



Farzie Shelton, chE; REM

Associate GM Technical Support

July 7, 2008

Ms. Trina L. Vielhauer
Chief, Bureau of Air Regulation
Department of Environmental Protection
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RECEIVED

JUL 10 2008

BUREAU OF AIR REGULATION

Re: **Site Name: C. D. McIntosh, Jr. Power Plant**
Facility Identification Number: 1050004

Dear Ms. Vielhauer:

Lakeland Electric (Lakeland) is seeking authorization from the Florida Department of Environmental Protection to install upgrades to its existing coal handling and transfer systems servicing Unit No. 3 at the C.D. McIntosh Power Plant. These upgrades are intended to improve reliability and efficiency, and streamline coal unloading by trucks and improve efficiency and consistency by automating coal blending activities.

This Project is planned to commence September 1, 2008 (when Lakeland has planned outage within its Pool partners) and will be completed in two phases. The first phase will be improvements to facilitate more efficient and time optimized truck unloading. This phase will include construction of a truck unloading ramp, an above-ground truck unloading hopper, and conveying system to a stacking pile. The second phase will be improvements to the existing coal blending facility which includes automated coal conveyors from the existing rail unloading facility (trestle and underground reclaim) and the truck unloading facility.

Therefore, enclosed please find completed "Application for Air Permit", and appropriate number of copies, prepared by Mr. Ken Kosky P.E. of Golder Associates Inc. (our consulting engineers).

If you should have any questions, please do not hesitate to contact me.

Sincerely

Farzie Shelton

Enclosure

Cc: Tim Bachand
Ken Kosky
DEP Southwest District

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

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BUREAU OF AIR REGULATION

**APPLICATION FOR MINOR SOURCE
AIR CONSTRUCTION PERMIT
FOR COAL HANDLING FACILITIES
AT THE C.D. MCINTOSH, JR. PLANT
CITY OF LAKE LAND,
DEPARTMENT OF ELECTRIC UTILITIES
(LAKE LAND ELECTRIC)
POLK COUNTY, FLORIDA**

Prepared For:

**City of Lakeland, Department of Electric Utilities
(Lakeland Electric)
C.D. McIntosh, Jr. Power Plant
3030 East Lake Parker Drive
Lakeland, Florida 33805**

Prepared By:

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

July 2008

0838-7638

DISTRIBUTION:

5 Copies – FDEP

2 Copies – Lakeland Electric

2 Copies – Golder Associates Inc.

APPLICATION FOR AIR CONSTRUCTION PERMIT

LONG FORM



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 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: City of Lakeland, Department of Electric Utilities	
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, Assoc. 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: 7/10/04	3. PSD Number (if applicable):
2. Project Number(s): 1050004-624-A4	4. Siting Number (if applicable):

APPLICATION INFORMATION

Purpose of Application

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

Air Construction Permit

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

Air Operation Permit

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

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

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

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

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

Application Comment

This application is for the installation of a truck unloading facility for coal delivery and a stockpiling and blending facility to improve and streamline coal yard operations and provide an efficient method of blending coal.

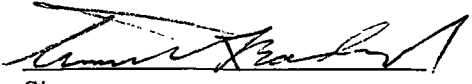
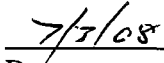
The truck unloading system will include an above-ground truck unloading hopper and coal conveying system to a stacking pile. The stockpiling and blending system will include an automated coal conveying and stacking system for both truck and railcar delivered coal.

Enclosed transfer points, hood covered conveyors, and water sprays will be used to control fugitive emissions.

APPLICATION INFORMATION

Owner/Authorized Representative Statement

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

1. Owner/Authorized Representative Name : Mr. Timothy Bachand, P.E., Manager of Engineering
2. Owner/Authorized Representative Mailing Address... Organization/Firm: Lakeland Electric Street Address: 501 E. Lemon Street City: Lakeland State: FL Zip Code: 33801-5079
3. Owner/Authorized Representative Telephone Numbers... Telephone: (863) 834 - 6633 ext. N/A Fax: (863) 834 - 5670
4. Owner/Authorized Representative E-mail Address: timothy.bachand@lakelandelectric.com
5. Owner/Authorized Representative Statement: <i>I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.</i> Subject: C.D. McIntosh, Jr. Power Plant Coal Yard Improvements  Signature  Date

APPLICATION INFORMATION

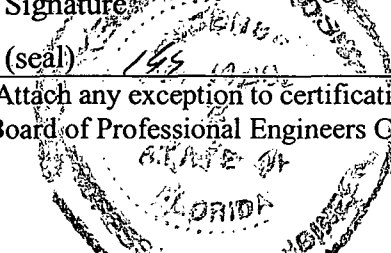
Application Responsible Official Certification

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

1. Application Responsible Official Name:		
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):		
<input type="checkbox"/> For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.		
<input type="checkbox"/> For a partnership or sole proprietorship, a general partner or the proprietor, respectively.		
<input type="checkbox"/> For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.		
<input type="checkbox"/> The designated representative at an Acid Rain source, CAIR source, or Hg Budget source.		
3. Application Responsible Official Mailing Address...		
Organization/Firm:		
Street Address:		
City:	State:	Zip Code:
4. Application Responsible Official Telephone Numbers...		
Telephone: () ext. Fax: ()		
5. Application Responsible Official E-mail Address:		
6. Application Responsible Official Certification:		
<p>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.</p>		
_____ Signature		_____ Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: Kennard F. Kosky Registration Number: 14996
2. Professional Engineer Mailing Address... Organization/Firm: Golder Associates Inc.** Street Address: 6241 NW 23rd Street, Suite 500 City: Gainesville State: FL Zip Code: 32653
3. Professional Engineer Telephone Numbers... Telephone: (352) 336-5600 ext. Fax: (352) 336-6603
4. Professional Engineer E-mail Address: kkosky@golder.com
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> <i>(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> <i>(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> <i>(3) If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/> , if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> <i>(4) If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/> , if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input type="checkbox"/> , if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> <i>(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/> , if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i> Signature: <u><i>Kennard F. Kosky</i></u> Date: <u>7/3/08</u> (seal) 

* Attach any exception to certification statement.

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

Facility Regulatory Classifications

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

1. <input type="checkbox"/> Small Business Stationary Source	<input type="checkbox"/> Unknown
2. <input type="checkbox"/> Synthetic Non-Title V Source	
3. <input checked="" type="checkbox"/> Title V Source	
4. <input checked="" type="checkbox"/> Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. <input type="checkbox"/> Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. <input checked="" type="checkbox"/> Major Source of Hazardous Air Pollutants (HAPs)	
7. <input type="checkbox"/> Synthetic Minor Source of HAPs	
8. <input checked="" type="checkbox"/> One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. <input type="checkbox"/> One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. <input 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 portion of coal processing and conveying equipment at the proposed truck unloading and coal stackout/blending system will be subject to Subpart Y.	

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>June 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 checked="" type="checkbox"/> Attached, Document ID: <u>Part II</u> <input type="checkbox"/> Previously Submitted, Date: _____
3.	Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>MC-FI-C3</u> <input type="checkbox"/> Previously Submitted, Date: _____

Additional Requirements for Air Construction Permit Applications

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

C. FACILITY ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units:
 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: June 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: June 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: June 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]

ATTACHMENT MC-FI-C3

**PRECAUTIONS TO PREVENT EMISSIONS OF
UNCONFINED PARTICULATE MATTER**

ATTACHMENT MC-FI-C3
PRECAUTIONS TO PREVENT EMISSIONS
OF UNCONFINED PARTICULATE MATTER

The facility has small amounts of unconfined particulate matter as a result of the operation of the facility.

The particulate matter includes:

- Fugitive dust from paved and unpaved roads;
- Fugitive particulates from the use of bagged chemical products;
- Coal handling and storage;
- Limestone handling and storage;
- FGD/ash by-products/handling and storage;
- Municipal solid waste;
- Ash cleaning; and
- Paint removal.

Operational measures are undertaken at the facility which also minimize particulate emissions, in accordance with 62-296.320(4)(c), F.A.C. (Condition 8, Section II, Title V Permit):

- Maintenance of paved areas;
- Regular mowing of grass and care of vegetation;
- Limiting access to plant property by unnecessary vehicles;
- Enclosed coal handling transfer points;
- Hooded conveyors for coal transfer; and
- Water sprays at stackout points.

EMISSIONS UNIT INFORMATION

Section [1]

Truck Unloading & Coal Stackout/Blending

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]

Truck Unloading & Coal Stackout/Blending

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:
Truck Unloading and Coal Stackout/Blending

3. Emissions Unit Identification Number:

4. Emissions Unit Status Code:

5. Commence Construction Date:

6. Initial Startup Date:

7. Emissions Unit Major Group SIC Code:
49

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

Acid Rain Unit

CAIR Unit

Hg Budget Unit

9. Package Unit:

Manufacturer:

Model Number:

10. Generator Nameplate Rating: **MW**

11. Emissions Unit Comment:

Emissions unit is a truck unloading facility for coal delivery and a stockpiling and blending facility to improve and streamline coal yard operations and provide an efficient method of blending coal.

