



# Air Construction Permit Application

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## AIR CONSTRUCTION PERMIT APPLICATION

Lakeland Electric  
Larsen Unit 8

Submitted To: Lakeland Electric,  
501 E. Lemon Street  
Lakeland, FL 33801 USA

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

Distribution:	4 copies	FDEP
	2 copies	Lakeland Electric
	2 copies	Golder Associates Inc.

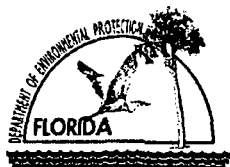
May 2010

093-87764



**APPLICATION FOR AIR PERMIT**

**LONG FORM**



# Department of Environmental Protection

## Division of Air Resource Management APPLICATION FOR AIR PERMIT - LONG FORM

RECEIVED  
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AIR REGULATION

### I. APPLICATION INFORMATION

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

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

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

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

To ensure accuracy, please see form instructions.

#### Identification of Facility

1. Facility Owner/Company Name: <b>Lakeland Electric</b>	
2. Site Name: <b>Charles Larsen Memorial Power Plant</b>	
3. Facility Identification Number: <b>1050003</b>	
4. Facility Location... Street Address or Other Locator: <b>2002 Highway 92 East</b> City: <b>Lakeland</b> County: <b>Polk</b> Zip Code: <b>33801</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>Ms. Farzie Shelton, Associate General Manager of Technical Support</b>	
2. Application Contact Mailing Address... Organization/Firm: <b>Lakeland Electric</b> Street Address: <b>501 E. Lemon Street</b> City: <b>Lakeland</b> State: <b>FL</b> Zip Code: <b>33801-5079</b>	
3. Application Contact Telephone Numbers... Telephone: <b>(863) 834 - 6603</b> ext. Fax: <b>(863) 834 - 6362</b>	
4. Application Contact E-mail Address: <b>farzie.shelton@lakelandelectric.com</b>	

#### Application Processing Information (DEP Use)

1. Date of Receipt of Application: <b>6/1/10</b>	3. PSD Number (if applicable): <b>146E</b>
2. Project Number(s): <b>1050003-014-A</b>	4. Siting Number (if applicable):

## APPLICATION INFORMATION

### Purpose of Application

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

#### **Air Construction Permit**

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

#### **Air Operation Permit**

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

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

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

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

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

### Application Comment

**This minor source air construction permit application is to request modification of Specific Conditions C.24, C.27, and C.28 of the current Title V permit No. 1050003-014-AV requirements for Combined-Cycle CT No. 8 (EU 008). (See Part II.)**

## APPLICATION INFORMATION

### Scope of Application

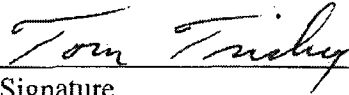
Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Processing Fee
008	Combined Cycle Combustion Turbine No. 8	AC1F	

### Application Processing Fee

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

**Owner/Authorized Representative Statement**

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

1. Owner/Authorized Representative Name : <b>Mr. Thomas J. Trickey, P.E., Plant Manager</b>
2. Owner/Authorized Representative Mailing Address... Organization/Firm: <b>Lakeland Electric</b> Street Address: <b>501 E. Lemon Street</b> City: <b>Lakeland</b> State: <b>FL</b> Zip Code: <b>33801-5079</b>
3. Owner/Authorized Representative Telephone Numbers... Telephone: <b>(863) 834 - 6477</b> ext. N/A Fax: <b>(863 ) 834 - 5670</b>
4. Owner/Authorized Representative E-mail Address: <b>tom.trickey@lakelandelectric.com</b>
5. Owner/Authorized Representative Statement:  <i>I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.</i>  <b>Subject: Charles Larsen Memorial Power Plant - Unit 8</b> <b>Minor Source Permit Application</b>  <div style="display: flex; justify-content: space-between;"><div style="text-align: center;"> Signature</div><div style="text-align: center;"><u>5-28-10</u> Date</div></div>

## APPLICATION INFORMATION

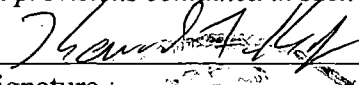
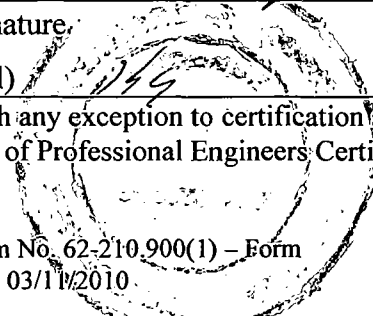
### Application Responsible Official Certification

