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D.E.P. - South District

**AIR CONSTRUCTION PERMIT APPLICATION  
BOILER NOS. 4 & 5  
SUGAR CANE GROWERS COOPERATIVE OF FLORIDA  
BELLE GLADE, FLORIDA**

**Prepared For:  
Sugar Cane Growers Cooperative of Florida  
1500 West Sugar House Road  
Belle Glade, Florida 33430**

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

**November 2003  
0237588**

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4 Copies - FDEP  
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# Department of Environmental Protection

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## Division of Air Resource Management

D.E.P. - South District

### APPLICATION FOR AIR PERMIT - LONG FORM

#### I. APPLICATION INFORMATION

**Air Construction Permit** – 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
- at an existing federally enforceable state air operation permit (FESOP) or Title V permitted facility.

**Air Operation Permit** – Use this form to apply for:

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

**Air Construction Permit & Revised/Renewal 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: <b>Sugar Cane Growers Cooperative of Florida</b>	
2. Site Name: <b>Glades Sugar House</b>	
3. Facility Identification Number: <b>0990026</b>	
4. Facility Location...: Street Address or Other Locator: <b>West Sugar House Road</b> City: <b>Belle Glade</b> County: <b>Palm Beach</b> Zip Code: <b>33430-0666</b>	
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: <b>Kathy Lockhart</b>	
2. Application Contact Mailing Address... Organization/Firm: <b>Sugar Cane Growers Cooperative of Florida</b> Street Address: <b>Airport Road P.O. Box 666</b> City: <b>Belle Glade</b> State: <b>FL</b> Zip Code: <b>33430-0666</b>	
3. Application Contact Telephone Numbers... Telephone: <b>(516) 996-4779</b> ext. Fax: <b>(561) 996-4780</b>	
4. Application Contact Email Address: <b>kdlockhart@scgc.com</b>	

#### Application Processing Information (DEP Use)

1. Date of Receipt of Application:	<b>12-08-04</b>
2. Project Number(s):	<b>0990026-008-AC</b>
3. PSD Number (if applicable):	
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 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 *(Amendment Note: previously at end of Section I)*

Application to add the ability to also fire natural gas in Boiler Nos. 4 and 5.

APPLICATION INFORMATION

Scope of Application (Amendment Note: previously at end of Section I)

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Proc. Fee
004	Boiler No. 4	AC1B	
005	Boiler No. 5	AC1B	

Application Processing Fee (Amendment Note: previously at end of Section I)

Check one:  Attached - Amount: \$ \_\_\_\_\_  Not Applicable

**APPLICATION INFORMATION**

**Owner/Authorized Representative Statement**

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

1. Owner/Authorized Representative Name :	
<b>Jose F. Alvarez, Senior Vice President Planning Operations</b>	
2. Owner/Authorized Representative Mailing Address...	
Organization/Firm: <b>Sugar Cane Growers Cooperative of Florida</b>	
Street Address: <b>Airport Road P.O. Box 666</b>	
City: <b>Belle Glade</b> State: <b>FL</b> Zip Code: <b>33430-0666</b>	
3. Owner/Authorized Representative Telephone Numbers...	
Telephone: <b>(561) 996-4759</b> ext. Fax: <b>(561) 996-4747</b>	
4. Owner/Authorized Representative Email Address: <b>jfalvarez@scgc.com</b>	
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>12/2/03</u> Date

# APPLICATION INFORMATION

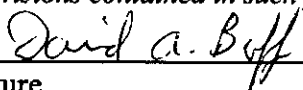
## Application Responsible Official Certification

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:			
<p><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></p>			
_____ Signature		_____ Date	

# APPLICATION INFORMATION

## Professional Engineer Certification

1. Professional Engineer Name: <b>David A. Buff</b> Registration Number: <b>19011</b>
2. Professional Engineer Mailing Address... Organization/Firm: <b>Golder Associates Inc.**</b> Street Address: <b>6241 NW 23<sup>rd</sup> Street, Suite 500</b> City: <b>Gainesville</b> State: <b>FL</b> Zip Code: <b>32653</b>
3. Professional Engineer Telephone Numbers... Telephone: <b>(352) 336-5600</b> ext. <b>545</b> Fax: <b>(352) 336-6603</b>
4. Professional Engineer Email Address: <b>dbuff@golder.com</b>
5. Professional Engineer Statement: <p><i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i></p> <p><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></p> <p><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></p> <p><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></p> <p><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></p> <p><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></p> <p style="text-align: center;">               _____              Signature         </p> <p style="text-align: right;">             _____              Date         </p> <p>(seal)</p>

\* Attach any exception to certification statement.

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

## II. FACILITY INFORMATION

### A. GENERAL FACILITY INFORMATION

#### Facility Location and Type

1. Facility UTM Coordinates... Zone 17 East (km) <b>534.9</b> North (km) <b>2,953.3</b>		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) <b>26/42/06</b> Longitude (DD/MM/SS) <b>80/38/57</b>	
3. Governmental Facility Code: <b>0</b>	4. Facility Status Code: <b>A</b>	5. Facility Major Group SIC Code: <b>20</b>	6. Facility SIC(s): <b>2061</b>
7. Facility Comment :			

#### Facility Contact

1. Facility Contact Name: <b>Kathy Lockhart, Environmental Manager</b>
2. Facility Contact Mailing Address... Organization/Firm: <b>Sugar Cane Growers Cooperative of Florida</b> Street Address: <b>West Sugar House Road, P.O. Box 666</b> City: <b>Belle Glade</b> State: <b>FL</b> Zip Code: <b>33430-0666</b>
3. Facility Contact Telephone Numbers: Telephone: <b>(561) 996-4779</b> ext. Fax: <b>(561) 996-4780</b>
4. Facility Contact Email Address: <b>kdlockhart@scgc.com</b>

#### 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 checked="" type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)	
7. <input type="checkbox"/> Synthetic Minor Source of HAPs	
8. <input 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:	

# FACILITY INFORMATION

## List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
Sulfur Dioxide (SO <sub>2</sub> )	A	N
Volatile Organic Compounds (VOC)	A	N
Particulate Matter (PM)	A	N
Carbon Monoxide (CO)	A	N
Nitrogen Oxides (NO <sub>x</sub> )	A	N
Methanol (H115)	A	N
Napthalene (H132)	A	N
Polycyclic Organic Matter (H151)	A	N
Xylene (H186)	A	N

**FACILITY INFORMATION**

**B. EMISSIONS CAPS**

**Facility-Wide or Multi-Unit Emissions Caps**

1. Pollutant Subject to Emissions Cap	2. Facility Wide Cap [Y or N]? (all units)	3. Emissions Unit ID No.s Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap
SO <sub>2</sub>	N	See Comment	See Comment		See Comment

**7. Facility-Wide or Multi-Unit Emissions Cap Comment:**

**Item No. 3:** Boiler No. 1 (Emission Unit ID No. 001)  
 Boiler No. 2 (Emission Unit ID No. 002)  
 Boiler No. 3 (Emission Unit ID No. 003)  
 Boiler No. 4 (Emission Unit ID No. 004)  
 Boiler No. 5 (Emission Unit ID No. 005)  
 Boiler No. 8 (Emission Unit ID No. 008)

**Item No. 4:** The SO<sub>2</sub> emission cap is a daily limit of 14 tons per day.

**Item No. 6:** Permit No. 0990026-002-AV, Common Condition No. H.2 and AC50-42476/PSD-FL-077 dated 10/28/81.

**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 checked="" type="checkbox"/> Attached, Document ID: <b>SCG-FI-C1</b> <input type="checkbox"/> Previously Submitted, Date: _____
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 checked="" type="checkbox"/> Attached, Document ID: <b>SCG-FI-C2</b> <input type="checkbox"/> Previously Submitted, Date: _____
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 type="checkbox"/> Previously Submitted, Date: _____

**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: <b>Part B</b>
3. Rule Applicability Analysis: <input checked="" type="checkbox"/> Attached, Document ID: <b>SCG-FI-CC3</b>
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)

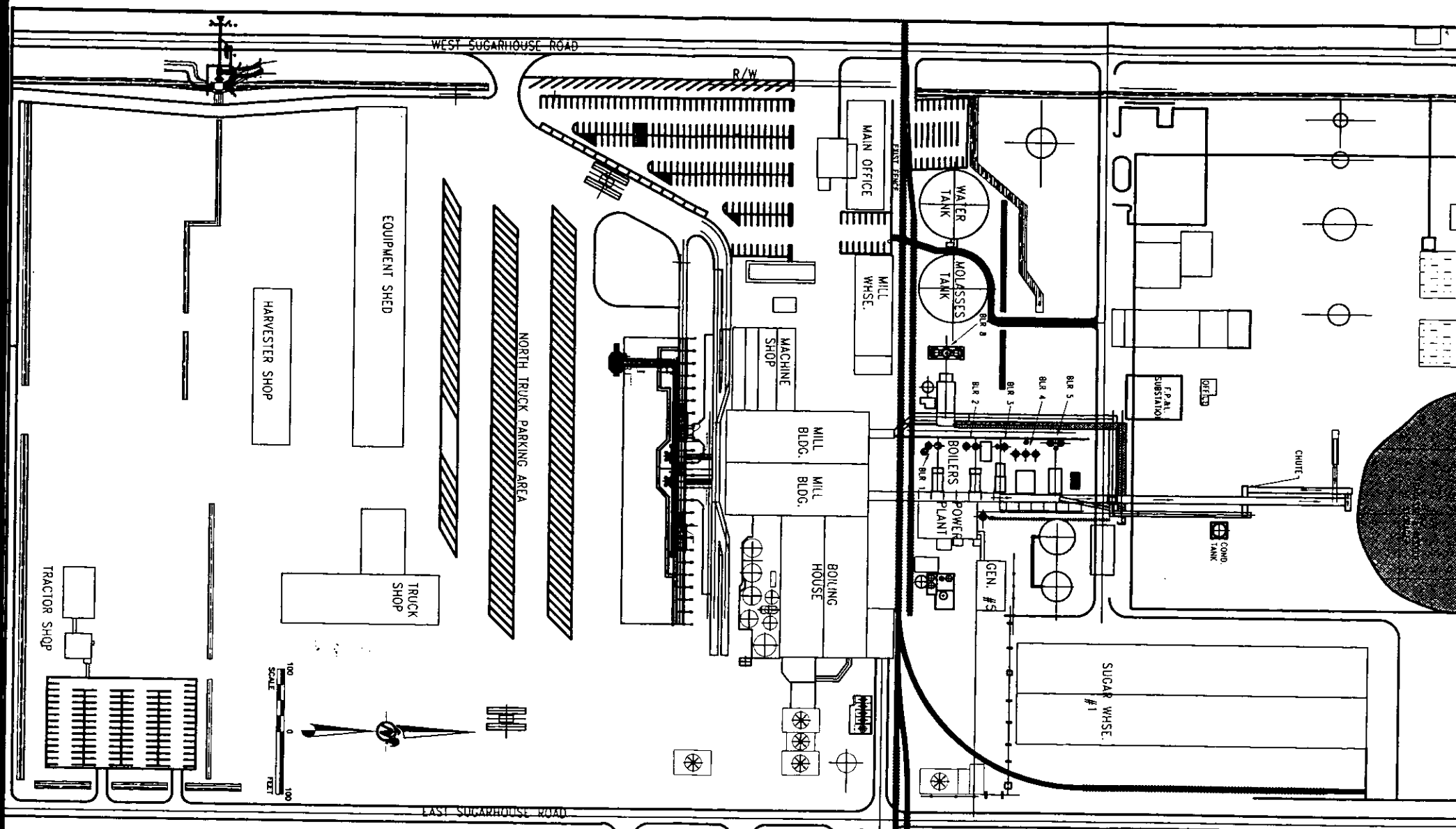
**Additional Requirements for Title V Air Operation Permit Applications**