EMISSIONS UNIT INFORMATION

Section [1]

Truck Unloading & Coal Stackout/Blending

Emissions Unit Control Equipment/Method: Control 1 of 1

1. Control Equipment/Method Description:
PM/PM₁₀/PM_{2.5} - Fabric Filter

2. Control Device or Method Code: **018**

Emissions Unit Control Equipment/Method: Control ____ of ____

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ____ of ____

1. Control Equipment/Method Description:

2. Control Device or Method Code:

Emissions Unit Control Equipment/Method: Control ____ of ____

1. Control Equipment/Method Description:

2. Control Device or Method Code:

EMISSIONS UNIT INFORMATION

Section [1]

Truck Unloading & Coal Stackout/Blending

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:	400 tons/hr	
2. Maximum Production Rate:		
3. Maximum Heat Input Rate:	million Btu/hr	
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:		

EMISSIONS UNIT INFORMATION

Section [1]

Truck Unloading & Coal Stackout/Blending

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: 3	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: Exhausts through a single stack and other fugitive emission points.			
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
5. Discharge Type Code:	6. Stack Height: feet	7. Exit Diameter: Feet	
8. Exit Temperature: °F	9. Actual Volumetric Flow Rate: acfm	10. Water Vapor: %	
11. Maximum Dry Standard Flow Rate: dscfm		12. Nonstack Emission Point Height: Feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):		14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:			

EMISSIONS UNIT INFORMATION

Section [1]

Truck Unloading & Coal Stackout/Blending

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): Industrial Processes; Mineral Products; Bulk Materials Conveyors; Coal		
2. Source Classification Code (SCC): 3-05-101-03		3. SCC Units: Tons
4. Maximum Hourly Rate: 400.0	5. Maximum Annual Rate: 1,330,000	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 1.42	8. Maximum % Ash: 10.1	9. Million Btu per SCC Unit: 24.3
10. Segment Comment: Maximum annual rate = 3,640 MMBtu/hr / 24.3 MMBtu/ton (HHV) x 8,760 hrs/yr = 1,330,000 tons/yr.		

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:		

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

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

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 3.73 lb/hour 3.55 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: Reference: See calculation.		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 = 0.31 (Phase I) + 3.42 (Phase II) = 3.73 lb/hr Annual emissions = 0.33 (Phase I) + 3.22 (Phase II) = 3.55 TPY			
11. Potential, Fugitive, and Actual Emissions Comment: See Tables 2-1 and 2-4 for emissions calculations.			

EMISSIONS UNIT INFORMATION**POLLUTANT DETAIL INFORMATION**

Section [1]

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Truck Unloading & Coal Stackout/Blending

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 1

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 20% Opacity	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: VE Testing using EPA Method 9.	
6. Allowable Emissions Comment (Description of Operating Method): Requested emissions limit.	

Allowable Emissions Allowable Emissions ____ of ____

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

Allowable Emissions Allowable Emissions ____ of ____

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

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

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

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM₁₀		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 1.77 lb/hour 1.69 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: Reference: See calculation.		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 = 0.15 (Phase I) + 1.62 (Phase II) = 1.77 lb/hr Annual emissions = 0.16 (Phase I) + 1.53 (Phase II) = 1.69 TPY			
11. Potential, Fugitive, and Actual Emissions Comment: See Tables 2-2 and 2-5 for emissions calculations.			

**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:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Work practice standard. See Part II.	
6. Allowable Emissions Comment (Description of Operating Method): Work practice standard requested.	

Allowable Emissions Allowable Emissions ____ of ____

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

Allowable Emissions Allowable Emissions ____ of ____

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

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

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

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: PM_{2.5}		2. Total Percent Efficiency of Control:	
3. Potential Emissions: 0.49 lb/hour 0.52 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: Reference: See calculation.		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 = 0.047 (Phase I) + 0.44 (Phase II) = 0.49 lb/hr Annual emissions = 0.052 (Phase I) + 0.47 (Phase II) = 0.52 TPY			
11. Potential, Fugitive, and Actual Emissions Comment: See Tables 2-3 and 2-6 for emissions calculations.			

**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:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance: Work practice standard. See Part II.	
6. Allowable Emissions Comment (Description of Operating Method): Work practice standard requested.	

Allowable Emissions Allowable Emissions ____ of ____

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

Allowable Emissions Allowable Emissions ____ of ____

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

EMISSIONS UNIT INFORMATION

Section [1]

Truck Unloading & Coal Stackout/Blending

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 1

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: 40 % Maximum Period of Excess Opacity Allowed: 2 min/hour	
4. Method of Compliance: VE test using EPA Method 9	
5. Visible Emissions Comment: Rule 62-296.320(4)(b), F.A.C. 40 CFR 60 Subpart Y for certain conveyors. See Part II.	

Visible Emissions Limitation: Visible Emissions Limitation ____ of ____

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

EMISSIONS UNIT INFORMATION

Section [1]

Truck Unloading & Coal Stackout/Blending

H. CONTINUOUS MONITOR INFORMATION

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

Continuous Monitoring System: Continuous Monitor ____ of ____

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

Continuous Monitoring System: Continuous Monitor ____ of ____

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

EMISSIONS UNIT INFORMATION
Section [1]
Truck Unloading & Coal Stackout/Blending

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Part II</u> <input type="checkbox"/> Previously Submitted, Date _____
2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____
3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input checked="" type="checkbox"/> Attached, Document ID: <u>Part II</u> <input type="checkbox"/> Previously Submitted, Date _____
4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable (construction application)
5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought) <input type="checkbox"/> Attached, Document ID: _____ <input type="checkbox"/> Previously Submitted, Date _____ <input checked="" type="checkbox"/> Not Applicable
6. Compliance Demonstration Reports/Records: <input type="checkbox"/> Attached, Document ID: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> Previously Submitted, Date: _____ Test Date(s)/Pollutant(s) Tested: _____ <input type="checkbox"/> To be Submitted, Date (if known): _____ Test Date(s)/Pollutant(s) Tested: _____ <input checked="" type="checkbox"/> Not Applicable Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.
7. Other Information Required by Rule or Statute: <input type="checkbox"/> Attached, Document ID: _____ <input checked="" type="checkbox"/> Not Applicable

PART II

1.0 INTRODUCTION

Lakeland Electric is seeking authorization from the Florida Department of Environmental Protection (FDEP) to install upgrades to the existing coal handling and transfer systems at the C.D. McIntosh Power Plant to improve coal unloading by trucks and allow coal blending. The Project will be completed in two phases. The first phase will be improvements to truck unloading. This will include a truck unloading ramp, truck unloading hopper, and conveyors. The second phase will be a coal blending facility that includes conveyors from the existing rail unloading facility (trestle and underground reclaim) and the truck unloading facility, and stackout conveying system with reclaim conveyors. These improvements are collectively the "Project".

The C. D. McIntosh Power Plant is located at 3030 East Lake Parker Drive, Lakeland, Polk County, Florida. The facility is authorized to operate under Title V Permit (Final Title V Permit No. 1050004 016-AV).

Golder Associates Inc. (Golder) was contracted to prepare the necessary air permit application seeking authorization for the Project. The air permit application consists of the appropriate applications form [Part I; DEP Form 62-210.900(1)], a technical description of the project (Part II, Section 2.0), and rule applicability for the project (Part II, Section 3.0).

2.0 PROJECT DESCRIPTION

The Project will consist of two phases: truck unloading facilities and coal stackout/blending facilities improvements. In Phase 1, truck unloading facilities will be installed that will include a ramp to an unloading hopper and conveyors to two stackout piles. These facilities are shown in Figure 2-1. Currently, fuel received by truck is unloaded on the ground and moved using frontend loaders. The new system will improve unloading and the movement of coal. The methods used to control fugitive emissions from the truck unloading facilities are listed below.

Truck Unloading Fugitive Emission Controls:

1. The truck unloading hopper dust will be collected by suction to a baghouse.
2. Conveyors will be belt type with hood covers.
3. Transfer points will be enclosed.
4. Wet suppression will be used at conveyor stackout points.

In Phase II, the coal stackout/coal blending facilities will include a series of conveyors that connect the existing rail unloading facility (coal trestle and underground reclaim) and truck unloading facility to the new stackout system that allows coal blending through separate reclaim conveyors. The arrangement of the coal stackout and blending facilities is shown in Figure 2-2. The methods used to control fugitive emissions from the coal stackout and blending facilities are listed below.

Coal Stackout/Blending Fugitive Emission Controls:

1. Conveyors will be belt type with hood covers.
2. Transfer points will be enclosed.
3. Stackout will be by way of lowering well (stacking tubes).
4. Reclaim will be by way of aboveground reclaim conveyors fed by front end loader.

Both the truck unloading facility and the stackout/blending facilities will have a rated capacity of 400 tons per hour. Baghouses/vent filters will be rated at 99 percent particulate removal. The material handling emissions estimates for each phase of the Project were based on fugitive emission factors. The emission factors used for total suspended particulate matter (TSP), particulate matter (PM) with an aerodynamic diameter of 10 micrometers (μm) or less (PM_{10}), and PM with an aerodynamic diameter of 2.5 μm or less ($\text{PM}_{2.5}$) were the current U.S. Environmental Protection

Agency (EPA) techniques presented in: AP-42 (EPA, 2006); the fugitive dust background document (EPA, 1992); historical EPA emission factors; and equipment design information.

