



REPORT

AIR CONSTRUCTION PERMIT APPLICATION

JEA Northside Generating Station

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MAR 30 2011

BUREAU OF
AIR REGULATION

Prepared For: JEA
11201 New Berlin Road
Jacksonville, FL 32226

Submitted By: Golder Associates Inc.
6026 NW 1st Place
Gainesville, FL 32607 USA

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2 copies JEA
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March 2011

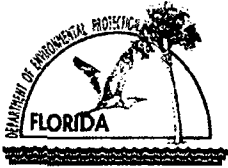
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APPLICATION FOR AIR PERMIT

LONG FORM



Department of Environmental Protection **RECEIVED**
MAR 30 2011

Division of Air Resource Management **BUREAU OF AIR REGULATION**
APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

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

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

Air Operation Permit – Use this form to apply for:

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

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: JEA	
2. Site Name: Northside Generating Station (NGS)	
3. Facility Identification Number: 0310045	
4. Facility Location... Street Address or Other Locator: 11201 New Berlin Road City: Jacksonville County: Duval 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. Facility Contact Name: N. Bert Gianazza, P.E.
2. Facility Contact Mailing Address... Organization/Firm: JEA Street Address: 21 West Church Street City: Jacksonville State: FL Zip Code: 32202
3. Facility Contact Telephone Numbers: Telephone: (904) 665-6247 ext. Fax: (904) 665-7376
4. Facility Contact E-mail Address: Giannb@jea.com

Application Processing Information (DEP Use)

1. Date of Receipt of Application: 3/30/11	3. PSD Number (if applicable):
2. Project Number(s): 0310045-031-04	Siting Number (if applicable):

APPLICATION INFORMATION

Purpose of Application

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

Air Construction Permit

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

Air Operation Permit

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

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

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

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

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


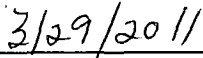
Application Comment

Application for an air construction permit to allow biomass (wood chips from tree trimmings and similar plant materials) firing for Northside Generating Station (NGS) Boiler Nos. 1 and 2 (EU IDs 027 and 026).

APPLICATION INFORMATION

Owner/Authorized Representative Statement

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

1. Owner/Authorized Representative Name : James M. Chansler, P.E., D.P.A., Chief Operations Officer	
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 - 4433 ext. Fax: (904) - 665 - 4238	
4. Owner/Authorized Representative E-mail Address: chanjm@jea.com	
5. Owner/Authorized Representative Statement: <i>I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.</i>	
 Signature	 Date

APPLICATION INFORMATION

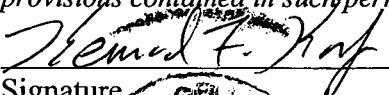
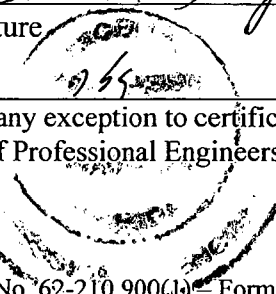
Application Responsible Official Certification

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

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

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: 6026 NW 1st Place City: Gainesville State: FL Zip Code: 32607
3. Professional Engineer Telephone Numbers... Telephone: (352) 336-5600 ext. 21156 Fax: (352) 336-6603
4. Professional Engineer E-mail Address: Ken_Kosky@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>  Signature _____ Date <u>3/24/11</u> (seal) 

* Attach any exception to certification statement.

**Board of Professional Engineers Certificate of Authorization #00001670.

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 checked="" 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 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: NGS Boiler Nos. 1 and 2 are subject to NSPS 40 CFR 60 Subpart Da.	

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
PM/PM10/PM2.5	A	N
NOx	A	N
CO	A	N
VOC	A	N
SO2	A	N

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

<p>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)</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>July 2008</u></p>
<p>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)</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>July 2008</u></p>
<p>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)</p> <p><input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>July 2008</u></p>

Additional Requirements for Air Construction Permit Applications

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

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units:
 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 Onsite 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

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Facilities Subject to Acid Rain, CAIR, or Hg Budget Program

1. Acid Rain Program Forms:

Acid Rain Part Application (DEP Form No. 62-210.900(1)(a)):

- Attached, Document ID: _____ Previously Submitted, Date: July 2008
 Not Applicable (not an Acid Rain source)

Phase II NO_x Averaging Plan (DEP Form No. 62-210.900(1)(a)1.):

- Attached, Document ID: _____ Previously Submitted, Date: July 2008
 Not Applicable

New Unit Exemption (DEP Form No. 62-210.900(1)(a)2.):

- Attached, Document ID: _____ Previously Submitted, Date: _____
 Not Applicable

2. CAIR Part (DEP Form No. 62-210.900(1)(b)):

- Attached, Document ID: _____ Previously Submitted, Date: July 2008
 Not Applicable (not a CAIR source)

Additional Requirements Comment

[Empty box for Additional Requirements Comment]

EMISSIONS UNIT INFORMATION

Section [1]

NGS Boiler Nos. 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 an initial, revised or renewal 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. 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 an 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 or 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. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes 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]

NGS Boiler Nos. 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.)
<input type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.
<input type="checkbox"/> 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)			
<input type="checkbox"/> 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).			
<input checked="" type="checkbox"/> 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.			
<input type="checkbox"/> 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: NGS Circulating Fluidized Bed Boiler No. 2 (EU 026) NGS Circulating Fluidized Bed Boiler No. 1 (EU 027)			
3. Emissions Unit Identification Number: 026, 027			
4. Emissions Unit Status Code: A	5. Commence Construction Date:	6. Initial Startup Date: 02/02	7. Emissions Unit Major Group SIC Code: 49
8. Federal Program Applicability: (Check all that apply)			
<input checked="" type="checkbox"/> Acid Rain Unit			
<input checked="" type="checkbox"/> CAIR Unit			
9. Package Unit: Manufacturer:		Model Number:	
10. Generator Nameplate Rating: 297.5 MW			
11. Emissions Unit Comment: Initial Startup Date for Boiler No. 2 was February 2002. Boiler No. 1 began commercial operation in May 2002.			

