

Polk Power Partners, L.P.  
Mulberry Cogeneration Facility  
3600 Highway 555  
P.O. Box 824  
Bartow, FL 33831

RECEIVED

MAR 23 2007

BUREAU OF AIR REGULATION

March 19, 2007

Mr. Al Linero, P.E.  
Program Administrator, Permitting South Section  
Bureau of Air Regulation  
Florida Department of Environmental Protection  
2600 Blair Stone Rd.  
Tallahassee, FL 32399-2400

Re: **Mulberry Cogeneration Facility (ID No 1050217)**  
Application for Air Construction Permit – Heat Input Increase

Dear Mr. Linero:

This permit application for the Mulberry Cogeneration Facility serves to request an increase in the allowable fuel firing rate of the combustion turbine from 912 MMBTU/hr (LHV at ISO conditions) to 970 MMBTU/hr (LHV at ISO conditions), an increase of approximately six percent. The heat input increase requested in this application for a permit revision would allow firing temperatures to be further increased from 2,055°F to 2,080°F, during high power-demand periods. This application is in addition to the previous request for a heat input increase, that was subsequently incorporated into the revised TV permit (1050217-005-AV) issued on August 3, 2006. A project description is provided in the air application package (Attachment MC-FI-C2), as well as an emission evaluation (Attachment MC-FI-C3, Tables 1 through 6).

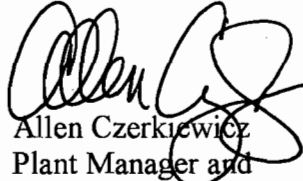
As the proposed project constitutes a modification under the provisions of 40 CFR Part 60 (i.e., a change in the method of operation accompanied by an increase in the actual hourly emission rate of a regulated pollutant) and will occur after February 18, 2005, the project will be subject to the newly promulgated Subpart KKKK. Therefore, this request will require a commitment from Mulberry to fire No. 2 fuel oil at a sulfur content no greater than 0.05 percent, versus the current allowable limit of 0.10 percent sulfur.

Accordingly, enclosed are an original and three copies of the air application package. If you should have any questions concerning this letter, please don't hesitate to contact Mr.

Mr. Linero  
October 14, 2005  
Page 2

Scott Osbourn, P.E. at (813) 287-1717. Mulberry appreciates your consideration of this request. Thanks in advance for your timely processing of this permit revision request.

Sincerely,



Allen Czerkiewicz  
Plant Manager and  
Authorized Representative

Attachment

Cc: Dave Kellermeyer, Northern Star Generation  
Scott Osbourn, P.E., Golder Associates Inc.



# Department of Environmental Protection

## Division of Air Resource Management

### APPLICATION FOR AIR PERMIT - LONG FORM

#### I. APPLICATION INFORMATION

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

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

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

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

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

To ensure accuracy, please see form instructions.

#### Identification of Facility

1. Facility Owner/Company Name: <b>Polk Power Partners, L.P.</b>	
2. Site Name: <b>Mulberry Cogeneration Facility</b>	
3. Facility Identification Number: <b>1050217</b>	
4. Facility Location... Street Address or Other Locator: <b>3600 County Road 555</b> City: <b>Bartow</b> County: <b>Polk</b> Zip Code: <b>33831-0824</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>Dave Kellermeyer, Vice President, EH&amp;S</b>	
2. Application Contact Mailing Address... Organization/Firm: <b>Northern Star Generation Services Company, LLC</b> Street Address: <b>2929 Allen Parkway, Suite 2200</b> City: <b>Houston</b> State: <b>TX</b> Zip Code: <b>77019</b>	
3. Application Contact Telephone Numbers... Telephone: <b>(713) 580 - 6368</b> ext. Fax: <b>(713) 580 - 6320</b>	
4. Application Contact Email Address: <u><b>dave.kellermeyer@northernstargen.com</b></u>	

#### Application Processing Information (DEP Use)

1. Date of Receipt of Application:	3. PSD Number (if applicable):
2. Project Number(s):	4. Siting Number (if applicable):

## APPLICATION INFORMATION

### Purpose of Application

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

#### **Air Construction Permit**

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

#### **Air Operation Permit**

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

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

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

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

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

### Application Comment

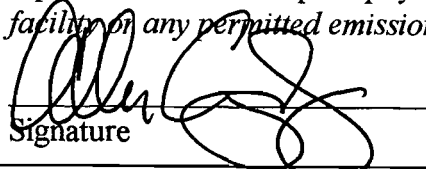
This permit application serves to request an increase in the allowable fuel firing rate of the combustion turbine (EU 001) from 912 MMBTU/hr (LHV at ISO conditions) to 970 MMBTU/hr (LHV at ISO conditions), an increase of approximately six percent. The heat input increase requested in this application for a permit revision would allow firing temperatures to be further increased from 2,055°F to 2,080°F, during high power-demand periods. This application is in addition to the previous request for a heat input increase, that was subsequently incorporated into the revised TV permit (1050217-005-AV) issued on August 3, 2006. A project description is provided in Attachment MC-FI-C2 and an emission evaluation in Attachment MC-FI-C3 (Tables 1 through 6).