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

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

## APPLICATION INFORMATION

### Professional Engineer Certification

1. Professional Engineer Name: <b>Ken Kosky</b> Registration Number: <b>14996</b>		
2. Professional Engineer Mailing Address... Organization/Firm: <b>Golder Associates Inc.**</b> Street Address: <b>6026 NW 1st Place</b> City: <b>Gainesville</b> State: <b>FL</b> Zip Code: <b>32607</b>		
3. Professional Engineer Telephone Numbers... Telephone: <b>(352) 336-5600</b> ext. <b>21156</b> Fax: <b>(352) 336-6603</b>		
4. Professional Engineer E-mail Address:		
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i>  (1) <i>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>  (2) <i>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>  (3) <i>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>  (4) <i>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>  (5) <i>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>  <div style="display: flex; justify-content: space-between;"><div>Signature:  (seal) </div><div>Date: <u>5/28/10</u></div></div>		

\* 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) 408.9 North (km) 3,102.5		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) 28/02/56 Longitude (DD/MM/SS) 81/55/25	
3. Governmental Facility Code: 0	4. Facility Status Code: A	5. Facility Major Group SIC Code: 49	6. Facility SIC(s): 4911
7. Facility Comment : The facility consists of two simple-cycle combustion turbine (CT) peaking units (EUs 005 and 006), one combined cycle CT No. 8 (EU 008), fuel oil storage tanks, and associated equipment. Fossil fuel-fired steam generator No. 7 (EU 004) has been permanently shutdown.			

#### Facility Contact

1. Facility Contact Name: <b>Ms. Farzie Shelton, Associate General Manager of Technical Support</b>			
2. Facility Contact Mailing Address... Organization/Firm: <b>Lakeland Electric</b> Street Address: <b>501 E. Lemon Street</b> City: <b>Lakeland</b> State: <b>FL</b> Zip Code: <b>33801-5079</b>			
3. Facility Contact Telephone Numbers: Telephone: <b>(863) 834 - 6603</b> ext. Fax: <b>(863) 834 - 6362</b>			
4. Facility Contact E-mail Address: <b>farzie.shelton@lakelandelectric.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 E-mail Address:			

### Facility Regulatory Classifications

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

1. <input type="checkbox"/> Small Business Stationary Source	<input type="checkbox"/> Unknown
2. <input type="checkbox"/> Synthetic Non-Title V Source	
3. <input checked="" type="checkbox"/> Title V Source	
4. <input checked="" type="checkbox"/> Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. <input type="checkbox"/> Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. <input type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)	
7. <input type="checkbox"/> Synthetic Minor Source of HAPs	
8. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. <input type="checkbox"/> One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. <input checked="" 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:  <b>Simple cycle peaking Units 2 and 3 (EUs 005 and 006) and combined cycle Unit 8 (EU 008) are subject to Subpart GG.</b>	

**List of Pollutants Emitted by Facility**

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

## 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's Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap

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

### C. FACILITY ADDITIONAL INFORMATION

#### Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>July 2007</u>
2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>July 2007</u>
3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>July 2007</u>

#### Additional Requirements for Air Construction Permit Applications

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

### C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

#### Additional Requirements for FESOP Applications

- |   |
|---|
| 1. List of Exempt Emissions Units:<br><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> 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)<br><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> 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)<br><input type="checkbox"/> Attached, Document ID: _____<br><input type="checkbox"/> Not Applicable (revision application with no change in applicable requirements)  |
| 3. Compliance Report and Plan: (Required for all initial/revision/renewal applications)<br><input type="checkbox"/> Attached, Document ID: _____<br>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)<br><input type="checkbox"/> Attached, Document ID: _____<br><input type="checkbox"/> Equipment/Activities Onsite but Not Required to be Individually Listed<br><input type="checkbox"/> Not Applicable   |
| 5. Verification of Risk Management Plan Submission to EPA: (If applicable, required for initial/renewal applications only)<br><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable  |
| 6. Requested Changes to Current Title V Air Operation Permit:<br><input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable   |

**C. FACILITY ADDITIONAL INFORMATION (CONTINUED)**

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

**1. Acid Rain Program Forms:**

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

- ☐ Attached, Document ID: \_\_\_\_\_ ☒ Previously Submitted, Date: July 2007  
☐ Not Applicable (not an Acid Rain source)

Phase II NO<sub>x</sub> Averaging Plan (DEP Form No. 62-210.900(1)(a)1.):

- ☐ Attached, Document ID: \_\_\_\_\_ ☐ Previously Submitted, Date: \_\_\_\_\_  
☒ Not Applicable

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

- ☐ Attached, Document ID: \_\_\_\_\_ ☐ Previously Submitted, Date: \_\_\_\_\_  
☒ Not Applicable

