



Farzie Shelton, ChE; REM

Associate GM Technical Support

SENT VIA FEDEX

October 27, 2010

Ms. Christy DeVore, P.E.
Permitting Engineer
Bureau of Air Regulation
Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RECEIVED
OCT 28 2010
BUREAU OF
AIR REGULATION

RE: Revision of Air Operation Permit Application – Unit 3 SCR
C.D. McIntosh, Jr. Power Plant 1050004

Dear Ms. DeVore:

Project No. = 1050004-029-AV

Lakeland Electric is requesting through this permit revision application to incorporate the provisions of Air Construction Permit No. 1050004-026-AC into the current Title V Operating Permit. The Florida Department of Environmental Protection (FDEP) issued permit No. 1050004-026-AC to revise Permit No. 1050004-019-AC, which authorized the installation of a selective catalytic reduction (SCR) system to reduce NOx emissions and a sorbent injection system to reduce sulfuric acid mist (SAM) emissions. Permit No. 1050004-026-AC extended the expiration date of Permit No. 1050004-019-AC until March 31, 2011. Lakeland Electric completed construction of the SCR and the sorbent injection system and had since conducted all performance tests required by the above stated permits.

Enclosed please find four (4) copies of this application signed by Mr. Ken Kosky P.E. of Golder Associates and certified by Mr. Thomas J. Trickey our Responsible Official. This application has been prepared in accordance with Rule 62-210, F.A.C. and instructions associated with DEP Form No. 62.210.900(1). If you have any questions regarding the enclosed, please do not hesitate to contact me.

Sincerely,

For Farzie Shelton

Enclosure

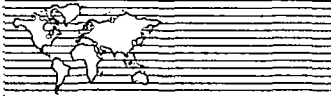
cc: Ms. Cindy Zhang-Torres, P.E.
Permitting Supervisor
Air Permitting Section
FDEP
13051 North Telecom Parkway
Temple Terrace, FL 33637-0926
(one copy of application via FedEx)

City of Lakeland • Department of Electric Utilities

501 East Lemon Street • Lakeland, FL 33801-5050 • 863. 834.6603 • Fax 863. 834.8187 • Cell 863.430.8297

farzie.shelton@lakelandelectric.com

Page 1 of 1



Application

REVISION OF AIR OPERATION PERMIT APPLICATION

C. D. McIntosh, Jr. Power Plant

Prepared For: Lakeland Electric
501 East Lemon Street
Lakeland, FL 33805

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.

October 2010

103-87664

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**APPLICATION FOR AIR PERMIT
LONG - FORM**



Department of Environmental Protection

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

RECEIVED
OCT 28 2010
BUREAU OF 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: Lakeland Electric	
2. Site Name: C. D. McIntosh, Jr. Power Plant	
3. Facility Identification Number: 1050004	
4. Facility Location... Street Address or Other Locator: 3030 East Lake Parker Drive City: Lakeland County: Polk Zip Code: 33805	
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: Ms. Farzie Shelton, Associate General Manager of Technical Support	
2. Application Contact Mailing Address... Organization/Firm: Lakeland Electric Street Address: 501 East Lemon Street City: Lakeland State: FL Zip Code: 33801-5079	
3. Application Contact Telephone Numbers... Telephone: (863) 834 - 6603 ext. Fax: (863) 834 - 6362	
4. Application Contact E-mail Address: farzie.shelton@lakelandelectric.com	

Application Processing Information (DEP Use)

1. Date of Receipt of Application: 10-28-10	3. PSD Number (if applicable):
2. Project Number(s): 1050004-029-A1	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

See Part II.

APPLICATION INFORMATION

Owner/Authorized Representative Statement




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

1. Owner/Authorized Representative Name :
2. Owner/Authorized Representative Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Owner/Authorized Representative Telephone Numbers... Telephone: () ext. Fax: ()
4. Owner/Authorized Representative E-mail Address:
5. Owner/Authorized Representative Statement: <i>I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.</i> _____ Signature _____ Date

APPLICATION INFORMATION

Application Responsible Official Certification

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

1. Application Responsible Official Name: Mr. Thomas J. Trickey, P.E., Plant Manager		
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable): <input checked="" 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, CAIR source, or Hg Budget source.		
3. Application Responsible Official Mailing Address... Organization/Firm: Lakeland Electric Street Address: 3030 E. Lake Parker Drive City: Lakeland State: FL Zip Code: 33805		
4. Application Responsible Official Telephone Numbers... Telephone: (863) 834 - 6477 ext. Fax: (863) 834 - 5670		
5. Application Responsible Official E-mail Address: tom.trickey@lakelandelectric.com		
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. <table><tr><td> Signature</td><td><u>10-27-10</u> Date</td></tr></table>	 Signature	<u>10-27-10</u> Date
 Signature	<u>10-27-10</u> Date	

APPLICATION INFORMATION

Professional Engineer Certification

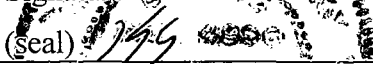
1. Professional Engineer Name: **Ken Kosky**
 Registration Number: **14996**

2. Professional Engineer Mailing Address...
 Organization/Firm: **Golder Associates Inc.****
 Street Address: **6026 NW 1st Place**
 City: **Gainesville** State: **FL** Zip Code: **32607**