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**

[Empty box for Additional Requirements Comment]

**ATTACHMENT SCG-FI-C1**  
**FACILITY PLOT PLAN**



REV	SCALE	DATE
CAAD	AMB	1/7/05
CHECK	DB	1/8/05
REVIEW		

**ATTACHMENT SCG-FI-C1  
FACILITY PLOT PLAN**

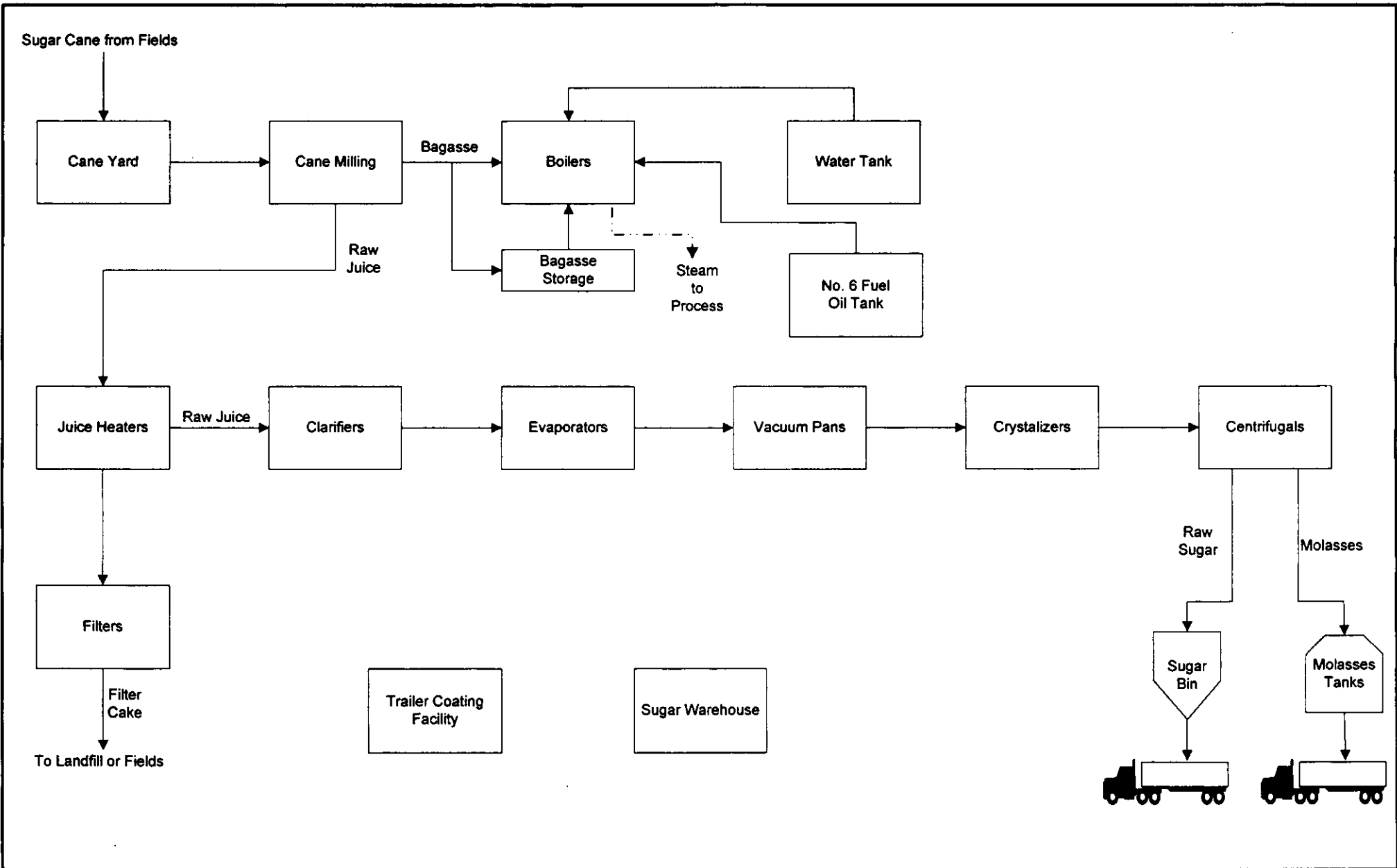
PROJECT  
**SUGAR CANE GROWERS  
 COOPERATIVE OF FLORIDA**  
 BELLE GLADE, FLORIDA

NOTE: ● = STACK LOCATION

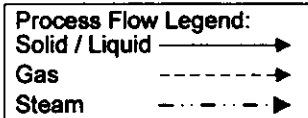


**ATTACHMENT SCG-FI-C2**  
**PROCESS FLOW DIAGRAM**





ATTACHMENT SCG-FI-C2  
 PROCESS FLOW DIAGRAM  
 SUGAR CANE GROWERS COOPERATIVE OF FLORIDA  
 Source: Golder, 2003.



0237588/4/4.4/4.4.1 Boilers 4&5/SCG-FI-C2.vsd

11/25/03



**ATTACHMENT SCG-FI-CC3**  
**RULE APPLICABILITY ANALYSIS**

# Title V Core List

Effective: 03/01/02

[Note: The Title V Core List is meant to simplify the completion of the "List of Applicable Regulations" for DEP Form No. 62-210.900(1), Application for Air Permit - Long Form. The Title V Core List is a list of rules to which all Title V Sources are presumptively subject. The Title V Core List may be referenced in its entirety, or with specific exceptions. The Department may periodically update the Title V Core List.]

**Federal:** (description)

40 CFR 61, Subpart M: NESHAP for Asbestos.

40 CFR 82: Protection of Stratospheric Ozone.

40 CFR 82, Subpart B: Servicing of Motor Vehicle Air Conditioners (MVAC).

40 CFR 82, Subpart F: Recycling and Emissions Reduction.

**State:** (description)

**CHAPTER 62-4, F.A.C.: PERMITS, effective 06-01-01**

62-4.030, F.A.C.: General Prohibition.

62-4.040, F.A.C.: Exemptions.

62-4.050, F.A.C.: Procedure to Obtain Permits; Application.

62-4.060, F.A.C.: Consultation.

62-4.070, F.A.C.: Standards for Issuing or Denying Permits; Issuance; Denial.

62-4.080, F.A.C.: Modification of Permit Conditions.

62-4.090, F.A.C.: Renewals.

62-4.100, F.A.C.: Suspension and Revocation.

62-4.110, F.A.C.: Financial Responsibility.

62-4.120, F.A.C.: Transfer of Permits.

62-4.130, F.A.C.: Plant Operation - Problems.

62-4.150, F.A.C.: Review.

62-4.160, F.A.C.: Permit Conditions.

62-4.210, F.A.C.: Construction Permits.

62-4.220, F.A.C.: Operation Permit for New Sources.

**CHAPTER 62-210, F.A.C.: STATIONARY SOURCES - GENERAL REQUIREMENTS, effective 06-21-01**

62-210.300, F.A.C.: Permits Required.

62-210.300(1), F.A.C.: Air Construction Permits.

62-210.300(2), F.A.C.: Air Operation Permits.

62-210.300(3), F.A.C.: Exemptions.

62-210.300(5), F.A.C.: Notification of Startup.

62-210.300(6), F.A.C.: Emissions Unit Reclassification.

62-210.300(7), F.A.C.: Transfer of Air Permits.

## **Title V Core List**

Effective: 03/01/02

- 62-210.350, F.A.C.: Public Notice and Comment.
- 62-210.350(1), F.A.C.: Public Notice of Proposed Agency Action.
- 62-210.350(2), F.A.C.: Additional Public Notice Requirements for Emissions Units Subject to Prevention of Significant Deterioration or Nonattainment-Area Preconstruction Review.
- 62-210.350(3), F.A.C.: Additional Public Notice Requirements for Sources Subject to Operation Permits for Title V Sources.

- 62-210.360, F.A.C.: Administrative Permit Corrections.
- 62-210.370(3), F.A.C.: Annual Operating Report for Air Pollutant Emitting Facility.
- 62-210.400, F.A.C.: Emission Estimates.
- 62-210.650, F.A.C.: Circumvention.
- 62-210.700, F.A.C.: Excess Emissions.

- 62-210.900, F.A.C.: Forms and Instructions.
- 62-210.900(1), F.A.C.: Application for Air Permit – Title V Source, Form and Instructions.
- 62-210.900(5), F.A.C.: Annual Operating Report for Air Pollutant Emitting Facility, Form and Instructions.
- 62-210.900(7), F.A.C.: Application for Transfer of Air Permit – Title V and Non-Title V Source.

### **CHAPTER 62-212, F.A.C.: STATIONARY SOURCES - PRECONSTRUCTION REVIEW, effective 08-17-00**

### **CHAPTER 62-213, F.A.C.: OPERATION PERMITS FOR MAJOR SOURCES OF AIR POLLUTION, effective 04-16-01**

- 62-213.205, F.A.C.: Annual Emissions Fee.
  - 62-213.400, F.A.C.: Permits and Permit Revisions Required.
  - 62-213.410, F.A.C.: Changes Without Permit Revision.
  - 62-213.412, F.A.C.: Immediate Implementation Pending Revision Process.
  - 62-213.415, F.A.C.: Trading of Emissions Within a Source.
  - 62-213.420, F.A.C.: Permit Applications.
  - 62-213.430, F.A.C.: Permit Issuance, Renewal, and Revision.
  - 62-213.440, F.A.C.: Permit Content.
  - 62-213.450, F.A.C.: Permit Review by EPA and Affected States
  - 62-213.460, F.A.C.: Permit Shield.
- 
- 62-213.900, F.A.C.: Forms and Instructions.
  - 62-213.900(1), F.A.C.: Major Air Pollution Source Annual Emissions Fee Form.
  - 62-213.900(7), F.A.C.: Statement of Compliance Form.

## **Title V Core List**

Effective: 03/01/02

### **CHAPTER 62-296, F.A.C.: STATIONARY SOURCES - EMISSION STANDARDS, effective 03-02-99**

62-296.320(4)(c), F.A.C.: Unconfined Emissions of Particulate Matter.

62-296.320(2), F.A.C.: Objectionable Odor Prohibited.

### **CHAPTER 62-297, F.A.C.: STATIONARY SOURCES - EMISSIONS MONITORING, effective 03-02-99**

62-297.310, F.A.C.: General Test Requirements.

62-297.330, F.A.C.: Applicable Test Procedures.

62-297.340, F.A.C.: Frequency of Compliance Tests.

62-297.345, F.A.C.: Stack Sampling Facilities Provided by the Owner of an Emissions Unit.

62-297.350, F.A.C.: Determination of Process Variables.

62-297.570, F.A.C.: Test Report.

62-297.620, F.A.C.: Exceptions and Approval of Alternate Procedures and Requirements.