TSP, PM₁₀, and PM_{2.5} emission factors for batch drop operations are defined by the equation in Section 13.2.4 of AP-42:

$$E = k(0.0032) (U/5)^{1.3}/(M/2)^{1.4} \text{ pounds per ton (lb/ton)}$$

where: E = emission factor, lb/ton,
k = particle size multiplier,
U = mean wind speed (mph), and
M = material moisture content (percent).

The particle size multiplier, k, was based on EPA AP-42 multipliers of 0.74, 0.35, and 0.11 for the PM (TSP), PM₁₀, and PM_{2.5} emission estimates, respectively. The mean wind speed of 9.6 mph was obtained from the Local Climatological Data (NOAA, 2006) at Tampa International Airport. Tables 2-1 through 2-3 present the PM (TSP), PM₁₀, and PM_{2.5} emissions, respectively, for the truck unloading facilities (Phase 1). Tables 2-4 through 2-6 present the PM (TSP), PM₁₀, and PM_{2.5} emissions, respectively, for the coal stackout/blending facilities (Phase 2). Detailed emission estimates, including various control methods for material handling operations, are provided in Tables 2-7 through 2-10. Actual coal usage data and a meteorological data summary are presented in Table 2-11.

3.0 RULE APPLICABILITY

Under Federal and State of Florida PSD review requirements, all major new or modified sources of air pollutants regulated under the Clean Air Act (CAA) must be reviewed and a pre-construction permit issued. EPA has approved Florida's State Implementation Plan (SIP), which contains PSD regulations. Therefore, PSD approval authority has been granted to FDEP. For projects approved under the Florida Power Plant Siting Act (PPSA), the PSD program is delegated.

A "major facility" is defined as any 1 of 28 named source categories that have the potential to emit 100 tons per year (TPY) or more, or any other stationary facility that has the potential to emit 250 TPY or more, of any pollutant regulated under CAA. "Potential to emit" means the capability, at maximum design capacity, to emit a pollutant after the application of control equipment. Once a new source is determined to be a "major facility" for a particular pollutant, any pollutant emitted in amounts greater than the PSD significant emission rates is subject to PSD review. For an existing source for which a modification is proposed, the modification is subject to PSD review if the net increase in emissions due to the modification is greater than the PSD significant emission rates.

PSD review is used to determine whether significant air quality deterioration will result from the new or modified facility. Federal PSD requirements are contained in Title 40, Part 52.21 of the Code of Federal Regulations (40 CFR 52.21), *Prevention of Significant Deterioration of Air Quality*. The State of Florida has adopted the federal PSD regulations by reference [Rule 62-212.400, Florida Administrative Code (F.A.C.)]. Major facilities and major modifications are required to undergo the following analysis related to PSD for each pollutant emitted in significant amounts:

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

The McIntosh Power Plant is a major facility under FDEP Rules. Because there is a physical change with the modification of the truck unloading and coal stackout/blending facilities, the project is a potential modification as defined in the FDEP Rules in 62-210.200 and under the PSD rules in 62 212.400, F.A.C. PSD review would be required for the project if there were a significant net increase in emissions. The comparison is made based on the projected future actual emissions and the baseline actual emissions. The baseline actual emissions for a fossil fuel-fired steam electric

generating unit are the emissions over a consecutive 24-month period, 5 years immediately preceding the date that a complete application is submitted. The use of different consecutive 24-month periods for each pollutant is allowed. For an existing facility for which a modification is proposed, the modification is subject to PSD review if the net increase in emissions due to the modification is greater than the PSD significant emission rates. The net emissions increase is determined using the baseline-to-projected actual test. In this comparison, if the projected actual emissions minus the baseline actual emissions equal or exceed the PSD significant emission rates, then PSD review would apply.

Table 3-1 shows the baseline actual emissions using the existing coal unloading facilities. Tables 3-2 and 3-3 show the detailed calculations. Table 3-4 shows a comparison of the baseline actual emissions and the projected actual emissions with the truck unloading facilities and the coal stackout/blending facilities. As shown, the emissions increase do not exceed the PSD significant emission rates.

The Subpart Y New Source Performance Standards (NSPS) that are applicable to Coal Preparation Plants are potentially applicable to portions of the project. The NSPS were recently proposed to be modified by EPA (73 Federal Register 22901; April 28, 2008). The NSPS are applicable as of the proposal date in the Federal Register. The definitions in proposed Subpart Y relating to applicability have remained the same. The new NSPS do change the emission limit from 20-percent opacity to 5-percent opacity for bituminous coals. This change for new control equipment with baghouse should not be an issue.

Based on the design, the truck unloading facility is not considered an "affected facility" under the definitions of the EPA regulation. There are two affected facilities listed in the regulation that could potentially be construed to apply to the project:

- 1) coal transfer and loading systems, and
- 2) coal processing and conveying equipment.

The definition of coal transfer and loading systems indicates that it applies to facilities "used to transfer and load coal for shipment." The truck unloading facilities involve equipment used to unload coal to storage, not to load coal for shipment.

Subpart Y NSPS are applicable to the conveyors since in the definition of coal processing facilities in Subpart Y, coal crushing is identified. During Phase 2, conveyors will be connected to the existing coal crusher that will allow processing and conveying to McIntosh Unit 3. Individual conveyors are involved based on EPA's guidance on Subpart Y. This is summarized below.

From EPA's Applicability Index

What portion of the coal conveying system is subject to Subpart Y?

"Any coal conveyors which are functionally linked to and directly convey coal to or remove coal and refuse from coal processing equipment are subject to Subpart Y."

From EPA Determination Control Number 9800083

What equipment is included in a coal processing plant?

"The standards are applicable to plants which process 200 or more tons per day of coal by one or more of the following processes: crushing, breaking, screening, wet or dry cleaning, or thermal drying. In addition to "coal preparation plants," any other source types (e.g., pulpmills, power plants) that prepare coal by one of these five processes may also be covered by Subpart Y if it processes more than 200 tons per day of coal."

From EPA Determination Control Number NS48

Are storage silos included in coal processing equipment?

It appears that storage silos are included as equipment used to remove coal from coal processing equipment and are subject to Subpart Y. In applicability determination for Carolina Power and Light Company, April 16th, 1998 (Determination Control Number 9800083), EPA indicated that the baghouses of the plant's five silos are subject to the opacity standards of Subpart Y.

How do you evaluate a modification of a conveyor or individual equipment component of a coal processing plant?

"Each conveyor must be evaluated individually to determine if the replacement of a single conveyor creates an affected facility subject to Subpart Y. Based on the wording of the regulation, each conveyor is viewed individually. This determination confirms an earlier determination on this issue, and was also based on previous determinations concerning the applicability of Subpart Y." EPA Region 5, 6/30/2003.

When evaluating applicability of Subpart Y to coal processing and conveying equipment at a coal preparation plant, does one include all coal preparation equipment as a whole (system) or does one view each piece of processing and conveying equipment as a separate affected facility?

“The NSPS General Provisions in Subpart A define affected facility as any apparatus to which a standard is applicable. In general, when U.S. EPA seeks to regulate a process as a whole the regulation will refer to a system or facility or will use the term “all” when describing the equipment that is part of the affected facility. Because Subpart Y defines coal processing and conveying equipment to be any machinery and because U.S. EPA did not identify coal processing and conveying equipment as a system, the affected facility is each individual coal conveyor.”

The NSPS would be applicable if a “reconstruction” or “modification” occurs. The EPA guidance indicates that under reconstruction and modification the term facility would mean the individual component that changes in the coal processing plant.

The criteria for reconstruction and modification are as follows:

A project is considered a reconstruction if the replacement of components of an existing facility occurs to the extent that:

The fixed capital cost of the new component exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility; and it is technologically and economically feasible to meet the applicable standards set forth in Subpart Y.

A modification occurs if there is a change in equipment or operation that results in an increase in air emissions.

Because there is new conveying equipment connected to the coal crusher and EPA guidance suggests that individual components are evaluated, several conveyor systems and any controls at transfer points would be subject to NSPS. These conveyors are:

Conveyors from truck unloading hopper to coal crusher.

Conveyors from Coal Stackout/Blending Area to coal crusher.

The conveyors to the coal stackout/blending storage area are excluded, since these conveyors go to storage and not the coal crusher. The proposed controls for the conveyors include enclosures and vent filters that will not exceed 5 percent opacity.

TABLE 2-1
ESTIMATE OF PM (TSP) EMISSIONS FOR
COAL HANDLING OPERATIONS AT MCINTOSH PLANT - PHASE I

Source:	Phase I	
	(lb/hr)	(TPY)
1. Trucks dumping coal into the hopper.	0.019	0.017
2. Gravity reclaim of coal from hopper onto apron feeder.	0.004	0.003
3. Apron feeder drops coal onto the belt conveyor.	0.004	0.003
4. Belt Conveyor drops coal onto conveyor for stockpile A.	0.056	0.051
5. Belt Conveyor drops coal onto conveyor for stockpile B.	0.056	0.051
6. Conveyor A transports coal to the boom tower, which drops the coal above ground onto the coal stockpile A.	0.074	0.068
7. Conveyor B transports coal to the boom tower, which drops the coal above ground onto the coal stockpile B.	0.074	0.068
8. Wind erosion from active stockpile A.	0.011	0.034
9. Wind erosion from active stockpile B.	0.011	0.034
TOTAL	0.31	0.33

Note: See Tables 2-7 and 2-8 for detailed emissions calculation.