3. Professional Engineer Telephone Numbers...
 Telephone: **(352) 336-5600** ext. **21156** Fax: **(352) 336-6603**

4. Professional Engineer E-mail Address:

5. Professional Engineer Statement:
I, the undersigned, hereby certify, except as particularly noted herein, that:*
 (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*
 (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.*
 (3) *If the purpose of this application is to obtain a Title V air operation permit (check here , 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.*
 (4) *If the purpose of this application is to obtain an air construction permit (check here , 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 , 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.*
 (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 , 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.*

Signature: *J. Kosky* Date: 10/26/10
 (seal) 

* 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) 409.0 North (km) 3,106.2		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) 28/04/50 Longitude (DD/MM/SS) 81/55/32	
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 McIntosh Power Plant consists of three fossil fuel-fired steam generators (FFFSG), two diesel powered generators, one gas turbine peaking unit, and one combined-cycle combustion turbine (Unit 5). FFFSG Unit 1 is fired with No. 6 fuel oil, natural gas, and on-specification used oil (distillate oil is used as an ignitor). FFFSG Unit 2 is fired with natural gas, No. 6 fuel oil, and No. 2 fuel oil. FFFSG Unit 3 is primarily fired with coal, refuse derived fuel, and petroleum coke. Unit 5 consists of a Siemens 501G combustion turbine and is primarily fired with natural gas with distillate oil as a backup. The McIntosh Plant was recently authorized to construct a truck unloading hopper and baghouse (EU031) and a coal processing and conveying system (EU032) under construction permit No. 1050004-024-AC.			

Facility Contact

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

Facility Primary Responsible Official

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

1. Facility Primary Responsible Official Name:
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: () ext. Fax: ()
4. Facility Primary Responsible Official 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 checked="" type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)	
7. <input type="checkbox"/> Synthetic Minor Source of HAPs	
8. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. <input type="checkbox"/> One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. <input 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: Unit 1, Unit 2, Unit 3, and Unit 5 are regulated under Acid Rain, Phase II. Unit 2 is subject to NSPS Subpart D. Unit 3 is subject to Subpart Da. Unit 5 is subject to Subpart GG. The coal processing and conveying system (EU032), when constructed will be subject to Subpart Y.	

List of Pollutants Emitted by Facility

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

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 2008</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 2008</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 2008</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 type="checkbox"/> Attached, Document ID: _____
3. Rule Applicability Analysis: <input type="checkbox"/> Attached, Document ID: _____
4. List of Exempt Emissions Units: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable (no exempt units at facility)
5. Fugitive Emissions Identification: <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
6. Air Quality Analysis (Rule 62-212.400(7), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable
7. Source Impact Analysis (Rule 62-212.400(5), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input 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 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 type="checkbox"/> Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.): <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Not Applicable

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units:
 Attached, Document ID: _____ Not Applicable (no exempt units at facility)

Additional Requirements for Title V Air Operation Permit Applications

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

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

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

1. Acid Rain Program Forms:

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

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

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

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

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

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

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

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

3. Hg Budget Part (DEP Form No. 62-210.900(1)(c)):

- Attached, Document ID: _____ Previously Submitted, Date: _____
 Not Applicable (not a Hg Budget unit)

Additional Requirements Comment

[Empty box for Additional Requirements Comment]

EMISSIONS UNIT INFORMATION

Section [1]
McIntosh Unit 3

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]
McIntosh Unit 3

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:
McIntosh Unit 3 – Fossil-Fuel-Fired Steam Generator (FFFSG)

3. Emissions Unit Identification Number: **006**

4. Emissions Unit Status Code: A	5. Commence Construction Date:	6. Initial Startup Date: 1982	7. Emissions Unit Major Group SIC Code: 49
--	--------------------------------	---	--

8. Federal Program Applicability: (Check all that apply)

Acid Rain Unit

CAIR Unit

9. Package Unit:
Manufacturer: _____ Model Number: _____

10. Generator Nameplate Rating: **364 MW**

11. Emissions Unit Comment:
This emission unit is a coal, residual oil, and natural gas fired steam generating unit which also co-fires refuse-derived fuel and petroleum coke.

EMISSIONS UNIT INFORMATION

**Section [1]
McIntosh Unit 3**

Emissions Unit Control Equipment/Method: Control 1 of 5

- | |
|---|
| 1. Control Equipment/Method Description:
PM- Electrostatic Precipitator (ESP) - High Efficiency |
| 2. Control Device or Method Code: 010 |

Emissions Unit Control Equipment/Method: Control 2 of 5

- | |
|---|
| 1. Control Equipment/Method Description:
SO₂ - Flue Gas Desulfurization (FGD) system |
| 2. Control Device or Method Code: 067 |

Emissions Unit Control Equipment/Method: Control 3 of 5

- | |
|--|
| 1. Control Equipment/Method Description:
NO_x- Low NOX burners (LNB) , Overfire air (OFA) system |
| 2. Control Device or Method Code: 205, 204 |

Emissions Unit Control Equipment/Method: Control 4 of 5

- | |
|---|
| 1. Control Equipment/Method Description:
NO_x- Selective Catalytic Reduction (SCR) with ammonia injection |
| 2. Control Device or Method Code: 139 |

Emissions Unit Control Equipment/Method: Control 5 of 5

- | |
|---|
| 1. Control Equipment/Method Description:
SAM- Dry Sorbent Injection |
| 2. Control Device or Method Code: 207 |

