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Jacksonville, Florida 32202-3139

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BUREAU OF AIR REGULATION



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Mr. Al Linero, P.E.  
Administrator, New Source Review Section  
Division of Air Resources Management  
Florida Department of Environmental Protection  
2600 Blair Stone Road, MS # 5505  
Tallahassee, FL 32399-2400

Subject: Northside Repowering Project  
Proposed Changes to the Design of the Ash Handling Systems  
Air Construction Permit 0310045-003-AC, PSD-FL-265

Dear Mr. Linero:

This letter is to inform you of proposed changes to the design of the fly and bed ash handling systems at the Northside Repowering Project, and to request the appropriate permit modifications to facilitate the construction of these changes. Simply stated, the proposed change to the ash handling systems will allow boiler ash byproducts to be slurried and then pumped to the byproduct storage area (BSA) as a dense slurry. The proposed changes will cause a net decrease in the particulate emissions from the fly and bed ash handling systems currently permitted, and will meet the permitted BACT limits already established for the process.

The following sections present a brief description of the fly and bed ash handling systems as they are currently permitted, as well as a description of the changes that are proposed. Additionally, an estimate of the particulate matter emission decreases associated with the proposed changes to the ash handling systems and the applicable air permit application forms are included with this letter.

**Description of the Permitted Ash Handling System**

The Northside Repowering Project consists of two new Circulating Fluidized Bed (CFB) boilers (EU026 and EU027) designed to repower the existing steam turbines for Units 1 and 2. As permitted, the ash system for these units includes a fly and bed ash handling system for each CFB boiler. Each boiler consists of two trains of ash handling - one for fly ash and one for bed ash. A process flow diagram of the permitted fly and bed ash handling systems is presented in Figure 1 of Attachment A.

### Permitted Fly ash Handling System

On a per boiler basis, the permitted fly ash handling system consists of a particulate air quality control system that discharges into two (2) fly ash filter separators. Particulate emissions from the ash separators are controlled with fabric filters (EU036). The fly ash is then transferred into a fly ash silo. Particulate emissions from the fly ash silo are also controlled with a fabric filter (EU037). The dry fly ash from the fly ash silo is then either transferred into four hydrators located beneath the silo, or transported directly to enclosed tanker trucks for further processing and handling offsite. Particulate emissions resulting from the transfer of the dry fly ash into the hydrators are controlled using venturi scrubbers (EU039). Particulate emissions resulting from the transfer of the dry fly ash directly into the tanker trucks are controlled with fabric filters (EU041). Hydrated fly ash is transferred directly into dump trucks and transported to the BSA. Particulate emissions resulting from the transfer of the hydrated fly ash into the dump trucks are permitted as fugitive sources (EU028r). An identical fly ash handling system is permitted for the other boiler.

### Permitted Bed Ash Handling System

On a per boiler basis, the permitted bed ash handling system transfers bed ash from the boiler to the bed ash silo. Particulate emissions resulting from the transfer are controlled with fabric filters (EU038). The bed ash is then either transferred into two (2) hydrators located beneath the bed ash silo, or transported directly to enclosed tanker trucks for further processing and handling offsite. Particulate emissions resulting from the transfer of the dry bed ash into the hydrators are controlled using venturi scrubbers (EU039). Particulate emissions resulting from the transfer of the dry bed ash directly into the tanker trucks are controlled with fabric filters (EU040). Hydrated bed ash is transferred directly into dump trucks and transported to the BSA. Particulate emissions resulting from the transfer of the hydrated bed ash into the dump trucks are permitted as fugitive sources (EU028r). An identical bed ash handling system is permitted for the other boiler.

### Proposed Modification to the Ash Handling System

The following sections present a description of the proposed changes to the ash handling systems. A process flow diagram of the proposed ash handling system design is presented in Figure 2 of Attachment A.