TABLE 2-2
ESTIMATE OF PM₁₀ EMISSIONS FOR
COAL HANDLING OPERATIONS AT MCINTOSH PLANT - PHASE I

Source:	Phase I	
	(lb/hr)	(TPY)
1. Trucks dumping coal into the hopper.	0.0088	0.0081
2. Gravity reclaim of coal from hopper onto apron feeder.	0.0018	0.0016
3. Apron feeder drops coal onto the belt conveyor to junction box.	0.0018	0.0016
4. Belt Conveyor drops coal onto Conveyor A inside junction box.	0.0263	0.0242
5. Belt Conveyor drops coal onto Conveyor B inside junction box.	0.0263	0.0242
6. Conveyor A transports coal to the boom tower, which drops the coal above ground onto the coal stockpile A.	0.0350	0.0323
7. Conveyor B transports coal to the boom tower, which drops the coal above ground onto the coal stockpile B.	0.0350	0.0323
8. Wind erosion from active stockpile A.	0.0053	0.0168
9. Wind erosion from active stockpile B.	0.0053	0.0168
TOTAL	0.15	0.16

Note: See Tables 2-7 and 2-8 for detailed emissions calculation.

TABLE 2-3
ESTIMATE OF PM_{2.5} EMISSIONS FOR
COAL HANDLING OPERATIONS AT MCINTOSH PLANT - PHASE I

Source:	Phase I	
	(lb/hr)	(TPY)
1. Trucks dumping coal into the hopper.	0.0028	0.0025
2. Gravity reclaim of coal from hopper onto apron feeder.	0.0006	0.0005
3. Apron feeder drops coal onto the belt conveyor to junction box.	0.0006	0.0005
4. Belt Conveyor drops coal onto Conveyor A inside junction box.	0.0083	0.0076
5. Belt Conveyor drops coal onto Conveyor B inside junction box.	0.0083	0.0076
6. Conveyor A transports coal to the boom tower, which drops the coal above ground onto the coal stockpile A.	0.0110	0.0101
7. Conveyor B transports coal to the boom tower, which drops the coal above ground onto the coal stockpile B.	0.0110	0.0101
8. Wind erosion from active stockpile A.	0.0021	0.0067
9. Wind erosion from active stockpile B.	0.0021	0.0067
TOTAL	0.047	0.052

Note: See Tables 2-7 and 2-8 for detailed emissions calculation.

TABLE 2-4
ESTIMATE OF PM (TSP) EMISSIONS FOR
COAL HANDLING OPERATIONS AT MCINTOSH PLANT - PHASE II

Source:	Phase II	
	(lb/hr)	(TPY)
1. Trucks dumping coal into the hopper.	0.0185	0.0171
2. Gravity reclaim of coal from hopper onto apron feeder.	0.0037	0.0034
3. Apron feeder drops coal onto the belt conveyor.	0.0037	0.0034
4. Belt Conveyor drops coal onto Conveyor for stackout pile.	0.1111	0.1024
5. Conveyor transports coal to the boom tower, which drops the coal above ground onto the stackout pile.	0.1481	0.1365
6. Belt Conveyor transports coal to the crusher house.	0.4443	0.4094
7. Coal is transported from the crusher house to stacking tubes.	0.7774	0.7165
8. Coal transported from stockpiles around the stacking tube to the reclaim system.	1.1106	1.0236
9. Coal is transported from the reclaim system to the crusher house.	0.7774	0.7165
10. Wind erosion of coal stockpiles.	0.0289	0.0912
TOTAL	3.42	3.22

Note: See Tables 2-9 and 2-10 for detailed emissions calculation.

TABLE 2-5
ESTIMATE OF PM₁₀ EMISSIONS
FOR COAL HANDLING OPERATIONS AT MCINTOSH PLANT - PHASE II

Source:	Phase II	
	(lb/hr)	(TPY)
1. Trucks dumping coal into the hopper.	0.0088	0.0081
2. Gravity reclaim of coal from hopper onto apron feeder.	0.0018	0.0016
3. Apron feeder drops coal onto the belt conveyor.	0.0018	0.0016
4. Belt Conveyor drops coal onto Conveyor for stackout pile.	0.0525	0.0484
5. Conveyor transports coal to the boom tower, which drops the coal above ground onto the stackout pile.	0.0700	0.0645
6. Belt Conveyor transports coal to the crusher house.	0.2101	0.1936
7. Coal is transported from the crusher house to stacking tubes.	0.3677	0.3389
8. Coal transported from stockpiles around the stacking tube to the reclaim system.	0.5253	0.4841
9. Coal is transported from the reclaim system to the crusher house.	0.3677	0.3389
10. Wind erosion of coal stockpiles.	0.0145	0.0456
TOTAL	1.62	1.53

Note: See Tables 2-9 and 2-10 for detailed emissions calculation.

TABLE 2-6
ESTIMATE OF PM_{2.5} EMISSIONS FOR
COAL HANDLING OPERATIONS AT MCINTOSH PLANT - PHASE II

Source:	Phase II	
	(lb/hr)	(TPY)
1. Trucks dumping coal into the hopper.	0.0028	0.0025
2. Gravity reclaim of coal from hopper onto apron feeder.	0.0006	0.0005
3. Apron feeder drops coal onto the belt conveyor.	0.0006	0.0005
4. Belt Conveyor drops coal onto Conveyor for stackout pile.	0.0165	0.0152
5. Conveyor transports coal to the boom tower, which drops the coal above ground onto the stackout pile.	0.0220	0.0203
6. Belt Conveyor transports coal to the crusher house.	0.0660	0.0609
7. Coal is transported from the crusher house to stacking tubes.	0.1156	0.1065
8. Coal transported from stockpiles around the stacking tube to the reclaim system.	0.1651	0.1522
9. Coal is transported from the reclaim system to the crusher house.	0.0547	0.1065
10. Wind erosion of coal stockpiles.	0.0058	0.0182
TOTAL	0.44	0.47

Note: See Tables 2-9 and 2-10 for detailed emissions calculation.

**TABLE 2-7
ESTIMATION OF PM EMISSION FACTORS AND RATES FOR THE COAL-HANDLING SYSTEM FROM BATCH/CONTINUOUS DROP OPERATIONS AT TRANSFER POINTS
PROJECT: MCINTOSH TRUCK UNLOADING & COAL STACKOUT/BLENDING - PHASE I**

Parameters	Source 1	Source 2	Source 3	Source 4	Source 5	Source 6	Source 7
	Transfer coal from truck to unloading hopper	Gravity Reclaim to Apron Feeder	Apron Feeder to Belt Conveyor	Belt Conveyor to Conveyor for Stockpile A	Belt Conveyor to Conveyor for Stockpile B	Conveyor A to Stockpile A	Conveyor B to Stockpile B
Emission Point/Area	Batch Drop	Conveyor Drop	Conveyor Drop	Conveyor Drop	Conveyor Drop	Conveyor Drop	Conveyor Drop
Material Handling Data							
Material type	Coal	Coal	Coal	Coal	Coal	Coal	Coal
Material throughput, ton/hr (design)	400	400	400	200	200	200	200
Material throughput, ton/day	9,600	9,600	9,600	4,800 (b)	4,800 (b)	4,800 (b)	4,800 (b)
Material throughput, ton/yr	1,200,000 (a)	1,200,000	1,200,000	600,000 (b)	600,000 (b)	600,000 (b)	600,000 (b)
Moisture content (M), % (nominal)	7.2 (a)	7.2	7.2	7.2	7.2	7.2	7.2
Number of transfers	1	1	1	1	1	1	1
General/ Site Characteristics							
Mean wind speed, mph	9.6	9.6	9.6	9.6	9.6	9.6	9.6
Mean wind speed, mph	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Particle size multiplier, PM (k)	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Particle size multiplier, PM ₁₀ (k)	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Particle size multiplier, PM _{2.5} (k)	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Emission Control Data:							
Emission control method	Enclosed structure	Baghouse/vent filters	Baghouse/vent filters	Partially enclosed structure	Partially enclosed structure	Water sprays	Water sprays
Emission control removal efficiency, % (c)	95	99	99	70	70	60	60
Emission Factor (EF) Equations							
Uncontrolled EF (UEF) Equation	UEF (lb/ton) = k x (0.0032) x (U / 5) ^{1.3} / [(M / 2) ^{1.4}]						
Controlled EF (CEF) Equation	CEF (lb/ton) = UEF (lb/ton) x [100% - Removal efficiency (%)]						
Calculated PM Emission Factor (EF)							
Uncontrolled EF, lb/ton	Short term	0.000926	0.000926	0.000926	0.000926	0.000926	0.000926
Uncontrolled EF, lb/ton	Annual	0.000569	0.000569	0.000569	0.000569	0.000569	0.000569
Controlled EF, lb/ton	Short term	0.000046	0.000009	0.000009	0.000278	0.000278	0.000370
Controlled EF, lb/ton	Annual	0.000028	0.000006	0.000006	0.000171	0.000171	0.000227
Calculated PM₁₀ Emission Factor (EF)							
Uncontrolled EF, lb/ton	Short term	0.000438	0.000438	0.000438	0.000438	0.000438	0.000438
Uncontrolled EF, lb/ton	Annual	0.000269	0.000269	0.000269	0.000269	0.000269	0.000269
Controlled EF, lb/ton	Short term	0.000022	0.000004	0.000004	0.000131	0.000131	0.000175
Controlled EF, lb/ton	Annual	0.000013	0.000003	0.000003	0.000081	0.000081	0.000108
Calculated PM_{2.5} Emission Factor (EF)							
Uncontrolled EF, lb/ton	Short term	0.000138	0.000138	0.000138	0.000138	0.000138	0.000138
Uncontrolled EF, lb/ton	Annual	0.000085	0.000085	0.000085	0.000085	0.000085	0.000085
Controlled EF, lb/ton	Short term	0.000007	0.000001	0.000001	0.000041	0.000041	0.000055
Controlled EF, lb/ton	Annual	0.000004	0.000001	0.000001	0.000025	0.000025	0.000034
Estimated Emission Rate (ER)							
PM ER lb/hr	Source 1	Source 2	Source 3	Source 4	Source 5	Source 6	Source 7
PM ER TPY	0.019	0.004	0.004	0.056	0.056	0.074	0.074
PM ₁₀ ER lb/hr	0.017	0.003	0.003	0.051	0.051	0.068	0.068
PM ₁₀ ER TPY	0.009	0.002	0.002	0.026	0.026	0.035	0.035
PM _{2.5} ER lb/hr	0.008	0.002	0.002	0.024	0.024	0.032	0.032
PM _{2.5} ER TPY	0.003	0.001	0.001	0.008	0.008	0.011	0.011
PM _{2.5} ER TPY	0.003	0.001	0.001	0.008	0.008	0.010	0.010