EMISSIONS UNIT INFORMATION

Section [1]
McIntosh Unit 3

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:	3,640 million Btu/hr	
4. Maximum Incineration Rate:	pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	24 hours/day 52 weeks/year	7 days/week 8,760 hours/year
6. Operating Capacity/Schedule Comment:		

EMISSIONS UNIT INFORMATION

Section [1]
McIntosh Unit 3

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: S003		2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: Exhausts through a single stack.			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code: V	6. Stack Height: 250 feet	7. Exit Diameter: 18 feet	
8. Exit Temperature: 125°F	9. Actual Volumetric Flow Rate: 1,260,536 acfm	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): 409.3 North (km): 3106.3		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: Stack parameters based on Title V permit application submitted June 2008.			

EMISSIONS UNIT INFORMATION

Section [1]
McIntosh Unit 3

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 4

1. Segment Description (Process/Fuel Type): External Combustion Boilers; Electrical Generation; Coal		
2. Source Classification Code (SCC): 1-01-001-01		3. SCC Units: Tons
4. Maximum Hourly Rate: 159.6	5. Maximum Annual Rate: 1,398,096	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 3.3	8. Maximum % Ash: 16	9. Million Btu per SCC Unit: 23
10. Segment Comment: Up to 20 percent petroleum coke is authorized to be co-fired with coal. Maximum hourly rate = 3,640 MMBtu/hr / 24 MMBtu/ton (HHV) = 151.7 tons/hr.		

Segment Description and Rate: Segment 2 of 4

1. Segment Description (Process/Fuel Type): External Combustion Boilers; Electrical Generation; Residual Oil		
2. Source Classification Code (SCC): 1-01-004-01		3. SCC Units: 1,000 Gallons Burned
4. Maximum Hourly Rate: 24,268	5. Maximum Annual Rate: 212,584	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.73	8. Maximum % Ash:	9. Million Btu per SCC Unit: 150
10. Segment Comment: Up to 10 percent RDF is authorized to be co-fired with low sulfur ($\leq 0.5\%$ S) oil. Maximum hourly rate = 3,640 MMBtu/hr / (150 MMBtu/1000 gallons) = 24,267 gallons/hr		

EMISSIONS UNIT INFORMATION

Section [1]
McIntosh Unit 3

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

Segment Description and Rate: Segment 3 of 4

1. Segment Description (Process/Fuel Type): External Combustion Boilers; Electric Generation; Petroleum Coke.		
2. Source Classification Code (SCC): 1-01-001-01	3. SCC Units: Tons	
4. Maximum Hourly Rate: 152.6	5. Maximum Annual Rate: 1,336,776	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 3.3	8. Maximum % Ash:	9. Million Btu per SCC Unit: 24
10. Segment Comment:		

Segment Description and Rate: Segment 4 of 4

1. Segment Description (Process/Fuel Type): External Combustion Boilers; Electrical Generation; Natural Gas; Boilers>100 Million Btu/hr except Tangential		
2. Source Classification Code (SCC): 1-01-006-01	3. SCC Units: Million Cubic Feet	
4. Maximum Hourly Rate: 3.56	5. Maximum Annual Rate: 31,139	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 1,024
10. Segment Comment: Natural gas or propane only or in combination with any other fuels or fuel combinations. Maximum hourly rate = 3,640 MMBtu/hr / (1,024 MMBtu/MMft³) = 3.56 MMft³/hr		

EMISSIONS UNIT INFORMATION

Section [1]
McIntosh Unit 3

POLLUTANT DETAIL INFORMATION

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

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

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM		2. Total Percent Efficiency of Control: 99.1	
3. Potential Emissions: 273 lb/hour 1,196 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.075 lb/MMBtu Reference: Title V Permit No. 1050004-023-AV		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: 0.075 lb/mmBtu x 3,640 mmBtu/hr = 273 lb/hr Annual emissions = (273.0 lb/hr x 8760 hrs/yr) x 1 Ton/2,000 lbs = 1,196 TPY			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

Section [1]
McIntosh Unit 3

POLLUTANT DETAIL INFORMATION

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

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

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

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

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.070 lb/mmBtu	4. Equivalent Allowable Emissions: 254lb/hour 1,116tons/year
5. Method of Compliance: Annual stack test; EPA Method 5 and 5B, if greater than 400 hours.	
6. Allowable Emissions Comment (Description of Operating Method): Allowable emission limit based on Title V Permit No. 1050004-023-AV for oil firing.	

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

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.075 lb/MMBtu	4. Equivalent Allowable Emissions: 273 lb/hour 1,196tons/year
5. Method of Compliance: Annual stack test; EPA Method 5 or 5B, if greater than 400 hours.	
6. Allowable Emissions Comment (Description of Operating Method): Allowable emission limit based on Title V Permit No. 1050004-023-AV for oil/RDF firing.	

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

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.05 lb/MMBtu	4. Equivalent Allowable Emissions: 182 lb/hour 797.2 tons/year
5. Method of Compliance: Annual stack test; EPA Method 5 and 5B.	
6. Allowable Emissions Comment (Description of Operating Method): Allowable emission limit based on Title V Permit No. 1050004-023-AV for coal/petroleum coke/RDF firing and coal/RDF firing.	