EMISSIONS UNIT INFORMATION

Section [1]

NGS Boiler Nos. 1 and 2

Emissions Unit Control Equipment/Method: Control 1 of 4

1. Control Equipment/Method Description: Dry Limestone Injection
2. Control Device or Method Code: 041

Emissions Unit Control Equipment/Method: Control 2 of 4

1. Control Equipment/Method Description: Spray Dryer Absorber (SDA) polishing scrubber
2. Control Device or Method Code: 013

Emissions Unit Control Equipment/Method: Control 3 of 4

1. Control Equipment/Method Description: Selective Noncatalytic Reduction (SNCR) for NOx
2. Control Device or Method Code: 107

Emissions Unit Control Equipment/Method: Control 4 of 4

1. Control Equipment/Method Description: Fabric Filter - Low Temperature (T < 180F)
2. Control Device or Method Code: 018

EMISSIONS UNIT INFORMATION

Section [1]

NGS Boiler Nos. 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: EU026 and EU027		2. Emission Point Type Code: 2	
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: NGS Boiler No. 2 (EU026) and Boiler No. 1 (EU027) share a common stack. The common stack contains two separate flues, one for each CFB boiler.			
5. Discharge Type Code: V	6. Stack Height: 495 feet	7. Exit Diameter: 15 feet	
8. Exit Temperature: 144°F	9. Actual Volumetric Flow Rate: 700,300 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: Each boiler exhausts through its own flue but through a common stack. Stack parameters are for each boiler.			

EMISSIONS UNIT INFORMATION

Section [1]
NGS Boiler Nos. 1 and 2

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 6

1. Segment Description (Process/Fuel Type): External Combustion Boilers; Electric Generation; Bituminous/Subbituminous Coal; Coal and coal treated with a latex binder		
2. Source Classification Code (SCC): 1-01-002-18		3. SCC Units: Tons Burned
4. Maximum Hourly Rate: 221.12	5. Maximum Annual Rate: 1,937,011	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 8	8. Maximum % Ash: 18	9. Million Btu per SCC Unit: 25
10. Segment Comment: Total for both boilers based on 2,764 MMBtu/hr each boiler.		

Segment Description and Rate: Segment 2 of 6

1. Segment Description (Process/Fuel Type): External Combustion Boilers; Electric Generation; Petroleum Coke		
2. Source Classification Code (SCC): 1-01-008-01		3. SCC Units: Tons Burned
4. Maximum Hourly Rate: 212.62	5. Maximum Annual Rate: 1,862,511	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 8	8. Maximum % Ash: 18	9. Million Btu per SCC Unit: 26
10. Segment Comment: Total for both boilers based on 2,764 MMBtu/hr each boiler.		

EMISSIONS UNIT INFORMATION

Section [1]
 NGS Boiler Nos. 1 and 2

D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)

Segment Description and Rate: Segment 3 of 6

1. Segment Description (Process/Fuel Type): External Combustion Boilers; Electric Generation; Landfill gas		
2. Source Classification Code (SCC): 1-01-006-01		3. SCC Units: Million Cubic Feet Burned
4. Maximum Hourly Rate: 0.012	5. Maximum Annual Rate: 102.50	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 1,000
10. Segment Comment: 195 cf/min x 60 min/hr = 0.0117 x 10⁶ cf/hr 0.0117 x 10⁶ cf/hr x 8,760 hr/yr = 102.5 x 10⁶ cf/yr Represents total landfill gas to both boilers.		

Segment Description and Rate: Segment 4 of 6

1. Segment Description (Process/Fuel Type): External Combustion Boilers; Electric Generation; Natural Gas		
2. Source Classification Code (SCC): 1-01-006-01		3. SCC Units: Million Cubic Feet Burned
4. Maximum Hourly Rate: 0.62	5. Maximum Annual Rate: 2,000	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 2 gr/100 scf	8. Maximum % Ash:	9. Million Btu per SCC Unit: 1,022
10. Segment Comment: Rates are total for both boilers.		

EMISSIONS UNIT INFORMATION

Section [1]
NGS Boiler Nos. 1 and 2

D. SEGMENT (PROCESS/FUEL) INFORMATION (CONTINUED)

Segment Description and Rate: Segment 5 of 6

1. Segment Description (Process/Fuel Type): External Combustion Boiler; Electric Generation; Distillate Fuel Oil - Grades 1 or 2 Oil		
2. Source Classification Code (SCC): 1-01-005-01	3. SCC Units: Thousand Gallons Burned	
4. Maximum Hourly Rate: 4.52	5. Maximum Annual Rate: 3,432.8	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.05	8. Maximum % Ash:	9. Million Btu per SCC Unit: 140
10. Segment Comment: Rates are total for both boilers.		

Segment Description and Rate: Segment 6 of 6

1. Segment Description (Process/Fuel Type): External Combustion Boiler; Electric Generation; Wood/Bark Waste		
2. Source Classification Code (SCC): 1-01-009-02	3. SCC Units: Tons Burned	
4. Maximum Hourly Rate:	5. Maximum Annual Rate: 4,380	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 16
10. Segment Comment: Rates are total for one or both boilers. Maximum daily rate = 12 tons/day.		

EMISSIONS UNIT INFORMATION

Section [1]

NGS Boiler Nos. 1 and 2

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
NOx	107		EL
CO			EL
SO2	041	013	EL
VOC			EL
PM	018		EL
PM10	018		EL
Mercury (H114)	013	018	EL
PB	018		EL
SAM	041	013	EL
HF (H107)	013		EL
HCl (H106)	013		NS
HAPs			NS

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

Section [1]
NGS Boiler Nos. 1 and 2

Page [1] of [10]
Nitrogen Oxides - NOx

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS
(Optional for unregulated emissions units.)**

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: NOx		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 498 lb/hour 2,180 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: 0.09 lb/MMBtu (30-day rolling average)		7. Emissions Method Code: 0	
Reference: Permit No. 0310045-003-AC/PSD-FL-265			
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 type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Each unit: Hourly NOx emissions rate: 0.09 lb/MMBtu x 2,764 MMBtu/hr = 249 lb/hr Each unit: Annual NOx emissions rate: 249 lb/hr x 8,760 hr/yr x ton/2000 lb = 1,090 ton/yr			
11. Potential, Fugitive, and Actual Emissions Comment: Emission limit is based on a 30-day rolling average. Emissions represent total for both boilers.			

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

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions **1** of **3**

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.09 lb/MMBtu, 30-day rolling average	4. Equivalent Allowable Emissions: 498 lb/hour 2,180 tons/year
5. Method of Compliance: Compliance with the NOx emission limit will be demonstrated using CEMs.	
6. Allowable Emissions Comment (Description of Operating Method): Represents total of both boilers.	