(a) Throughput based on maximum actual coal throughput for the period 2003 - 2007. Moisture content based on minimum actual coal moisture content for the period 2003 - 2007.

(b) Assuming one-half goes to Stockpile A and the other half to Stockpile B.

(c) See Table 1.

Source: USEPA, 1995; AP-42, Section 13.2.4 for Aggregate Handling and Storage Piles.

**TABLE 2-8
ESTIMATION OF PM EMISSION FACTORS AND RATES FOR WIND EROSION FROM ACTIVE STORAGE PILES
PROJECT: MCINTOSH TRUCK UNLOADING & COAL STACKOUT/BLENDING - PHASE I**

Parameters	Active Coal Pile - Stockpile	
	A Wind Erosion	B Wind Erosion
Emission Point/Area	Active Coal Stackout Pile	Active Coal Stackout Pile
Storage Pile Data		
Material Type	Coal	Coal
Pile Description (shape)	Circular	Circular
Average Storage (tons/day; or tons)	4,800	4,800
Average Height (ft)	42 ^a	42 ^a
Diameter (ft)	130	130
Size, ft ²	8,577	8,577
Size, acres	0.20	0.20
General/ Site Characteristics		
Days of precipitation greater than or equal to 0.01 inch (p)	Annual	102
Time (%) that unobstructed wind speed exceeds 5.4 m/s at mean pile height (f)	Annual	7.8
Silt content (s), %		2.2 ^b
Particle size multiplier, PM (k)	1.00	1.00
Particle size multiplier, PM ₁₀ (k)	0.50	0.50
Particle size multiplier, PM _{2.5} (k)	0.20	0.20
Emission Control Data:		
Emission control method	None	None
Emission control removal efficiency, %	0	0
Emission Factor (EF) Equation		
Uncontrolled EF (UEF) Equation	UEF (lb/day/acre) = k x 1.7 x (s/1.5) x ((365 - p)/365) x (f/15)	
Controlled (Final) EF (CEF) Equation	CEF (lb/day/acre) = UEF (lb/day/acre) x (100 - Removal efficiency (%))	
Calculated PM Emission Factor (EF)		
Uncontrolled EF, lb/day/acre	Short term	1.30
Uncontrolled EF, lb/day/acre	Annual	0.93
Controlled EF, lb/day/acre	Short term	1.30
Controlled EF, lb/day/acre	Annual	0.93
Calculated PM₁₀ Emission Factor (EF)		
Uncontrolled EF, lb/day/acre	Short term	0.65
Uncontrolled EF, lb/day/acre	Annual	0.47
Controlled EF, lb/day/acre	Short term	0.65
Controlled EF, lb/day/acre	Annual	0.47
Calculated PM_{2.5} Emission Factor (EF)		
Uncontrolled EF, lb/day/acre	Short term	0.26
Uncontrolled EF, lb/day/acre	Annual	0.19
Controlled EF, lb/day/acre	Short term	0.26
Controlled EF, lb/day/acre	Annual	0.19
Estimated Emission Rate (ER)		
PM ER lb/hr		0.011
PM ER TPY		0.034
PM ₁₀ ER lb/hr		0.005
PM ₁₀ ER TPY		0.017
PM _{2.5} ER lb/hr		0.002
PM _{2.5} ER TPY		0.007

^a Assumed.

^b Table 13.2.4-1; average coal silt content for coal fired power plant.

Source: USEPA, 1992 (Fugitive Dust Background and Technical Information Document for Best Available Control Measures, Section 2.3.1.3.3, Wind Emissions from Continuously Active Piles).

**TABLE 2-9
ESTIMATION OF PM EMISSION FACTORS AND RATES FOR THE COAL-HANDLING SYSTEM FROM BATCH/CONTINUOUS DROP OPERATIONS AT TRANSFER POINTS
PROJECT: MCINTOSH TRUCK UNLOADING & COAL STACKOUT/BLENDING - PHASE II**

Parameters	Source 1	Source 2	Source 3	Source 4	Source 5	Source 6	Source 7	Source 8	Source 9
	Transfer coal from truck to unloading hopper	Gravity Reclaim to Apron Feeder	Apron Feeder to Belt Conveyor	Belt Conveyor to Conveyor for Stackout Pile	Conveyor to Stackout Pile	Belt Conveyor to Crusher House	Crusher House to Stacking Tubes	Stockpiles to Reclaim System	Reclaim System to Crusher House
Emission Point/Area	Batch Drop	Conveyor Drop	Conveyor Drop	Conveyor Drop	Conveyor Drop	Conveyor Drop	Conveyor Drop	Batch Drop	Conveyor Drop
Material Handling Data									
Material type	Coal	Coal	Coal	Coal	Coal	Coal	Coal	Coal	Coal
Material throughput, ton/hr (design)	400	400	400	400	400	400	400	400	400
Material throughput, ton/day	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600	9,600
Material throughput, ton/yr	1,200,000 (a)	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
Moisture content (M), % (nominal)	7.2 (a)	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
Number of transfers	1	1	1	1	1	4	7	3	7
General/ Site Characteristics									
Mean wind speed, mph	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6
Mean wind speed, mph	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Particle size multiplier, PM (k)	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Particle size multiplier, PM ₁₀ (k)	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Particle size multiplier, PM _{2.5} (k)	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Emission Control Data:									
Emission control method	Enclosed structure	Drop occurs underground in an enclosed area	Drop occurs underground in an enclosed area	Partially enclosed structure	Water sprays	Partially enclosed structure	Partially enclosed structure	No Control	Partially enclosed structure
Emission control removal efficiency, % (c)	95	99	99	70	60	70	70	0	70
Emission Factor (EF) Equations									
Uncontrolled EF (UEF) Equation	UEF (lb/ton) = k x (0.0032) x (U / 5) ^{1.3} / [(M / 2) ^{1.4}]								
Controlled EF (CEF) Equation	CEF (lb/ton) = UEF (lb/ton) x [100% - Removal efficiency (%)]								
Calculated PM Emission Factor (EF)									
Uncontrolled EF, lb/ton	Short term	0.000926	0.000926	0.000926	0.000926	0.000926	0.000926	0.000926	0.000926
Uncontrolled EF, lb/ton	Annual	0.000569	0.000569	0.000569	0.000569	0.000569	0.000569	0.000569	0.000569
Controlled EF, lb/ton	Short term	0.000046	0.000009	0.000009	0.000278	0.000370	0.000278	0.000926	0.000278
Controlled EF, lb/ton	Annual	0.000028	0.000006	0.000006	0.000171	0.000227	0.000171	0.000569	0.000171
Calculated PM₁₀ Emission Factor (EF)									
Uncontrolled EF, lb/ton	Short term	0.000438	0.000438	0.000438	0.000438	0.000438	0.000438	0.000438	0.000438
Uncontrolled EF, lb/ton	Annual	0.000269	0.000269	0.000269	0.000269	0.000269	0.000269	0.000269	0.000269
Controlled EF, lb/ton	Short term	0.000022	0.000004	0.000004	0.000131	0.000175	0.000131	0.000438	0.000131
Controlled EF, lb/ton	Annual	0.000013	0.000003	0.000003	0.000081	0.000108	0.000081	0.000269	0.000081
Calculated PM_{2.5} Emission Factor (EF)									
Uncontrolled EF, lb/ton	Short term	0.000138	0.000138	0.000138	0.000138	0.000138	0.000138	0.000138	0.000065
Uncontrolled EF, lb/ton	Annual	0.000085	0.000085	0.000085	0.000085	0.000085	0.000085	0.000085	0.000085
Controlled EF, lb/ton	Short term	0.000007	0.000001	0.000001	0.000041	0.000055	0.000041	0.000138	0.000020
Controlled EF, lb/ton	Annual	0.000004	0.000001	0.000001	0.000025	0.000034	0.000025	0.000085	0.000025
Estimated Emission Rate (ER)									
	Source 1	Source 2	Source 3	Source 4	Source 5	Source 6	Source 7	Source 8	Source 9
PM ER lb/hr	0.019	0.004	0.004	0.111	0.148	0.444	0.777	1.111	0.777
PM ER TPY	0.017	0.003	0.003	0.102	0.136	0.409	0.716	1.024	0.716
PM ₁₀ ER lb/hr	0.009	0.002	0.002	0.053	0.070	0.210	0.368	0.525	0.368
PM ₁₀ ER TPY	0.008	0.002	0.002	0.048	0.065	0.194	0.339	0.484	0.339
PM _{2.5} ER lb/hr	0.003	0.001	0.001	0.017	0.022	0.066	0.116	0.165	0.055
PM _{2.5} ER TPY	0.003	0.001	0.001	0.015	0.020	0.061	0.107	0.152	0.107