**APPLICATION INFORMATION**

**Owner/Authorized Representative Statement**

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

1. Owner/Authorized Representative Name : <b>Allen Czerkiewicz, Plant Manager</b>
2. Owner/Authorized Representative Mailing Address... Organization/Firm: <b>Mulberry Cogeneration Facility</b> Street Address: <b>3600 County Road 555</b> City: <b>Bartow</b> State: <b>FL</b> Zip Code: <b>33831-0824</b>
3. Owner/Authorized Representative Telephone Numbers... Telephone: (863) 533-9073 ext. 235 Fax: (863) 533-4092
4. Owner/Authorized Representative Email Address: <b><u>allen.czerkiewicz@northernstargen.com</u></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  3.19.07 Date

## APPLICATION INFORMATION

### Application Responsible Official Certification

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

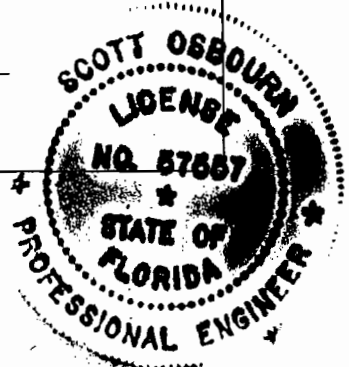
1. Application Responsible Official Name:
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable): <input type="checkbox"/> For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business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

# APPLICATION INFORMATION

## Professional Engineer Certification

1. Professional Engineer Name: <b>Scott Osbourn, Senior Consultant</b> Registration Number: <b>57557</b>
2. Professional Engineer Mailing Address... Organization/Firm: <b>Golder Associates, Inc.*</b> Street Address: <b>5100 Lemon Street, Suite 114</b> City: <b>Tampa</b> State: <b>FL</b> Zip Code: <b>33609</b>
3. Professional Engineer Telephone Numbers... Telephone: <b>(813) 287 - 1717</b> ext. <b>211</b> Fax: <b>(813) 287 - 1716</b>
4. Professional Engineer Email Address: <b>sosbourn@golder.com</b>
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> <i>(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/>, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/>, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> <i>(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/>, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i>  Signature _____ Date <u>3/19/07</u> (seal)

\* Board of Professional Engineers Certificate of Authorization No. 00001670





## II. FACILITY INFORMATION

### A. GENERAL FACILITY INFORMATION

#### Facility Location and Type

1. Facility UTM Coordinates... Zone 17      East (km) <b>413.6</b> North (km) <b>3080.6</b>		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) <b>27/50/56</b> Longitude (DD/MM/SS) <b>81/52/39</b>	
3. Governmental Facility Code: <b>0</b> (Not owned or operated by a Federal, State or Local Government)	4. Facility Status Code:	5. Facility Major Group SIC Code: (49) Electric, Gas and Sanitary Services	6. Facility SIC(s):  <b>4911</b>
7. Facility Comment :			

#### Facility Contact

1. Facility Contact Name: <b>Gwynne L. Johnson, Plant Engineer</b>
2. Facility Contact Mailing Address... Organization/Firm: <b>Mulberry Cogeneration Facility</b> Street Address: <b>3600 County Road 555</b> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <span>City: <b>Bartow</b></span> <span>State: <b>FL</b></span> <span>Zip Code: <b>33831-0824</b></span> </div>
3. Facility Contact Telephone Numbers: Telephone: <b>(863) 533 - 9073</b> ext.      Fax: <b>(863) 533 - 4092</b>
4. Facility Contact Email Address:

#### 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: <b>Allen Czerkiewicz, Plant Manager</b>
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: : <b>Mulberry Cogeneration Facility</b> Street Address: <b>3600 County Road 555</b> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <span>City: <b>Bartow</b></span> <span>State: <b>FL</b></span> <span>Zip Code: <b>33831-0824</b></span> </div>
3. Facility Primary Responsible Official Telephone Numbers... Telephone: <b>(863) 533 -9073</b> ext. 235      Fax: <b>(863) 533-4092</b>
4. Facility Primary Responsible Official Email Address: <b><u>allen.czerkiewicz@northernstargen.com</u></b>

