, the ammonia gas will be mixed with ambient air and distributed into the flue gas through ammonia injection grids located upstream of the reactor.

The catalyst used for NO_x reduction primarily consists of a vanadium and titanium mixture. However, the final catalyst composition can consist of many active metals and support materials. Titanium dioxide (TiO₂) is used as the base material that disperses and supports vanadium pentoxide (V₂O₅), which is the active catalyst material. Vanadium pentoxide is widely used in the SCR industry due to its resistance to sulfur poisoning. The vanadium content controls the reactivity of the catalyst, but also catalyzes the oxidation of SO₂ to SO₃. For moderate to high sulfur coal applications, it is necessary to minimize the vanadium content to reduce SO₂ oxidation. Additionally, the vanadium already present in the petcoke fuel will deposit on the catalyst, potentially increasing the oxidation of SO₂ to SO₃. Tungsten oxide also provides thermal and mechanical stability to the catalyst. The concentrations of vanadium pentoxide, titanium dioxide, and tungsten oxide will be customized to meet the specific requirements for Units 1 and 2 SCR system installations. The catalyst will be made up of several catalyst modules that will be loaded into the SCR reactor.

Each SCR reactor will include soot blowers and sonic horns to keep the catalyst free of fly ash buildup. Provisions for catalyst loading into the reactors will be included. The SCR reactors will be designed for three initial layers of catalyst and a spare level for a future additional layer of catalyst.

The high level of arsenic combined with the relatively low amount of calcium in the domestic coal could result in the potential for gaseous arsenic to poison the catalyst. To minimize potential catalyst poisoning, the units will be equipped with limestone addition in the combustion process. Limestone will be fed on to the coal conveyor when transporting fuel to the silos. A limestone system to receive, store, and feed limestone to the coal conveyors will be provided.

The conceptual SCR system characteristics are listed below:

- Baseline NO_x Loading: 0.40 lb/MMBtu
- Target NO_x Emissions: 0.06 lb/MMBtu
- Ammonia Slip: 2 ppmvd at 3% O₂
- SO₂ to SO₃ Conversion: 2.5%
- Catalyst Type: High Dust
- Catalyst Configuration: Vertical
- Number of Reactors Per Unit: 2
- Number of Initial Catalyst Layers (Per Reactor): 3
- Number of Spare Layers (Per Reactor): 1
- Modules Per Layer (Per Reactor): 14 x 6
- Reactor Dimensions (Inside x Inside) 46' 10" x 40' 3"
- Full Load Gas Flow: 3,292,190 acfm
- Superficial Velocity Through Catalyst: 15 to 20 ft/sec
- Pressure Drop Through Box and Ductwork: 10.0 inches (w.c.)
- Ammonia Consumption @ Design Conditions: 839 lb/hr
- Reagent Storage Required: 2 x 77,100 gallons

An ammonia inject grid will be designed and located within the duct work leading to the ESP. The system will be designed to remove up to 90 percent of the SAM after the air heater.

3.0 RULE APPLICABILITY

Under Federal and State of Florida PSD review requirements, all major new or modified sources of air pollutants regulated under the Clean Air Act (CAA) must be reviewed and a pre-construction permit issued. EPA has approved Florida's State Implementation Plan (SIP), which contains PSD regulations. Therefore, PSD approval authority has been granted to the FDEP. For projects approved under the Florida PPSA, the PSD program is delegated.

A "major facility" is defined as any 1 of 28 named source categories that have the potential to emit 100 tons per year (TPY) or more, or any other stationary facility that has the potential to emit 250 TPY or more of any pollutant regulated under CAA. "Potential to emit" means the capability, at maximum design capacity, to emit a pollutant after the application of control equipment. Once a new source is determined to be a "major facility" for a particular pollutant, any pollutant emitted in amounts greater than the PSD significant emission rates is subject to PSD review. For an existing source for which a modification is proposed, the modification is subject to PSD review if the net increase in emissions due to the modification is greater than the PSD significant emission rates.

PSD review is used to determine whether significant air quality deterioration will result from the new or modified facility. Federal PSD requirements are contained in 40 Code of Federal Regulations (CFR) 52.21, *Prevention of Significant Deterioration of Air Quality*. The State of Florida has adopted the federal PSD regulations by reference [Rule 62-212.400, Federal Administrative Code (F.A.C.)]. Major facilities and major modifications are required to undergo the following analysis related to PSD for each pollutant emitted in significant amounts:

- Control technology review;
- Source impact analysis;
- Air quality analysis (monitoring);
- Source information; and
- Additional impact analyses.