#### **Miscellaneous:**

**CHAPTER 28-106, F.A.C.: Decisions Determining Substantial Interests**

**CHAPTER 62-110, F.A.C.: Exception to the Uniform Rules of Procedure, effective  
07-01-98**

**CHAPTER 62-256, F.A.C.: Open Burning and Frost Protection Fires, effective 11-30-94**

**CHAPTER 62-257, F.A.C.: Asbestos Notification and Fee, effective 02-09-99**

**CHAPTER 62-281, F.A.C.: Motor Vehicle Air Conditioning Refrigerant Recovery and  
Recycling, effective 09-10-96**

## EMISSIONS UNIT REGULATIONS – BOILER NO. 4

### List of Applicable Regulations

62-296.320(4)(b)4.a., F.A.C.: Visible Emissions Testing
62-296.410(1)(b), F.A.C: Carbonaceous Fuel Burning Equipment
62-296.410(3), F.A.C: Carbonaceous Fuel Burning Equipment
62-296.500(1)(b), F.A.C: RACT for VOC and NO <sub>x</sub>
62-296.500(2)(a), F.A.C: RACT for VOC and NO <sub>x</sub>
62-296.500(2)(c), F.A.C: RACT for VOC and NO <sub>x</sub>
62-296.500(6), F.A.C: RACT for VOC and NO <sub>x</sub>
62-296.570(1), F.A.C: RACT for VOC and NO <sub>x</sub>
62-296.570(2), F.A.C: RACT for VOC and NO <sub>x</sub>
62-296.570(3), F.A.C: RACT for VOC and NO <sub>x</sub>
62-296.570(4)(a), F.A.C: RACT for VOC and NO <sub>x</sub>
62-296.570(4)(b)6., F.A.C: RACT for VOC and NO <sub>x</sub>
62-296.570(4)(c), F.A.C: RACT for VOC and NO <sub>x</sub>
62-297.310(1), F.A.C: General Compliance Test Requirements
62-297.310(2)(b), F.A.C: General Compliance Test Requirements
62-297.310(3), F.A.C: General Compliance Test Requirements
62-297.310(4), F.A.C: General Compliance Test Requirements
62-297.310(5), F.A.C: General Compliance Test Requirements
62-297.310(6), F.A.C: General Compliance Test Requirements
62-297.310(7)(a)3., F.A.C: General Compliance Test Requirements
62-297.310(7)(a)4., F.A.C: General Compliance Test Requirements
62-297.310(7)(a)5., F.A.C: General Compliance Test Requirements
62-297.310(7)(a)9., F.A.C: General Compliance Test Requirements
62-297.310(7)(b), F.A.C.: General Compliance Test Requirements
62-297.310(7)(c), F.A.C: General Compliance Test Requirements
62-297.310(8), F.A.C: General Compliance Test Requirements
62-297.401(1-5), F.A.C: EPA Test Method 5
62-297.401(7)(e), F.A.C: EPA Test Method 7E
62-297.401(9), F.A.C: EPA Test Method 9
62-297.401(18), F.A.C: EPA Test Method 18
62-297.401(25)(a), F.A.C: EPA Test Method 25A
62-297.440(1)(b), F.A.C: Supplemental Test Procedures

## EMISSIONS UNIT REGULATIONS – BOILER NO. 5

### List of Applicable Regulations

62-296.320(4)(b)4.a., F.A.C.: Visible Emissions Testing
62-296.410(1)(b), F.A.C: Carbonaceous Fuel Burning Equipment
62-296.410(3), F.A.C: Carbonaceous Fuel Burning Equipment
62-296.500(1)(b), F.A.C: RACT for VOC and NO <sub>x</sub>
62-296.500(2)(a), F.A.C: RACT for VOC and NO <sub>x</sub>
62-296.500(2)(c), F.A.C: RACT for VOC and NO <sub>x</sub>
62-296.500(6), F.A.C: RACT for VOC and NO <sub>x</sub>
62-296.570(1), F.A.C: RACT for VOC and NO <sub>x</sub>
62-296.570(2), F.A.C: RACT for VOC and NO <sub>x</sub>
62-296.570(3), F.A.C: RACT for VOC and NO <sub>x</sub>
62-296.570(4)(a), F.A.C: RACT for VOC and NO <sub>x</sub>
62-296.570(4)(b)6., F.A.C: RACT for VOC and NO <sub>x</sub>
62-296.570(4)(c), F.A.C: RACT for VOC and NO <sub>x</sub>
62-297.310(1), F.A.C: General Compliance Test Requirements
62-297.310(2)(b), F.A.C: General Compliance Test Requirements
62-297.310(3), F.A.C: General Compliance Test Requirements
62-297.310(4), F.A.C: General Compliance Test Requirements
62-297.310(5), F.A.C: General Compliance Test Requirements
62-297.310(6), F.A.C: General Compliance Test Requirements
62-297.310(7)(a)3., F.A.C: General Compliance Test Requirements
62-297.310(7)(a)4., F.A.C: General Compliance Test Requirements
62-297.310(7)(a)5., F.A.C: General Compliance Test Requirements
62-297.310(7)(a)9., F.A.C: General Compliance Test Requirements
62-297.310(7)(b), F.A.C.: General Compliance Test Requirements
62-297.310(7)(c), F.A.C: General Compliance Test Requirements
62-297.310(8), F.A.C: General Compliance Test Requirements
62-297.401(1-5), F.A.C: EPA Test Method 5
62-297.401(7)(e), F.A.C: EPA Test Method 7E
62-297.401(9), F.A.C: EPA Test Method 9
62-297.401(18), F.A.C: EPA Test Method 18
62-297.401(25)(a), F.A.C: EPA Test Method 25A
62-297.440(1)(b), F.A.C: Supplemental Test Procedures

## EMISSIONS UNIT INFORMATION

Section [ 1 ] of [ 2 ]

Boiler No. 4

### 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 [ 2 ]

Boiler No. 4

## 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:

Boiler No. 4

3. Emissions Unit Identification Number: 004

4. Emissions Unit Status Code:  
A

5. Commence Construction Date:

6. Initial Startup Date:

7. Emissions Unit Major Group SIC Code:  
20

8. Acid Rain Unit?  
 Yes  
 No

9. Package Unit:

Manufacturer:

Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment:

This boiler is currently permitted to fire carbonaceous fuel (bagasse and residue) and fuel oil. The purpose of this application is to add the capability to also fire 100 MMBtu/hr of natural gas replacing some of the heat input currently supplied by firing fuel oil.

**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 2 ]

Boiler No. 4

**Emissions Unit Control Equipment**

1. Control Equipment/Method(s) Description:

**Multi-cyclone dust collector followed by two parallel Joy Turbulaire Type D wet impingement scrubbers**

2. Control Device or Method Code(s): **002, 008**

**EMISSIONS UNIT INFORMATION**

Section [1] of [2]

Boiler No. 4

**B. EMISSIONS UNIT CAPACITY INFORMATION**

**(Optional for unregulated emissions units.)**

**Emissions Unit Operating Capacity and Schedule**

1. Maximum Process or Throughput Rate:		
2. Maximum Production Rate: 300,000 lb/hr steam (585°F, 400 PSIG)		
3. Maximum Heat Input Rate: 572 million Btu/hr		
4. Maximum Incineration Rate:		
	pounds/hr	
	tons/day	
5. Requested Maximum Operating Schedule:		
	24 hours/day	7 days/week
	29 weeks/year	4,800 hours/year
6. Operating Capacity/Schedule Comment: Maximum production rate of 300,000 lb/hr steam is a 24-hour average.		

**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 2 ]

Boiler No. 4

**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: <b>BLR 4</b>		2. Emission Point Type Code: <b>1</b>	
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: <b>V</b>	6. Stack Height: <b>180 feet</b>	7. Exit Diameter: <b>9.46 feet</b>	
8. Exit Temperature: <b>159°F</b>	9. Actual Volumetric Flow Rate: <b>214,000 acfm</b>	10. Water Vapor: <b>%</b>	
11. Maximum Dry Standard Flow Rate: <b>dscfm</b>		12. Nonstack Emission Point Height: <b>feet</b>	
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: <b>Stack parameters based on compliance test performed November 25, 2002.</b>			

**EMISSIONS UNIT INFORMATION**

Section [1] of [2]

Boiler No. 4

**D. SEGMENT (PROCESS/FUEL) INFORMATION****Segment Description and Rate: Segment 1 of 4**

1. Segment Description (Process/Fuel Type): <b>External Combustion Boiler; Bagasse</b>		
2. Source Classification Code (SCC): <b>1-02-011-01</b>		3. SCC Units: <b>Tons Burned</b>
4. Maximum Hourly Rate: <b>79.44</b>	5. Maximum Annual Rate: <b>381,333</b>	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: <b>7.2</b>
10. Segment Comment: <b>Maximum hourly rate based on 572 MMBtu/hr from bagasse (max 24-hour average), and 3,600 Btu/lb (wet) minimum. Maximum annual rate based on 4,800 hours of operation per year.</b>		

**Segment Description and Rate: Segment 2 of 4**

1. Segment Description (Process/Fuel Type): <b>External Combustion Boiler; No. 6 Fuel Oil</b>		
2. Source Classification Code (SCC): <b>1-02-004-01</b>		3. SCC Units: <b>Thousand Gallons Burned</b>
4. Maximum Hourly Rate: <b>2.602</b>	5. Maximum Annual Rate: <b>12,490</b>	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: <b>2.4</b>	8. Maximum % Ash:	9. Million Btu per SCC Unit: <b>151</b>
10. Segment Comment: <b>Maximum hourly rate based on 392.9 MMBtu/hr from fuel oil. Maximum annual rate based on 4,800 hours of operation per year.</b>		

**EMISSIONS UNIT INFORMATION**

Section [1] of [2]

Boiler No. 4

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

**Segment Description and Rate: Segment 3 of 4**

1. Segment Description (Process/Fuel Type): <b>External Combustion Boiler; Natural Gas (&gt; 100 MMBtu/hr)</b>		
2. Source Classification Code (SCC): <b>1-02-006-01</b>		3. SCC Units: <b>Million Cubic Feet Burned</b>
4. Maximum Hourly Rate: <b>0.10</b>	5. Maximum Annual Rate: <b>260</b>	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: <b>1,000</b>
10. Segment Comment: <b>Maximum hourly rate based on 100 MMBtu/hr from natural gas. Maximum annual rate based on 2,600 hours of operation per year.</b>		

**Segment Description and Rate: Segment 4 of 4**

1. Segment Description (Process/Fuel Type): <b>External Combustion Boiler; Solid Waste (Bagasse Residue)</b>		
2. Source Classification Code (SCC): <b>1-02-012-01</b>		3. SCC Units: <b>Tons Burned</b>
4. Maximum Hourly Rate: <b>28.26</b>	5. Maximum Annual Rate: <b>135,649</b>	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: <b>17.8</b>
10. Segment Comment: <b>Maximum hourly rate based on 503.03 MMBtu/hr (24-hour average) from residue firing. Maximum annual rate based on 4,800 hours of operation per year.</b>		

# EMISSIONS UNIT INFORMATION

Section [ 1 ] of [ 2 ]

Boiler No. 4

## 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
PM	008	002	EL
NO <sub>x</sub>			EL
VOC			EL
SO <sub>2</sub>			EL
Methanol (H115)			NS
POM (H151)			NS

**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: <b>PM</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: <b>143 lb/hour                      343 tons/year</b>		4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor: <b>0.25 lb PM/MMBtu (Carbonaceous Fuels)</b> Reference: <b>Permitted PM emission rate for bagasse (worst-case fuel)</b>		7. Emissions Method Code: <b>0</b>	
8. Calculation of Emissions: Hourly: <b>0.25 lb PM/MMBtu x 572 MMBtu/hr = 143 lb/hr</b>  Annual: <b>143 lb/hr x 4,800 hr/yr x 1 ton/2,000 lb = 343.2 TPY</b>			
9. Pollutant Potential/Estimated Fugitive Emissions Comment: <b>Annual potential PM emissions based on 4,800 hr/yr of operation firing bagasse. Although Boiler No. 4 may also fire fuel oil and natural gas, firing bagasse results in worst-case PM emissions.</b>			



**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [1] of [2]  
 Boiler No. 4

Page [1] of [4]  
 Particulate Matter - Total

**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 2

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>0.25 lb/MMBtu (Carbonaceous Fuels)</b>	4. Equivalent Allowable Emissions: <b>143 lb/hour      344 tons/year</b>
5. Method of Compliance: <b>EPA Method 5</b>	
6. Allowable Emissions Comment (Description of Operating Method): <b>Permit No. AC50-42476/PSD-FL-077 dated 10/28/81.</b>	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: <b>RULE</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>0.1 lb/MMBtu (Fossil Fuel)</b>	4. Equivalent Allowable Emissions: <b>31.5 lb/hour      75.7 tons/year</b>
5. Method of Compliance: <b>EPA Method 5</b>	
6. Allowable Emissions Comment (Description of Operating Method): <b>Based on firing No. 6 Fuel Oil at a maximum heat input rate for fuel oil of 315.25 MMBtu/hr. Annual allowable emissions based on 4,800 hr/yr of operation. Permit No. AC50-42476/PSD-FL-077 dated 10/28/81.</b>	