**FACILITY INFORMATION**

**Facility Regulatory Classifications**

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

1. <input type="checkbox"/> Small Business Stationary Source	<input type="checkbox"/> Unknown
2. <input type="checkbox"/> Synthetic Non-Title V Source	
3. <input checked="" type="checkbox"/> Title V Source	
4. <input checked="" type="checkbox"/> Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. <input type="checkbox"/> Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. <input type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)	
7. <input type="checkbox"/> Synthetic Minor Source of HAPs	
8. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. <input 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 checked="" type="checkbox"/> Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment:  As the proposed project constitutes a modification under the provisions of 40 CFR Part 60 (i.e., a change in the method of operation accompanied by an increase in the actual hourly emission rate of a regulated pollutant) and will occur after February 18, 2005, the project will be subject to the newly promulgated Subpart KKKK. Therefore, the applicant will accept the applicable fuel oil sulfur limitation of 0.05 percent, versus the current allowable limit of 0.10 percent sulfur.	





**FACILITY INFORMATION**

**C. FACILITY ADDITIONAL INFORMATION**

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

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date: <u>05-JUL-02</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>05-JUL-02</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>05-JUL-02</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>MC-FI-C2</u>
3. Rule Applicability Analysis: <input checked="" type="checkbox"/> Attached, Document ID: <u>MC-FI-C3</u>
4. List of Exempt Emissions Units (Rule 62-210.300(3), F.A.C.): <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



## EMISSIONS UNIT INFORMATION

Section [1] of [1]

### III. EMISSIONS UNIT INFORMATION

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

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

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

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

**EMISSIONS UNIT INFORMATION**

Section [1] of [1]

**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:

**Combustion Turbine (CT) with HRSG (EU 001)**

3. Emissions Unit Identification Number: **001**

4. Emissions Unit Status Code:  
**A**

5. Commence Construction Date:

6. Initial Startup Date:  
**10-AUG-94**

7. Emissions Unit Major Group SIC Code:  
**49**

8. Acid Rain Unit?  
 Yes  
 No

9. Package Unit:

Manufacturer: **General Electric**

Model Number: **PG7111 EA**

10. Generator Nameplate Rating: **82 MW**

11. Emissions Unit Comment:

**No. 2 fuel oil is used as back-up fuel; limited to firing no more than 720 hours per year.**



**EMISSIONS UNIT INFORMATION**

Section [1] of [1]

**Emissions Unit Control Equipment**

1. Control Equipment/Method(s) Description:

**NO<sub>x</sub> emissions are controlled by dry low NO<sub>x</sub> (DLN) combustors and water-injection**

**28 – Steam or Water Injection – water-injection**

**25 – Staged Combustion – Stage Combustion Technology – Dry Low NO<sub>x</sub> Burners**

2. Control Device or Method Code(s): **28 and 25**

**EMISSIONS UNIT INFORMATION**

Section [1] of [1]

**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>970 million Btu/hr</b>
4. Maximum Incineration Rate: pounds/hr tons/day
5. Requested Maximum Operating Schedule: 24 hours/day 7 days/week 52 weeks/year 8,760 hours/year
6. Operating Capacity/Schedule Comment:  <b>Requested maximum heat input of 970 MMBtu/hr, based on lower heating value (LHV) at 59°F and 60 percent relative humidity (ISO conditions).</b>

**EMISSIONS UNIT INFORMATION**

Section [1] of [1]

**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>1 – A single emission point serving a single emission unit.</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>125 feet</b>	7. Exit Diameter: <b>15 feet</b>	
8. Exit Temperature: <b>220 °F</b>	9. Actual Volumetric Flow Rate: <b>679,324 acfm</b>	10. Water Vapor: <b>%</b>	
11. Maximum Dry Standard Flow Rate: Dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: <b>17</b> East (km): <b>413.6</b> North (km): <b>3080.6</b>		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) <b>27/50/56</b> Longitude (DD/MM/SS) <b>81/53/11</b>	
15. Emission Point Comment:  <b>Emission point calculations assume base load conditions at 59°F for natural gas firing.</b>			

**EMISSIONS UNIT INFORMATION**

Section [1] of [1]