SJRPP is part of the JEA Northside Generating Station/SJRPP complex, which is a major facility under FDEP Rules. Because there is a physical change with the addition of SCR and the pollution control exemption in the PSD rules have been vacated, the project is a potential modification as defined in the FDEP Rules in 62-210.200 and under the PSD rules in 62-212.400, F.A.C. PSD review would be required for the project if there were a significant net increase in emissions. The

comparison is made based on the projected future actual emissions and the baseline actual emissions. The baseline actual emissions for a fossil fuel fired steam electric generating unit are the emissions over a consecutive 24-month period, 5 years immediately preceding the date that a complete application is submitted. The use of different consecutive 24-month periods for each pollutant are allowed. For an existing facility for which a modification is proposed, the modification is subject to PSD review if the net increase in emissions due to the modification is greater than the PSD significant emission rates. The net emissions increase is determined using the baseline-to-projected actual test. In this comparison, if the projected actual emissions minus the baseline actual emissions equal or exceed the PSD significant emission rates, then PSD review would apply.

Presented in Table 2-1 is the heat input reported in the Annual Operating Report (AOR) for the period 2001 through 2005. This table also presents the capacity factor for Units 1 and 2, as well as the average for both units during the same year and the period 2001 through 2005. These data demonstrate the consistent operation of Units 1 and 2. During the period 2001 through 2005 the average capacity factor based on heat input for Units 1 and 2 ranged from 79.4 percent in 2005 to 89.8 percent in 2002. The average capacity factors for the years 2005, 2004, 2003, 2002, and 2001 were 79.4, 84.5, 88.1, 89.8 and 89.0 percent, respectively. The average two-year capacity factors based on heat input were 81.9, 86.3 88.9, and 89.4 percent for the periods 2005-2004, 2004-2003, 2003-2002, and 2002-2001, respectively. The average 5-year capacity factor was 86.2 percent.

Table 2-2 presents the annual emissions reported in the AORs for the years 2001 through 2005 for PM and SAM. Table 2-3 presents the average calendar year emissions for each consecutive 2-year period from 2001 through 2005 based on the average calendar year emissions in Table 2-2. The use of calendar year dates from the AOR is representative of historic normal operation. The annual average emissions for each consecutive 2-year period are consistent with the definition of baseline actual emissions for fossil fuel fired steam electric generating units. The highest two consecutive two years for emissions in Tables 2-3 for the period 2001-2002 are proposed as the basis for future comparisons. This 2-year period also has the highest heat input. It should be noted, however, that both the heat input and emissions for the consecutive two-year periods are similar for all pollutants.

SJRPP Units 1 and 2 are normally operated as base-load units, but, for any given year, operation can vary slightly due to electric demand and operational variability due to outages and maintenance. Due to this slight variability, two consecutive years out of the last 5 years are appropriate for any future comparisons.

The proposed conditions for the installation of the SCR system with ammonia control for SAM emissions are presented below:

SCR Systems: The permittee shall construct, tune, operate, and maintain a new SCR system for Units 1 and 2, to reduce emissions of nitrogen oxides (NO_x) as described in the application and the SCR shall be operated as necessary to comply with CAIR at JEA's discretion.

Ammonia Injection System: The permittee shall construct and operate a new ammonia injection system on Units 1 and 2 to mitigate the potential impacts of SO₃ formation resulting from the operation of the SCR control systems. The design criteria shall ensure that sulfuric acid mist emissions do not increase above the sulfuric acid mist emissions baseline. [Design]

The applicant shall maintain and submit to the Department on an annual basis for a period of five years from the date the SCR systems are initially operated, information demonstrating in accordance with 62-212.300(1)(e) F.A.C. that the installation of SCR did not result in emission increases of particulate matter and sulfuric acid mist. The future emissions shall be compared with the baseline actual emissions for the period 2002-2001 as reported in the Annual Operating Reports using EPA Method 5b for PM and Method 8A (controlled condensate) for SAM.