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: <b>lb/hour      tons/year</b>
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

**EMISSIONS UNIT INFORMATION**

Section **[ 1 ]** of **[ 2 ]**  
Boiler No. **4**

**POLLUTANT DETAIL INFORMATION**

Page **[ 2 ]** of **[ 4 ]**  
**Nitrogen Oxide**

**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: <b>NO<sub>x</sub></b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: <b>327.0 lb/hour                      784.8 tons/year</b>		4. Synthetically Limited? <input checked="checked" type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to          tons/year			
6. Emission Factor: <b>0.65 lb/MMBtu (Residue Firing)</b> Reference: <b>Permitted maximum emission rate for firing worst-case fuel.</b>		7. Emissions Method Code: <b>0</b>	
8. Calculation of Emissions: <b>Hourly: 0.65 lb/MMBtu x 503.03 MMBtu/hr = 327.0 lb/hr</b> <b>Annual: 327.0 lb/hr x 4,800 hr/yr x 1 ton/2,000 lb = 784.8 TPY</b>			
9. Pollutant Potential/Estimated Fugitive Emissions Comment:			

**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [1] of [2]  
Boiler No. 4

Page [2] of [4]  
Nitrogen Oxide

**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 2

1. Basis for Allowable Emissions Code: <b>RULE</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>0.45 lb/MMBtu</b>	4. Equivalent Allowable Emissions: <b>257.4 lb/hour      617.8 tons/year</b>
5. Method of Compliance: <b>EPA Method 7E</b>	
6. Allowable Emissions Comment (Description of Operating Method): <b>Permit No. AO50-191735 dated 1/27/97, RACT Permit Amendment. Applies when firing bagasse @ 572 MMBtu/hr.</b>	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>0.65 lb/MMBtu</b>	4. Equivalent Allowable Emissions: <b>327.0 lb/hour      784.8 tons/year</b>
5. Method of Compliance: <b>EPA Method 7E</b>	
6. Allowable Emissions Comment (Description of Operating Method): <b>Applies when firing bagasse residue @ 503.03 MMBtu/hr.</b>	

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**

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 Boiler No. 4

**POLLUTANT DETAIL INFORMATION**

Page [3] of [4]  
 Volatile Organic Compounds

**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: <b>VOC</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: <b>400.4 lb/hour                      961 tons/year</b>		4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor: <b>0.7 lb VOC/MMBtu</b>  Reference: <b>Permitted VOC Emission Rate</b>		7. Emissions Method Code: <b>0</b>	
8. Calculation of Emissions: Hourly: <b>0.7 lb VOC/MMBtu x 572 MMBtu/hr = 400.4 lb/hr</b>  Annual: <b>400.4 lb/hr x 4,800 hr/yr x 1 ton/2,000 lb = 961 TPY</b>			
9. Pollutant Potential/Estimated Fugitive Emissions Comment:			

**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [1] of [2]  
Boiler No. 4

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Volatile Organic Compounds

**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: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>0.7 lb/MMBtu</b>	4. Equivalent Allowable Emissions: <b>400.4 lb/hour      961 tons/year</b>
5. Method of Compliance: <b>EPA Methods 25A and 18, combined.</b>	
6. Allowable Emissions Comment (Description of Operating Method): <b>Permit No. 0990026-005-AC; dated 04/28/03.</b>	

**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

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 Boiler No. 4

POLLUTANT DETAIL INFORMATION

Page [ 4 ] of [ 4 ]  
 Sulfur Dioxide

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: SO <sub>2</sub>	2. Total Percent Efficiency of Control:
3. Potential Emissions: 1,099 lb/hour              2,638 tons/year	4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to              tons/year	
6. Emission Factor: 2.4% S fuel oil  Reference: Permit Limit	7. Emissions Method Code: 3
8. Calculation of Emissions: Hourly: see Attachment SCG-EU1-F8  Annual: 1,099 lb/hr x 4,800 hr/yr x 1 ton/2,000 lb = 2,637.6 TPY	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [1] of [2]  
Boiler No. 4

Page [4] of [4]  
Sulfur Dioxide

**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: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>Maximum sulfur content of fuel = 2.4%</b>	4. Equivalent Allowable Emissions: <b>1,024 lb/hour      2,458 tons/year</b>
5. Method of Compliance: <b>Record keeping of total fuel oil to Boiler Nos. 1 through 5 as described in the current Title V permit.</b>	
6. Allowable Emissions Comment (Description of Operating Method): <b>Construction Permit No. AC50-2334 dated 10/14/74 and Permit No. AC50-42476/PSD-FL-077 dated 10/28/81. See Attachment SCG-EU1-F8 for calculations.</b>	

**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 [ 2 ]

Boiler No. 4

**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 1

1. Visible Emissions Subtype: <b>VE30</b>	2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: <b>30 %</b> Exceptional Conditions: <b>40 %</b> Maximum Period of Excess Opacity Allowed: <b>2 min/hour</b>	
4. Method of Compliance: <b>EPA Method 9</b>	
5. Visible Emissions Comment: <b>Rule 62-296.410(1)(b)1, F.A.C.</b>	

**Visible Emissions Limitation:** Visible Emissions Limitation \_\_\_\_ of \_\_\_\_

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	



**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 2 ]

Boiler No. 4

**H. CONTINUOUS MONITOR INFORMATION**

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

**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:	

**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 [ 2 ]  
Boiler No. 4

**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: <b>SCG-EU1-I1</b> <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 checked="" type="checkbox"/> Attached, Document ID: <b>SCG-EU1-I2</b> <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 checked="" type="checkbox"/> Attached, Document ID: <b>SCG-EU1-I3</b> <input type="checkbox"/> Previously Submitted, Date _____
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 type="checkbox"/> Previously Submitted, Date _____ <input checked="" 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

**EMISSIONS UNIT INFORMATION**

Section [ 1 ] of [ 2 ]

Boiler No. 4

**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 [ 2 ]

Boiler No. 4

Additional Requirements Comment

[Empty comment box]

**ATTACHMENT SCG-EU1-F8**  
**CALCULATION OF EMISSIONS**

Attachment SCG-EU1-F8. SCGC Boiler No. 4 Maximum SO<sub>2</sub> Emissions Due to Bagasse/Residue and Fuel Oil Firing: 2.4% Sulfur Fuel Oil (11/11/2003)

Boiler	Boiler Design Rates				Steam Rate			Heat Input		Fuel Oil Usage (gal/hr)	Bagasse or Residue Usage (lb/hr, dry)	SO <sub>2</sub> Emissions		
	Steam Rate (lb/hr)	Steam Enthalpy (Btu/lb)	Heat Input		Total (lb/hr)	Bagasse or Residue (lb/hr)	Fuel Oil (lb/hr)	From Bagasse or Residue <sup>a</sup> (MMBtu/hr)	From Fuel Oil <sup>b</sup> (MMBtu/hr)			Fuel Oil <sup>b</sup> (lb/hr)	Bagasse or Residue <sup>c</sup> (lb/hr)	Total (lb/hr)
			Total (MMBtu/hr)	Oil Only (MMBtu/hr)										
<u>BAGASSE/OIL FIRING</u>														
4	300,000	1,050	572.7	392.9	300,000	94,221	205,779	179.9	392.9	2,602	22,485	1,024.0	10.8	1,034.8
<u>RESIDUE/OIL FIRING</u>														
4	300,000	1,050	504.0	392.9	300,000	66,131	233,869	111.1	392.9	2,602	12,483	1,024.1	74.9	1,099.0

(a) Based on 55% thermal efficiency for bagasse or bagasse/fuel oil firing, and 62.5% thermal efficiency for residue or residue/fuel oil firing.

(b) Assumes all sulfur in fuel oil is emitted out the stack.

(c) Emission factor of 0.06 lb/MMBtu for SO<sub>2</sub> due to bagasse firing, based on industry test data. Sulfur content of residue assumed to be 0.5% (dry), with 40% removal in wet scrubbers.

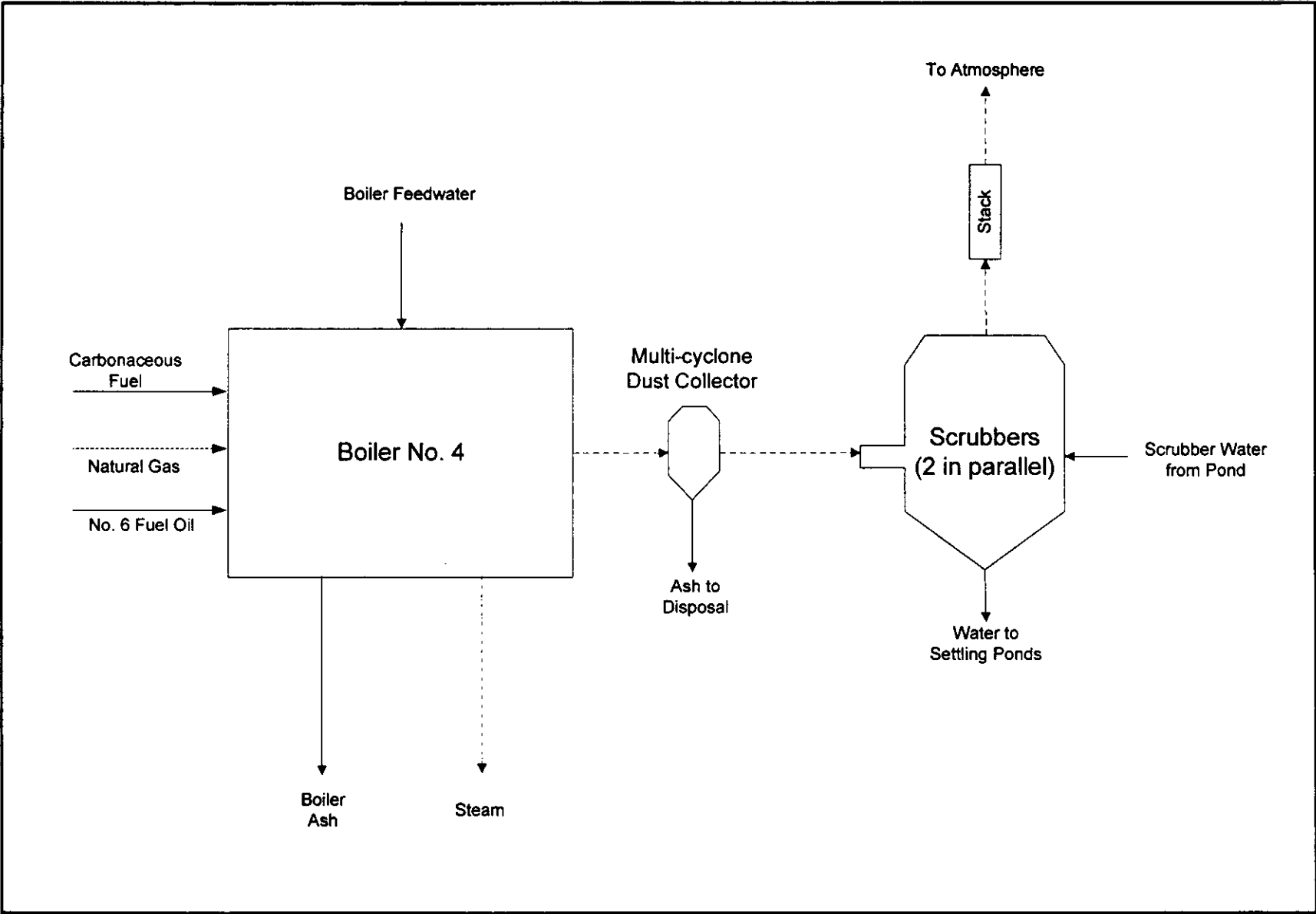
Note: Fuel Oil- 2.4% Sulfur

18,415 Btu/lb; 151,000 Btu/gal

8.2 lb/gal

Bagasse - 8,000 Btu/lb (dry); 3,600 Btu/lb(wet)

**ATTACHMENT SCG-EU1-I1**  
**PROCESS FLOW DIAGRAM**



Attachment SCG-EU1-11  
Process Flow Diagram

Source: Golder, 2003.