### Proposed Fly Ash Handling System Modifications

The proposed modification to the fly ash handling system design includes the removal of all four (4) fly ash hydrators and associated control equipment (EU039), as well as the fly ash hydrated truck load out systems (EU028r) for each boiler. In place of the hydrators, fly ash pre-mixer tanks will be installed (one per fly ash silo) to slurry the fly ash. Particulate emissions resulting from the pre-mixer will be controlled using wet scrubber and fabric filter controls (EU051). After hydration in the pre-mixer, the fly ash will be pumped (fully enclosed) to the main ash mixing tanks located under each bed ash silo. The main ash mixers, or bed ash silo mixers, replace the bed ash silo hydrators in the original design. In the bed ash silo mixers, the fly ash will be formulated into a dense slurry with the bed ash. The resulting dense slurry ash will then be fed to a dense slurry pumping system that will pump the ash slurry to the BSA in a 4 inch pipeline.

While the aforementioned dense slurry ash system and pipeline feed to the BSA will be the primary conveyance of fly ash, a dry fly ash truck load out capability, similar to the one already permitted, will be necessary to allow for the offsite transport and handling of dry fly ash. However, unlike the currently permitted dry fly ash truck load out system and associated fabric filter emission point (EU041), the modified dry fly ash truck load out system will use a telescopic chute designed to collect the displaced air from the truck load out system and return it to the fly ash silo, thereby eliminating EU041. In the event of an emergency (i.e., complete malfunction and failure of the dense slurry ash handling system) dry fly ash can be trucked to the BSA and hydrated for BSA application using a jet ring.

#### *Proposed Bed Ash Handling System Modifications*

The proposed modification to the bed ash handling system design includes the removal of the two (2) bed ash hydrators and associated control equipment (EU039), as well as the bed ash hydrated truck load out systems (EU028r) for each boiler. A surge bin with fabric filter control was added between the boiler and the silo. In place of the mixers, a double roll crusher and a mix tank were added to prepare the ash for mixing, combine it with the fly ash slurry and mix it into the dense slurry. As previously discussed, the resulting dense slurry ash will be fed to a dense slurry pumping system that will pump the ash slurry to the BSA in a 4 inch pipeline. The particulate emissions resulting from the bed ash double roll crushers and the bed ash dry surge hopper waste bins will be collected and returned to the bed ash silos. Particulate emissions resulting from the operation of the bed ash silo mixer will be controlled with a wet scrubber followed by a fabric filter (EU052). Particulate emissions from the surge bin are controlled with a fabric filter (EU053).

Like the fly ash system, a dry bed ash truck load out capability, similar to the one already permitted, will be necessary to allow for offsite transport and handling of bed ash. However, unlike the currently permitted bed ash truck load out system and associated fabric filter emission point (EU040), the modified dry bed ash truck load out system will use a telescopic chute designed to collect the displaced air from the truck load out system and return it to the bed ash silo, thereby eliminating EU040. In the event of an emergency (i.e., complete malfunction and failure of the dense slurry ash handling system) dry bed ash can be trucked to the BSA and hydrated for BSA application using a jet ring.

#### **Summary of Proposed Modifications**

The proposed modifications to the ash handling system design will result in the elimination of several permitted particulate emission units. In their place, three new emission units are proposed to support the dense slurry ash handling system design. The new emission units EU051 and EU052 will use wet scrubber and fabric filter technology and EU053 will use fabric filter technology to control particulate emissions to the BACT limit of 5 percent. The following is a summary of the permitted emission units that will be eliminated from the design, and the new emission units that would be required as a result of the aforementioned modifications to the ash handling systems.

Permitted Emission Units to be Eliminated from the Ash Handling System Design

- Eight (8) Fly Ash Hydrators (4 per Fly Ash Silo) - EU039
- Four (4) Bed Ash Hydrators (2 per Bed Ash Silo) - EU039
- Four (4) Dry Fly and Bed Ash Truck Load Out Systems (1 per Silo) - EU041 and EU040
- Four (4) Hydrated Ash Truck Load Out Systems (1 per Silo) - EU028r
- Hydrated Ash Truck Hauling Fugitive Particulate Emissions - EU028f

New Emission Units to be added to the Ash Handling System Design

- Two (2) Fly Ash Silo Pre-Mixers (1 per Fly Ash Silo) - EU051
- Two (2) Bed Ash Silo Mixers (1 per Bed Ash Silo)- EU052
- Two (2) Bed Ash Surge Hoppers (1 per Boiler) - EU053