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

- ☐ Attached, Document ID: \_\_\_\_\_ ☒ Previously Submitted, Date: December 2009  
☐ Not Applicable (not a CAIR source)

**Additional Requirements Comment**

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## **EMISSIONS UNIT INFORMATION**

### **Section [1]**

#### **Combined Cycle Combustion Turbine No. 8**

### **III. EMISSIONS UNIT INFORMATION**

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

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

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

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



## EMISSIONS UNIT INFORMATION

Section [1]

Combined Cycle Combustion Turbine No. 8

### 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:  
**Combined Cycle Combustion Turbine No. 8**
3. Emissions Unit Identification Number: **008**
- |  |                                |   |  |
|--|--------------------------------|---|--|
| 4. Emissions Unit Status Code:<br><b>A</b> | 5. Commence Construction Date: | 6. Initial Startup Date:<br><b>7/7/92</b> | 7. Emissions Unit Major Group SIC Code:<br><b>49</b> |
|--|--------------------------------|---|--|
8. Federal Program Applicability: (Check all that apply)
- ☐ Acid Rain Unit
- ☐ CAIR Unit
9. Package Unit:  
Manufacturer: **GE** Model Number: **PG7111 EA**
10. Generator Nameplate Rating: **120 MW**
11. Emissions Unit Comment:  
**Emission unit is a GE 7EA natural gas or No. 2 fuel oil-fired combined or simple cycle gas turbine with a heat recovery steam generator (HRSG). Initial startup date is emission unit's commercial in-service date.**

## EMISSIONS UNIT INFORMATION

Section [1]

Combined Cycle Combustion Turbine No. 8

**Emissions Unit Control Equipment/Method:** Control 1 of 1

1. Control Equipment/Method Description:

Water Injection for NOx control

2. Control Device or Method Code: **028**

**Emissions Unit Control Equipment/Method:** Control \_\_\_\_ of \_\_\_\_

1. Control Equipment/Method Description:

2. Control Device or Method Code:

**Emissions Unit Control Equipment/Method:** Control \_\_\_\_ of \_\_\_\_

1. Control Equipment/Method Description:

2. Control Device or Method Code:

**Emissions Unit Control Equipment/Method:** Control \_\_\_\_ of \_\_\_\_

1. Control Equipment/Method Description:

2. Control Device or Method Code:

## EMISSIONS UNIT INFORMATION

Section [1]

Combined Cycle Combustion Turbine No. 8

### 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:		
3. Maximum Heat Input Rate: <b>1,075.0</b> million Btu/hr		
4. Maximum Incineration Rate:	pounds/hr tons/day	
5. Requested Maximum Operating Schedule:		
	<b>24</b> hours/day	<b>7</b> days/week
	<b>52</b> weeks/year	<b>8,760</b> hours/year
6. Operating Capacity/Schedule Comment:		
<b>Maximum heat input rates:</b> Natural gas firing - 1,075.0 MMBtu/hr No. 2 fuel oil firing - 1,060.0 MMBtu/hr		
Heat input rates are based on the lower heating value of the fuels and inlet temperature of 25°F.		
<b>Maximum heat input rates during peak mode operations:</b> Natural gas firing - 1,161 MMBtu/hr No. 2 fuel oil firing - 1,149.0 MMBtu/hr		

**EMISSIONS UNIT INFORMATION**

Section [1]

Combined Cycle Combustion Turbine No. 8

**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:		2. Emission Point Type Code: <b>3</b>	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking:  <b>Emission unit can exhaust through either a by-pass stack (simple-cycle mode) or heat recovery steam generator (HRSG) stack (combined-cycle mode).</b>			
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>155 feet</b>	
7. Exit Diameter: <b>16 Feet</b>			
8. Exit Temperature: <b>°F</b>		9. Actual Volumetric Flow Rate: <b>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: <b>17</b> East (km): <b>408.9</b> North (km): <b>3,102.9</b>		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) <b>28/02/56</b> Longitude (DD/MM/SS) <b>81/55/25</b>	
15. Emission Point Comment: <b>Stack parameters for the by-pass stack:</b> <b>Height : 100 ft</b> <b>Diameter : 17.6 ft (equivalent diameter, stack is rectangular 18.3' x 13.3')</b> <b>Temperature : 950°F</b> <b>Flow : 1,549,432 acfm</b>  <b>Stack parameters based on Title V renewal application dated June 2007.</b>			

**EMISSIONS UNIT INFORMATION**

Section [1]