Process Area: Boiler No. 4  
0237588/4/4.4/4.4.1 Boilers 4&5/SCG-EU1-11.vsd  
Latest Revision Date: 11/25/2003

Process Flow Legend:	
Solid / Liquid	→
Gas	- - - - -
Steam	- - - - -





**ATTACHMENT SCG-EU1-I2**  
**FUEL ANALYSIS OR SPECIFICATION**

**ATTACHMENT SCG-EU1-I2  
FUEL ANALYSIS AND SPECIFICATION  
BOILER NO. 4**

SUGAR CANE GROWERS COOPERATIVE OF FLORIDA

PARAMETER	BAGASSE*	RESIDUE*	NO. 6 FUEL OIL**
Dry Basis:			
Btu/lb	8,000	8,900	18,415
lb/gal	--	--	8.2
Btu/gal	--	--	151,000
AVERAGE ULTIMATE ANALYSIS: (Dry Basis %)			
			**
Carbon	49.5	51	87.3
Hydrogen	5.9	5	10.5
Nitrogen	0.35	0.4	0.28
Oxygen	42.4	35	0.64
Sulfur	0.06	0.4--0.6	2.4
Ash	1.74	1.9--8.0	0.1
Water	54	40	0.2

\* Sources: Sugar Cane Growers Cooperative, 2003. It represents average values, since biomass in particular could vary depending on environmental conditions, as well as harvesting procedures.

\*\* Source: Perry's Chemical Engineers' Handbook. Sixth Edition

**ATTACHMENT SCG-EU1-I3**  
**DETAILED DESCRIPTION OF CONTROL EQUIPMENT**

**ATTACHMENT SCG-EU1-I3  
DETAILED DESCRIPTION OF CONTROL EQUIPMENT**

**SUGAR CANE GROWERS COOPERATIVE OF FLORIDA  
BOILER NO. 4**

**Control equipment:** Multi-cyclone collector followed by two (2) Joy  
Turbulaire wet impingement scrubbers, custom design.

Scrubbing Liquid:	Water
Inlet Water Pressure (psi)	0-100
Pressure Drop Across Scrubber (Inches H <sub>2</sub> O)	0-15

## EMISSIONS UNIT INFORMATION

Section [ 2 ] of [ 2 ]  
Boiler No. 5

### 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 [ 2 ] of [ 2 ]  
Boiler No. 5

**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:  
**Boiler No. 5**

3. Emissions Unit Identification Number: **005**

4. Emissions Unit Status Code: <b>A</b>	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code: <b>20</b>	8. Acid Rain Unit? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
--	--------------------------------	--------------------------	--	--

9. Package Unit:  
Manufacturer: \_\_\_\_\_ Model Number: \_\_\_\_\_

10. Generator Nameplate Rating: **MW**

11. Emissions Unit Comment:  
**This boiler is currently permitted to fire carbonaceous fuel (bagasse and residue) and fuel oil. The purpose of this application is to add the capability to also fire 300 MMBtu/hr of natural gas as needed as a substitute for the heat input currently supplied by firing fuel oil.**

**EMISSIONS UNIT INFORMATION**

Section [ 2 ] of [ 2 ]

Boiler No. 5

**Emissions Unit Control Equipment**

1. Control Equipment/Method(s) Description:  
**Multicyclone Dust Collector followed by two parallel Joy Turbulaire Type D wet impingement scrubbers.**

2. Control Device or Method Code(s): **002, 008**

**EMISSIONS UNIT INFORMATION**

Section [ 2 ] of [ 2 ]

Boiler No. 5

**B. EMISSIONS UNIT CAPACITY INFORMATION**

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:		
2. Maximum Production Rate: 230,000 lb/hr steam (585°F, 400 PSIG)		
3. Maximum Heat Input Rate: 439 million Btu/hr		
4. Maximum Incineration Rate:	pounds/hr	
	tons/day	
5. Requested Maximum Operating Schedule:		
	24 hours/day	7 days/week
	29 weeks/year	4,800 hours/year
6. Operating Capacity/Schedule Comment: Maximum production rate of 230,000 lb/hr steam is a 24-hour average.		



**EMISSIONS UNIT INFORMATION**

Section [ 2 ] of [ 2 ]

Boiler No. 5

**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: <b>BLR 5</b>		2. Emission Point Type Code: <b>1</b>	
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: <b>V</b>	6. Stack Height: <b>150 feet</b>		7. Exit Diameter: <b>7 feet</b>
8. Exit Temperature: <b>157°F</b>	9. Actual Volumetric Flow Rate: <b>165,320 acfm</b>	10. Water Vapor: <b>%</b>	
11. Maximum Dry Standard Flow Rate: <b>dscfm</b>		12. Nonstack Emission Point Height: <b>feet</b>	
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: <b>Stack paramaters based on compliance test performed November 26, 2002.</b>			

**EMISSIONS UNIT INFORMATION**

Section [ 2 ] of [ 2 ]

Boiler No. 5

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

**Segment Description and Rate: Segment 1 of 4**

1. Segment Description (Process/Fuel Type): <b>External Combustion Boiler; Bagasse</b>		
2. Source Classification Code (SCC): <b>1-02-011-01</b>		3. SCC Units: <b>Tons Burned</b>
4. Maximum Hourly Rate: <b>60.972</b>	5. Maximum Annual Rate: <b>292,667</b>	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: <b>7.2</b>
10. Segment Comment: <b>Maximum hourly rate based on 439 MMBtu/hr for bagasse (maximum 24-hour average). Assumes minimum heating value for bagasse of 3,600 Btu/lb. Maximum annual rate based on 4,800 hours of operation per year.</b>		

**Segment Description and Rate: Segment 2 of 4**

1. Segment Description (Process/Fuel Type): <b>External Combustion Boiler; No. 6 Fuel Oil</b>		
2. Source Classification Code (SCC):		3. SCC Units: <b>Thousand Gallons Burned (all liquid fuels)</b>
4. Maximum Hourly Rate: <b>1.9993</b>	5. Maximum Annual Rate: <b>9,597</b>	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: <b>2.4</b>	8. Maximum % Ash:	9. Million Btu per SCC Unit: <b>151</b>
10. Segment Comment: <b>Maximum hourly rate based on 301.9 MMBtu/hr from fuel oil. Maximum annual rate based on 4,800 hours of operation per year.</b>		

**EMISSIONS UNIT INFORMATION**

Section [2] of [2]

Boiler No. 5

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

**Segment Description and Rate: Segment 3 of 4**

1. Segment Description (Process/Fuel Type): External Combustion Boiler; Natural Gas (> 100 MMBtu/hr)		
2. Source Classification Code (SCC): 1-02-006-01		3. SCC Units: Million Cubic Feet Burned
4. Maximum Hourly Rate: 0.300	5. Maximum Annual Rate: 780	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 1,000
10. Segment Comment: Maximum hourly rate based on 300 MMBtu/hr. Maximum annual rate based on 2,600 hours of operation per year.		

**Segment Description and Rate: Segment 4 of 4**

1. Segment Description (Process/Fuel Type): External Combustion Boiler; Solid Waste (Bagasse Residue)		
2. Source Classification Code (SCC): 1-02-012-01		3. SCC Units: Tons Burned
4. Maximum Hourly Rate: 21.71	5. Maximum Annual Rate: 104,198	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 17.8
10. Segment Comment: Maximum hourly rate based on 386.4 MMBtu/hr from bagasse residue firing. Maximum annual rate based on 4,800 hours of operation per year.		

**EMISSIONS UNIT INFORMATION**

Section [ 2 ] of [ 2 ]

Boiler No. 5

**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
PM	008	002	EL
NO <sub>x</sub>			EL
VOC			EL
SO <sub>2</sub>			EL

**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [2] of [2]  
Boiler No. 5

Page [1] of [4]  
Particulate Matter - Total

**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: <b>PM</b>	2. Total Percent Efficiency of Control:
3. Potential Emissions: <b>109.8 lb/hour                      263.4 tons/year</b>	4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year	
6. Emission Factor: <b>0.25 lb PM/MMBtu (Carbonaceous Fuels)</b> Reference: <b>Permitted PM emission rate for bagasse (worst-case fuel)</b>	7. Emissions Method Code: <b>0</b>
8. Calculation of Emissions: <b>Hourly: 0.25 lb PM/MMBtu x 439 MMBtu/hr = 109.8 lb/hr</b>  <b>Annual: 109.8 lb/hr x 4,800 hr/yr x 1 ton/2,000 lb = 263.4 TPY</b>	
9. Pollutant Potential/Estimated Fugitive Emissions Comment: <b>Annual potential PM emissions based on 4,800 hr/yr of operation firing bagasse. Although Boiler No. 5 may also fire fuel oil and natural gas, firing bagasse results in worst-case PM emissions.</b>	

**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [ 2 ] of [ 2 ]  
Boiler No. 5

Page [ 1 ] of [ 4 ]  
Particulate Matter - Total

**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 2**

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>0.25 lb/MMBtu (Carbonaceous Fuels)</b>	4. Equivalent Allowable Emissions: <b>109.8 lb/hour      264 tons/year</b>
5. Method of Compliance: <b>EPA Method 5</b>	
6. Allowable Emissions Comment (Description of Operating Method): <b>Permit No. AC50-42476/PSD-FL-077 dated 10/28/81.</b>	

**Allowable Emissions Allowable Emissions 2 of 2**

1. Basis for Allowable Emissions Code: <b>RULE</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>0.1 lb/MMBtu (Fossil Fuel)</b>	4. Equivalent Allowable Emissions: <b>30.2 lb/hour      72.5 tons/year</b>
5. Method of Compliance: <b>EPA Method 5</b>	
6. Allowable Emissions Comment (Description of Operating Method): <b>Based on firing No. 6 Fuel Oil at a maximum heat input rate for fuel oil of 301.9 MMBtu/hr. Annual allowable emissions based on 4,800 hr/yr of operation. Permit No. AC50-42476/PSD-FL-077 dated 10/28/81.</b>	

**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: <b>lb/hour      tons/year</b>
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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: NO <sub>x</sub>	2. Total Percent Efficiency of Control:
3. Potential Emissions: 285.4 lb/hour      685 tons/year	4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to      tons/year	
6. Emission Factor: 0.65 lb NO <sub>x</sub> /MMBtu  Reference: Permitted NO <sub>x</sub> emission rate for bagasse residue.	7. Emissions Method Code: 0
8. Calculation of Emissions: Hourly: 0.65 lb NO <sub>x</sub> /MMBtu x 439 MMBtu/hr = 285.4 lb/hr  Annual: 285.4 lb/hr x 4,800 hr/yr x 1 ton/2,000 lb = 684.8 TPY	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [2] of [2]  
Boiler No. 5

Page [2] of [4]  
Nitrogen Oxide

**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 2

1. Basis for Allowable Emissions Code: <b>RULE</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>0.45 lb/MMBtu</b>	4. Equivalent Allowable Emissions: <b>197.6 lb/hour      474 tons/year</b>
5. Method of Compliance: <b>EPA Method 7E</b>	
6. Allowable Emissions Comment (Description of Operating Method): <b>Permit No. AO50-191737 dated 1/27/97, RACT permit amendment. Applies when firing bagasse.</b>	