(a) Throughput based on maximum actual coal throughput for the period 2003 - 2007 and capacity factor of 90%. Moisture content based on minimum actual coal moisture content for the period 2003 - 2007.

Source: USEPA, 1995; AP-42, Section 13.2.4 for Aggregate Handling and Storage Piles.

**TABLE 2-10
ESTIMATION OF PM EMISSION FACTORS AND RATES FOR WIND EROSION FROM ACTIVE STORAGE PILES
PROJECT: MCINTOSH TRUCK UNLOADING & COAL STACKOUT/BLENDING - PHASE II**

Parameters	Active Coal Piles						
	Stackout Pile Wind Erosion	Stack Tube Pile 1 Wind Erosion	Stack Tube Pile 2 Wind Erosion	Stack Tube Pile 3 Wind Erosion	Stack Tube Pile 4 Wind Erosion	Stack Tube Pile 5 Wind Erosion	Stack Tube Pile 6 Wind Erosion
Emission Point/Area	Active Coal Pile	Active Coal Pile	Active Coal Pile	Active Coal Pile	Active Coal Pile	Active Coal Pile	Active Coal Pile
Storage Pile Data							
Material Type	Coal	Coal	Coal	Coal	Coal	Coal	Coal
File Description (shape)	Circular	Circular	Circular	Circular	Circular	Circular	Circular
Average Storage (tons/day; or tons)	9,600 ^a	1,600 ^a	1,600 ^a	1,600 ^a	1,600 ^a	1,600 ^a	1,600 ^a
Average Height (ft)	83 ^b	26 ^b	26 ^b	26 ^b	26 ^b	26 ^b	26 ^b
Diameter (ft)	130	95	95	95	95	95	95
Size, ft ²	16,949	3,880	3,880	3,880	3,880	3,880	3,880
Size, acres	0.39	0.09	0.09	0.09	0.09	0.09	0.09
General/ Site Characteristics							
Days of precipitation greater than or equal to 0.01 inch (p)	Annual	102	102	102	102	102	102
Time (%) that unobstructed wind speed exceeds 5.4 m/s at mean pile height (f)	Annual	7.8	7.8	7.8	7.8	7.8	7.8
Silt content (s), %		2.2 ^c	2.2 ^c	2.2 ^c	2.2 ^c	2.2 ^c	2.2 ^c
Particle size multiplier, PM (k)		1.00	1.00	1.00	1.00	1.00	1.00
Particle size multiplier, PM ₁₀ (k)		0.50	0.50	0.50	0.50	0.50	0.50
Particle size multiplier, PM _{2.5} (k)		0.20	0.20	0.20	0.20	0.20	0.20
Emission Control Data:							
Emission control method	None	None	None	None	None	None	None
Emission control removal efficiency, %	0	0	0	0	0	0	0
Emission Factor (EF) Equation							
Uncontrolled EF (UEF) Equation	UEF (lb/day/acre) = k x 1.7 x (s/1.5) x ((365 - p)/365) x (f/15)						
Controlled (Final) EF (CEF) Equation	CEF (lb/day/acre) = UEF (lb/day/acre) x (100 - Removal efficiency (%))						
Calculated PM Emission Factor (EF)							
Uncontrolled EF, lb/day/acre	Short term	1.30	1.30	1.30	1.30	1.30	1.30
Uncontrolled EF, lb/day/acre	Annual	0.93	0.93	0.93	0.93	0.93	0.93
Controlled EF, lb/day/acre	Short term	1.30	1.30	1.30	1.30	1.30	1.30
Controlled EF, lb/day/acre	Annual	0.93	0.93	0.93	0.93	0.93	0.93
Calculated PM₁₀ Emission Factor (EF)							
Uncontrolled EF, lb/day/acre	Short term	0.65	0.65	0.65	0.65	0.65	0.65
Uncontrolled EF, lb/day/acre	Annual	0.47	0.47	0.47	0.47	0.47	0.47
Controlled EF, lb/day/acre	Short term	0.65	0.65	0.65	0.65	0.65	0.65
Controlled EF, lb/day/acre	Annual	0.47	0.47	0.47	0.47	0.47	0.47
Calculated PM_{2.5} Emission Factor (EF)							
Uncontrolled EF, lb/day/acre	Short term	0.26	0.26	0.26	0.26	0.26	0.26
Uncontrolled EF, lb/day/acre	Annual	0.19	0.19	0.19	0.19	0.19	0.19
Controlled EF, lb/day/acre	Short term	0.26	0.26	0.26	0.26	0.26	0.26
Controlled EF, lb/day/acre	Annual	0.19	0.19	0.19	0.19	0.19	0.19
Estimated Emission Rate (ER)							
PM ER lb/hr		0.0210	0.0048	0.0048	0.0048	0.0048	0.0048
PM ER TPY		0.0664	0.0152	0.0152	0.0152	0.0152	0.0152
PM ₁₀ ER lb/hr		0.0105	0.0024	0.0024	0.0024	0.0024	0.0024
PM ₁₀ ER TPY		0.0332	0.0076	0.0076	0.0076	0.0076	0.0076
PM _{2.5} ER lb/hr		0.0042	0.0010	0.0010	0.0010	0.0010	0.0010
PM _{2.5} ER TPY		0.0133	0.0030	0.0030	0.0030	0.0030	0.0030

^a Average storage based on 400 tons/hr, 24 hrs/day. 9,600 tons/day daily storage equally divided among 6 stack tubes.

^b Estimated based on amount of coal stored and density of 52 lb/cuft.

^c Table 13.2.4-1; average coal silt content for coal fired power plant.

Source: USEPA, 1992 (Fugitive Dust Background and Technical Information Document for Best Available Control Measures, Section 2.3.1.3.3, Wind Emissions from Continuously Active Piles).

**TABLE 2-11
ACTUAL COAL USAGE AND METEOROLOGICAL DATA SUMMARY
MCINTOSH COAL HANDLING EMISSIONS ESTIMATES**

	2003	2004	2005	2006	2007
Coal Throughput ^a	942,263	749,083	989,577	973,722	1,046,865
Moisture Content, % ^a	5.9	7.3	7.87	7.17	7.65
Ash Content, % ^a	9.04	8.97	9	10.11	9.43
Average Sulfur ^a	1.36	1.24	1.42	1.41	1.21
Average Heating Value (HHV) ^a	12557	12260	12267	12170	12261
<u>Meteorological Data ^b</u>					
Mean Wind Speed, mph, daily	9.6				
Mean Wind Speed, mph, annual	6.6				
Number of Days >0.01 in rain, P	102				
Frequency of Time wind >12 mph, F, %	7.8				

^a City of Lakeland actual data for the period 2003-2007.

^b Date from Tampa International Airport for the period 2001-2005.

TABLE 3-1
SUMMARY OF BASELINE ACTUAL EMISSIONS
COAL HANDLING OPERATIONS AT MCINTOSH PLANT - EXISTING

Source:	PM (TSP)		PM ₁₀		PM _{2.5}	
	(lb/hr)	(TPY)	(lb/hr)	(TPY)	(lb/hr)	(TPY)
1. Front-end Loaders dumping coal into the hopper.	0.019	0.015	0.009	0.007	0.003	0.002
2. Gravity reclaim of coal from hopper onto apron feeder.	0.004	0.003	0.002	0.001	0.001	0.000
3. Apron feeder drops coal onto the belt conveyor.	0.004	0.003	0.002	0.001	0.001	0.000
4. Belt Conveyor transports coal to crusher house.	0.222	0.179	0.105	0.085	0.033	0.027
5. Wind erosion from active stockpiles (worst of east, southwest, or northwest).	0.072	0.218	0.036	0.109	0.014	0.044
TOTAL	0.32	0.42	0.15	0.20	0.05	0.07

Note: See Tables 3-2 and 3-3 for detailed emissions calculation.