**TABLE 2-1
SJRPP ANNUAL HEAT INPUT AND CAPACITY FACTORS, 1999-2003**

Year	Heat Input (MMBtu/hr)			Capacity Factor		
	Unit 1	Unit 2	Total	Unit 1	Unit 2	Average
2005	40,576,121	44,879,935	85,456,056	75.39%	83.39%	79.39%
2004	51,559,458	39,381,272	90,940,730	95.80%	73.17%	84.48%
2003	46,416,440	48,376,056	94,792,496	86.24%	89.88%	88.06%
2002	51,497,802	45,166,544	96,664,346	95.68%	83.92%	89.80%
2001	46,245,091	49,554,215	95,799,306	85.92%	92.07%	89.00%

Note: Capacity Factor based on the maximum heat input of 6,144 MMBtu/unit and 8,760 hrs/yr.
Heat Input calculated from Annual Operating Reports based on fuel use and heat content.

Table 2-2
SJRPP ANNUAL EMISSIONS REPORTED IN ANNUAL OPERATING REPORTS, 1999-2003

Year	Pollutant	Unit 1 (tons)	Unit 2 (tons)	Total (tons)
2005	PM	34.5	71.8	106.3
	SAM	273.9	327.6	601.5
2004	PM	170.5	132.2	302.7
	SAM	705.6	538.9	1,244.5
2003	PM	70.5	74.8	145.3
	SAM	635.2	662.0	1,297.3
2002	PM	170.3	155.9	326.2
	SAM	704.8	618.1	1,322.9
2001	PM	154.1	163.2	317.3
	SAM	632.9	678.2	1,311.0

Note: Data from Annual Operating Reports, except for SAM emissions.
 SAM emissions for 2001 through 2004 based on the average SAM
 emission from stack tests when co-firing petroleum coke with coal during the period of
 1997 through 2000. SAM emissions for 2005 based on stack test performed in 2005.

**TABLE 2-3
 SJRPP ANNUAL AVERAGE EMISSIONS
 FOR EACH CONSECUTIVE TWO YEAR PERIOD, 2001-2005**

Pollutant	2005-2004 (tons)	2003-2002 (tons)	2003-2002 (tons)	2002-2001 (tons)
PM	204.5	224.0	235.8	321.7
SAM	923.0	1,270.9	1,310.1	1,316.9