Combined Cycle Combustion Turbine No. 8

**D. SEGMENT (PROCESS/FUEL) INFORMATION****Segment Description and Rate:** Segment 1 of 2

1. Segment Description (Process/Fuel Type): <b>Internal Combustion Engines; Electric Generation; Natural Gas; Turbine.</b>		
2. Source Classification Code (SCC): <b>2-01-002-01</b>		3. SCC Units: <b>Million cubic feet natural gas burned</b>
4. Maximum Hourly Rate: <b>1.13</b>	5. Maximum Annual Rate: <b>9,913</b>	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: <b>950</b>
10. Segment Comment:  <b>Maximum hourly rate = 1,075 MMBtu/hr / 950 MMBtu/MM ft<sup>3</sup> (LHV) = 1.13 MM ft<sup>3</sup>/hr Maximum annual rate = 1,075 MMBtu/hr / 950 MMBtu/MM ft<sup>3</sup> x 8,760 hr/yr = 9,913 MM ft<sup>3</sup>/yr.</b>		

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

1. Segment Description (Process/Fuel Type): <b>Internal Combustion Engines; Electric Generation; Distillate Oil (Diesel); Turbine.</b>		
2. Source Classification Code (SCC): <b>2-01-001-01</b>		3. SCC Units: <b>1,000 gallons burned</b>
4. Maximum Hourly Rate: <b>8.19</b>	5. Maximum Annual Rate: <b>23,914.8</b>	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: <b>0.2</b>	8. Maximum % Ash:	9. Million Btu per SCC Unit: <b>138</b>
10. Segment Comment: <b>Up to 10 percent refuse-derived fuel (RDF) is authorized to be combined with low sulfur (≤0.2% S) oil.</b>  <b>Maximum hourly No. 2 oil consumption limited to 8,190 gallons/hr. Maximum annual No. 2 oil consumption limited to 23,914,800 gallons/yr.</b>		

**EMISSIONS UNIT INFORMATION**

Section [1]

Combined Cycle Combustion Turbine No. 8

**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			EL
CO			EL
VOC			EL
SO2			EL
NOx	028		EL
SAM			EL

**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: lb/hour                      tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor:  Reference:		7. Emissions Method Code: <b>0</b>	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From:                      To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:			
11. Potential Fugitive and Actual Emissions Comment:  <b>No changes in potential emissions result from the requested permit changes.</b>			

**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:	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): <b>No changes in allowable emissions result from the requested permit changes.</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]

Combined Cycle Combustion Turbine No. 8

**POLLUTANT DETAIL INFORMATION**

Page [2] of [6]

Carbon Monoxide (CO)

**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>CO</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: lb/hour                      tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor:  Reference:		7. Emissions Method Code: <b>0</b>	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From:                      To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:			
11. Potential Fugitive and Actual Emissions Comment:  <b>No changes in potential emissions result from the requested permit changes.</b>			

**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:	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): <b>No changes in allowable emissions result from the requested permit changes.</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):	

**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: lb/hour                      tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor:  Reference:		7. Emissions Method Code: <b>0</b>	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From:                      To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:			
11. Potential Fugitive and Actual Emissions Comment:  <b>No changes in potential emissions result from the requested permit changes.</b>			

**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:	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): <b>No changes in allowable emissions result from the requested permit changes.</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):	

## POLLUTANT DETAIL INFORMATION

Section [1]

Page [4] of [6]

### Combined Cycle Combustion Turbine No. 8

### Sulfur Dioxide (SO<sub>2</sub>)

## 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: lb/hour                      tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                  tons/year			
6. Emission Factor:  Reference:		7. Emissions Method Code: <b>0</b>	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From:                  To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:			
11. Potential Fugitive and Actual Emissions Comment:  <b>No changes in potential emissions result from the requested permit changes.</b>			

**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:	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): <b>No changes in allowable emissions result from the requested permit changes.</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):	

**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>NOx</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: lb/hour                      tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor:  Reference:		7. Emissions Method Code: <b>0</b>	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From:                      To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:			
11. Potential Fugitive and Actual Emissions Comment:  <b>No changes in potential emissions result from the requested permit changes.</b>			

**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>25 ppm @ 15% O<sub>2</sub></b>	4. Equivalent Allowable Emissions: <b>107 lb/hour      425 tons/year</b>
5. Method of Compliance: <b>40 CFR 75 CEMS, 3-hour block average.</b>	
6. Allowable Emissions Comment (Description of Operating Method): <b>Natural gas firing. Base mode shown for equivalent allowable emissions. Peak mode: 115 lb/hr and 425 TPY.</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>42 ppm @ 15% O<sub>2</sub></b>	4. Equivalent Allowable Emissions: <b>180 lb/hour      244 tons/year</b>
5. Method of Compliance: <b>No. 2 distillate oil firing. Base mode shown for equivalent allowable emissions. Peak mode: 192 lb/hr and 244 TPY.</b>	
6. Allowable Emissions Comment (Description of Operating Method):	