EMISSIONS UNIT INFORMATION

Section [1]
McIntosh Unit 3

POLLUTANT DETAIL INFORMATION

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Particulate Matter - Total

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

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

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

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.044 lb/mmBtu	4. Equivalent Allowable Emissions: 160lb/hour 702tons/year
5. Method of Compliance: Annual stack test; EPA Method 5 and 5B.	
6. Allowable Emissions Comment (Description of Operating Method): Allowable emission limit based on Title V Permit No. 1050004-023-AV for coal firing and coal/petroleum coke firing.	

Allowable Emissions Allowable Emissions ____ of ____

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

Allowable Emissions Allowable Emissions ____ of ____

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

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

Section [1]
McIntosh Unit 3

Page [2] of [4]
Carbon Monoxide

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

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: CO		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 728 lb/hour 3,189 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.20 lb/MMBtu Reference: Title V Permit No. 1050004-023-AV		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: 0.20 lb/mmBtu x 3,640 mmBtu/hr = 728.0 lb/hr 728.0 lb/hr x 8,760 hr/yr ÷ 2,000 lb/ton = 3,189 ton/yr			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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McIntosh Unit 3

Page [2] of [4]
Carbon Monoxide

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

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.20 lb/MMBtu	4. Equivalent Allowable Emissions: 728lb/hour 3,189tons/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):	

Allowable Emissions Allowable Emissions ____ of ____

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

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

Section [1]
McIntosh Unit 3

Page [3] of [4]
Nitrogen Oxides

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

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: NOx		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 800.8 lb/hour 3,507 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 0.22 lb/MMBtu Reference: Permit No. 1050004-026-AC		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: 0.22 lb/mmBtu x 3,640 mmBtu/hr = 800.8 lb/hr 800.8 lb/hr x 8,760 hr/yr ÷ 2,000 lb/ton = 3,507 ton/yr			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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McIntosh Unit 3

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Nitrogen Oxides

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

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

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.22 lb/MMBtu	4. Equivalent Allowable Emissions: 800.8lb/hour 3,507tons/year
5. Method of Compliance: CEM	
6. Allowable Emissions Comment (Description of Operating Method): Allowable emissions based on Permit No. 1050004-26-AC. Allowable emission limit is applicable beginning January 1, 2011.	

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 1 tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION

POLLUTANT DETAIL INFORMATION

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McIntosh Unit 3

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Sulfur Dioxide

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

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: SO2		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 4,368 lb/hour 19,131 tons/year		4. Synthetically Limited? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year			
6. Emission Factor: 1.2 lb/MMBtu Reference: Title V Permit No. 1050004-023-AV		7. Emissions Method Code: 0	
8.a. Baseline Actual Emissions (if required): tons/year		8.b. Baseline 24-month Period: From: To:	
9.a. Projected Actual Emissions (if required): tons/year		9.b. Projected Monitoring Period: <input type="checkbox"/> 5 years <input type="checkbox"/> 10 years	
10. Calculation of Emissions: Hourly emissions = 1.2 lb/MMBtu x 3,640 MMBtu/hr = 4,368 lb/hr Annual emissions = (4,368 lb/hr x 8760 hrs/yr) x 1 Ton/2,000 lbs = 19,132 TPY			
11. Potential, Fugitive, and Actual Emissions Comment:			

EMISSIONS UNIT INFORMATION

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McIntosh Unit 3

POLLUTANT DETAIL INFORMATION

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Sulfur Dioxide

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

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

Allowable Emissions Allowable Emissions 1 of 3

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 1.2 lb/MMBtu (3-Hour average)	4. Equivalent Allowable Emissions: 4,368 lb/hour 19,132 tons/year
5. Method of Compliance: Annual stack test; EPA Method 6 and 6B.	
6. Allowable Emissions Comment (Description of Operating Method): From Permit: Based on solid fuel firing. Allowable emissions based on 40 CFR 60, Subpart D for solid fuel firing.	

Allowable Emissions Allowable Emissions 2 of 3

1. Basis for Allowable Emissions Code: RULE	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 0.8 lb/MMBtu (3-Hour average)	4. Equivalent Allowable Emissions: 2,912 lb/hour 12,755 tons/year
5. Method of Compliance: Fuel analysis.	
6. Allowable Emissions Comment (Description of Operating Method): Based on oil firing. Allowable emissions based on 40 CFR 60, Subpart D for oil firing.	

Allowable Emissions Allowable Emissions 3 of 3

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: $PS_{SO_2} = [y(340) + z(520)] / (y+z)$	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: CEM	
6. Allowable Emissions Comment (Description of Operating Method): Allowable when blends of petroleum coke with other fuels are co-fired, based on 30-day rolling average [PSD-FL-008(B) and Permit No. 1050004-023-AV].	

EMISSIONS UNIT INFORMATION

Section [1]
McIntosh Unit 3

G. VISIBLE EMISSIONS INFORMATION

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

Visible Emissions Limitation: Visible Emissions Limitation 1 of 2

1. Visible Emissions Subtype: VE20	2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: 20 % Exceptional Conditions: 27 % Maximum Period of Excess Opacity Allowed: 6 min/hour	
4. Method of Compliance: Annual VE testing; EPA Method 9	
5. Visible Emissions Comment: Title V Permit 1050004-023-AV	

Visible Emissions Limitation: Visible Emissions Limitation 2 of 2

1. Visible Emissions Subtype: VE99	2. Basis for Allowable Opacity: <input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: 100 % Maximum Period of Excess Opacity Allowed: 60 min/hour	
4. Method of Compliance: None	
5. Visible Emissions Comment: Excess VE emissions allowed under FDEP Rule 62-210.700(1) and 40 CFR 60.8(c), and 60.11(c) for 2 hours (120 minutes) per 24-hour period for startup, shutdown, and malfunction.	