Allowable Emissions Allowable Emissions **2** of **3**

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.6 lb/MMBtu	4. Equivalent Allowable Emissions: 3,316 lb/hour 14,528 tons/year
5. Method of Compliance: Compliance with the NOx emission limit will be demonstrated using CEMs.	
6. Allowable Emissions Comment (Description of Operating Method): Based on 40 CFR 60, Subpart Da. Represents total of both boilers.	

Allowable Emissions Allowable Emissions **3** of **3**

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 3,600 TPY	4. Equivalent Allowable Emissions: lb/hour 3,600 tons/year
5. Method of Compliance: Compliance with the NOx emission limit will be demonstrated using CEMs.	
6. Allowable Emissions Comment (Description of Operating Method): Allowable to NGS Boiler Nos. 1, 2, and 3 (EU003) combined, 12-month rolling average.	

EMISSIONS UNIT INFORMATION

Section [1]
 NGS Boiler Nos. 1 and 2

POLLUTANT DETAIL INFORMATION

Page [2] of [10]
 Carbon Monoxide - CO

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**
 (Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: CO		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 700 lb/hour 3,066 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: 350 lb/hr, each boiler Reference: Permit No. 0310045-003-AC/PSD-FL-265		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 type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Each unit: Annual CO emissions rate: 350 lb/hr x 8,760 hr/yr x ton/2000 lb = 1,533 ton/yr			
11. Potential, Fugitive, and Actual Emissions Comment: CO emissions limit based on a 24-hour block average. Emissions represent total for both boilers.			

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

Complete Subsection F2 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: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 350 lb/hr, 24-hr block, each boiler	4. Equivalent Allowable Emissions: 700 lb/hour 3,066 tons/year
5. Method of Compliance: Compliance with the CO emission limit will be demonstrated using CEMs.	
6. Allowable Emissions Comment (Description of Operating Method): Permit No. 0310045-003-AC/PSD-FL-265. Represents total of both boilers.	

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 1,533 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]
NGS Boiler Nos. 1 and 2

POLLUTANT DETAIL INFORMATION

Page [3] of [10]
Sulfur Dioxide - SO₂

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: SO₂		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 1,106 lb/hour 3,632 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: 0.20 lb/MMBtu (24-hour block average) 0.15 lb/MMBtu (30-day rolling average)		7. Emissions Method Code: 0	
Reference: Permit No. 0310045-003-AC/PSD-FL-265			
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 type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Each unit: Hourly SO ₂ emissions rate (24-hour average): 0.20 lb/MMBtu x 2,764 MMBtu/hr = 553 lb/hr Each unit: Hourly SO ₂ emissions rate (30-day average): 0.15 lb/MMBtu x 2,764 MMBtu/hr = 415 lb/hr Each unit: Annual SO ₂ emissions rate = 415 lb/hr x 8,760 hr/yr x ton/2000 lb = 1,816 ton/yr			
11. Potential, Fugitive, and Actual Emissions Comment: SO₂ emissions limit based on a 24 hour block average and a 30 day rolling average. Emissions represent total for both boilers.			

EMISSIONS UNIT INFORMATION

Section [1]
NGS Boiler Nos. 1 and 2

POLLUTANT DETAIL INFORMATION

Page [3] of [10]
Sulfur Dioxide - SO₂

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

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions **1** of **4**

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.20 lb/MMBtu, 24-hr block average	4. Equivalent Allowable Emissions: 1,106 lb/hour 4,843 tons/year
5. Method of Compliance: Compliance with the SO₂ emission limit will be demonstrated using CEMs.	
6. Allowable Emissions Comment (Description of Operating Method): Permit No. 0310045-003-AC/PSD-FL-265. Represents total of both boilers.	

Allowable Emissions Allowable Emissions **2** of **4**

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.15 lb/MMBtu, 30-day rolling average	4. Equivalent Allowable Emissions: 830 lb/hour 3,632 tons/year
5. Method of Compliance: Compliance with the SO₂ emission limit will be demonstrated using CEMs.	
6. Allowable Emissions Comment (Description of Operating Method): Permit No. 0310045-003-AC/PSD-FL-265. Represents total of both boilers.	

Allowable Emissions Allowable Emissions **3** of **4**

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.6 lb/MMBtu, 30-day rolling average	4. Equivalent Allowable Emissions: 3,316 lb/hour 12,284 tons/year
5. Method of Compliance: Compliance with the SO₂ emission limit will be demonstrated using CEMs.	
6. Allowable Emissions Comment (Description of Operating Method): Based on 40 CFR 60, Subpart Da. Represents total of both boilers.	

EMISSIONS UNIT INFORMATION

Section [1]
NGS Boiler Nos. 1 and 2

POLLUTANT DETAIL INFORMATION

Page [3] of [10]
Sulfur Dioxide - SO₂

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

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 4 of 4

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 12,284 TPY	4. Equivalent Allowable Emissions: lb/hour 12,284 tons/year
5. Method of Compliance: Compliance with the SO₂ emission limit will be demonstrated using CEMs.	
6. Allowable Emissions Comment (Description of Operating Method): Allowable to NGS Units 1, 2, and 3 combined, 12-month rolling average.	

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]
 NGS Boiler Nos. 1 and 2

POLLUTANT DETAIL INFORMATION

Page [4] of [10]
 Volatile Organic Compounds - VOC

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**
 (Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: VOC		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 28 lb/hour 123 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: 14 lb/hr (3-hour average), each boiler Reference: Permit No. 0310045-003-AC/PSD-FL-265		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 type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Each unit: Annual VOC emissions rate = 14 lb/hr x 8,760 hr/yr x ton/2000 lb = 61.32 ton/yr			
11. Potential, Fugitive, and Actual Emissions Comment: VOC emissions limit based on a 3 hour average. Emissions represent total for both boilers.			

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

Complete Subsection F2 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: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 14 lb/hr, 3-hour average, each boiler	4. Equivalent Allowable Emissions: 28 lb/hour 123 tons/year
5. Method of Compliance: Compliance with CO limits based on CEMS data can be used as surrogate.	
6. Allowable Emissions Comment (Description of Operating Method): Permit No. 0310045-003-AC/PSD-FL-265. Represents total of both boilers.	

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):	

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**
 (Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 60 lb/hour 266 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: 0.011 lb/MMBtu (3-hour average) Reference: Permit No. 0310045-003-AC/PSD-FL-265		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 type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Each unit: Hourly PM emissions rate: 0.011 lb/MMBtu x 2,764 MMBtu/hr = 30 lb/hr Each unit: Annual PM emissions rate: 30 lb/hr x 8,760 hr/yr x ton/2000 lb = 133 ton/yr			
11. Potential, Fugitive, and Actual Emissions Comment: PM emissions limits are based on a 3 hour average. Emissions represent total for both boilers.			