Baseline emissions are based on actual coal usage from 2007, see Table 2 - 11.

**TABLE 3-2
ESTIMATION OF PM EMISSION FACTORS AND RATES FOR THE EXISTING COAL-HANDLING SYSTEM AT MCINTOSH PLANT
BATCH/CONTINUOUS DROP OPERATIONS AT TRANSFER POINTS**

Parameters	Source 1	Source 2	Source 3	Source 4	
	Transfer coal from Front-end Loader to hopper	Gravity Reclaim to Apron Feeder	Apron Feeder to Belt Conveyor	Belt Conveyor to Crusher House	
Emission Point/Area	Batch Drop	Conveyor Drop	Conveyor Drop	Conveyor Drop	
Material Handling Data					
Material type	Coal	Coal	Coal	Coal	
Material throughput, ton/hr (design)	400	400	400	400	
ton/day	9,600	9,600	9,600	9,600	
Material throughput, ton/yr	1,050,000 (a)	1,050,000	1,050,000	1,050,000	
Moisture content (M), % (nominal)	7.2 (a)	7.2	7.2	7.2	
Number of transfers	1	1	1	2	
General/ Site Characteristics					
Mean wind speed, mph	9.6	9.6	9.6	9.6	
Mean wind speed, mph	6.6	6.6	6.6	6.6	
Particle size multiplier, PM (k)	0.74	0.74	0.74	0.74	
Particle size multiplier, PM ₁₀ (k)	0.35	0.35	0.35	0.35	
Particle size multiplier, PM _{2.5} (k)	0.11	0.11	0.11	0.11	
Emission Control Data:					
Emission control method	Enclosed structure	Drop occurs underground in an enclosed area	Drop occurs underground in an enclosed area	Partially enclosed structure	
Emission control removal efficiency, %	95	99	99	70	
Emission Factor (EF) Equations					
Uncontrolled EF (UEF) Equation	$UEF (lb/ton) = k \times (0.0032) \times (U / 5)^{1.3} / [(M / 2)^{1.4}]$				
Controlled EF (CEF) Equation	$CEF (lb/ton) = UEF (lb/ton) \times [100\% - Removal\ efficiency\ (\%)]$				
Calculated PM Emission Factor (EF)					
Uncontrolled EF, lb/ton	Short term	0.000926	0.000926	0.000926	0.000926
Uncontrolled EF, lb/ton	Annual	0.000569	0.000569	0.000569	0.000569
Controlled EF, lb/ton	Short term	0.000046	0.000009	0.000009	0.000278
Controlled EF, lb/ton	Annual	0.000028	0.000006	0.000006	0.000171
Calculated PM₁₀ Emission Factor (EF)					
Uncontrolled EF, lb/ton	Short term	0.000438	0.000438	0.000438	0.000438
Uncontrolled EF, lb/ton	Annual	0.000269	0.000269	0.000269	0.000269
Controlled EF, lb/ton	Short term	0.000022	0.000004	0.000004	0.000131
Controlled EF, lb/ton	Annual	0.000013	0.000003	0.000003	0.000081
Calculated PM_{2.5} Emission Factor (EF)					
Uncontrolled EF, lb/ton	Short term	0.000138	0.000138	0.000138	0.000138
Uncontrolled EF, lb/ton	Annual	0.000085	0.000085	0.000085	0.000085
Controlled EF, lb/ton	Short term	0.000007	0.000001	0.000001	0.000041
Controlled EF, lb/ton	Annual	0.000004	0.000001	0.000001	0.000025
Estimated Emission Rate (ER)					
	Source 1	Source 2	Source 3	Source 4	
PM ER lb/hr	0.019	0.004	0.004	0.222	
PM ER TPY	0.015	0.003	0.003	0.179	
PM ₁₀ ER lb/hr	0.009	0.002	0.002	0.105	
PM ₁₀ ER TPY	0.007	0.001	0.001	0.085	
PM _{2.5} ER lb/hr	0.003	0.001	0.001	0.033	
PM _{2.5} ER TPY	0.002	0.000	0.000	0.027	

(a) Throughput based on maximum actual coal throughput for the period 2003 - 2007.

Moisture content based on minimum actual coal moisture content for the period 2003 - 2007.

Source: USEPA, 1995; AP-42, Section 13.2.4 for Aggregate Handling and Storage Piles.

**TABLE 3-3
ESTIMATION OF PM EMISSION FACTORS AND RATES FOR WIND EROSION FROM ACTIVE STORAGE PILES
MCINTOSH EXISTING COAL HANDLING SYSTEM**

Parameters	Active Coal Pile - East Stockpile Wind Erosion	Active Coal Pile - Southwest Stockpile Wind Erosion	Active Coal Pile - Northwest Stockpile Wind Erosion
	Active Coal Stackout Pile	Active Coal Stackout Pile	Active Coal Stackout Pile
Emission Point/Area			
Storage Pile Data			
Material Type	Coal	Coal	Coal
Pile Description (shape)	Rectangular	Rectangular	Rectangular
Average Storage (tons/day; or tons)	9,600	9,600	9,600
Average Height (ft)	30 ^a	30 ^a	30 ^a
Length (ft)	135	130	120
Width (ft)	255	235	130
Size, ft ²	57,825	52,450	30,600
Size, acres	1.33	1.21	0.70
General/ Site Characteristics			
Days of precipitation greater than or equal to 0.01 inch (p)	Annual	112	112
Time (%) that unobstructed wind speed exceeds 5.4 m/s at mean pile height (f)	Annual	7.8	7.8
Silt content (s), %	2.2 ^b	2.2 ^b	2.2 ^b
Particle size multiplier, PM (k)	1.00	1.00	1.00
Particle size multiplier, PM ₁₀ (k)	0.50	0.50	0.50
Particle size multiplier, PM _{2.5} (k)	0.20	0.20	0.20
Emission Control Data:			
Emission control method	None	None	None
Emission control removal efficiency, %	0	0	0
Emission Factor (EF) Equation			
Uncontrolled EF (UEF) Equation	UEF (lb/day/acre) = k x 1.7 x (s/1.5) x ((365 - p)/365) x (f/15)		
Controlled (Final) EF (CEF) Equation	CEF (lb/day/acre) = UEF (lb/day/acre) x (100 - Removal efficiency (%))		
Calculated PM Emission Factor (EF)			
Uncontrolled EF, lb/day/acre	Short term	1.30	1.30
Uncontrolled EF, lb/day/acre	Annual	0.90	0.90
Controlled EF, lb/day/acre	Short term	1.30	1.30
Controlled EF, lb/day/acre	Annual	0.90	0.90
Calculated PM10 Emission Factor (EF)			
Uncontrolled EF, lb/day/acre	Short term	0.65	0.65
Uncontrolled EF, lb/day/acre	Annual	0.45	0.45
Controlled EF, lb/day/acre	Short term	0.65	0.65
Controlled EF, lb/day/acre	Annual	0.45	0.45
Calculated PM2.5 Emission Factor (EF)			
Uncontrolled EF, lb/day/acre	Short term	0.26	0.26
Uncontrolled EF, lb/day/acre	Annual	0.18	0.18
Controlled EF, lb/day/acre	Short term	0.26	0.26
Controlled EF, lb/day/acre	Annual	0.18	0.18
Estimated Emission Rate (ER)			
PM ER lb/hr		0.072	0.065
PM ER TPY		0.218	0.198
PM ₁₀ ER lb/hr		0.036	0.033
PM ₁₀ ER TPY		0.109	0.099
PM _{2.5} ER lb/hr		0.014	0.013
PM _{2.5} ER TPY		0.044	0.040

^a Assumed.

^b Table 13.2.4-1; average coal silt content for coal fired power plant.