**Allowable Emissions** Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>0.65 lb/MMBtu</b>	4. Equivalent Allowable Emissions: <b>285.4 lb/hour      685 tons/year</b>
5. Method of Compliance: <b>EPA Method 7E</b>	
6. Allowable Emissions Comment (Description of Operating Method): <b>Permit No. AO50-191737 dated 1/27/97, RACT permit amendment. Applies to firing bagasse residue.</b>	

**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/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: <b>VOC</b>	2. Total Percent Efficiency of Control:
3. Potential Emissions: 307.3 lb/hour                      737.5 tons/year	4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5. Range of Estimated Fugitive Emissions (as applicable): to                  tons/year	
6. Emission Factor: <b>0.7 lb VOC/MMBtu</b>  Reference: <b>Permitted VOC Emission Rate</b>	7. Emissions Method Code: <b>0</b>
8. Calculation of Emissions: Hourly: <b>0.7 lb VOC/MMBtu x 439 MMBtu/hr = 307.3 lb/hr</b>  Annual: <b>307.3 lb/hr x 4,800 hr/yr x 1 ton/2,000 lb = 737.5 TPY</b>	
9. Pollutant Potential/Estimated Fugitive Emissions Comment:	

**EMISSIONS UNIT INFORMATION**

Section [2] of [2]  
Boiler No. 5

**POLLUTANT DETAIL INFORMATION**

Page [3] of [4]  
Volatile Organic Compounds

**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: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>0.7 lb/MMBtu</b>	4. Equivalent Allowable Emissions: <b>307.3 lb/hour      737.5 tons/year</b>
5. Method of Compliance: <b>EPA Methods 25A and 18, combined.</b>	
6. Allowable Emissions Comment (Description of Operating Method): <b>Permit No. 0990026-005-AC, dated 04/28/03.</b>	

**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 [ 2 ] of [ 2 ]  
Boiler No. 5

Page [ 4 ] of [ 4 ]  
Sulfur Dioxide

**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: <b>SO<sub>2</sub></b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: <b>843.9 lb/hour                      2,025 tons/year</b>		4. Synthetically Limited? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor: <b>2.4% S Oil</b>  Reference: <b>Permit Limit</b>		7. Emissions Method Code: <b>3</b>	
8. Calculation of Emissions: <b>Hourly: see Attachment SCG-EU2-F8</b>  <b>Annual: 843.9 lb/hr x 4,800 hr/yr x 1 ton/2,000 lb = 2,025.4 TPY</b>			
9. Pollutant Potential/Estimated Fugitive Emissions Comment:			

**EMISSIONS UNIT INFORMATION**

**POLLUTANT DETAIL INFORMATION**

Section [2] of [2]  
Boiler No. 5

Page [4] of [4]  
Sulfur Dioxide

**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: <b>OTHER</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>Maximum sulfur content of fuel = 2.4%</b>	4. Equivalent Allowable Emissions: <b>786.9 lb/hour      1,889 tons/year</b>
5. Method of Compliance: <b>Record keeping of total fuel oil to Boiler Nos. 1 through 5 as described in the current Title V permit.</b>	
6. Allowable Emissions Comment (Description of Operating Method): <b>Permit No. AC50-2047A dated 02/10/75 and Permit No. AC50-42476/PSD-FL-077 dated 10/28/81. See Attachment SCG-EU2-F8 for calculations.</b>	

**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 [2] of [2]

Boiler No. 5

**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 1

1. Visible Emissions Subtype: VE30	2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: 30 %      Exceptional Conditions: 40 % Maximum Period of Excess Opacity Allowed: 2 min/hour	
4. Method of Compliance: EPA Method 9	
5. Visible Emissions Comment: Rule 62-296.410(1)(b)1, F.A.C.	

**Visible Emissions Limitation:** Visible Emissions Limitation \_\_\_\_ of \_\_\_\_

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: %      Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

**EMISSIONS UNIT INFORMATION**

Section [ 2 ] of [ 2 ]

Boiler No. 5

**H. CONTINUOUS MONITOR INFORMATION**

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

**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:	

**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 [ 2 ] of [ 2 ]

Boiler No. 5

**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: <b>SCG-EU2-I1</b> <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 checked="" type="checkbox"/> Attached, Document ID: <b>SCG-EU2-I2</b> <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 checked="" type="checkbox"/> Attached, Document ID: <b>SCG-EU2-I3</b> <input type="checkbox"/> Previously Submitted, Date _____
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 type="checkbox"/> Previously Submitted, Date _____ <input checked="" 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

**EMISSIONS UNIT INFORMATION**

Section [ 2 ] of [ 2 ]

Boiler No. 5

**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 [ 2 ] of [ 2 ]

Boiler No. 5

**Additional Requirements Comment**

**ATTACHMENT SCG-EU2-F8**  
**CALCULATION OF EMISSIONS**

Attachment SCG-EU2-F8. SCGC Boiler No. 5 Maximum SO<sub>2</sub> Emissions Due to Bagasse/Residue and Fuel Oil Firing: 2.4% Sulfur Fuel Oil (11/11/2003)

Boiler	Boiler Design Rates				Steam Rate			Heat Input		Fuel Oil Usage (gal/hr)	Bagasse or Residue Usage (lb/hr, dry)	SO <sub>2</sub> Emissions		
	Steam Rate (lb/hr)	Steam Enthalpy (Btu/lb)	Heat Input		Total (lb/hr)	Bagasse or Residue (lb/hr)	Fuel Oil (lb/hr)	From Bagasse or Residue <sup>a</sup> (MMBtu/hr)	From Fuel Oil <sup>b</sup> (MMBtu/hr)			Fuel Oil <sup>b</sup> (lb/hr)	Bagasse or Residue <sup>c</sup> (lb/hr)	Total (lb/hr)
			Total (MMBtu/hr)	Oil Only (MMBtu/hr)										
<u>BAGASSE/OIL FIRING</u>														
5	230,000	1,050	439.1	301.9	230,000	71,862	158,138	137.2	301.9	1,999.3	17,149	786.9	8.2	795.2
<u>RESIDUE/OIL FIRING</u>														
5	230,000	1,050	386.4	301.9	230,000	50,298	179,702	84.5	301.9	1,999.3	9,494	786.9	57.0	843.9

(a) Based on 55% thermal efficiency for bagasse or bagasse/fuel oil firing, and 62.5% thermal efficiency for residue or residue/fuel oil firing.

(b) Assumes all sulfur in fuel oil is emitted out the stack.

(c) Emission factor of 0.06 lb/MMBtu for SO<sub>2</sub> due to bagasse firing, based on industry test data. Sulfur content of residue assumed to be 0.5% (dry), with 40% removal in wet scrubbers.

Note: Fuel Oil- 2.4% Sulfur

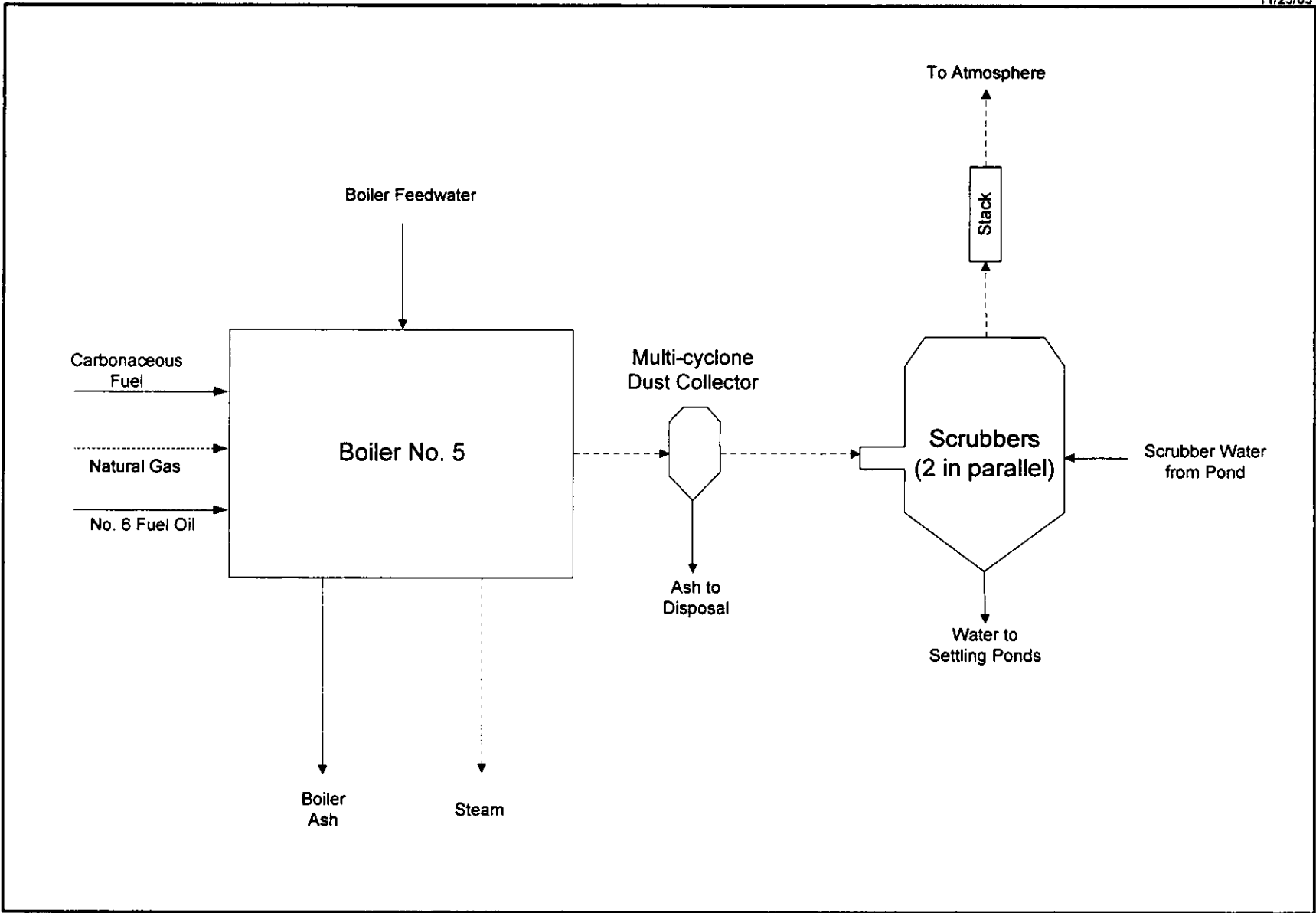
18,415 Btu/lb; 151,000 Btu/gal

8.2 lb/gal

Bagasse - 8,000 Btu/lb (dry); 3,600 Btu/lb(wet)

Residue - 8,900 Btu/lb (dry)

**ATTACHMENT SCG-EU2-I1**  
**PROCESS FLOW DIAGRAM**



Attachment SCG-EU2-11  
Process Flow Diagram

Source: Golder, 2003.

Process Area: Boiler No. 5  
0237588/4/4.4/4.4.1 Boilers 4&5/SCG-EU2-11.vsd  
Latest Revision Date: 11/25/2003

Process Flow Legend:  
Solid / Liquid ———>  
Gas - - - - ->  
Steam - · - - - ->



**ATTACHMENT SCG-EU2-I2**  
**FUEL ANALYSIS OR SPECIFICATION**

**ATTACHMENT SCG-EU2-I2  
FUEL ANALYSIS AND SPECIFICATION  
BOILER NO. 5**

**SUGAR CANE GROWERS COOPERATIVE OF FLORIDA**

PARAMETER	BAGASSE*	RESIDUE*	NO. 6 FUEL OIL**
Dry Basis:			
Btu/lb	8,000	8,900	18,415
lb/gal	--	--	8.2
Btu/gal	--	--	151,000
AVERAGE ULTIMATE ANALYSIS: (Dry Basis %)			
			**
Carbon	49.5	51	87.3
Hydrogen	5.9	5	10.5
Nitrogen	0.35	0.4	0.28
Oxygen	42.4	35	0.64
Sulfur	0.06	0.4--0.6	2.4
Ash	1.74	1.9--8.0	0.1
Water	54	40	0.2

\* Sources: Sugar Cane Growers Cooperative, 2003. It represents average values, since biomass in particular could vary depending on environmental conditions, as well as harvesting procedures.