**Allowable Emissions** Allowable Emissions \_\_\_\_ of \_\_\_\_

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



**F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION –  
POTENTIAL/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>SAM</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: lb/hour                      tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to                      tons/year			
6. Emission Factor:  Reference:		7. Emissions Method Code: <b>0</b>	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From:                      To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions:			
11. Potential Fugitive and Actual Emissions Comment:  <b>No changes in potential emissions result from the requested permit changes.</b>			

**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:	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): <b>No changes in allowable emissions result from the requested permit changes.</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]**  
**Combined Cycle Combustion Turbine No. 8**

**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:	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:  <b>No changes in visible emissions result from the requested permit changes.</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]

Combined Cycle Combustion Turbine No. 8

**H. CONTINUOUS MONITOR INFORMATION**

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

**Continuous Monitoring System:** Continuous Monitor 1 of 2

1. Parameter Code: <b>EM</b>	2. Pollutant(s): <b>NO<sub>x</sub></b>
3. CMS Requirement:	<input checked="" type="checkbox"/> Rule      Other
4. Monitor Information... Manufacturer: <b>Advanced Pollution Inst.</b> Model Number: <b>252</b> Serial Number: <b>132</b>	
5. Installation Date: <b>28 November 1994</b>	6. Performance Specification Test Date: <b>12 December 1995</b>
7. Continuous Monitor Comment:  <b>CEM required pursuant to 40 CFR 75. NO<sub>x</sub> CEM elected as continuous compliance demonstration method per 40 CFR 64.1 and monitoring method per 40 CFR 60.334(b).</b>	

**Continuous Monitoring System:** Continuous Monitor 2 of 2

1. Parameter Code: <b>O<sub>2</sub></b>	2. Pollutant(s):
3. CMS Requirement:	<input checked="" type="checkbox"/> Rule      Other
4. Monitor Information... Manufacturer: <b>Graseby STI</b> Model Number: <b>DP0802</b> Serial Number: <b>1511-1-8</b>	
5. Installation Date: <b>28 November 1994</b>	6. Performance Specification Test Date: <b>12 December 1995</b>
7. Continuous Monitor Comment:  <b>CEM required pursuant to 40 CFR 75 for dilution with NO<sub>x</sub> monitors.</b>	

## EMISSIONS UNIT INFORMATION

### Section [1]

#### Combined Cycle Combustion Turbine No. 8

### 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 type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>June 2007</u>
2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>June 2007</u>
3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>June 2007</u>
4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input 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

**Combined Cycle Combustion Turbine No. 8**

### **Additional Requirements for Air Construction Permit Applications**

1. Control Technology Review and Analysis (Rules 62-212.400(10) 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 (Rules 62-212.400(4)(d) and 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

1.	Identification of Applicable Requirements: <input type="checkbox"/> Attached, Document ID: _____
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

[illegible]

**PART II**

## PART II

### APPLICATION FOR MINOR SOURCE AIR CONSTRUCTION PERMIT FOR A CHANGE IN THE ANNUAL COMPLIANCE TESTING FOR FUEL OIL AND CONTINUOUS COMPLIANCE METHOD FOR NO<sub>x</sub> FOR LARSEN UNIT 8

#### EXECUTIVE SUMMARY

Lakeland Electric is requesting a minor source air construction permit from the Florida Department of Environmental Protection (FDEP) to change the annual compliance testing requirements for fuel oil and the compliance method for nitrogen oxides (NO<sub>x</sub>) for the combined-cycle combustion turbine (CT) Unit 8 (EU 008) at the Charles Larsen Power Plant. The Charles Larsen Memorial Power Plant is currently operating under Title V operating permit No. 1050003-014-AV. Larsen combined-cycle Unit 8 is permitted to operate 8,760 hours per year (hr/yr) and burn natural gas or No. 2 distillate fuel oil with maximum 0.2-percent sulfur content. Fuel oil firing is limited to 1/3 of the annual capacity factor or 8,190 gallons per hour and 23,914,800 gallons per year. Specific Condition No. C.28 of the operating permit requires annual compliance test for visible emissions (VE), carbon monoxide (CO), NO<sub>x</sub>, and diluents, and also for particulate matter (PM) and volatile organic compounds (VOC) depending on the test results for VE and CO. Lakeland Electric has been conducting these tests annually for both fuels – natural gas and fuel oil. However, very small quantity of fuel oil is burned in Unit 8 every year, primarily for testing purposes. Lakeland Electric is requesting FDEP to delete the requirement for annual compliance test requirements using fuel oil if fuel oil is not used for more than 400 hr/yr.