EMISSIONS UNIT INFORMATION

Section [1]
NGS Boiler Nos. 1 and 2

POLLUTANT DETAIL INFORMATION

Page [5] of [10]
Particulate Matter - PM

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

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.011 lb/MMBtu, 3-hour average	4. Equivalent Allowable Emissions: 60 lb/hour 266 tons/year
5. Method of Compliance: Annual compliance tests using EPA Methods 5, 5B, 8, 17, or 29 while firing petroleum coke.	
6. Allowable Emissions Comment (Description of Operating Method): If petroleum coke has been fired for less than 100 hours during previous quarter or less than 400 hours during the previous federal fiscal year, the testing may be performed while firing coal. Represents total of both boilers. Permit No. 0310045-003-AC/PSD-FL-265.	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 881 TPY	4. Equivalent Allowable Emissions: lb/hour 881 tons/year
5. Method of Compliance: Annual compliance tests using EPA Methods 5, 5B, 8, 17, or 29 while firing petroleum coke.	
6. Allowable Emissions Comment (Description of Operating Method): Allowable to NGS Units 1, 2, and 3 combined, 12-month rolling average. Permit No. 0310045-003-AC/PSD-FL-265.	

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]
NGS Boiler Nos. 1 and 2

POLLUTANT DETAIL INFORMATION

Page [6] of [10]
Particulate Matter - PM10

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**
(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM10		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 60 lb/hour 266 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: 0.011 lb/MMBtu (3-hour average) Reference: Permit No. 0310045-003-AC/PSD-FL-265		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 type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Each unit: Hourly PM ₁₀ emissions rate: 0.011 lb/MMBtu x 2,764 MMBtu/hr = 30 lb/hr Each unit: Annual PM ₁₀ emissions rate: 30 lb/hr x 8,760 hr/yr x ton/2000 lb = 133 ton/yr			
11. Potential, Fugitive, and Actual Emissions Comment: PM₁₀ emissions limits are based on a 3 hour average. Emissions represent total for both boilers.			

EMISSIONS UNIT INFORMATION

Section [1]
NGS Boiler Nos. 1 and 2

POLLUTANT DETAIL INFORMATION

Page [6] of [10]
Particulate Matter - PM10

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

Complete Subsection F2 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: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.011 lb/MMBtu, 3-hour average	4. Equivalent Allowable Emissions: 60 lb/hour 266 tons/year
5. Method of Compliance: Annual compliance tests using EPA Methods 5, 5B, 8, 17, or 29 while firing petroleum coke.	
6. Allowable Emissions Comment (Description of Operating Method): If petroleum coke has been fired for less than 100 hours during previous quarter or less than 400 hours during the previous federal fiscal year, the testing may be performed while firing coal. Represents total of both boilers. Permit No. 0310045-003-AC/PSD-FL-265.	

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]
NGS Boiler Nos. 1 and 2

Page [7] of [10]
Mercury - H114

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**
(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: Mercury		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.06 lb/hour 0.26 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/hour (6-hour average), each boiler Reference: Permit No. 0310045-003-AC/PSD-FL-265		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 type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Each unit: Annual mercury emissions rate: 0.03 lb/hr x 8,760 hr/yr x ton/2000 lb = 0.13 ton/yr			
11. Potential, Fugitive, and Actual Emissions Comment: Mercury emissions are based on a 6 hour average. Emissions represent total for both boilers.			

EMISSIONS UNIT INFORMATION

Section [1]
NGS Boiler Nos. 1 and 2

POLLUTANT DETAIL INFORMATION

Page [7] of [10]
Mercury - H114

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

Complete Subsection F2 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: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.03 lb/hr, 6-hour average, each boiler	4. Equivalent Allowable Emissions: 0.06 lb/hour 0.26 tons/year
5. Method of Compliance: Compliance with Hg limits based on CEMS.	
6. Allowable Emissions Comment (Description of Operating Method): Permit No. 0310045-003-AC/PSD-FL-265. Represents total of both boilers.	

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]
NGS Boiler Nos. 1 and 2

Page [8] of [10]
Lead - Pb

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**

(Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: Pb		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.14 lb/hour 0.62 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: 0.07 lb/hour (3-hour average), each boiler		7. Emissions Method Code: 0	
Reference: Permit No. 0310045-003-AC/PSD-FL-265			
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 type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Each unit: Annual lead emissions rate: 0.07 lb/hr x 8,760 hr/yr x ton/2000 lb = 0.31 ton/yr			
11. Potential, Fugitive, and Actual Emissions Comment: Lead emissions are based on a 3 hour average. Emissions represent total for both boilers.			

EMISSIONS UNIT INFORMATION

Section [1]
NGS Boiler Nos. 1 and 2

POLLUTANT DETAIL INFORMATION

Page [8] of [10]
Lead - Pb

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

Complete Subsection F2 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: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.07 lb/hr, 3-hour average, each boiler	4. Equivalent Allowable Emissions: 0.14 lb/hour 0.62 tons/year
5. Method of Compliance: EPA Method 12 or 29	
6. Allowable Emissions Comment (Description of Operating Method): Permit No. 0310045-003-AC/PSD-FL-265. Represents total of both boilers.	

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]
 NGS Boiler Nos. 1 and 2

POLLUTANT DETAIL INFORMATION

Page [9] of [10]
 Sulfuric Acid Mist - SAM

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
 POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS**
 (Optional for unregulated emissions units.)

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: SAM		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 2.2 lb/hour 9.64 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: 1.1 lb/hour (3-hour average), each boiler Reference: Permit No. 0310045-003-AC/PSD-FL-265		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 type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Each unit: Annual SAM emissions rate: 1.1 lb/hr x 8,760 hr/yr x ton/2000 lb = 4.82 tons/yr			
11. Potential, Fugitive, and Actual Emissions Comment: SAM emissions are based on a 3 hour average. Emissions represent total for both boilers.			

EMISSIONS UNIT INFORMATION

Section [1]
 NGS Boiler Nos. 1 and 2

POLLUTANT DETAIL INFORMATION

Page [9] of [10]
 Sulfuric Acid Mist - SAM

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

Complete Subsection F2 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: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 1.1 lb/hr, 3-hour average, each boiler	4. Equivalent Allowable Emissions: 2.2 lb/hour 9.64 tons/year
5. Method of Compliance: EPA Method 8	
6. Allowable Emissions Comment (Description of Operating Method): Continuous compliance is demonstrated by complying with the SO₂ limits based on CEMS data as surrogate. Permit No. 0310045-003-AC/PSD-FL-265. Represents total of both boilers.	