EMISSIONS UNIT INFORMATIONSection [1]
McIntosh Unit 3**H. CONTINUOUS MONITOR INFORMATION**

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

Continuous Monitoring System: Continuous Monitor 1 of 7

1. Parameter Code: EM	2. Pollutant(s): SO2
3. CMS Requirement:	<input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Thermo Electron Corp. Model Number: 43I-ANSAB Serial Number: 0608716018	
5. Installation Date: 23 May 2008	6. Performance Specification Test Date:
7. Continuous Monitor Comment: CEM required pursuant to 40 CFR Part 75, PSD-FL-008(B), Title V Permit No. 1050004-023-AV, and permit No. 1050004-026-AC.	

Continuous Monitoring System: Continuous Monitor 2 of 7

1. Parameter Code: EM	2. Pollutant(s): NOx
3. CMS Requirement:	<input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Thermo Electron Corp. Model Number: 43I-ANMSDAB Serial Number: 0608716016	
5. Installation Date: 23 May 2008	6. Performance Specification Test Date:
7. Continuous Monitor Comment: CEM required pursuant to 40 CFR Part 75, PSD-FL-008(B), Title V Permit No. 1050004-023-AV, and permit No. 1050004-026-AC.	

EMISSIONS UNIT INFORMATIONSection [1]
McIntosh Unit 3**H. CONTINUOUS MONITOR INFORMATION (CONTINUED)****Continuous Monitoring System: Continuous Monitor 3 of 7**

1. Parameter Code: VE	2. Pollutant(s):
3. CMS Requirement:	<input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Ametek Land Model Number: 4500 MKIII Serial Number: 16669301	
5. Installation Date: 23 April 2008	6. Performance Specification Test Date:
7. Continuous Monitor Comment: CEM required pursuant to 40 CFR Part 75, PSD-FL-008(B), and Title V Permit No. 1050004-023-AV	

Continuous Monitoring System: Continuous Monitor 4 of 7

1. Parameter Code: CO2	2. Pollutant(s):
3. CMS Requirement:	<input checked="" type="checkbox"/> Rule <input type="checkbox"/> Other
4. Monitor Information... Manufacturer: Thermo Electron Corp. Model Number: 410I-ANPDAB Serial Number: 0608716015	
5. Installation Date: 23 May 2008	6. Performance Specification Test Date:
7. Continuous Monitor Comment: CEM required pursuant to 40 CFR Part 75.	

EMISSIONS UNIT INFORMATION

Section [1]
McIntosh Unit 3

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Continuous Monitoring System: Continuous Monitor 7 of 7

1. Parameter Code: EM	2. Pollutant(s): CO
3. CMS Requirement: <input type="checkbox"/> Rule <input checked="" type="checkbox"/> Other	
4. Monitor Information... Manufacturer: Thermo Electron Corp. Model Number: 48i - TLE Serial Number: 0712221616	
5. Installation Date: 01 October 2007	6. Performance Specification Test Date:
7. Continuous Monitor Comment: PSD-FL-387 and Title V Permit No. 1050004-023-AV.	

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]
McIntosh Unit 3

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 2008</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 2008</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 2008</u>
4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input 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

ATTACHMENT MC-EU1-IV1
IDENTIFICATION OF APPLICABLE REQUIREMENTS

PERMITTEE

City of Lakeland, Department of Electric Utilities
Lakeland Electric
501 East Lemon Street
Lakeland, FL 33801-5050

Air Permit No. 1050004-026-AC
Permit Expires: March 31, 2011

C.D. McIntosh, Jr. Power Plant
Unit 3 SCR Project
Permit Extension and Revision

Authorized Representative:
Mr. Tom Trickey, Plant Manager

PROJECT

This is the final air construction permit, which revises original Permit No. 1050004-019-AC to: extend the permit expiration date; establish a new nitrogen oxides emissions limitation for Unit 3; and clarify the sulfuric acid mist emissions testing and reporting requirements. The project is being constructed at the existing C.D. McIntosh, Jr. Power Plant, which is located in Polk County at 3030 East Lake Parker Drive in Lakeland, Florida.

This final permit is organized into the following sections: Section 1 (General Information) and Section 2 (Permit Revisions).

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality. A copy of this permit modification shall be filed with the referenced permit and shall become part of the permit.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida

Joseph Kahn, Director
Division of Air Resource Management

(Date)

FINAL PERMIT REVISION

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination and Final Permit Revision) was sent by electronic mail, or a link to these documents made available electronically on a publicly accessible server, with received receipt requested before the close of business on _____ to the persons listed below.