\*\* Source: Perry's Chemical Engineers' Handbook. Sixth Edition

**ATTACHMENT SCG-EU2-13**  
**DETAILED DESCRIPTION OF CONTROL EQUIPMENT**



**ATTACHMENT SCG-EU2-I3  
DETAILED DESCRIPTION OF CONTROL EQUIPMENT**

**SUGAR CANE GROWERS COOPERATIVE OF FLORIDA  
BOILER NO. 5**

**Control equipment:** Multi-cyclone collector followed by two (2) Joy  
Turbulaire wet impingement scrubbers, custom design.

Scrubbing Liquid:	Water
Inlet Water Pressure (psi)	0-100
Pressure Drop Across Scrubber (Inches H <sub>2</sub> O)	0-15

**PART B**

## 1.0 PROJECT DESCRIPTION

Sugar Cane Growers Cooperative of Florida, Inc. (SCGCF) operates a sugar mill located on West Sugar House Road in Belle Glade, Palm Beach County, Florida. At the mill, sugarcane is ground to remove the sugarcane juice. The remaining fibrous material is called bagasse and is burned as boiler fuel to provide steam and heating requirements for the mill. SCGCF operates six bagasse/residue/oil-fired boilers ranging in capacity from 125,000 to 300,000 pounds per hour (lb/hr) of steam production.

Boiler Nos. 4 and 5 are currently operating under Title V Permit No. 0990026-004-AV. Boiler No. 4 has a maximum 24-hour average heat input rate of 572 million British thermal units per hour (MMBtu/hr). The total heat input can be supplied by firing solely bagasse, bagasse and residue, or a combination of bagasse and residue supplemented by firing No. 6 fuel oil. Boiler No. 4 currently has four (4) identical No. 6 fuel oil burners capable of providing a total of 393 MMBtu/hr of heat input.

Boiler No. 5 has a maximum 24-hour average heat input rate of 439 MMBtu/hr. The total heat input can be supplied by firing solely bagasse, bagasse and residue, or a combination of bagasse and residue supplemented by firing No. 6 fuel oil. Boiler No. 5 currently has three (3) identical No. 6 fuel oil burners with a maximum total heat input rate of 302 MMBtu/hr.

Due to cost considerations, fossil fuels are only fired in the boilers when bagasse, the primary fuel, is unavailable in sufficient quantity or quality to meet the steam requirements of the facility or during boiler start up. Note that the facility has not burned bagasse residue in several years, since the shutdown of the adjacent Great Lakes Chemical plant.

SCGCF is proposing to add the capability to fire natural gas as a substitute for No. 6 fuel oil in Boiler Nos. 4 and 5. SCGCF is proposing to modify one of the existing burners in Boiler No. 4 so that it can also fire natural gas at a maximum rate of 100 MMBtu/hr. For Boiler No. 5, SCGCF is proposing to modify all three existing burners to also fire natural gas at a total maximum heat input rate of 300 MMBtu/hr (i.e., three burners at 100 MMBtu/hr each). The current fuel oil firing capabilities of the existing burners will be retained after modification of the burners.

SCGCF is proposing to fire natural gas in each boiler up to an equivalent of 2,600 hours per year (hr/yr). This equates to a maximum of 260 MMscf/yr (260,000 MMBtu/yr) of gas in Boiler No. 4 and 780 MMscf/yr (780,000 MMBtu/yr) of gas in Boiler No. 5.

The proposed project can be completed without modification of the conditions in the existing Title V permit, except to include natural gas in the list of allowable fuels. Bagasse and residue firing rates, bagasse and residue heat input rates, and maximum steam rates for Boiler Nos. 4 and 5 will not change as a result of the proposed project. Since natural gas will only be used as a substitute for fuel oil, and fossil fuel is used as only a high-cost alternative to bagasse and residue, the annual heat input rate from firing fossil fuels will not increase as a result of the proposed project. SCGCF does not intend to burn any additional fossil fuels as a result of this project. Fossil fuel burning is currently minimized to the extent possible due to the high cost of such fuels and SCGCF is looking at ways to reduce fossil fuel firing. However, fossil fuels must be burned at times, such as during startup or to supplement the combustion process. The addition of natural gas burning capabilities will allow SCGCF the option of burning either oil, gas, or both when fossil fuels are needed.

Emission limits for those criteria pollutants regulated in the current Title V permit for Boiler Nos. 4 and 5 [particulate matter (PM), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>) through fuel sulfur content limits, and volatile organic compounds (VOCs)], will not increase above permitted levels as a result of firing natural gas as a substitute for No. 6 fuel oil. Based on the best available data, emissions of carbon monoxide (CO) may increase compared to fuel oil firing, but this increase will be less than the prevention of significant deterioration (PSD) significant emission rate for CO of 100 tons per year (TPY).

SCGCF is planning on implementing the proposed changes to the burners for Boiler Nos. 4 and 5 over the next 5 years.

## 2.0 AIR EMISSIONS

Hourly and annual emission estimates for firing natural gas in Boiler Nos. 4 and 5 are presented in Tables 1 and 2, respectively. These estimates are based on AP-42 emission factors for PM, SO<sub>2</sub>, and VOCs, vendor performance data for NO<sub>x</sub> and CO, and the equivalent of 2,600 hr/yr of firing natural gas in each boiler. The existing Title V permit specifically limits emissions of PM, NO<sub>x</sub>, SO<sub>2</sub> (through limitations of the sulfur content of the fuel), and VOCs. Emissions of CO are not limited in the Title V Permit.

As shown in Table 3, emissions of PM, NO<sub>x</sub>, and SO<sub>2</sub> from natural gas firing in Boiler Nos. 4 and 5 are significantly less than emissions from firing No. 6 fuel oil. Emissions of CO and VOC while

firing natural gas are greater than those for firing an equivalent amount of No. 6 fuel oil on a heat input basis.

### **3.0 REGULATORY APPLICABILITY**

The following discussion pertains to the federal and state air regulatory requirements and their applicability to the proposed increase in fuel oil firing rate.

#### **3.1 NEW SOURCE REVIEW**

Under federal and State of Florida Prevention of Significant Deterioration (PSD) review requirements, all major new or modified sources of air pollutants regulated under the Clear Air Act (CAA) must be reviewed and a pre-construction permit issued. Florida's State Implementation Plan, which contains PSD regulations, has been approved by EPA; therefore, PSD approval authority has been granted to the Florida Department of Environmental Protection (FDEP).

A "major facility" is defined as any one of 28 named source categories that have the potential to emit 100 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. A "major modification" is defined under PSD regulations as a change at an existing major facility that increases actual emissions by greater than PSD significant emission rates.

SCGCF is an existing major facility, for purposes of new source review, since potential emissions of criteria pollutants from the facility are above major source thresholds. In order to determine the potential increase in actual emissions due to the proposed modification of the burners, maximum annual emission rates due to firing natural gas for an equivalent of 2,600 hr/yr in both Boiler Nos. 4 and 5 were calculated. These emission rates were compared to firing No. 6 fuel oil at the same equivalent heat input rates. This comparison was performed because natural gas will replace fuel oil on an equivalent heat input basis, and total fossil fuel firing will not increase as a result of this project.

As shown in Table 4, actual annual emissions of PM, SO<sub>2</sub>, and NO<sub>x</sub> will decrease as a result of the proposed project. Also as shown in Table 4, actual annual emissions of CO and VOCs are estimated to increase by 69.1 and 0.2 TPY, respectively, based on burning the maximum amount of natural gas. However, these increases in actual annual emissions are well below the PSD significant emission

rates for CO and VOC of 100 and 40 TPY, respectively. Therefore, PSD review does not apply to the proposed project.

### **3.2 NEW SOURCE PERFORMANCE STANDARDS**

The New Source Performance Standards (NSPS) are a set of national emission standards that apply to specific categories of new sources. NSPS Subpart Db is applicable to each steam-generating unit for which construction, modification, or reconstruction is commenced after June 9, 1984, and that has a maximum design heat input rate of 100 MMBtu/hr or greater. Subpart Db regulates SO<sub>2</sub>, NO<sub>x</sub>, and PM emissions from steam generating units.

Boiler Nos. 4 and 5 are "existing facilities" under the NSPS definitions, and are not currently subject to Subpart Db. To become subject to NSPS, the proposed changes to Boiler Nos. 4 and 5 would need to meet the definition of "modification" as defined by 40 CFR 60.2. Modification is defined as:

"Any physical change in, or change in method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted."

The emission increase is based on hourly emissions. To determine if the proposed changes to Boiler No. 4 and 5 qualify as a modification, future hourly emissions due to natural gas burning were compared to current actual emissions due to No. 6 fuel oil firing for SO<sub>2</sub>, NO<sub>x</sub> and PM. These are the pollutants regulated under 40 CFR 60, Subpart Db. Since natural gas will only replace fuel oil burning, and the fossil fuel heat input rate is not increasing, this comparison was based on emission factors in terms of lb/MMBtu heat input. As shown in Table 5, future emission factors for PM, NO<sub>x</sub>, or SO<sub>2</sub> while firing natural gas are less than current emission rates for these pollutants while firing No. 6 fuel oil. As a result, emissions of PM, NO<sub>x</sub>, or SO<sub>2</sub> will not increase on an hourly basis due to natural gas firing. Therefore, the proposed changes to Boiler Nos. 4 and 5 will not result in a modification and will not trigger NSPS Subpart Db requirements.

Table I. Calculation of Maximum Hourly and Annual Emission Rates from Firing 100 MMBtu/hr of Natural Gas in Boiler No. 4

Regulated Pollutant	Emission Factor (lb/10 <sup>6</sup> scf) (lb/MMBtu)		Activity Factor		Emission Rate	
			Hourly <sup>a</sup> (10 <sup>6</sup> scf/hr)	Annual <sup>b</sup> (10 <sup>6</sup> scf/yr)	(lb/hr)	(TPY)
Particulate Matter (PM)	7.6	0.0076	0.10	260	0.76	0.99
Sulfur Dioxide (SO <sub>2</sub> )	0.6	0.00060	0.10	260	0.060	0.08
Nitrogen Oxides (NO <sub>x</sub> )	200 <sup>c</sup>	0.20	0.10	260	20.0	26.00
Carbon Monoxide (CO)	166 <sup>d</sup>	0.166	0.10	260	16.6	21.58
Volatile Organic Compounds (VOC)	5.5	0.0055	0.10	260	0.55	0.72

Footnotes:

<sup>a</sup> Based on modification to the boiler to allow firing of 100 MMBtu/hr of natural gas and a heating value of 1,000 Btu/scf.

<sup>b</sup> Based on 260,000 MMBtu/yr of natural gas firing, equivalent to 2,600 hr/yr at maximum firing rate.

<sup>c</sup> Based on a 0.20 lb/MMBtu NO<sub>x</sub> emission factor provided by Babcock Power Systems and a heating value of natural gas of 1,000 Btu/scf (0.20 lb/MMBtu x 1 MMBtu/10<sup>6</sup> Btu x 1,000 Btu/scf x 1,000,000 scf /10<sup>6</sup> scf = 200 lb/10<sup>6</sup> scf).