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]
NGS Boiler Nos. 1 and 2

Page [10] of [10]
HF - H107

**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –
POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS
(Optional for unregulated emissions units.)**

Complete a Subsection F1 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 operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: Hydrogen Fluoride		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.86 lb/hour 3.76 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: 0.43 lb/hour (3-hour average), each boiler Reference: Permit No. 0310045-003-AC/PSD-FL-265		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 type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Each unit: Annual HF emissions rate: 0.43 lb/hr x 8,760 hr/yr x ton/2000 lb = 1.88 tons/yr			
11. Potential, Fugitive, and Actual Emissions Comment: HF emissions are based on a 3 hour average. Emissions represent total for both boilers.			

EMISSIONS UNIT INFORMATION

Section [1]
NGS Boiler Nos. 1 and 2

POLLUTANT DETAIL INFORMATION

Page [10] of [10]
HF - H107

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

Complete Subsection F2 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: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.43 lb/hr, 3-hour average, each boiler	4. Equivalent Allowable Emissions: 0.86 lb/hour 3.76 tons/year
5. Method of Compliance: EPA Method 13A or 13B	
6. Allowable Emissions Comment (Description of Operating Method): Permit No. 0310045-003-AC/PSD-FL-265. Represents total of both boilers.	

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]
NGS Boiler Nos. 1 and 2

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G 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: VE10	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: 10 % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: 6 min/hour	
4. Method of Compliance: COMS	
5. Visible Emissions Comment: Rule 62-212.400, F.A.C; and Permit No. 0310045-03-AC/PSD-FL-265.	

Visible Emissions Limitation: Visible Emissions Limitation 2 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: 60 min/hour	
4. Method of Compliance: COMS	
5. Visible Emissions Comment: 40 CFR 60 Subpart Da.	

EMISSIONS UNIT INFORMATION

Section [1]
NGS Boiler Nos. 1 and 2

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor 1 of 6

1. Parameter Code: VE	2. Pollutant(s):
3. CMS Requirement:	<input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: KVB/MIP Model Number: LM3086EPA3 Serial Number: See Comment	
5. Installation Date: 7/14/2002 (Boiler No. 1) 4/1/2002 (Boiler No. 2)	6. Performance Specification Test Date: 10/14/2002 (Boiler No. 1) 7/1/2002 (Boiler No. 2)
7. Continuous Monitor Comment: Serial Number: NGS CFB Boiler No. 1: 730216 Serial Number: NGS CFB Boiler No. 2: 730217	

Continuous Monitoring System: Continuous Monitor 2 of 6

1. Parameter Code: EM	2. Pollutant(s): CO
3. CMS Requirement:	<input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other
4. Monitor Information... Manufacturer: Thermo Scientific Model Number: 48ITLE-ACPCB Serial Number: See Comment	
5. Installation Date: 11/1/2009	6. Performance Specification Test Date: 1/21/2010 (Boiler No. 1) 1/7/2010 (Boiler No. 2)
7. Continuous Monitor Comment: Serial Number: NGS CFB Boiler No. 1: 0819830961 Serial Number: NGS CFB Boiler No. 2: 0819830960	

EMISSIONS UNIT INFORMATION

Section [1]
NGS Boiler Nos. 1 and 2

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Continuous Monitoring System: Continuous Monitor **5** of **6**

1. Parameter Code: CO2	2. Pollutant(s):
3. CMS Requirement:	<input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: TECO Model Number: 410i Serial Number: See Comment	
5. Installation Date: 11/1/2009	6. Performance Specification Test Date: 1/21/2010 (Boiler No. 1) 1/7/2010 (Boiler No. 2)
7. Continuous Monitor Comment: Serial Number: NGS CFB Boiler No. 1: 0800226818 Serial Number: NGS CFB Boiler No. 2: 0800226813	

Continuous Monitoring System: Continuous Monitor **6** of **6**

1. Parameter Code: EM	2. Pollutant(s): Mercury
3. CMS Requirement:	<input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other
4. Monitor Information... Manufacturer: Thermo Scientific Model Number: 80I-ADFNCB Serial Number: See Comment	
5. Installation Date: September 12, 2008	6. Performance Specification Test Date: See Comment
7. Continuous Monitor Comment: Serial Number = NGS CFB Boiler No. 1: 0809128431 Serial Number = NGS CFB Boiler No. 2: 0805028186 Test Date: NGS CFB Boiler No. 1: June 23, 2009 Test Date: NGS CFB Boiler No. 2: March 24, 2009 Required per Permit No. 0310045-022-AC/PSD-FL-265E.	