The new ash handling system design will result in a net decrease of particulate emissions when compared to the permitted ash handling system design. Tables 1 and 2 in Attachment B present particulate emission estimates for the permitted fly and bed ash handling systems and the proposed modifications to the fly and bed ash handling systems, respectively. The particulate emission estimates are based on the emission factors and assumptions used in the original air permit application. As presented in the Tables 1 and 2, the dense slurry ash handling system will result in a net decrease of approximately 7.8 tons per year of particulate matter and approximately 1 ton per year of PM<sub>10</sub>. The specific parameters and details of the new emission units (EU051, EU052 and EU053) are included in the applicable permit application forms in Attachment, and the proposed modifications to the permit are included in attachment D.

In summary, the dense slurry ash handling system design will not only meet the BACT limit of 5 percent opacity establish for the process, but will also result in a net decrease in particulate emissions. Consequently, JEA believes the proposed changes represent a minor modification to the air construction permit, and in accordance with Administrative Condition 13 of the permit, JEA requests permission to modify the permitted fly and bed ash handling system design and construct the dense slurry ash handling system as described.

If you have any questions or need any additional information, please call me at (904)665-6247.

Sincerely,

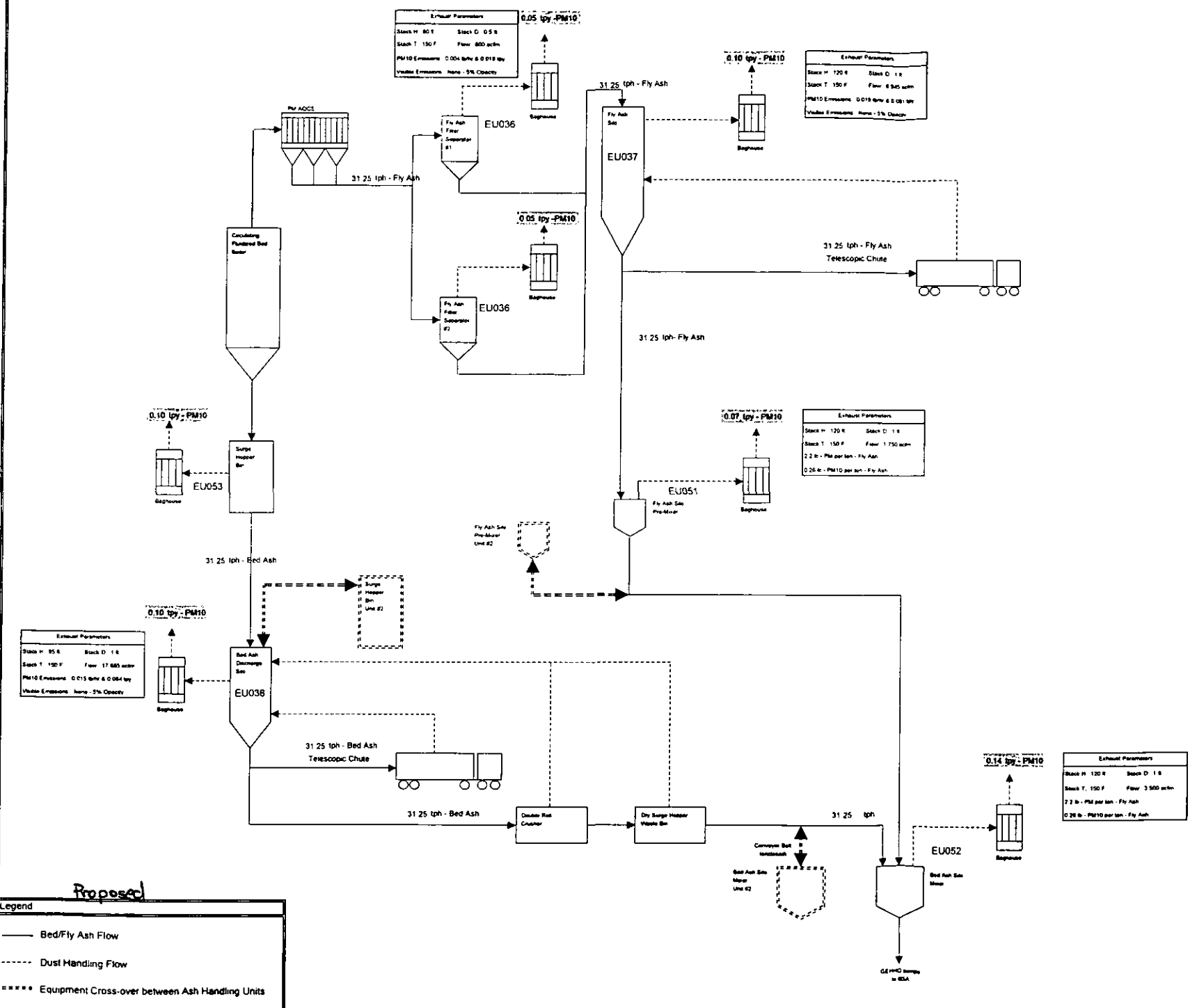


N. Bert Gianazza, P.E.  
Environmental Permitting  
& Compliance

cc: Syed Arif, P.E., FDEP  
Robert S. Pace, P.E., RESD

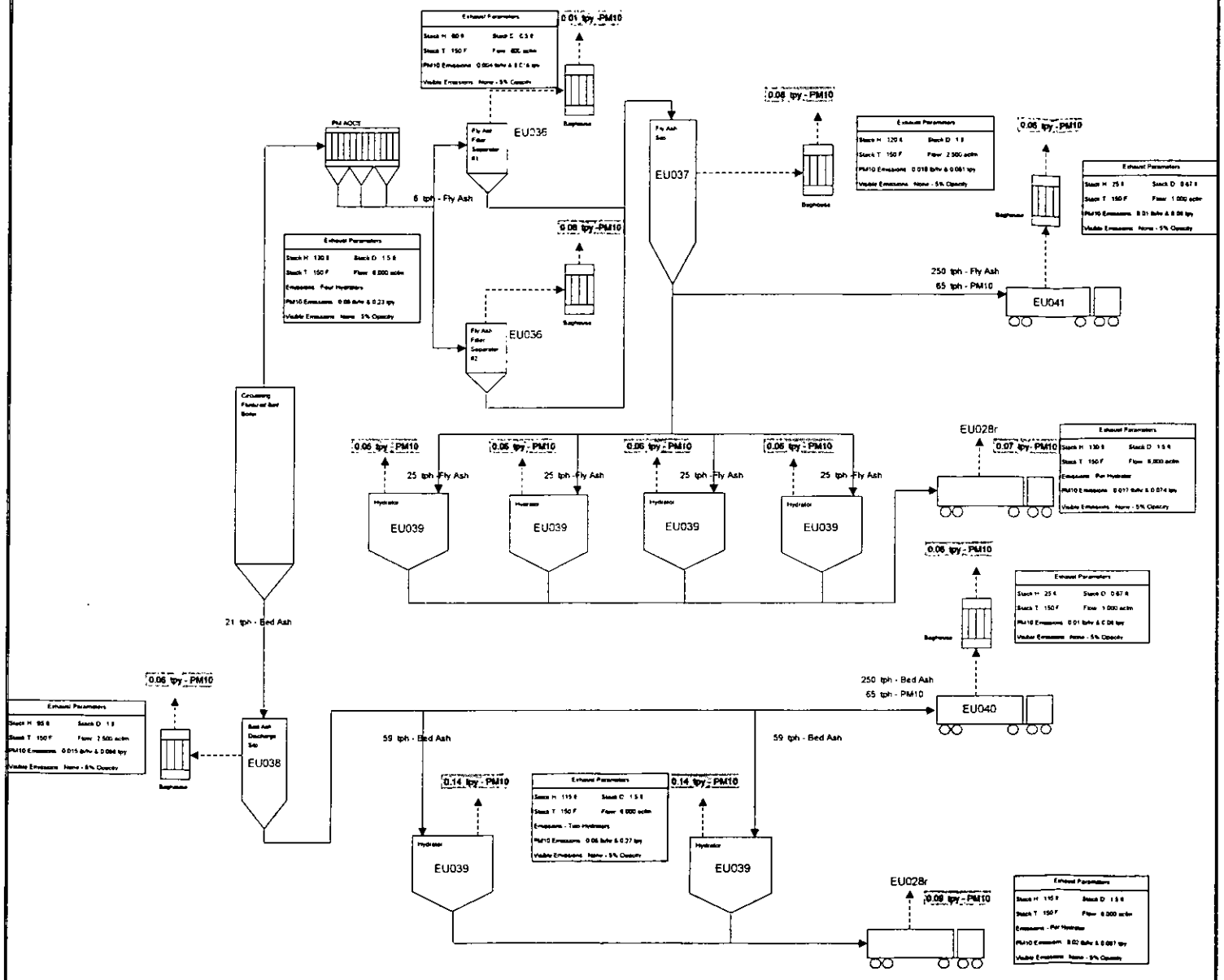
**Attachment A**  
**Process Flow Diagrams for the Permitted and Proposed Ash Handling**  
**Systems**