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

**Segment Description and Rate: Segment 1 of 2**

1. Segment Description (Process/Fuel Type): <b>Internal Combustion Engine; Electric Generation; Distillate Oil; Turbine</b>		
2. Source Classification Code (SCC): <b>20100101</b>		3. SCC Units: <b>1,000 Gallons Distillate Oil (Diesel Burned)</b>
4. Maximum Hourly Rate: <b>8.2</b>	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: <b>0.05</b>	8. Maximum % Ash:	9. Million Btu per SCC Unit: <b>132</b>
10. Segment Comment: <b>Max hourly rate based on 20°F inlet temperature (1,082 MMBtu/hr at fuel LHV presented above). Permit condition (Specific Condition A.2) limits annual fuel oil usage to no more than 40.0 MM lb/yr and 720 hours per year of operation. Note—Subpart KKKK limits fuel oil sulfur content to 0.05 percent.</b>		

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

1. Segment Description (Process/Fuel Type): <b>Internal Combustion Engine; Electric Generation; Distillate Oil; Turbine</b>		
2. Source Classification Code (SCC): <b>20100201</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>8,877.4</b>	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: <b>946</b>
10. Segment Comment: <b>Max hourly rate based on 20°F inlet temperature (1,067 MMBtu/hr at fuel LHV presented above). Permit condition (Specific Condition A.2) limits annual natural gas usage to no more than 8,877.4 MM cf/yr. Max allowable sulfur content equals 1 gr/100 scf.</b>		

**EMISSIONS UNIT INFORMATION**

Section [1] of [1]

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

**Segment Description and Rate:** Segment \_\_ of \_\_

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

**Segment Description and Rate:** Segment \_\_ of \_\_

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

**EMISSIONS UNIT INFORMATION**

Section [1] of [1]

**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
CO			EL
NO <sub>x</sub>	Low NO <sub>x</sub> Burners	Water Injection	EL
SO <sub>2</sub>			EL

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

(Optional for unregulated emissions units)

**Potential, Estimated Fugitive, and Baseline & Projected Actual 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 - Carbon Monoxide</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: <b>75.3 lb/hour                      232 tons/year</b>		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor:  Reference:		7. Emissions Method Code: <b>0</b>	
8.a. Baseline Actual Emissions (if required): <b>48.1 tons/year</b>		8.b. Baseline 24-month Period: From: <b>1/1/04</b> To: <b>12/31/05</b>	
9.a. Projected Actual Emissions (if required): <b>53.4 tons/year</b>		9.b. Projected Monitoring Period: <input checked="" type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: <b>Potential hourly emissions are based on fuel oil firing at ISO conditions. Potential annual emissions are based on natural gas firing at ISO conditions for 8,760 hr/yr.</b>			
11. Potential, Fugitive, and Actual Emissions Comment:			

**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>75.3 lb/hour</b>	4. Equivalent Allowable Emissions: <b>75.3 lb/hour      27.1 tons/year</b>
5. Method of Compliance: <b>EPA Reference Method 10 testing.</b>	
6. Allowable Emissions Comment (Description of Operating Method): <b>While firing fuel oil. Basis for allowable: AC 53-211670 and BACT determination dated February 21, 1994.</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>25 ppm<sub>d</sub>v @ 15% O<sub>2</sub></b>	4. Equivalent Allowable Emissions: <b>53.0 lb/hour      232 tons/year</b>
5. Method of Compliance: <b>EPA Reference Method 10 testing.</b>	
6. Allowable Emissions Comment (Description of Operating Method): <b>While firing natural gas. Basis for allowable: AC 53-211670 and BACT determination dated February 21, 1994.</b>	



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

(Optional for unregulated emissions units)

**Potential, Estimated Fugitive, and Baseline & Projected Actual 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> – Nitrogen Oxides</b>		2. Total Percent Efficiency of Control:	
3. Potential Emissions: <b>164 lb/hour                      230.7 tons/year</b>		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: <b>42 ppmvd @ 15% O<sub>2</sub></b>  Reference:		7. Emissions Method Code: <b>0</b>	
8.a. Baseline Actual Emissions (if required): <b>49.1 tons/year</b>		8.b. Baseline 24-month Period: From: <b>1/1/05</b> To: <b>12/31/06</b>	
9.a. Projected Actual Emissions (if required): <b>55.6 tons/year</b>		9.b. Projected Monitoring Period: <input checked="" type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: <b>Potential hourly emissions are based on fuel oil firing at ISO conditions. Potential annual emissions are based on natural gas firing at ISO conditions for 8,760 hr/yr.</b>			
11. Potential, Fugitive, and Actual Emissions Comment:			