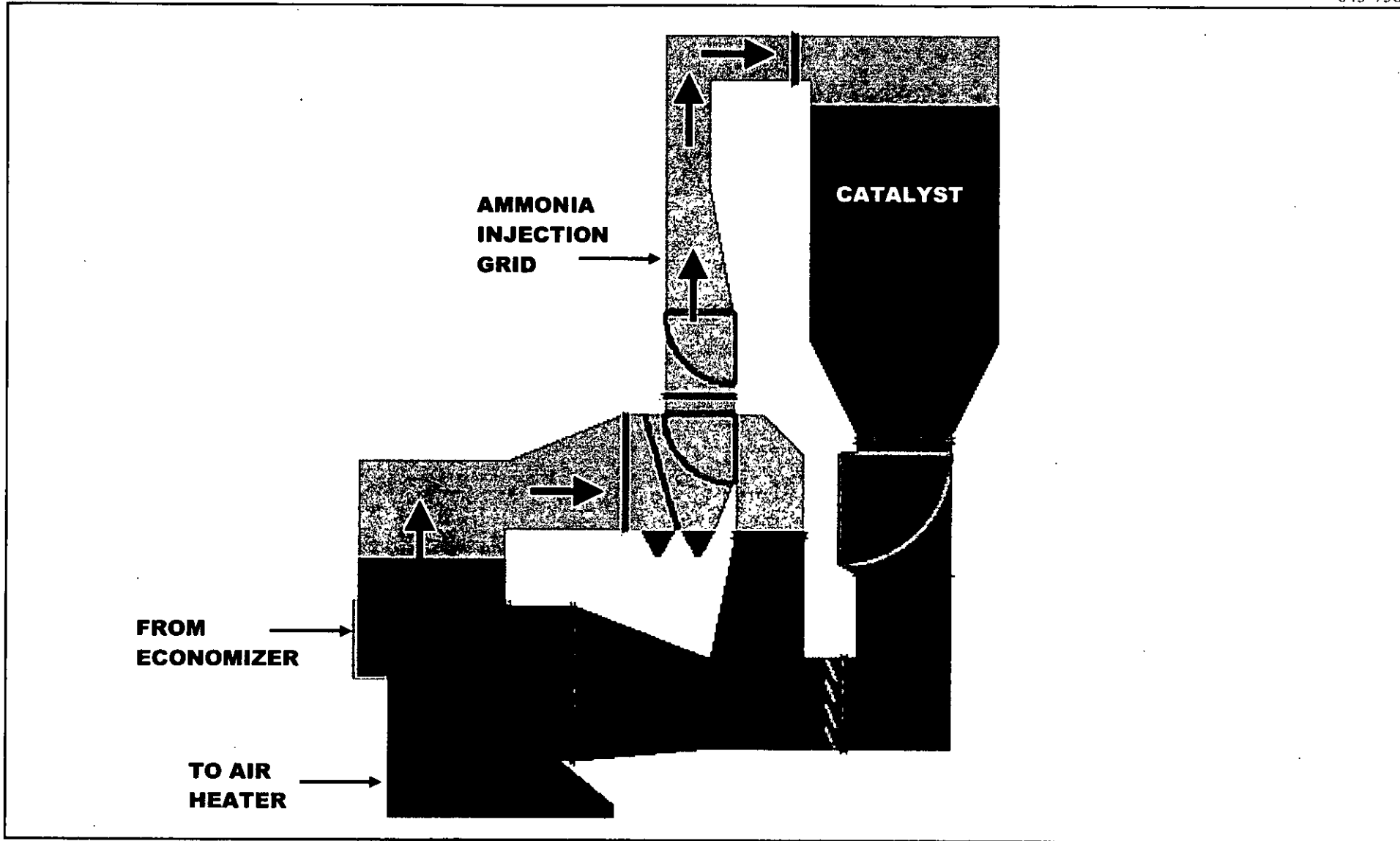


Figure 2-1
Schematic of SJRPP Units 1 and 2 SCR Systems

0637580/4.2/Figure 2-1.doc

Source: SJRPP, 2006.