### Ash Handling System (ARMS Emission Unit Nos. 026 & 027)



*Proposed*

Ash Handling System (ARMS Emission Unit Nos. 026 & 027)



Permitted  
Legend  
Bed Fly Ash Flow  
Dust Handling Flow

**Attachment B**  
**Emission Estimates for the Permitted and Proposed Ash Handling**  
**System**



**Table 1**  
**Northside Generating Station Units #1 & #2 Repowering Project**  
**Ash Handling Operations - Permitted**  
**PM and PM<sub>10</sub> Potential to Emit Calculations**

Equipment/Activity	Emission Unit ID		Control Efficiency %	Emission Estimates PM (tpy)	Emission Estimates PM10 (tpy)
	ARMS	Permit Application			
<b>Point Source Emissions</b>					
Fly Ash Wast Bin Unit #1	036	FA-F-204-T1	99.50	0.035	0.018
Fly Ash Waste Bin Unit #2	036	FA-F-204-T2	99.50	0.035	0.018
Fly Ash Transfer & Storage System Unit #1	037	FA-F-405-T1	99.50	0.160	0.081
Fly Ash Transfer & Storage System Unit #2	037	FA-F-405-T2	99.50	0.160	0.081
Fly Ash Silo Hydrators Unit #1	039	FA-M-403-T1	99.98	1.927	0.231
Fly Ash Silo Hydrators Unit #2	039	FA-M-403-T2	99.98	1.927	0.231
Fly Ash Truck Loadout System Unit #1	041	FA-F-406-T1	99.98	0.482	0.058
Fly Ash Truck Loadout System Unit #2	041	FA-F-406-T2	99.98	0.482	0.058
Bed Ash Transfer & Storage System Unit #1	038	BA-F-401-T1	99.50	0.124	0.063
Bed Ash Transfer & Storage System Unit #2	038	BA-F-401-T2	99.50	0.124	0.063
Bed Ash Silo Hydrators Unit #1	039	BA-M-401-T1	99.80	2.274	0.273
Bed Ash Silo Hydrators Unit #2	039	BA-M-401-T2	99.80	2.274	0.273
Bed Ash Truck Loadout System Unit #1	040	BA-F-402-T1	99.98	0.482	0.058
Bed Ash Truck Loadout System Unit #2	040	BA-F-402-T2	99.98	0.482	0.058
<b>Point Source Emissions (tpy)</b>				<b>10.968</b>	<b>1.564</b>
<b>Fugitive Emissions</b>					
Fly Ash Silo Unit #1 Unloading - Hydrators		FA-M-403-T1	0.00	0.156	0.074
Fly Ash Silo Unit #2 Unloading - Hydrators		FA-M-403-T2	0.00	0.156	0.074
Bed Ash Silo Unit #1 Unloading - Hydrators		BA-M-401-T1	0.00	0.184	0.087
Bed Ash Silo Unit #2 Unloading - Hydrators		BA-M-401-T2	0.00	0.184	0.087
Unpaved Road, By-Product Transport			75.00	2.55	0.680
<b>Fugitive Emissions (tpy)</b>				<b>3.230</b>	<b>1.002</b>
<b>Total Emissions (tpy)</b>				<b>14.198</b>	<b>2.566</b>