**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>42 ppmvd @ 15% O<sub>2</sub></b>	4. Equivalent Allowable Emissions: <b>164 lb/hour                      59 tons/year</b>
5. Method of Compliance: <b>EPA Reference Method 20 or 7E.</b>	
6. Allowable Emissions Comment (Description of Operating Method): <b>Based on 4-hour rolling average as measured by the NO<sub>x</sub> CEMS while firing fuel oil, excluding periods of startup and shutdown. Basis for allowable: AC 53-211670 and BACT determination dated February 21, 1994; and 1050217-004-AC.</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>15 ppmvd @ 15% O<sub>2</sub></b>	4. Equivalent Allowable Emissions: <b>58.8 lb/hour                      230.7 tons/year</b>
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method): <b>Based on 4-hour rolling average as measured by the NO<sub>x</sub> CEMS while firing natural gas, excluding periods of startup and shutdown. Basis for allowable: AC 53-211670 and BACT determination dated February 21, 1994; and 1050217-004-AC.</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: <b>Other</b>	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: <b>0.05 percent in fuel oil</b>	4. Equivalent Allowable Emissions:
5. Method of Compliance: <b>Fuel analysis for sulfur content, each fuel oil delivery.</b>	
6. Allowable Emissions Comment (Description of Operating Method): <b>While firing No. 2 fuel oil. Basis for allowable: AC 53-211670 and BACT determination dated February 21, 1994. Note- NSPS, Subpart KKKK limits fuel oil sulfur content to 0.05 percent.</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:
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

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

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

**EMISSIONS UNIT INFORMATION**

Section [1] of [1]

**G. VISIBLE EMISSIONS INFORMATION**

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

**Visible Emissions Limitation:** Visible Emissions Limitation 1 of 2

1. Visible Emissions Subtype: <b>VE 10 – Visible Emission – 10% Opacity</b>	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: <b>10%</b> Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment: <b>While firing natural gas. Permit AC 53-211670.</b>	

**Visible Emissions Limitation:** Visible Emissions Limitation 2 of 2

1. Visible Emissions Subtype: <b>VE 20 – Visible Emission – 20% Opacity</b>	2. Basis for Allowable Opacity: <input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: <b>20%</b> Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment: <b>While firing fuel oil. Permit AC 53-211670.</b>	

**EMISSIONS UNIT INFORMATION**

Section [1] of [1]

**H. CONTINUOUS MONITOR INFORMATION**

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

**Continuous Monitoring System: Continuous Monitor 1 of 5**

1. Parameter Code: <b>EM - Emission</b>	2. Pollutant(s): <b>NO<sub>x</sub></b>
3. CMS Requirement:	<input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other
4. Monitor Information... Manufacturer: <b>ACME</b> Model Number: <b>951C</b> Serial Number: <b>1000195</b>	
5. Installation Date:	6. Performance Specification Test Date: <b>27-DEC-95</b>
7. Continuous Monitor Comment: <b>Status is inactive.</b>	

**Continuous Monitoring System: Continuous Monitor 2 of 5**

1. Parameter Code: <b>EM - Emission</b>	2. Pollutant(s): <b>NO<sub>x</sub></b>
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: <b>ROSEMOUNT</b> Model Number: <b>951C</b> Serial Number: <b>1000195</b>	
5. Installation Date: <b>18-DEC-95</b>	6. Performance Specification Test Date: <b>27-DEC-95</b>
7. Continuous Monitor Comment: <b>System installed in accordance with AC Permit, AC 53-211670. Status is active.</b>	

**EMISSIONS UNIT INFORMATION**

Section [1] of [1]

**H. CONTINUOUS MONITOR INFORMATION (CONTINUED)**

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

**Continuous Monitoring System: Continuous Monitor 3 of 5**

1. Parameter Code: <b>O<sub>2</sub> - Oxygen</b>	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: <b>SERVOMEX</b> Model Number: <b>1400 B</b> Serial Number: <b>1420B/697</b>	
5. Installation Date: <b>18-DEC-95</b>	6. Performance Specification Test Date: <b>27-DEC-95</b>
7. Continuous Monitor Comment: <b>System installed in accordance with AC Permit, AC 53-211670. Status is active.</b>	

**Continuous Monitoring System: Continuous Monitor 4 of 5**

1. Parameter Code: <b>O<sub>2</sub> - Oxygen</b>	2. Pollutant(s):
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: <b>ANARAD</b> Model Number: <b>AR-22</b> Serial Number:	
5. Installation Date: <b>11-NOV-94</b>	6. Performance Specification Test Date: <b>21-FEB-95</b>
7. Continuous Monitor Comment: <b>System installed in accordance with AC Permit, AC 53-211670. Status is inactive.</b>	

**EMISSIONS UNIT INFORMATION**

Section [1] of [1]