- Mr. Tom Trickey, Lakeland Electric (tom.trickey@lakelandelectric.com)
- Ms. Farzie Shelton, Lakeland Electric (farzie.shelton@lakelandelectric.com)
- Mr. Bret Galbraith, Lakeland Electric (bret.galbraith@lakelandelectric.com)
- Ms. Cindy Zhang-Torres, DEP SW District (cindy.zhang-torres@dep.state.fl.us)
- Mr. Mike Halpin, DEP Siting Office (mike.halpin@dep.state.fl.us)
- Ms. Kathleen Forney, EPA Region 4 (forney.kathleen@epa.gov)
- Ms. Heather Abrams, EPA Region 4 (abrams.heather@epa.gov)
- Ms. Ana M. Oquendo, EPA Region 4 (oquendo.ana@epa.gov)
- Ms. Vickie Gibson, DEP BAR Reading File (victoria.gibson@dep.state.fl.us)

Clerk Stamp

FILED AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

(Clerk)

(Date)

SECTION 1. GENERAL INFORMATION

FACILITY DESCRIPTION

The facility is an existing power plant, which is categorized under Standard Industrial Classification Code No. 4911. The UTM coordinates are Zone 17, 409.0 km East and 3106.2 km North.

FACILITY REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants (HAP).
- The facility operates units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility operates units subject to the Clean Air Interstate Rule (CAIR).
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.

PROPOSED PROJECT

Fossil Fuel Steam Generator Unit 3 (Emissions Unit No. 006) is a nominal 364 megawatt fossil fuel-fired steam generator that burns primarily coal or blends of coal and petroleum coke (petcoke) and small amounts of refuse derived fuel (RDF). The maximum heat input rate is 3640 million British thermal units (MMBtu) per hour. The steam generator is supplied by Babcock and Wilcox. It is a balance-draft "late 1970's design" with 16 burners located on the front wall and 16 burners located on the back wall. The burners are fed by two coal pulverizers located on the front wall and two on the back wall. Particulate matter emissions are controlled by an existing electrostatic precipitator (ESP). Low-NO_x burners (LNBs) and over-fire air (OFA) systems control nitrogen oxides (NO_x) and a wet limestone scrubber reduces sulfur dioxide (SO₂) emissions. Permit No. 1050004-019-AC authorized the installation of a selective catalytic reduction (SCR) system to reduce NO_x emissions and a sorbent injection system to reduce sulfuric acid mist (SAM) emissions.

The permit extension is needed to complete miscellaneous construction activities, conduct performance testing, review and submit test results and submit an application for a revised Title V air operation permit to incorporate the applicable requirements of the air construction permit. Clarifications to the SAM emissions testing and reporting requirements are necessary to bridge the gap between the original permit requirements, the initial test protocol and the revised letter of authorization to conduct initial SAM performance tests.

The permittee is installing the new SCR system to provide flexibility to comply with the federal Clean Air Interstate (CAIR) program. However, based on current ambient monitoring data for nearby Hillsborough County, this area is likely to be designated as nonattainment for the new federal ozone standard (75 parts per billion). To help mitigate prospective ozone problems in this area, this permit specifies a new NO_x emissions limitation based on annual average NO_x emissions after implementing the newly installed LNB and OFA equipment and the SCR system design. In accordance with Rule 62-4.080, F.A.C., the Department determines that a higher degree of treatment is necessary to improve the area's air quality, which can be achieved with the installed equipment without unreasonable hardship.

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Permit Being Modified: Permit No. 1050004-019-AC

Affected Emissions Units: McIntosh Unit 3 Fossil Fuel Fired Steam Generator (EU-006)

The expiration date is hereby extended from **December 31, 2009 to March 31, 2011**. The purpose is to provide sufficient time to complete the work and submit an application to revise the Title V air operation permit.

Section 3, Specific Conditions 12, 13, 15, 16, 17, 18 and new 24: These conditions are revised as follows.

EMISSION LIMITS AND STANDARDS

12. Ammonia Emissions (Slip). Subject to the requirements of Condition 19 in this section, the SCR system shall be designed and operated for an ammonia slip target of less than 5 ppmv based on the average of three, 1-hour test runs. [Rule 62-4.070(3), F.A.C.]
13. Emission Limits.
- CO Emission Limit Subject to Revision: *(No other change to the CO emissions limit)*.
 - NOx Emission Limit: NOx emissions from Unit 3 shall not exceed 0.22 lb/MMBtu of heat input based on a calendar year average of all periods of operation, including startup, shutdown and malfunction. The permittee shall begin collecting and averaging data towards a demonstration of compliance with the new NOx emissions limitation beginning January 1, 2011.
[Rules 62-4.080, 62-210.300 and 62-4.055, F.A.C.]

EMISSIONS PERFORMANCE TESTING

15. SAM Performance Tests and Sorbent Injection for SAM Emissions Control. The permittee shall conduct a series of initial performance tests to determine the SAM emissions rate under a variety of operating scenarios that documents the impact of sorbent injection on reducing SAM emissions and results in the development of correlation/curves between injection rates, operating conditions and emissions.

The permittee shall conduct stack tests to determine the uncontrolled sulfuric acid mist emission rate, the controlled sulfuric acid mist emission rate, and actual control efficiency of the installed sorbent injection system. Tests shall be conducted while firing the fuel blend with the highest sulfur content that will be fired in the unit. During each test run, the permittee shall continuously monitor and record the sorbent injection rate. The purpose of these tests is to determine actual control efficiency of the installed systems and to establish the correlation between SAM emissions and the sorbent injection rate, which will be used to calculate the actual annual emissions.