Unit 8's current compliance method for NO<sub>x</sub> emissions is annual compliance testing, although NO<sub>x</sub> continuous emissions monitoring system (CEMS) have been installed to meet Acid Rain requirements. Larsen Unit 8 is currently subject to compliance assurance monitoring (CAM) requirements for NO<sub>x</sub> emissions controlled by water injection. Unit 8 is equipped with a CEMS to continuously monitor NO<sub>x</sub> emissions, and as mentioned in Specific Condition No. C.27, FDEP may use the NO<sub>x</sub> CEMS data as an indicator of compliance with NO<sub>x</sub> emissions. Lakeland Electric is requesting that the compliance method for NO<sub>x</sub> emissions be changed from an annual compliance test to CEMS. As a result, there is no need of the CAM Plan.

Since there are no emissions increases as a result of these changes, it is not a "modification" as defined in Rule 62-210.200(205), Florida Administrative Code (F.A.C.). A minor source air construction permit is submitted for the request.

Golder Associates Inc. (Golder) was contracted to prepare the necessary air permit application to request the permit condition modifications. The air permit application consists of the appropriate applications form [Part I; DEP Form 62-210.900(1)], a description of the proposed modification, and rule applicability.



## PROJECT DESCRIPTION

Unit 8 (EU 008) is a combined-cycle CT permitted to operate on natural gas or No. 2 distillate fuel oil for 8,760 hr/yr. Based on Table A-1 in Attachment A, which summarizes annual operating data for Unit 8 for the years 2005 to 2009, distillate fuel oil was never used. However, as required by the Annual Compliance Test Requirements in Specific Condition C.28, Lakeland Electric has been conducting tests annually firing both natural gas and distillate fuel oil. The fuel oil burning was only for the purpose of testing. Lakeland Electric requests that Condition C. 28 be revised to state that annual testing will not be required for a fuel not used for more than 400 hours in the year.

There is precedent in both previous permitting actions and rules for FDEP to grant this request. The latest Title V operating permit for Seminole Electric Cooperative, Inc's Midulla Generating Station (Permit No. 0490340-011-AV dated 3/31/2009) requires in Specific Condition A.17 that annual testing be performed on each unit for each fuel fired for 400 hours or more during the federal fiscal year. In addition, Department's Rule 62-297.310(7)(a) F.A.C provides an exemption from the annual testing requirements if liquid fuel is not burned for more than 400 hours or more per year for certain sources and pollutants.

Lakeland Electric requests that Specific Condition C. 28, which currently reads –

*C.28. Annual Compliance Tests required. Annual compliance tests shall be conducted for VE, CO, NO<sub>x</sub> and diluents. Depending on the compliance test results for VE and CO, compliance tests may be required for PM and VOC, respectively. [1050003-012-AC/PSD-FL-166D]*

be modified as –

*C.28. Annual Compliance Tests required. Annual compliance tests shall be conducted for VE, CO, NO<sub>x</sub> and diluents for Unit 8 on each fuel. Depending on the compliance test results for VE and CO, compliance tests may be required for PM and VOC, respectively. In the event that the operation of the emissions unit is less 400 hours per year on natural gas or distillate oil, annual testing is not required for that year and that fuel.*

Unit 8 uses low-NO<sub>x</sub> burner technology and water injection system to control NO<sub>x</sub> emissions during natural gas and fuel oil firing and is subject to CAM requirements. The Statement of Basis for Title V Permit No. 1050003-014-AV states that "CAM applies because the NO<sub>x</sub> emissions are greater than 100 tons per year before control, post control of NO<sub>x</sub> is by water injection, and there is no continuous emissions monitoring system (CEMS) used for compliance purposes". Specific Condition C.27a. of the permit states that FDEP is allowed to use the NO<sub>x</sub> CEMS data as an indicator of compliance and noncompliance. In addition, the current CAM plan uses the CEMs as the continuous compliance indicator with established indicator ranges for natural gas and fuel oil firing. Lakeland Electric requests that the NO<sub>x</sub> CEMS data be used for the "continuous compliance determination method" for NO<sub>x</sub> emissions and

the CAM Plan requirements are no longer applicable and CAM Plan references be removed from the permit by deleting Specific Condition No. C.24.