**H. CONTINUOUS MONITOR INFORMATION (CONTINUED)**

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

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

1. Parameter Code: <b>EM - Emission</b>	2. Pollutant(s): <b>NOx</b>
3. CMS Requirement:	<input type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: <b>ANARAD</b> Model Number: <b>AR-880</b> Serial Number: <b>1234</b>	
5. Installation Date: <b>11-NOV-94</b>	6. Performance Specification Test Date: <b>21-FEB-95</b>
7. Continuous Monitor Comment: <b>Emission is NOx. Status is inactive.</b>	

**Continuous Monitoring System:** Continuous Monitor \_\_\_ of \_\_\_

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



**EMISSIONS UNIT INFORMATION**

Section [1] of [1]

**I. EMISSIONS UNIT ADDITIONAL INFORMATION**

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

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>05-JUL-02</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>05-JUL-02</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>05-JUL-02</u>
4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>05-JUL-02</u> <input type="checkbox"/> Not Applicable (construction application)
5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Previously Submitted, Date <u>05-JUL-02</u> <input 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 checked="" type="checkbox"/> To be Submitted, Date (if known): <u>4/9/07</u> Test Date(s)/Pollutant(s) Tested: <u>2/22/07 for NOx, CO and VE</u> <input type="checkbox"/> Not Applicable <p>Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.</p>
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 [1]

**Additional Requirements for Air Construction Permit Applications -N/A**

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 type="checkbox"/> Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(4)(d), F.A.C., and Rule 62-212.500(4)(f), F.A.C.) <input type="checkbox"/> Attached, Document ID: _____ <input 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 type="checkbox"/> Not Applicable

**Additional Requirements for Title V Air Operation Permit Applications -N/A**

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
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

**Additional Requirements Comment**

**ATTACHMENT MC-FI-C2**

**Project Description**

## ATTACHMENT MC-FI-C2

### Mulberry Cogeneration Facility

#### Heat Input Increase Request Project Description

Mulberry Cogeneration Facility is seeking an increase in the allowable fuel firing rate of the General Electric PG7111EA combustion turbine (Emission Unit EU 001) from 912 MMBtu/hr (LHV, corrected to ISO conditions) to 970 MMBtu/hr (LHV, corrected to ISO conditions). In addition, Mulberry seeks an increase in the hourly NOx mass emission rate from 52.7 lb/hour to 58.8 lb/hour. No increase in the emission limits of any other pollutant is being requested, nor is an increase in the annual allowable NOx emissions being sought.

The purpose of this request is to be able to increase turbine firing temperature in order to increase plant output during periods of peak electricity demand. This increased firing temperature capability was established as a result of the previous normal replacement of hot gas section parts with functionally identical parts of a different metallurgy. That equipment replacement was addressed in a previous permit application for a heat input increase, submitted on September 14, 2005 (current Final TV Permit No. 1050217-005-AV, issued August 3, 2006). That previous permit modification allowed the increase of maximum firing temperature from 2020 °F to 2055 °F, which produced an estimated increase in peak firing rates from 869 MMBtu/hr to 912 MMBtu/hr (both LHV, adjusted to ISO conditions). The heat input increase requested in this permit revision application would allow firing temperatures to be further increased from 2,055 °F to 2,080 °F, during high power demand periods.

There are no physical modifications to the gas turbine required to implement this higher firing rate. The scope of the modification is limited to changes in the turbine process control software. To obtain an increase in fuel flow (peak load), the operating schedule (exhaust temperature control curve) in the control system would be modified to reflect the necessary changes. Subsequent to the software change, turbine tuning would be conducted at the peak firing temperatures.

When Mulberry previously applied for a heat input increase of approximately 5 percent, this additional capacity currently being sought through reprogramming of the control software was not considered due to excessive maintenance associated with the higher firing temperatures. An increase in firing temperature, for a given configuration, will increase thermal stresses and the frequency of inspection intervals for the combustion system and hot gas path, based on the hours at "higher firing temperature" (peak load) operation. However, given the relatively modest increase in firing temperature associated with the requested heat input increase, Mulberry has concluded that these potential heat stress impacts and their associated maintenance costs would be minimal. This conclusion

is supported by the fact that implementation of the higher firing temperatures is expected to occur relatively infrequently.

Tables 1 through 6 of this attachment present the emissions evaluation associated with this request. As stated previously, peak firing of the gas turbine at 2,080 °F is expected to increase the maximum heat input on gas-firing by about 6 percent compared to firing at 2,055 °F. Table 1 presents the current potential to emit and emission limits (EU 001) based on permit conditions. Table 2 summarizes past actual emissions data for the facility, from 2001 through 2006. Table 3 summarizes the highest past actual 2-year average value per pollutant (TPY) for the facility. Recent revisions to the State of Florida's new source review program (62-210.200) now require that "actual emissions" be determined over "consecutive 24-month periods", rather than the highest 2 year period in the previous 5 years. Therefore, Table 3 also indicates which 24-month periods were considered for each pollutant. Table 4 provides an estimate of the annual emissions increase associated with this requested higher firing temperature. The estimated increases associated with Mulberry's previous request for a heat input increase are presented in Table 5. Finally, Table 6 presents the net effect of the referenced requests for heat input increases (i.e., the previous 5 percent increase request and the current request for a 6 percent increase).