**Table 2**  
**Northside Generating Station Units #1 & #2 Repowering Project**  
**Ash Handling Operations - Proposed**  
**PM10 Potential to Emit Calculations**

Equipment/Activity	Emission Unit ID		Control Efficiency %	Emission Estimates PM (tpy)	Emission Estimates PM10 (tpy)
	ARMS	Permit Application			
Fly Ash Filter Separator #1 Unit #1	036	FA-F-204-T1	99.50	0.092	0.048
Fly Ash Filter Separator #2 Unit #1	036	FA-F-204-T1	99.50	0.092	0.048
Fly Ash Filter Separator #1 Unit #2	036	FA-F-204-T2	99.50	0.092	0.048
Fly Ash Filter Separator #2 Unit #2	036	FA-F-204-T2	99.50	0.092	0.048
Fly Ash Transfer & Storage System Unit #1	037	FA-F-405-T1	99.50	0.184	0.096
Fly Ash Transfer & Storage System Unit #2	037	FA-F-405-T2	99.50	0.184	0.096
Fly Ash Silo Pre-Mixer Vent Unit #1 <sup>1</sup>	051		99.80	0.604	0.070
Fly Ash Silo Pre-Mixer Vent Unit #2 <sup>1</sup>	051		99.80	0.604	0.070
Bed Ash Transfer & Storage System Unit #1	038	BA-F-401-T1	99.50	0.184	0.096
Bed Ash Transfer & Storage System Unit #2	038	BA-F-401-T2	99.50	0.184	0.096
Bed Ash Silo Mixer Vent Unit #1 <sup>1</sup>	052		99.80	1.205	0.145
Bed Ash Silo Mixer Vent Unit #2 <sup>1</sup>	052		99.80	1.205	0.145
Bed Ash Surge Hopper Bin Unit #1	053		99.50	0.184	0.096
Bed Ash Surge Hopper Bin Unit #2	053		99.50	0.184	0.096
<b>Point Source Emissions (tpy)</b>				<b>5.090</b>	<b>1.200</b>
<b>Fugitive Emissions</b>					
Unpaved Road, By-Product Transport			75.00	1.275	0.340
<b>Fugitive Emissions (tpy)</b>				<b>1.275</b>	<b>0.340</b>
<b>Total Emissions (tpy)</b>				<b>6.365</b>	<b>1.540</b>
<b>Notes</b>					
<sup>1</sup> The pre-mixer and mixer units were assumed to be similar in operation to the old hydrator units. The PM emission factor was 2.2 lb/ton, PM10 emission factor was 0.26 lb/ton, and the control efficiency on the unit was 99.80%.					
<sup>2</sup> The Unpaved Road fugitive emissions were assumed to be half of the previously permitted emissions since only four trucks will be hauling ash instead of eight trucks.					

**Attachment C**  
**Permit Application forms for Proposed New Units EU051, EU052 and**  
**EU053**

**Professional Engineer Certification**

1. Professional Engineer Name: Lloyd W.Sherrill Registration Number: <b>29138</b>
2. Professional Engineer Mailing Address: Organization/Firm: Black & Veatch Corporation Street Address 8400 Ward Parkway City: State:Zip Code: Kansas City, MO 64114
3. Professional Engineer Telephone Numbers: Telephone: (913) 458 - 7244                      Fax: (913) 458 - 2934

4. 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.*

*If the purpose of this application is to obtain a Title V source 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 schedule is submitted with this application.*

*If the purpose of this application is to obtain an air construction permit 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.*

*If the purpose of this application is to obtain an initial air operation permit or operation permit revision 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.*



*Wade Sherill*

*3/21/01*

Date

Attach any exception to certification statement.