Unit 8 is also subject to 40 CFR 60 Subpart GG and Lakeland Electric continuously monitor the water-to-fuel ratio in accordance with 40 CFR 60.334(a) to comply with the NO<sub>x</sub> emission limits. Recent changes to 40 CFR Subpart GG allow the use of CEMs for the monitoring method in lieu of water-to-fuel monitoring. This alternative is provided for in Section 60.334(b) shown below for convenience. Note that Section 60.334(b)3(iii) allows the use of 40 CFR Part 75 CEMs with the exception of missing data substitution method.

(b) The owner or operator of any stationary gas turbine that commenced construction, reconstruction or modification after October 3, 1977, but before July 8, 2004, and which uses water or steam injection to control NO<sub>x</sub> emissions may, as an alternative to operating the continuous monitoring system described in paragraph (a) of this section, install, certify, maintain, operate, and quality-assure a continuous emission monitoring system (CEMS) consisting of NO<sub>x</sub> and O<sub>2</sub> monitors. As an alternative, a CO<sub>2</sub> monitor may be used to adjust the measured NO<sub>x</sub> concentrations to 15 percent O<sub>2</sub> by either converting the CO<sub>2</sub> hourly averages to equivalent O<sub>2</sub> concentrations using Equation F-14a or F-14b in appendix F to part 75 of this chapter and making the adjustments to 15 percent O<sub>2</sub>, or by using the CO<sub>2</sub> readings directly to make the adjustments, as described in Method 20. If the option to use a CEMS is chosen, the CEMS shall be installed, certified, maintained and operated as follows:

(1) Each CEMS must be installed and certified according to PS 2 and 3 (for diluent) of 40 CFR part 60, appendix B, except the 7-day calibration drift is based on unit operating days, not calendar days. Appendix F, Procedure 1 is not required. The relative accuracy test audit (RATA) of the NO<sub>x</sub> and diluent monitors may be performed individually or on a combined basis, *i.e.*, the relative accuracy tests of the CEMS may be performed either:

(i) On a ppm basis (for NO<sub>x</sub>) and a percent O<sub>2</sub> basis for oxygen; or

(ii) On a ppm at 15 percent O<sub>2</sub> basis; or

(iii) On a ppm basis (for NO<sub>x</sub>) and a percent CO<sub>2</sub> basis (for a CO<sub>2</sub> monitor that uses the procedures in Method 20 to correct the NO<sub>x</sub> data to 15 percent O<sub>2</sub>).

(2) As specified in §60.13(e)(2), during each full unit operating hour, each monitor must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each 15-minute quadrant of the hour, to validate the hour. For partial unit operating hours, at least one valid data point must be obtained for each quadrant of the hour in which the unit operates. For unit operating hours in which required quality assurance and maintenance activities are

performed on the CEMS, a minimum of two valid data points (one in each of two quadrants) are required to validate the hour.

(3) For purposes of identifying excess emissions, CEMS data must be reduced to hourly averages as specified in §60.13(h).

(i) For each unit operating hour in which a valid hourly average, as described in paragraph (b)(2) of this section, is obtained for both  $\text{NO}_x$  and diluent, the data acquisition and handling system must calculate and record the hourly  $\text{NO}_x$  emissions in the units of the applicable  $\text{NO}_x$  emission standard under §60.332(a), i.e., percent  $\text{NO}_x$  by volume, dry basis, corrected to 15 percent  $\text{O}_2$  and International Organization for Standardization (ISO) standard conditions [if required as given in §60.335(b)(1)]. For any hour in which the hourly average  $\text{O}_2$  concentration exceeds 19.0 percent  $\text{O}_2$ , a diluent cap value of 19.0 percent  $\text{O}_2$  may be used in the emission calculations.

(ii) A worst case ISO correction factor may be calculated and applied using historical ambient data. For the purpose of this calculation, substitute the maximum humidity of ambient air ( $H_o$ ), minimum ambient temperature ( $T_a$ ), and minimum combustor inlet absolute pressure ( $P_o$ ) into the ISO correction equation.

(iii) If the owner or operator has installed a  $\text{NO}_x$  CEMS to meet the requirements of part 75 of this chapter, and is continuing to meet the ongoing requirements of part 75 of this chapter, the CEMS may be used to meet the requirements of this section, except that the missing data substitution methodology provided for at 40 CFR part 75, subpart D, is not required for purposes of identifying excess emissions. Instead, periods of missing CEMS data are to be reported as monitor downtime in the excess emissions and monitoring performance report required in §60.7(c).

Lakeland Electric requests the alternate of 40 CFR Part 75 CEMS as the monitoring method prescribed under Subpart GG and that reference to water-to-fuel ratio monitoring to be excluded from the permit. The changes requested by Lakeland Electric are to a portion of Condition C.27.a.