- Within 90 days of first injecting ammonia to the SCR system, the permittee shall conduct the following initial tests:
 - The permittee shall conduct at least two, 1-hour test runs at each of the following operating scenarios to determine SAM emissions.

Scenario	Load	Sorbent Injection
1A	100% load	Off
1B	100% load	ON
2A	88% load	Off
2B	88% load	ON

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Scenario	Load	Sorbent Injection
3A	69% load	Off
3B	69% load	ON

The operator shall use best efforts to obtain and maintain the approximate target unit load throughout the test run for each operating scenario.

- 2) All test runs shall be conducted while injecting ammonia for the control of nitrogen oxides (NO_x).
 - 3) The sorbent injection rate used for each operating scenario shall be determined by the equipment vendor.
 - 4) For each SAM test run the operator shall:
 - a) Record the ammonia injection rate;
 - b) Record the sorbent injection rate;
 - c) Determine the fuel firing rate and heat input rate;
 - d) Use the stack CEMS to determine controlled NO_x and SO₂ emissions; and
 - e) Attempt to sample uncontrolled SO₂ emissions before the flue gas desulfurization system. If unable to gather meaningful uncontrolled SO₂ data for these initial tests, the permittee shall determine the uncontrolled SO₂ emissions by actual fuel flow and sulfur content.
 - 5) Appropriate reference test methods shall be used to determine SAM and SO₂ emissions as necessary for the given operating conditions.
 - 6) At a minimum, the permittee shall submit a test report within 45 days of completing the initial performance tests to include the following information for each SAM test run: the load; the heat input rate; the test method with any variations noted; the fuel blend fired and the average sulfur content; the actual sorbent injection rate; the controlled SO₂ emissions rate as determined by the CEMS; the uncontrolled SO₂ emissions rate as determined by stack test (if not available, then as determined by fuel flow and sulfur content); the ammonia injection rate for NO_x control by the SCR; the controlled NO_x emissions rate as determined by CEMS; the stack opacity as determined by the continuous opacity monitoring system (COMS). The report shall discuss the relative influence of operating parameters and how the sorbent injection rate will be adjusted for differing operating scenarios.
 - 7) Until the test results are known, the permittee shall continue to operate the sorbent injection system based on the sorbent injection rate recommended by the equipment vendor. Once the test results are known, the permittee may begin to operate the sorbent injection system based on the performance indicated by the data collected during the initial tests such that SAM emissions increases from the project will be less than 7 tons/year. The permittee shall identify and monitor the operating conditions that would result in an adjustment of the sorbent injection rate.
- b. Within 60 days of conducting the initial round of performance tests, the permittee shall propose a new schedule and revised test protocol for conducting the originally proposed tests including the determination of the SAM conversion rate across the SCR catalyst. Within 120 days of submitting the test report for the initial tests, the permittee shall conduct the following additional tests:
- 1) For each set of operating conditions being evaluated, the permittee shall conduct at least a 1-hour test run to determine SAM emissions. At least nine such test runs shall be conducted to evaluate the effect on SAM emissions from such parameters as the SO₂ emission rate prior to the SCR catalyst (and FGD

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system), the unit load, the flue gas flow rate, the sorbent injection rate and the current catalyst oxidation rate.

- 2) Tests shall be conducted under a variety of fuel blends and load rates that are representative of the actual operating conditions. Sufficient tests shall be conducted to establish the SAM emissions rates for the following scenarios: SCR reactor in service (ammonia injection) without sorbent injection, and SCR reactor in service (ammonia injection) under varying operating conditions and levels of sorbent injection.
- 3) At least 15 days prior to initiating the performance tests, the permittee shall submit a test notification, preliminary test schedule and test protocol to the Bureau of Air Regulation and the Compliance Authority.
- 4) Within 45 days following the last test run conducted, the permittee shall provide a report summarizing the emissions tests and results. All SAM emissions test data shall be provided with this report.
- 5) Within 45 days following the submittal of the emissions test report and no later than 90 days following the last test run conducted, the permittee shall submit a project report summarizing the following:
 - a) Identify each set of operating conditions evaluated;
 - b) Identify each operating parameter evaluated;
 - c) Identify the relative influence of each operating parameter, describe how the automated control system will adjust the sorbent injection rate based on the selected parameters;
 - d) Identify the frequency with which operational parameters will be reevaluated and adjusted within the automated control system;
 - e) Provide the algorithm used for the automated control system or a series of related performance curves; and
 - f) Provide details for calculating and estimating the SAM emissions rate based on the level of sorbent injection and operating conditions. The test results shall be used to adjust the sorbent injection control system and estimate SAM emissions.
- c. Within 45 days of firing a fuel blend with a sulfur content that is 0.20% sulfur by weight (based on a 14-operational day rolling average) higher than the maximum sulfur content previously tested, the permittee shall conduct the following additional SAM performance tests.
 - 1) Conduct the SAM performance tests in accordance with the requirements of paragraph "b" of this condition, or
 - 2) If the sorbent injection system is removed or is determined to be unnecessary for a given coal blend, conduct at least three, 1-hour test runs at permitted capacity to determine the SAM emissions rate.

The permittee shall use the data collected to calculate the actual SAM emissions when operating under the given conditions, including the period of time from first fire of the fuel blend until the performance test results are known.