Emissions during peak firing will not exceed the SERs that would trigger PSD review for affected pollutants and emissions will continue to be comfortably within all of the facility's permitted emission limits. This request will trigger applicability of the recently promulgated NSPS, Subpart KKKK. This is due to the fact that this request constitutes a change in the method of operation accompanied by an increase in the "actual" hourly emission rate of a regulated pollutant, commencing after February 18, 2005. The facility, as currently permitted, will meet the allowable emissions requirements in this newly promulgated NSPS.

To reiterate, Mulberry is requesting an increase in the allowable heat input limit and the hourly NO<sub>x</sub> emission limit. The plant will continue to operate within the permit limit of 15 ppmvd @ 15% O<sub>2</sub> under all conditions. It is anticipated that the peak firing capability will be used infrequently, and primarily during the summer months. However, for the purposes of this permit modification, Mulberry is seeking the ability to implement peak firing without any restrictions on the annual hours of use of this operating scenario.

**ATTACHMENT MC-FI-C3**

**Emissions Evaluation**

**TABLE 1**  
**Mulberry Cogeneration Facility**  
**Current Permit Limits**

Pollutant ID	EU 001 CT/HSRG				Total
	Emissions Current Potential		Emissions Current Potential	Reference Note	Emissions (EU 001) Current Potential
	lb/hr	ppmvd @ 15% O <sub>2</sub>	TPY		TPY
NOx (gas)	52.7	15	230.7	A.5.1 <sup>1</sup>	289.7
NOx (oil)	164	42	59	A.5.2 <sup>1</sup>	
SO <sub>2</sub>	---	---	416.5	A.7 <sup>1,2</sup>	416.5
CO (gas)	53	25	232	A.9 <sup>1</sup>	259.1
CO (oil)	75.3	---	27.1	A.10 <sup>1</sup>	

<sup>1</sup>TV Permit No. 1050217-005-AV, Condition Number

<sup>2</sup>Maximum sulfur content shall not exceed 0.10%, by weight



TABLE 2

## Mulberry Cogeneration Facility - Historical Annual Emissions by Unit

Year		2001			2002			2003		
Pollutant		EU 001 CT/HSRG (tpy)	EU 002 Secondary Boiler (tpy)	Total (tpy)	EU 001 CT/HSRG (tpy)	EU 002 Secondary Boiler (tpy)	Total (tpy)	EU 001 CT/HSRG (tpy)	EU 002 Secondary Boiler (tpy)	Total (tpy)
Volatile Organic Compounds	VOC	23.0	0.0008	23.0	20.4	0.00066	20.4	23.5	0.0001	23.5
Sulfur Dioxide	SO <sub>2</sub>	1.7	0.0006	1.7	1.5	0.00045	1.5	1.8	0.00002	1.8
Particulate Matter	PM	25.6	0.008	25.6	22.7	0.0064	22.7	26.1	0.0009	26.1
Nitrogen Oxides	NO <sub>x</sub>	62.5	0.051	62.6	46.5	0.14	46.6	46.6	0.033	46.6
Carbon Monoxide	CO	6.8	0.0	6.8	26.2	0.0	26.2	8.3	0.0	8.3
Particulate Matter 10	PM <sub>10</sub>	12.3	0.0018	12.3	10.9	0.0014	10.9	12.5	0.0002	12.5

Source: AOR Data

TABLE 2 (continued)

## Mulberry Cogeneration Facility - Historical Annual Emissions by Unit

Year		2004			2005			2006		
Pollutant		EU 001 CT/HSRG (tpy)	EU 002 Secondary Boiler (tpy)	Total (tpy)	EU 001 CT/HSRG (tpy)	EU 002 Secondary Boiler (tpy)	Total (tpy)	EU 001 CT/HSRG (tpy)	EU 002 Secondary Boiler (tpy)	Total (tpy)
Volatile Organic Compounds	VOC	21.3	0.0046	21.3	22.8	0.0260	22.9	21.5	0.0060	21.5
Sulfur Dioxide	SO <sub>2</sub>	0.035	0.000068	0.04	0.230	0.002300	0.23	0.219	0.000500	0.22
Particulate Matter	PM	23.6	0.045	23.7	25.4	0.252	25.7	23.9	0.055	24.0
Nitrogen Oxides	NO <sub>x</sub>	48.8	0.175	49.0	40.9	0.913	41.8	56.1	0.239	56.3
Carbon Monoxide	CO	68.3	0.0	68.3	28.0	0.0	28.0	34.6	0.0	34.6
Particulate Matter 10	PM <sub>10</sub>	11.3	0.0099	11.3	12.2	0.0550	12.2	11.5	0.0120	11.5