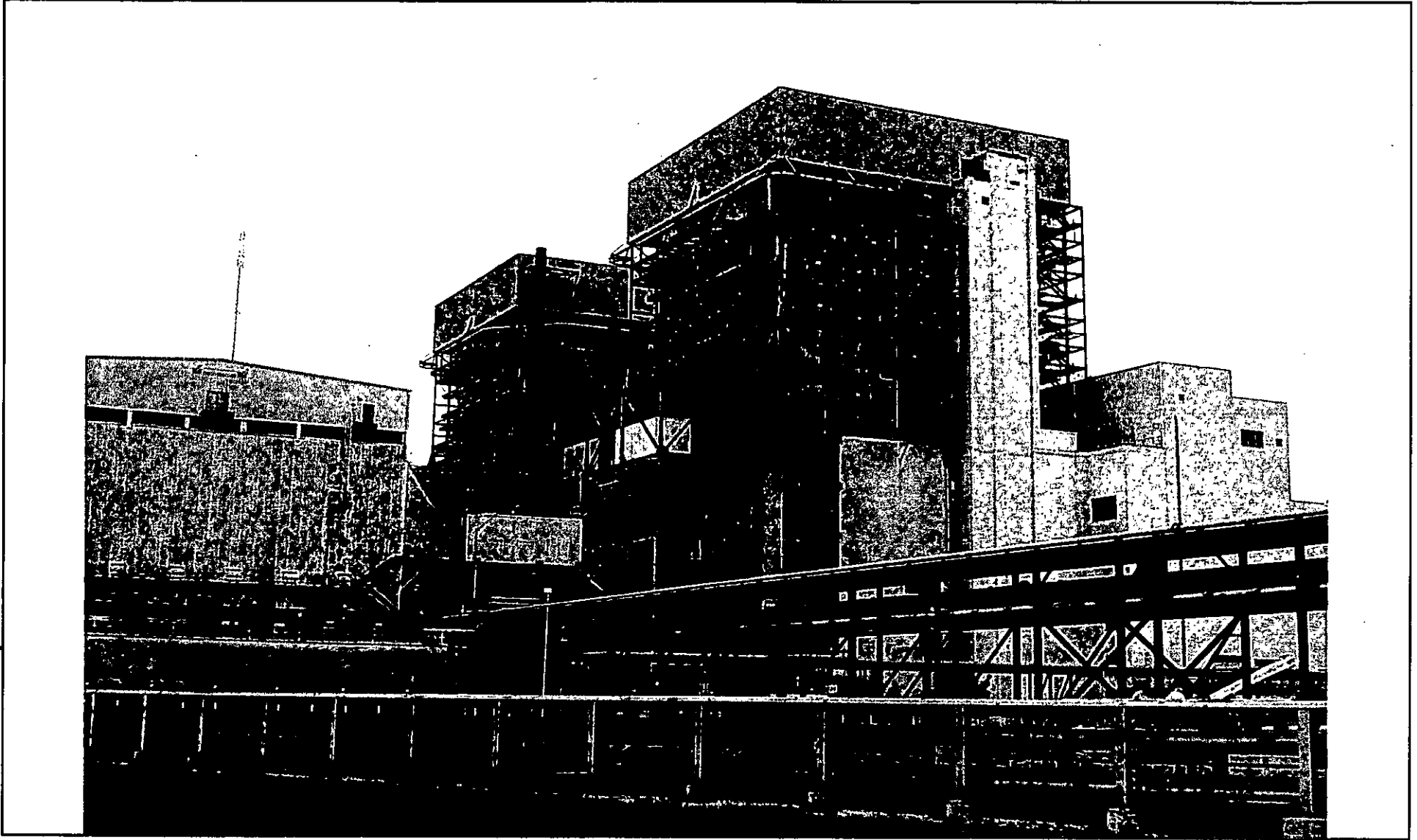


Figure 2-2
Existing SJRPP Boilers – East View

0637580/4.2/Figure 2-2.doc

Source: SJRPP, 2006.



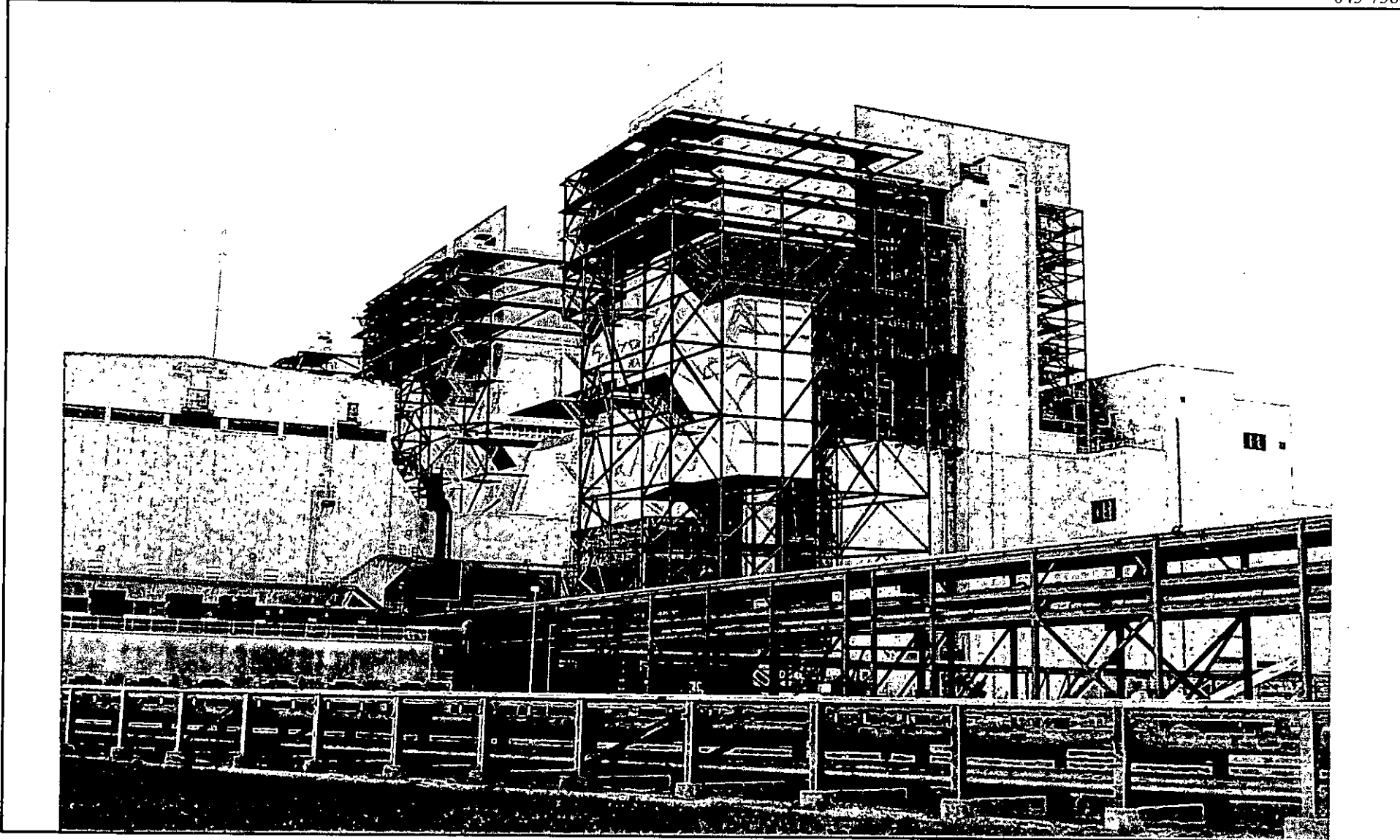


Figure 2-3
Simulation of SCR System for SJRPP- East View

0637580/4.2/Figure 2-3.doc

Source: SJRPPr, 2006.