EMISSIONS UNIT INFORMATION

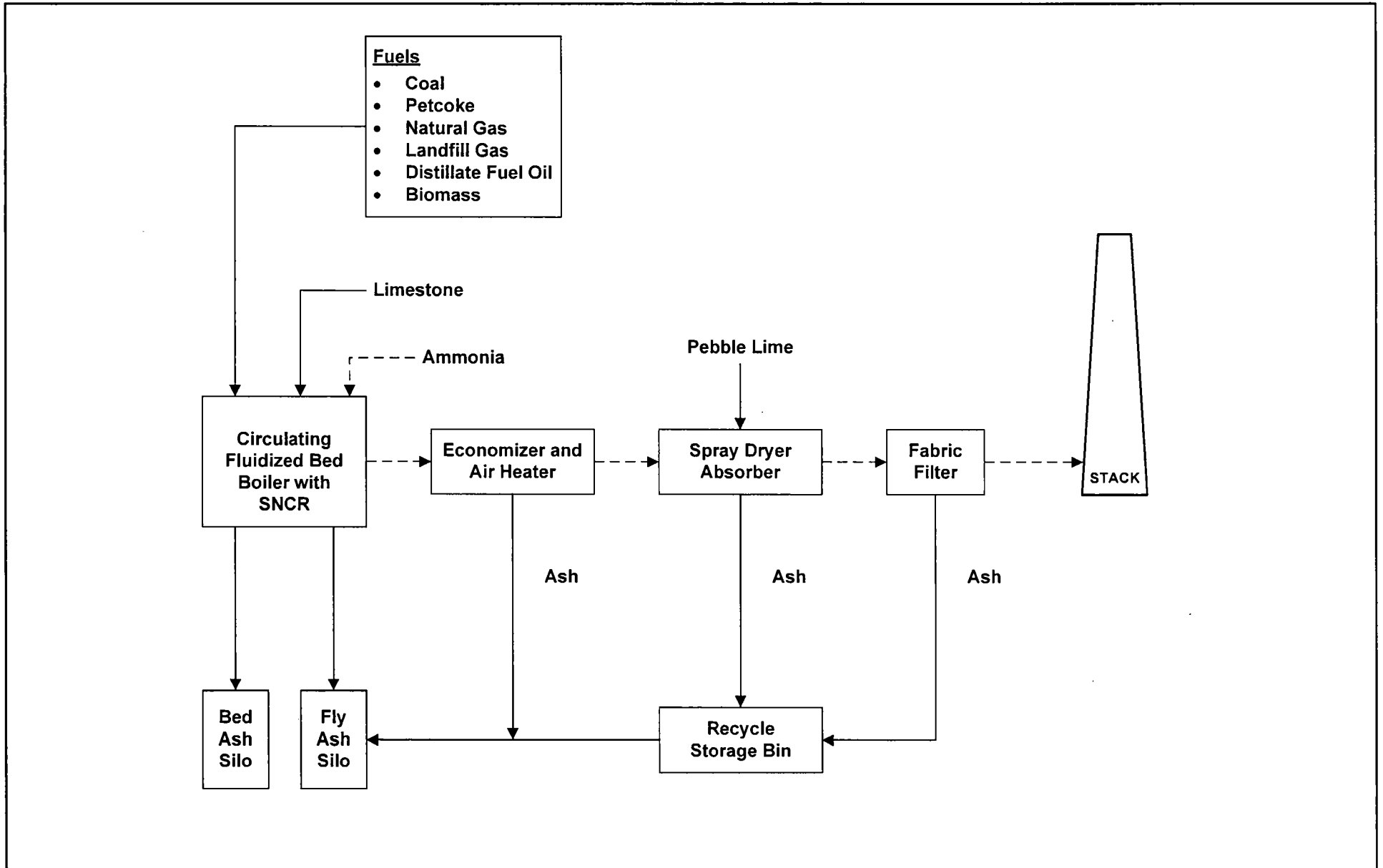
Section [1]
NGS Boiler Nos. 1 and 2

I. EMISSIONS UNIT ADDITIONAL INFORMATION

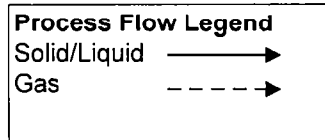
Additional Requirements for All Applications, Except as Otherwise Stated

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) <input checked="" type="checkbox"/> Attached, Document ID: <u>JEA-EU1-11</u> <input type="checkbox"/> Previously Submitted, Date _____
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) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____
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) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>July 2008</u>
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) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>July 2008</u> <input type="checkbox"/> Not Applicable (construction application)
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) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records: <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Not Applicable 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.
7. Other Information Required by Rule or Statute: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

ATTACHMENT JEA-EU1-11
PROCESS FLOW DIAGRAM



Attachment JEA-EU1-11
Process Flow Diagram
Northside Generating Station Units 1 and 2



PART II

PART II
APPLICATION FOR MINOR SOURCE AIR CONSTRUCTION PERMIT
FOR BURNING BIOMASS
IN NGS BOILER NOS. 1 AND 2 (EU IDS 027 AND 026)

EXECUTIVE SUMMARY

JEA is seeking authorization from the Florida Department of Environmental Protection (FDEP) to burn up to a maximum of 12 tons per day (TPD) of biomass (i.e., wood chips from tree trimmings and similar plant materials) in Northside Generating Station (NGS) Boiler Nos. 1 and 2 (EU IDs 027 and 026). The boilers are currently permitted to fire coal, coal treated with a latex binder, petroleum coke, No. 2 fuel oil, natural gas, and landfill gas from the adjacent North Landfill (Title V Permit No. 0310045-028-AV). Based on the current actual-to-future potential emissions test, the use of a maximum of 12 TPD of biomass for 365 days per year will not result in a net increase of any regulated pollutant above the Prevention of Significant Deterioration (PSD) significant emission rate. There are no other changes in Boiler Nos. 1 and 2 as a result of this project.

INTRODUCTION

The NGS is located at 4377 Heckscher Drive, Jacksonville, Duval County, Florida, and is adjacent to the St. Johns River Power Park (SJRPP) facility. Both facilities are covered under one Title V Permit (Final Title V Permit No. 0310045-028-AV).

Golder Associates Inc. (Golder) was contracted to prepare the necessary air permit application seeking authorization to burn biomass from JEA's tree trimming activities in NGS Boiler Nos. 1 and 2. The air permit application consists of the appropriate application form [Part I; DEP Form 62-210.900(1)], a technical description of the project, and rule applicability for the project.

The maximum heat input rate for NGS Boiler Nos. 1 and 2 is 2,764 million British thermal units per hour (MMBtu/hr) for each boiler. JEA is proposing to burn a maximum of 12 TPD of biomass in both boilers. The actual heating value of the biomass is not available. However, Section 1.6 of AP-42, Wood Residue Combustion in Boilers, provide a range of heating values – from about 4,500 British thermal units per pound (Btu/lb) of fuel on a wet, as-fired basis to about 8,000 Btu/lb for dry wood. Using a conservative high estimate of 8,000 Btu/lb, the proposed wood chip firing will have the potential to replace 192 MMBtu per day or 70,080 MMBtu per year of current actual heat input by the use of currently permitted fuels. The project does not include any physical changes to the boiler units.

Nitrogen oxides (NO_x) emissions from the NGS Boiler Nos. 1 and 2 are currently controlled by a selective non-catalytic reduction (SNCR) system installed on each boiler. Particulate matter (PM) emissions from the units are controlled by fabric filters, and sulfur dioxide (SO₂) emissions are controlled by limestone

injection and spray dryer absorber system. There will be no change to the existing control equipment as a result of the proposed project and no new emission control technology will be added.

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. The U.S. Environmental Protection Agency (EPA) has approved Florida's State Implementation Plan (SIP), which contains PSD regulations. The applicable PSD rules in Florida are found in Rule 62-212.400, Florida Administrative Code (F.A.C.).