Source: AOR Data

**TABLE 3**  
**Mulberry Cogeneration Past Actual Facility Annual Emissions**

Year		2001	2002	2003	2004	2005	2006	2002- 2006 Existing Emissions Highest 2 Year Avg.
Pollutant		Total (tpy)	Total (tpy)	Total (tpy)	Total (tpy)	Total (tpy)	Total (tpy)	Total (tpy)
Volatile Organic Compounds	<b>VOC</b>	23.0	20.4	<b>23.5</b>	<b>21.3</b>	22.9	21.5	22.4
Sulfur Dioxide	<b>SO<sub>2</sub></b>	1.7	<b>1.5</b>	<b>1.8</b>	0.0	0.2	0.2	1.7
Particulate Matter	<b>PM</b>	25.6	22.7	<b>26.1</b>	<b>23.7</b>	25.7	24.0	24.9
Nitrogen Oxides	<b>NO<sub>x</sub></b>	62.6	46.6	46.6	49.0	<b>41.8</b>	<b>56.3</b>	49.1
Carbon Monoxide	<b>CO</b>	6.8	26.2	8.3	<b>68.3</b>	<b>28.0</b>	34.6	48.1
Particulate Matter 10	<b>PM<sub>10</sub></b>	12.3	10.9	<b>12.5</b>	<b>11.3</b>	12.2	11.5	11.9

Source: AOR Data

Bold denotes highest 2 years in the 2002-2006 timeframe

**TABLE 4**  
**Mulberry Cogeneration Facility Emissions Increase**

<b>Pollutant</b>	<b>Existing Emissions (tpy) Highest 2-year avg.</b>	<b>Proposed Emissions<sup>1</sup> 6% Increase (tpy)</b>	<b>Net Increase or Decrease (tpy)</b>	<b>PSD Significant Emission Thresholds (tpy)</b>	<b>PSD Applicable (Yes/No)</b>
VOC	22.4	23.7	1.3	40	NO
SO <sub>2</sub>	1.7	1.8	0.1	40	NO
PM	24.9	26.4	1.5	25	NO
NO <sub>x</sub>	49.1	52.0	2.9	40	NO
CO	48.1	51.0	2.9	100	NO
PM <sub>10</sub>	11.9	12.6	0.7	15	NO

**TABLE 5**  
**Estimated Increase for Previous 5 Percent Heat Input Increase \***

\* (Permit No. 1050217-005-AV)

<b>Pollutant</b>	<b>Existing Emissions (tpy) Highest 2-year avg.</b>	<b>Proposed Emissions<sup>2</sup> 5% Increase (tpy)</b>	<b>Net Increase or Decrease (tpy)</b>	<b>PSD Significant Emission Thresholds (tpy)</b>	<b>PSD Applicable (Yes/No)</b>
VOC	23.3	24.4	1.2	40	NO
SO <sub>2</sub>	1.8	1.9	0.1	40	NO
PM	25.9	27.1	1.3	25	NO
NO <sub>x</sub>	71.5	75.1	3.6	40	NO
CO	47.3	49.6	2.4	100	NO
PM <sub>10</sub>	12.4	13.0	0.6	15	NO

<sup>1</sup>Proposed emissions calculated based on percent increase in emissions of highest 2-year average (years 2002-2006).

<sup>2</sup>Proposed emissions calculated based on percent increase in emissions of highest 2-year average (years 2000-2004).

**TABLE 6**  
**Mulberry Cogeneration Facility Contemporaneous Netting Summary**

<b>Pollutant</b>	<b>Existing Emissions (tpy) Highest 2-year avg.</b>	<b>Net Increase or Decrease (tpy)</b>	<b>PSD Significant Emission Thresholds (tpy)</b>	<b>PSD Applicable (Yes/No)</b>
<b>VOC</b>	22.4	2.5	40	NO
<b>SO2</b>	1.7	0.2	40	NO
<b>PM</b>	24.9	2.8	25	NO
<b>NOx</b>	49.1	6.5	40	NO
<b>CO</b>	48.1	5.3	100	NO
<b>PM10</b>	11.9	1.3	15	NO