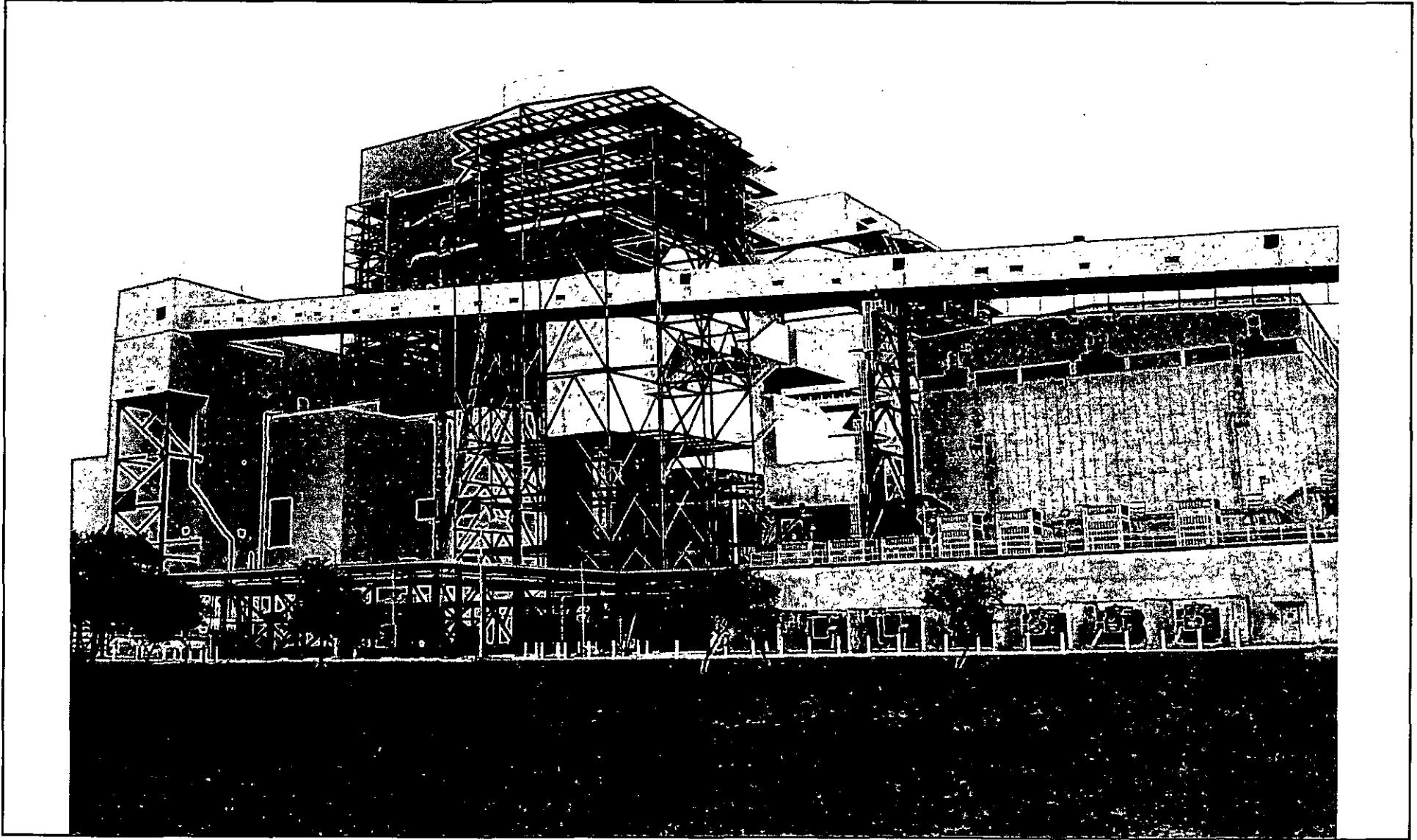


Figure 2-4
Simulation of SCR System for SJRPP – West View

0637580/4.2/Figure 2-4.doc

Source: SJRPP, 2006.