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 the 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 Title 40, Part 52.21 of the Code of Federal Regulations (40 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, F.A.C.). Major facilities and major modifications are required to undergo the following analyses related to PSD for each pollutant emitted in significant amounts:

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

The NGS is part of the JEA NGS/SJRPP/Separations Technology (ST) facility complex, which is a major facility under FDEP rules. Based on Rule 62-210.200(205), F.A.C., modification is defined as any physical change in, change in the method of operation of, or addition to a facility which would result in an increase in the actual emissions of any pollutant subject to new source review regulation under the CAA. Because there is a change in the method of operation with the addition of biomass as a fuel for normal operation, the project is a potential modification as defined in the FDEP rules in Rule 62-210.200 and

under the PSD rules in Rule 62-212.400, F.A.C. PSD review would be required for the project if there were a significant net increase in emissions.

NGS Boiler Nos. 1 and 2 are baseload electric generating units firing natural gas, No. 2 fuel oil, coal, petroleum coke, and landfill gas. Future operation of these primary fuels will not change. Since each boiler is rated at 2,764 MMBtu/hr of heat input and the proposed biomass fuel will have the potential to provide only 192 MMBtu/day heat input for both boilers, the primary heat input will be achieved by firing the currently permitted fuels. The daily heat input of 192 MMBtu/day achieved by biomass is only 0.14 percent of the daily heat input potential of 132,672 MMBtu/day for both boilers. Thus, only 0.14 percent of heat input obtained from firing currently permitted fuels will be replaced by firing biomass. To evaluate any potential increases in emissions, a comparison was made between future potential annual emissions resulting from 12 TPD of wood chip firing and the current actual annual emissions resulting from the maximum potential heat input to be replaced by biomass.

The baseline or current actual emissions are the emissions over a consecutive 24-month period within the 5 years immediately preceding the date that a complete application is submitted. The use of different consecutive 24-month periods for each pollutant is 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 for any applicable pollutant.

Table 1 presents the actual annual heat inputs from different fuels reported in the Annual Operating Reports (AORs) for the period 2005 through 2009. This table also presents the total actual heat input from all fuels for Boiler Nos. 1 and 2, as well as the actual operating hours for each unit.

Table 2 presents the future potential emissions due to wood chip firing. The potential annual heat input is based on maximum wood chip usage of 12 TPD for 365 days/year and using a heating value of 8,000 Btu/lb for dry wood. Emission factors used are from Section 1.6 of AP-42. PM emission factors include condensable PM assuming all condensable PM are in 2.5 micron ($PM_{2.5}$) size category. There are no emission factors available in AP-42 for sulfuric acid mist (SAM). The SAM emission rate was calculated assuming 10 percent of the SO_2 emissions will be oxidized into sulfur trioxide (SO_3), which will then convert to SAM through chemical reaction in the atmosphere. The use of EPA AP-42 emission factors are considered a very conservative estimate of emissions. The actual emissions of using the very small portion of the heat input (i.e., 0.14 percent) as biomass would likely result in lower potential emissions for most air pollutants than the use of petroleum coke and coal. Moreover, the control systems installed on Units 1 and 2 would reduce the estimated emissions presented in Table 2.

Table 3 presents total actual emissions from all fuels for each calendar year in the period 2005 through 2009.

Table 4 presents the average emissions for each consecutive 2-year period based on the calendar year emissions in Table 3. 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.

Table 5 presents the PSD applicability analysis. The worst-case 2-year average emissions for each pollutant from Table 4 and the corresponding 2-year average heat input from Table 1 are used in Table 5 to calculate baseline emission factors in pounds per MMBtu (lb/MMBtu). These baseline emission factors are applied to the heat input to be replaced by biomass to calculate baseline or current actual emissions that will be replaced by emissions due to wood chip firing. The current actual emissions were subtracted from the potential emissions due to wood chip firing and the difference was compared to the PSD significant emission rates for each pollutant.

As shown in Table 5, there will be a net decrease in SO₂ emissions. The increase in NO_x, carbon monoxide (CO), volatile organic compound (VOC), PM, PM less than 10 microns (PM₁₀), PM_{2.5}, and SAM emissions will be much lower than the PSD significant emission rates for the respective pollutants and are likely an artifact of using AP-42 estimates as discussed previously. As a result, the proposed project is not subject to PSD and a minor source air construction permit application is submitted for the proposed change.

The use of biomass will also reduce greenhouse gas emissions. Based on EPA's Acid Rain database, in 2009, carbon dioxide (CO₂) emissions from NGS Boiler Nos. 1 and 2 were 211 lb/MMBtu and 211.4 lb/MMBtu, respectively. Using an average of 211.2 lb/MMBtu and 70,080 MMBtu/yr of the potential annual heat input that will be replaced by biomass, an estimated 7,500 tons of non-biogenic CO₂ will be reduced per year. In addition, the tree trimmings typically end up in a landfill, where they decompose to generate methane (CH₄), a greenhouse gas that has global warming potential 21 times higher than CO₂. Burning it in the boilers will have an added benefit of reducing the CH₄ emissions that would have been generated from the biomass.

TABLE 1
NGS BOILER NOS. 1 AND 2 ANNUAL HEAT INPUTS, 2005 - 2009

Year	Heat Input from Bituminous Coal (MMBtu/yr)			Heat Input from Distillate Oil (MMBtu/yr)			Heat Input from Natural Gas (MMBtu/yr)			Heat Input from Coke (MMBtu/yr)			Total Actual Heat Input (MMBtu/yr)			Actual Operating Hours (hr/yr)	
	Boiler 1	Boiler 2	Total	Boiler 1	Boiler 2	Total	Boiler 1	Boiler 2	Total	Boiler 1	Boiler 2	Total	Boiler 1	Boiler 2	Total	Boiler 1	Boiler 2
2009	1,349,691	1,498,508	2,848,199	0	0	0	14,602	35,666	50,268	14,351,596	14,564,536	28,916,132	15,715,889	16,098,710	31,814,599	6,227	6,332
2008	1,698,226	1,488,040	3,186,266	0	0	0	70,283	46,200	116,483	17,798,191	15,357,664	33,155,855	19,566,700	16,891,904	36,458,604	7,940	6,885
2007	2,981,916	2,729,706	5,711,622	0	0	0	49,162	99,274	148,436	16,854,068	16,156,248	33,010,316	19,885,146	18,985,228	38,870,374	7,765	7,374
2006	2,781,275	3,284,308	6,065,583	0	0	0	51,156	52,479	103,635	14,596,540	14,969,108	29,565,648	17,428,971	18,305,895	35,734,866	7,105	7,411
2005	4,150,632	3,547,752	7,698,384	0	0	0	33,728	84,969	118,697	16,447,508	14,527,128	30,974,636	20,631,868	18,159,849	38,791,717	8,126	7,578

Note: All values are based on annual operating reports for the period 2005 - 2009.