<sup>d</sup> Based on a vendor guarantee for CO of 200 ppm at 3% O<sub>2</sub> dry, and the following calculations:

Exhaust flow rate (20% excess air [equivalent to 3% O<sub>2</sub>], standard conditions, dry) = 100 MMBtu/hr x 1 scf/1,000 Btu x 1x10<sup>6</sup> Btu/MMBtu x 11.442 ft<sup>3</sup> exhaust/ft<sup>3</sup> natural gas = 1,144,200 scf/hr.

CO Emissions (lb/hr) = 200/10<sup>6</sup> x 2116.8 lb<sub>f</sub>/ft<sup>2</sup> x 1,144,200 scf/hr x 28/(1545.6 ft-lb<sub>f</sub>/lb<sub>m</sub> deg. R) x 1/528 deg. R = 16.6 lb/hr

CO Emissions (lb/10<sup>6</sup> ft<sup>3</sup> natural gas) = 16.6 lb/hr /100 MMBtu/hr x 1 MMBtu/10<sup>6</sup> Btu x 1,000 Btu/scf x 1,000,000 scf/10<sup>6</sup> scf = 166 lb/10<sup>6</sup> scf

Table 2. Calculation of Maximum Hourly and Annual Emission Rates from Firing 300 MMBtu/hr of Natural Gas in Boiler No. 5

Regulated Pollutant	Emission Factor		Activity Factor		Emission Rate	
	(lb/10 <sup>6</sup> scf)	(lb/MMBtu)	Hourly <sup>a</sup> (10 <sup>6</sup> scf/hr)	Annual <sup>b</sup> (10 <sup>6</sup> scf/yr)	(lb/hr)	(TPY)
Particulate Matter (PM)	7.6	0.0076	0.30	780	2.28	2.96
Sulfur Dioxide (SO <sub>2</sub> )	0.6	0.00060	0.30	780	0.18	0.23
Nitrogen Oxides (NO <sub>x</sub> )	200 <sup>c</sup>	0.20	0.30	780	60.00	78.00
Carbon Monoxide (CO)	166 <sup>d</sup>	0.166	0.30	780	49.86	64.82
Volatile Organic Compounds (VOC)	5.5	0.0055	0.30	780	1.65	2.15

Footnotes:

<sup>a</sup> Based on modification to the boiler to allow firing of 300 MMBtu/hr of natural gas and a heating value of 1,000 Btu/scf.

<sup>b</sup> Based on 780,000 MMBtu/yr of natural gas firing, equivalent to 2,600 hr/yr at maximum firing rate.

<sup>c</sup> Based on a 0.20 lb/MMBtu NO<sub>x</sub> emission factor provided by Babcock Power Systems and a heating value of natural gas of 1,000 Btu/scf (0.20 lb/MMBtu x 1 MMBtu/10<sup>6</sup> Btu x 1,000 Btu/scf x 1,000,000 scf/10<sup>6</sup> scf = 200 lb/10<sup>6</sup> scf).

<sup>d</sup> Based on a vendor guarantee for CO of 200 ppm at 3% O<sub>2</sub>, dry, and the following calculations:

Exhaust flow rate (20% excess air [equivalent to 3% O<sub>2</sub>], standard conditions, dry) = 300 MMBtu/hr x 1 scf/1,000 Btu x 1x10<sup>6</sup> Btu/MMBtu x 11.442 ft<sup>3</sup> exhaust/ft<sup>3</sup> natural gas = 3,432,600 scf/hr

CO Emissions (lb/hr) = 200/10<sup>6</sup> x 2116.8 lb<sub>p</sub>/ft<sup>2</sup> x 3,432,600 scf/hr x 28/(1545.6 ft<sub>p</sub>-lb<sub>m</sub>/deg. R) x 1/528 deg. R = 49.86 lb/hr

CO Emissions (lb/10<sup>6</sup> ft<sup>3</sup> natural gas) = 49.86 lb/hr /300 MMBtu/hr x 1 MMBtu/10<sup>6</sup> Btu x 1,000 Btu/scf x 1,000,000 scf/10<sup>6</sup> scf = 166 lb/10<sup>6</sup> scf



Table 3. Comparison of Hourly and Annual Emission Rates from No. 6 Fuel Oil and Natural Gas Firing in Boiler Nos. 4 and 5 Assuming an Equivalent Heat Input Rate for Both Fuels

Regulated Pollutant	No. 6 Fuel Oil				Natural Gas			
	Emission Factor <sup>a</sup> (lb/10 <sup>3</sup> gal.)	Activity Factor <sup>b</sup> (10 <sup>3</sup> gal/hr)	Emission Rate		Emission Factor <sup>c</sup> (lb/10 <sup>6</sup> scf)	Activity Factor <sup>b</sup> (10 <sup>6</sup> scf/hr)	Emission Rate	
			lb/hr	TPY <sup>h</sup>			lb/hr	TPY <sup>h</sup>
<u>Boiler No. 4 @ 100 MMBtu/hr</u>								
Particulate Matter (PM)	14.1 <sup>d</sup>	0.662	9.3	12.1	7.6	0.10	0.76	0.99
Sulfur Dioxide (SO <sub>2</sub> )	393.6 <sup>e</sup>	0.662	260.6	338.7	0.6	0.10	0.06	0.078
Nitrogen Oxides (NO <sub>x</sub> )	47	0.662	31.1	40.4	200 <sup>f</sup>	0.10	20	26.0
Carbon Monoxide (CO)	5	0.662	3.3	4.30	166 <sup>g</sup>	0.10	16.6	21.6
Volatile Organic Compounds (VOCs)	0.76	0.662	0.5	0.65	5.5	0.10	0.55	0.72
<u>Boiler No. 5 @ 300 MMBtu/hr</u>								
Particulate Matter (PM)	14.1 <sup>d</sup>	1.987	28.0	36.4	7.6	0.30	2.28	2.96
Sulfur Dioxide (SO <sub>2</sub> )	393.6 <sup>e</sup>	1.987	782.1	1,016.7	0.6	0.30	0.18	0.23
Nitrogen Oxides (NO <sub>x</sub> )	47	1.987	93.4	121.4	200 <sup>f</sup>	0.30	60.0	78.0
Carbon Monoxide (CO)	5	1.987	9.9	12.92	166 <sup>g</sup>	0.30	49.8	64.7
Volatile Organic Compounds (VOCs)	0.76	1.987	1.5	1.96	5.5	0.30	1.65	2.15

Footnotes:

<sup>a</sup> These emission factors are from AP-42, Tables 1.3-1 and 1.3-3, unless otherwise noted.

<sup>b</sup> For Boiler No. 4, the equivalent heat input rate is generated by firing 662 gal./hr of No. 6 fuel oil (heating value of 151,000 Btu/gal) or 100,000 scf of Natural Gas (heat content of 1,000 Btu/scf). For Boiler No. 5, the equivalent heat input rate is generated by firing 1,987 gal./hr of No. 6 fuel oil or 300,000 scf/hr of natural gas.

<sup>c</sup> These emission factors are from AP-42, Tables 1.4-1 and 1.4-2, unless otherwise noted.

<sup>d</sup> Based on the current PM emission limit of 0.1 lb/MMBtu for firing No. 6 fuel oil in Boiler Nos. 4 and 5, instead of the AP-42 emission factor of  $9.19(S) + 3.22$ , where S is the sulfur content of the fuel, in this case 2.4%, which yields an emission factor of 25.3 lb/10<sup>3</sup> gal. At a heat content for No. 6 fuel oil of 151,000 Btu/gal this emission factor is equivalent to 0.18 lb/MMBtu. Since the AP-42 emission factor is higher than the permit limit and is based on no control, the permit limit of 0.1 lb/MMBtu, which is equivalent to 14.1 lb/10<sup>3</sup> gal., was used for this comparison.

<sup>e</sup> Calculated stoichiometrically based on a No. 6 fuel oil density of 8.2 lb/gal. and a sulfur content of the oil of 2.4% by weight:

$$\text{Emission Factor (lb/10}^3\text{ gal.)} = 8.2 \text{ lb/gal} \times 2.4 \text{ lb S/100 lb oil} \times 2 \text{ lb SO}_2\text{/lb S} \times 1,000 \text{ gal./10}^3\text{ gal.} = 393.6 \text{ lb/10}^3\text{ gal.}$$

<sup>f</sup> See footnote c in Tables 1 and 2.

<sup>g</sup> See footnote d in Tables 1 and 2.

<sup>h</sup> Based on equivalent of 2,600 hr/yr of operation.

Table 4. Summary of the Increase in Annual Emission Due to the Project and Comparison with Significant Emission Rates

Regulated Pollutant	Annual Emissions for No. 6 Fuel Oil Firing <sup>a</sup> (TPY)			Annual Emissions for Natural Gas Firing <sup>a</sup> (TPY)			Net Change in Annual Emission (TPY)	PSD Significant Emission Rate (TPY)	PSD Review Triggered? (Yes/No)
	Boiler No. 4	Boiler No. 5	Total	Boiler No. 4	Boiler No. 5	Total			
Particulate Matter (TSP)	12.1	36.4	48.6	0.99	2.96	4.0	-44.6	25	No
Particulate Matter (PM <sub>10</sub> )	12.1	36.4	48.6	0.99	2.96	4.0	-44.6	15	No
Sulfur Dioxide (SO <sub>2</sub> )	338.7	1,016.7	1,355.4	0.078	0.23	0.3	-1,355.1	40	No
Nitrogen Oxides (NO <sub>x</sub> )	40.4	121.4	161.9	26.0	78.0	104.0	-57.9	40	No
Carbon Monoxide (CO)	4.30	12.92	17.2	21.6	64.7	86.3	69.1	100	No
Volatile Organic Compounds (VOCs)	0.65	1.96	2.6	0.72	2.15	2.9	0.2	40	No

Footnote:

<sup>a</sup> Based on an equivalent of 2,600 hr/yr of operation.

Table 5. Comparison of Hourly PM, SO<sub>2</sub>, and NO<sub>x</sub> Emission Rates From No. 6 Fuel Oil and Natural Gas Firing in Boiler Nos. 4 and 5

Regulated Pollutant	Emission Rate for No. 6 Fuel Oil Firing in Boilers Nos. 4 and 5 (lb/MMBtu)	Emission Rate for Natural Gas Firing in Boilers Nos. 4 and 5 <sup>d</sup> (lb/MMBtu)
Particulate Matter (PM)	0.1 <sup>a</sup>	0.0076
Sulfur Dioxide (SO <sub>2</sub> )	2.61 <sup>b</sup>	0.00060
Nitrogen Oxides (NO <sub>x</sub> )	0.31 <sup>c</sup>	0.20

## Footnotes:

<sup>a</sup> See footnote d in Table 3.

<sup>b</sup> Calculated stoichiometrically based on a No. 6 fuel oil density of 8.2 lb/gal. and a sulfur content of the oil of 2.4% by weight:

$$\text{Emission Factor (lb/MMBtu)} = 8.2 \text{ lb/gal} \times 2.4 \text{ lb S}/100 \text{ lb oil} \times 2 \text{ lb SO}_2/\text{lb S} \times 1 \text{ gal.}/151,000 \text{ Btu} \times 10^6 \text{ Btu/MMBtu} = 2.61 \text{ lb/MMBtu}$$

<sup>c</sup> Based on an AP-42 emission factor of 47 lb NO<sub>x</sub>/10<sup>3</sup> gal. of No. 6 fuel oil fired and a heating value of No. 6 fuel oil of 151,000 Btu/gal., the emission factor is calculated as follows:

$$\text{Emission Factor (lb/MMBtu)} = 47 \text{ lb}/10^3 \text{ gal.} \times 1 \text{ gal.}/151,000 \text{ Btu} \times 10^3 \text{ gal.}/1000 \text{ gal.} \times 10^6 \text{ Btu/MMBtu} = 0.31 \text{ lb/MMBtu}$$

<sup>d</sup> Refer to Tables 1 and 2.