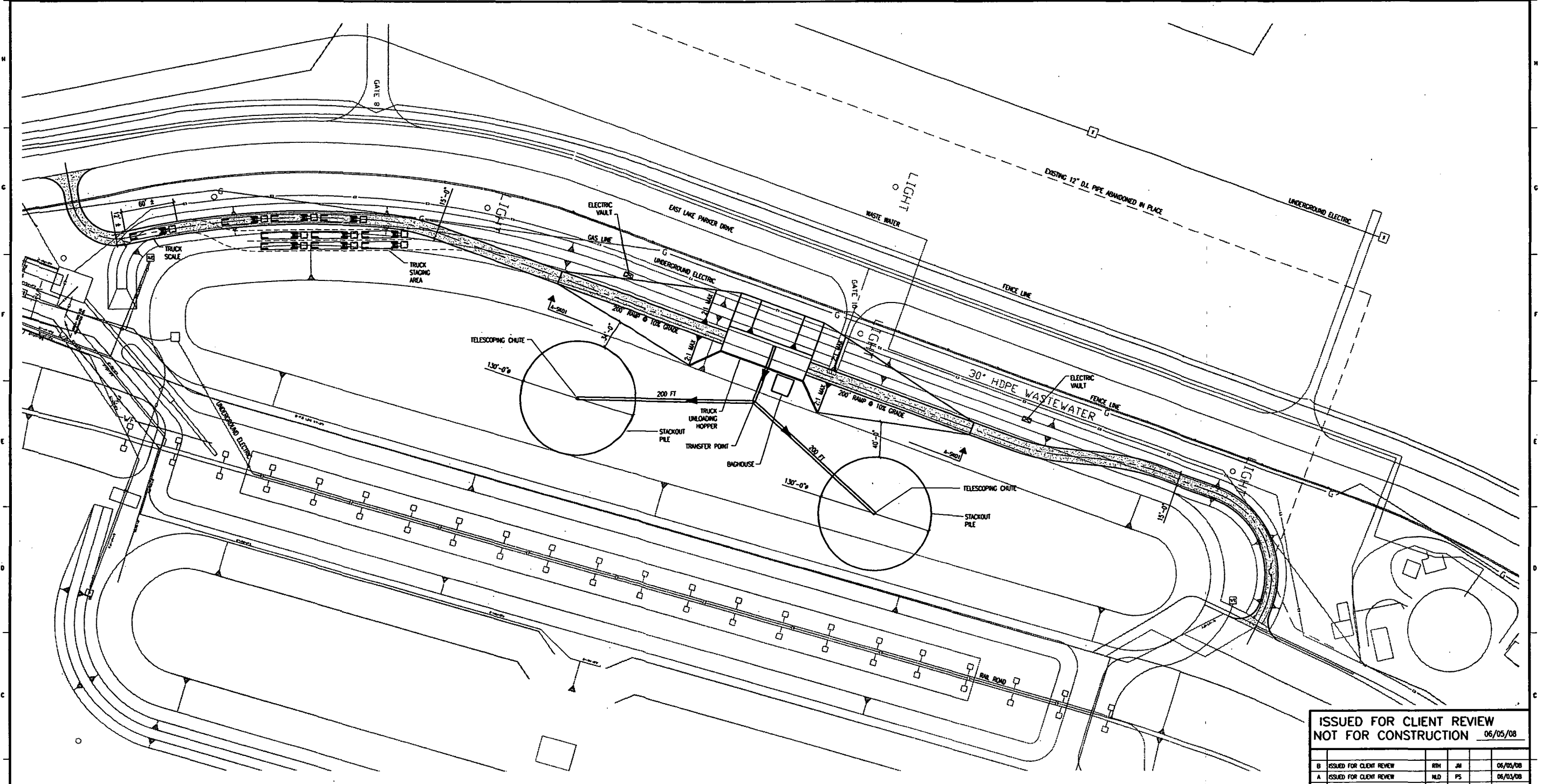
Source: USEPA, 1992 (Fugitive Dust Background and Technical Information Document for Best Available Control Measures, Section 2.3.1.3.3, Wind Emissions from Continuously Active Piles).

**TABLE 3-4
PSD APPLICABILITY ANALYSIS
TRUCK UNLOADING AND COAL STACKOUT/BLENDING PROJECT - MCINTOSH
POWER PLANT**

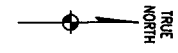
Source:	PM (TSP) (TPY)	PM₁₀ (TPY)	PM_{2.5} (TPY)
Phase I ^a	0.33	0.16	0.05
Phase II ^a	3.22	1.53	0.47
Total Project	3.55	1.69	0.52
Baseline Actual Emissions ^b	0.42	0.20	0.07
Net Emissions Increase Due to the Project	3.13	1.49	0.45
PSD Significant Emission Rate	25.0	15.0	15.0
PSD Review Required?	No	No	No

^a See Tables 2-1 through 2-6.

^b See Table 3-1.



TRUCK UNLOADING GENERAL ARRANGEMENT
SCALE: 1"=50'-0"



ISSUED FOR CLIENT REVIEW
NOT FOR CONSTRUCTION 06/05/08

NO.	REVISIONS	DSGN	CHKD	APVD	DATE
B	ISSUED FOR CLIENT REVIEW	RTH	JM		06/05/08
A	ISSUED FOR CLIENT REVIEW	MJD	PS		06/03/08



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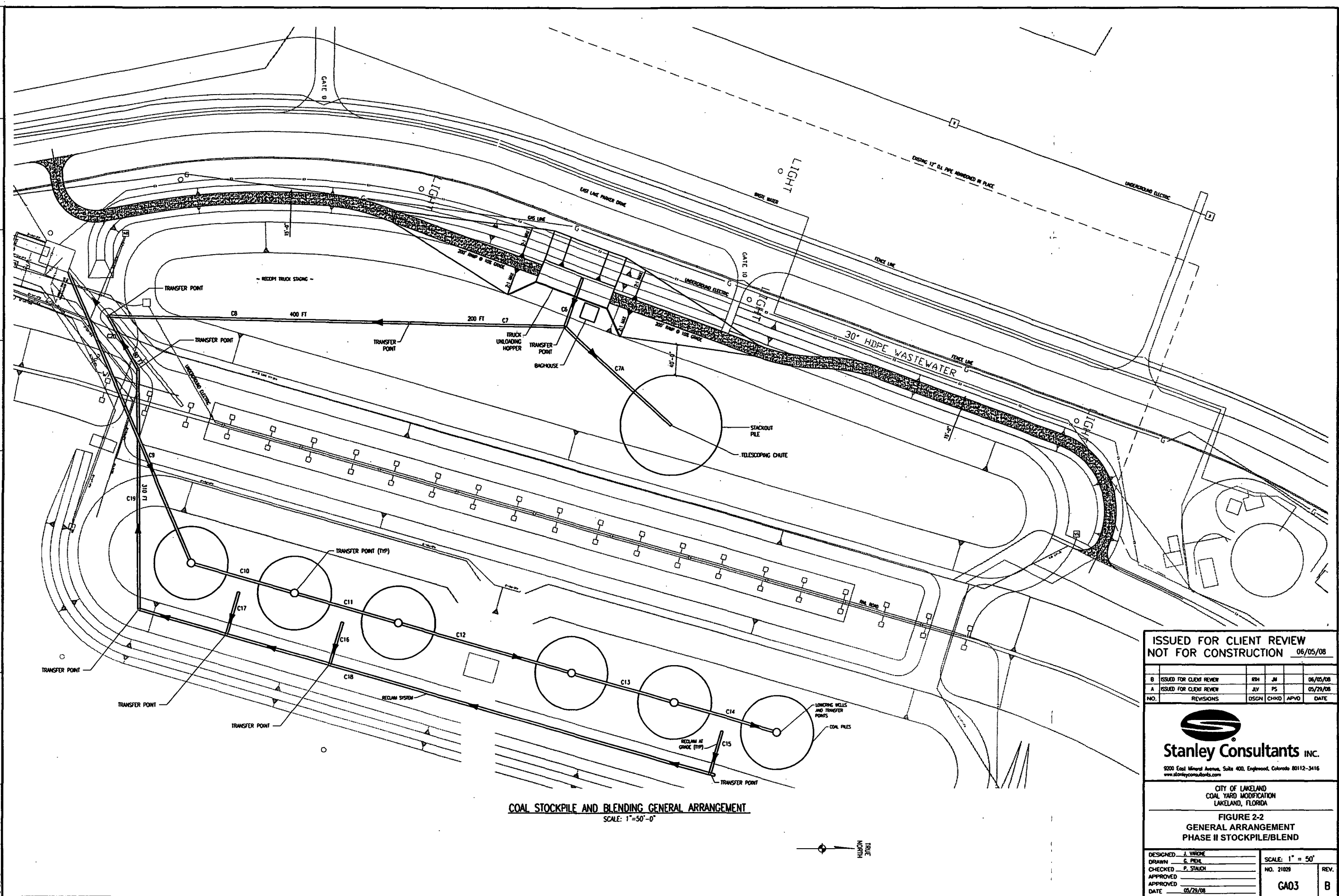
CITY OF LAKELAND
COAL YARD MODIFICATION
LAKELAND, FLORIDA

FIGURE 2-1
GENERAL ARRANGEMENT
PHASE I TRUCK UNLOADING, WEST SIDE

DESIGNED: N. DURM	SCALE: 1" = 50'	NO. 21029	REV.
DRAWN: N. DURM			
CHECKED: P. STAUCH			
APPROVED:			
DATE: 06/03/08			
	CAD1		B

V:\11-CAD\04-Mech\CAD1.dwg
06/05/08

V:\11-CADD\14-Mech\GA03.dwg
 LEAD: 01-11-08



COAL STOCKPILE AND BLENDING GENERAL ARRANGEMENT
 SCALE: 1" = 50'-0"

ISSUED FOR CLIENT REVIEW
 NOT FOR CONSTRUCTION 06/05/08

B	ISSUED FOR CLIENT REVIEW	RH	JM	06/05/08	
A	ISSUED FOR CLIENT REVIEW	JV	PS	05/29/08	
NO.	REVISIONS	DSGN	CHKD	APVD	DATE



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CITY OF LAKELAND
 COAL YARD MODIFICATION
 LAKELAND, FLORIDA

FIGURE 2-2
GENERAL ARRANGEMENT
PHASE II STOCKPILE/BLEND

DESIGNED	J. VROBE
DRAWN	E. PEJA
CHECKED	P. STALDN
APPROVED	
DATE	05/29/08

SCALE: 1" = 50'	REV.
NO. 21029	
GA03	B