**TABLE 2
FUTURE POTENTIAL EMISSIONS FOR NGS BOILER NOS. 1 AND 2 DUE TO WOOD CHIP FIRING**

Pollutant	Potential Biomass Usage^a (tons/day)	Biomass Heating Value^b (Btu/lb)	Potential Daily Heat Input (MMBtu/day)	Potential Annual Heat Input^c (MMBtu/yr)	Emission Factor^d (lb/MMBtu)	Hourly Emissions (lb/hr)	Annual Emissions (TPY)
NO _x	12.0	8,000.0	192.0	70,080	0.22	1.8	7.7
CO	12.0	8,000.0	192.0	70,080	0.60	4.8	21.0
SO ₂	12.0	8,000.0	192.0	70,080	0.025	0.2	0.9
VOC	12.0	8,000.0	192.0	70,080	0.017	0.1	0.6
PM ^e	12.0	8,000.0	192.0	70,080	0.1	0.9	4.1
PM ₁₀ ^e	12.0	8,000.0	192.0	70,080	0.091	0.7	3.2
PM _{2.5} ^e	12.0	8,000.0	192.0	70,080	0.082	0.7	2.9
SAM	12.0	8,000.0	192.0	70,080	0.004	0.03	0.1

^a Proposed daily wood chip usage.

^b Heating value based on Section 1.6 of AP-42. Dry wood heating value of 8,000 Btu/lb used as a conservative (high) value.

^c Based on 365 days/yr operation.

^d Tables 1.6-1, 1.6-2, and 1.6-3, Section 1.6, AP-42. SAM emission factor based on assumption that 10% of the SO₂ is further oxidized to SO₃, which is then converted to SAM (98/80).

^e Emission factors based on fabric filter PM control device, Table 1.6-1, AP-42. Factors include condensable PM emission factor of 0.017 lb/MMBtu and assuming all condensable PM are in PM_{2.5} category.

**TABLE 3
ANNUAL EMISSIONS REPORTED
IN 2005-2009 ANNUAL OPERATING REPORTS**

Year	Pollutant	Boiler No. 1 (tons)	Boiler No. 2 (tons)	Total (tons)
2009	NO _x	810.0	804.1	1,614.1
	CO	119.9	150.5	270.4
	SO ₂	1,397.1	1,387.9	2,785.0
	VOC	19.6	20.0	39.6
	PM	18.7	29.0	47.7
	PM ₁₀	17.5	27.0	44.5
2008	NO _x	818.7	701.2	1,519.9
	CO	203.4	125.0	328.4
	SO ₂	1,565.0	1,565.0	3,130.0
	VOC	24.6	21.2	45.9
	PM	26.4	33.5	59.8
	PM ₁₀	18.9	22.9	41.8
2007	NO _x	724.6	719.3	1,443.9
	CO	256.8	329.5	586.3
	SO ₂	1,510.5	1,411.7	2,922.2
	VOC	24.7	23.0	47.8
	PM	10.3	37.6	47.9
	PM ₁₀	10.1	28.0	38.1
2006	NO _x	710.0	782.0	1,492.0
	CO	312.8	319.3	632.1
	SO ₂	1,435.5	1,598.0	3,033.5
	VOC	21.4	22.4	43.8
	PM	8.8	36.3	45.1
	PM ₁₀	8.6	27.0	35.7
2005	NO _x	731.8	671.7	1,403.5
	CO	231.9	298.1	530.0
	SO ₂	1,441.4	1,573.2	3,014.6
	VOC	24.9	15.0	40.0
	PM	30.8	26.3	57.1
	PM ₁₀	20.4	22.5	42.9

Source: Annual Operating Report (AOR) for JEA SJRPP, 2005 - 2009.

**TABLE 4
ANNUAL AVERAGE EMISSIONS FOR NGS BOILER NOS. 1 AND 2
FOR EACH CONSECUTIVE TWO-YEAR PERIOD, 2005-2009**

Pollutant	2009-2008 (tons)	2008-2007 (tons)	2007-2006 (tons)	2006-2005 (tons)
NO _x	1,567.0	1,481.9	1,468.0	1,447.8
CO	299.38	457.33	609.2	581.1
SO ₂	2957.5	3026.1	2977.8	3,024.1
VOC	42.7	46.8	45.8	41.9
PM	53.75	53.84	46.5	51.1
PM ₁₀	43.2	40.0	36.9	39.3

Source: Annual Operating Report (AOR) for JEA SJRPP, 2005 - 2009.

TABLE 5
PSD APPLICABILITY - NGS BOILER NOS. 1 AND 2
WOOD CHIP FIRING

Pollutant	Worst-Case 2-Year Average Emissions ^a (TPY)	Worst-Case 2-Year Period	Worst-Case 2-Year Period Average Heat Input ^a (MMBtu/yr)	Current Actual Emission Factors (lb/MMBtu)	Heat Input to be Replaced by Wood Chips ^b (MMBtu/yr)	Current Actual Emissions for Heat Input Potential of Wood Chips ^c (TPY)	Future Potential Emissions ^d (TPY)	Emissions (Future - Current Actual) (TPY)	PSD Significant Emission Rates (TPY)
NO _x	1,567	2009 - 2008	34,136,601	0.09	70,080.0	3.2	7.7	4.5	40
CO	609	2007 - 2006	37,302,620	0.03	70,080.0	1.1	21.0	19.9	100
SO ₂	3,026	2008 - 2007	37,664,489	0.16	70,080.0	5.6	0.9	-4.8	40
VOC	47	2008 - 2007	37,664,489	0.0025	70,080.0	0.1	0.6	0.5	40
PM	54	2008 - 2007	37,664,489	0.0029	70,080.0	0.1	4.1	4.0	25
PM ₁₀	43	2009 - 2008	34,136,601	0.0025	70,080.0	0.1	3.2	3.1	15
PM _{2.5}	NA	NA	NA	NA	NA	NA	2.9	2.9	10
SAM ^e	NA	NA	NA	NA	NA	NA	0.1	0.1	7

^a Based on AOR data for the period 2005 - 2009, see Table 4.

^b See Table 2 for heat input potential for wood chips, which is the potential amount of current actual heat input to be replaced by wood chip burning.

^c Current actual emissions for heat input potential of annual wood chip usage. This is the current actual annual emissions that will be replaced by emissions due to annual wood chip usage.

^d Future potential emissions for annual wood chip usage, see Table 2.

^e SAM emissions data are not available (NA) in the AORs for 2005 - 2009.

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