The second paragraph of Condition C.27.a., which currently reads –

*Since water injection is used to control  $\text{NO}_x$  with no additional post-combustion  $\text{NO}_x$  control and the owner or operator chose to monitor the water-to-fuel ratio in accordance with 40 CFR 60.334(a), then that monitoring system must be operated concurrently with each EPA Method 20, ASTM D6522-00 (incorporated by reference, see 40 CFR 60.17), or EPA Reference Method 7E run and shall be used to determine the fuel consumption and water-to-fuel ratio necessary to comply with the  $\text{NO}_x$  emission limits. This provision does not preclude FDEP from using the  $\text{NO}_x$  CEMs data as an indicator of compliance and noncompliance.*

should be replaced by –

*Continuous compliance with the NO<sub>x</sub> emission limits in Conditions C.7 and C.8 shall be demonstrated using CEMs meeting the requirements of 40 CFR Part 75. The averaging time shall be 3-hour block averages while demonstrating compliance on a ppm at 15 percent oxygen basis. Since the owner/operator has selected the use of Part 75 CEMs as the continuous compliance demonstration method pursuant to 40 CFR Part 64.1 and the monitoring method pursuant to 40 CFR 60.334(b), a CAM plan and water-to-fuel ratio monitoring are not required for NO<sub>x</sub> emissions. Annual demonstration with the emission limits may be demonstrated using the annual RATA tests conducted for the CEMs.*

## **RULE APPLICABILITY**

Under Federal and State of Florida PSD review requirements, all major new or modified sources of air pollutants regulated under the Clean Air Act (CAA) must be reviewed and a pre-construction permit issued. The U.S. Environmental Protection Agency (EPA) has approved Florida's State Implementation Plan (SIP), which contains PSD regulations. The applicable PSD rules in Florida are found at Rule 62-212.400, Florida Administrative Code (F.A.C.).

A "major facility" is defined as any 1 of 28 named source categories that have the potential to emit 100 TPY or more, or any other stationary facility that has the potential to emit 250 TPY or more, of any pollutant regulated under the CAA. "Potential to emit" means the capability, at maximum design capacity, to emit a pollutant after the application of control equipment. Once a new source is determined to be a "major facility" for a particular pollutant, any pollutant emitted in amounts greater than the PSD significant emission rates is subject to PSD review. For an existing source for which a modification is proposed, the modification is subject to PSD review if the net increase in emissions for any CAA-regulated air pollutant due to the modification is greater than the PSD significant emission rates defined in 40 CFR 52.21(b)(23). If subject to PSD review, a PSD air construction permit is required for the project, which is required to undergo other analyses such as control technology review, air quality impact analysis, etc. If the net increase in emissions for any CAA-regulated air pollutant is smaller than the PSD significant emission rates, then a minor source air construction permit is required for the project.

The Charles Larsen Power Plant facility is a major facility under FDEP rules. Based on Rule 62-210.200(205), F.A.C., modification is defined as any physical change in, change in the method of operation of, or addition to a facility which would result in an increase in the actual emissions of any pollutant subject to new source review regulation under the CAA. This permit application is to modify the permit conditions regarding annual testing requirements, delete a permit condition regarding the CAM plan and incorporate CEMs as the continuous compliance demonstration method. There will neither be

any physical nor operational change to Unit 8 resulting in any increase in emissions. Therefore, the requested changes are not a modification as defined under the FDEP rules.

**TABLE A-1**  
**LARSEN UNIT 8 ANNUAL HEAT INPUTS, 2005-2009**

Year	Heat Input from Distillate Oil (MMBtu/yr)	Heat Input from Natural Gas (MMBtu/yr)	Total Actual Heat Input (MMBtu/yr)	Actual Operating Hours (hrs/yr)	Oil-Firing Operating Hours <sup>a</sup> (hrs/yr)
2009	0	1,145,774	1,145,774	1,287	0
2008	20,198	959,443	979,641	1,365	<< 19
2007	549	1,425,812	1,426,361	1,764	<< 1
2006	12,673	1,806,051	1,818,724	2,259	<< 12
2005	67,870	1,265,663	1,333,532	1,504	<< 64

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

<sup>a</sup> Oil firing hours are conservatively estimated from distillate oil heat input and the heat input capacity of 1,060 MMBtu/hr @ 25°F turbine inlet.

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Africa	+ 27 11 254 4800
Asia	+ 852 2562 3658
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 55 21 3095 9500

[solutions@golder.com](mailto:solutions@golder.com)  
[www.golder.com](http://www.golder.com)

**Golder Associates Inc.**  
**6026 NW 1st Place**  
**Gainesville, FL 32607 USA**  
**(352) 336-5600 - Phone**  
**(352) 336-6603 - Fax**