[Rules 62-4.070(3) and 62-212.300(1)(e), F.A.C.]

16. Determining Actual SAM Emissions. On an annual basis, the permittee must demonstrate that SAM emissions increases as a result of this project are less than 7 TPY. The permittee shall operate the sorbent injection system at a frequency and injection rate for SAM control to satisfy this requirement. An automated control system will be used to adjust the sorbent flow rate for the given set of operating conditions based on the most recent performance test results. Actual SAM emissions shall be calculated using the information available for

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the given operating conditions (e.g., the sulfur content of fuel blend, the SO₂ emission rate prior to the SCR catalyst, the unit load, the flue gas flow rate, the sorbent injection rate and the current catalyst oxidation rate). If performance testing shows that it is unnecessary to operate the sorbent injection system for a given coal blend or the sorbent injection system is removed, the permittee shall determine actual SAM emissions based on emissions factors developed through the performance tests.

[Rules 62-4.070(3) and 62-212.300(1)e, F.A.C.]

17. **Performance Tests.** After completing shakedown of the SCR-system, but no later than 180 days after first injecting ammonia in the SCR reactor, the permittee shall have the following tests conducted for the unit. At permitted capacity, the permittee shall conduct tests to determine the uncontrolled NO_x emissions rate, the controlled NO_x emission rate, and the actual control efficiency of the installed SCR system. Tests shall consist of at least three, 1-hour test runs. Alternatively, the permittee may provide representative CEMS data for this demonstration. During each test run, the permittee shall continuously monitor and record the ammonia injection rate.

[Rule 62-297.310(7)(a)1, F.A.C.]

18. **Ammonia Slip Tests:** Initial and annual compliance with the ammonia (NH₃) slip limit shall be determined using EPA conditional test method (CTM-027), EPA method 320, or other methods approved by the Department. The initial test shall be completed within 180 days after first injecting ammonia in the SCR reactor. If the tested ammonia slip rate exceeds 5 ppmv during the test, the permittee shall:

- (a) Begin testing and reporting the ammonia slip for each subsequent calendar quarter;
- (b) Before the ammonia slip exceeds 7 ppmv, take corrective actions that result in lowering the ammonia slip to less than 5 ppmv; and
- (c) Test and demonstrate that the ammonia slip is less than 5 ppmv within 30 days after completing the corrective actions.

Corrective actions may include, but are not limited to, adding catalyst, replacing catalyst, or other SCR system maintenance or repair. After demonstrating that the ammonia slip level is less than 5 ppmv, testing and reporting shall resume on an annual basis.

[Rule 62-4.070(3), F.A.C.]

Add the following new condition:

24. **New Control Equipment:** In accordance with Rule 62-210.300(1)(a), F.A.C., if the sorbent injection system is removed, the permittee shall obtain an air construction permit to install new acid mist mitigation equipment or to reinstall the sorbent injection system if required to maintain SAM emissions below a 7 TPY increase above the baseline emissions, which were estimated at 136 TPY. [Rule 62-210.300(1)(a), F.A.C.]

PART II

PART II

INFORMATION FOR TITLE V PERMIT APPLICATION

Lakeland Electric currently operates the C. D. McIntosh, Jr. Power Plant under Title V Operating Permit No. 1050004-023-AV. The facility is located at 3030 East Lake Parker Drive, Lakeland, Polk County, and consists of three fossil fuel fired steam generators, two diesel powered generators, and two gas turbines.

McIntosh Unit 3 (EU ID 006) is a nominal 364 megawatt (electric) dry bottom wall-fired fossil fuel-fired steam generator. The unit is fired on coal, residual oil, natural gas and co-fires refuse derived fuel (RDF), and petroleum coke. The maximum heat input rate is 3,640 million British thermal units per hour (MMBtu/hr). Prior to Permit No. 1050004-019-AC, Unit 3 was equipped with an electrostatic precipitator (ESP), a flue gas desulfurization system (FGD), and low NO_x burners (LNB) and an overfire air (OFA) system to control emissions. McIntosh Unit 3 began commercial service in September 1982. The stack parameters are: height, 250 feet; diameter, 18 feet; exit temperature, 125 degrees fahrenheit (°F); and, actual stack gas flow rate, 1,260,536 actual cubic feet per minute (acfm).

Lakeland Electric is requesting through this permit revision application to incorporate the provisions of Air Construction Permit No. 1050004-026-AC into the current Title V Operating Permit. The Florida Department of Environmental Protection (FDEP) issued Permit No. 1050004-026-AC to revise Permit No. 1050004-019-AC, which authorized the installation of a selective catalytic reduction (SCR) system to reduce NO_x emissions and a sorbent injection system to reduce sulfuric acid mist (SAM) emissions. Permit No. 1050004-026-AC extended the expiration date of Permit No. 1050004-019-AC until March 31, 2011. Lakeland Electric completed construction of the SCR and the sorbent injection system and conducted performance tests in February 2010.

Based on Permit No. 105004-026-AC, beginning January 1, 2011, NO_x emissions from Unit 3 will be limited to 0.22 lb/MMBtu based on annual average. Lakeland Electric is also required to demonstrate on an annual basis, that the SAM emissions increase due to the project is less than 7 tons per year (TPY) compared to the baseline actual SAM emissions of 136 TPY (Section 3.11, AC Permit No. 1050004-019-AC).

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