**III. EMISSIONS UNIT INFORMATION**

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

**A. GENERAL EMISSIONS UNIT INFORMATION**

**(All Emissions Units)**

**Emissions Unit Description and Status**

<p>1. Type of Emissions Unit Addressed in This Section: (Check one)</p> <p><input type="checkbox"/> 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).</p> <p><input checked="" type="checkbox"/> 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.</p> <p><input type="checkbox"/> 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.</p>			
<p>2. Regulated or Unregulated Emissions Unit? (Check one)</p> <p><input checked="" type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.</p> <p><input type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.</p>			
<p>3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):</p> <p>NGS – Fly Ash Silo Pre-Mixer Vent (EU051)</p>			
<p>4. Emissions Unit Identification Number:</p> <p>ID: 051</p>		<p><input type="checkbox"/> No ID</p> <p><input type="checkbox"/> ID Unknown</p>	
<p>5. Emissions Unit Status Code:</p> <p>C</p>	<p>6. Initial Startup Date:</p>	<p>7. Emissions Unit Major Group SIC Code:</p> <p>49</p>	<p>8. Acid Rain Unit?</p> <p><input type="checkbox"/></p>

**Emissions Unit Information Section \_\_\_\_\_ of \_\_\_\_\_**

9. Emissions Unit Comment: (Limit to 500 Characters)

Emission Unit consists of two (2) fly ash silo pre-mixer units. Each pre-mixer services a CFB boiler.

The emissions unit includes two emission points.

**Emissions Unit Control Equipment**

1. Control Equipment/Method Description (Limit to 200 characters per device or method):

2. Control Device or Method Code(s): 017

**Emissions Unit Details**

1. Package Unit:

Manufacturer:

Model Number:

2. Generator Nameplate Rating:

3. Incinerator Information: N/A

Dwell Temperature:

°F

Dwell Time:

seconds

Incinerator Afterburner Temperature:

°F



**B. EMISSIONS UNIT CAPACITY INFORMATION  
(Regulated Emissions Units Only)**

**Emissions Unit Operating Capacity and Schedule**

1. Maximum Heat Input Rate: N/A
2. Maximum Incineration Rate:      N/A              lb/hr                      tons/day
3. Maximum Process or Throughput Rate: N/A
4. Maximum Production Rate: N/A
5. Requested Maximum Operating Schedule:
6. Operating Capacity/Schedule Comment (limit to 200 characters):  Fly Ash Silo Pre-Mixer receives ash at 31.25 TPH and 273,750 TPY

**C. EMISSIONS UNIT REGULATIONS  
(Regulated Emissions Units Only)**

**List of Applicable Regulations**

40 CFR 60, Subpart A- General Provisions	Emission unit applicable regulations hereby incorporates by reference the Title V Core List of Applicable Regulations that all Title V sources are presumptively subject.
62-297.520, Stationary Sources- Emissions Monitoring	
Ordinance Code, City of Jacksonville (JOC), Title X, Chapter 376, Odor Control	
Jacksonville Environmental Protection Board (JEPB), Rule 2 Part IX, General Pollutant	
Ordinance Code, City of Jacksonville (JOC), Title V, Chapter 362, Air and Water Pollution	

**D. EMISSION POINT (STACK/VENT) INFORMATION  
(Regulated Emissions Units Only)**

**Emission Point Description and Type**

1. Identification of Point on Plot Plan or Flow Diagram? EU051		1. Emission Point Type Code:  3	
2. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point):  Two (2) Fly Ash Silo Pre-Mixer Vents			
3. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
4. Discharge Type Code: V	6. Stack Height: 120 feet	7. Exit Diameter: 1.0 feet	
8. Exit Temperature: 150 °F	9. Actual Volumetric Flow Rate: 1,750 acfm	10. Water Vapor: N/A	
11. Maximum Dry Standard Flow Rate: N/A		12. Nonstack Emission Point Height: N/A	
13. Emission Point UTM Coordinates: Zone: 17                      East (km): 446.700                      North (km): 3,365.100			
14. Emission Point Comment (limit to 200 characters):			

**E. SEGMENT (PROCESS/FUEL) INFORMATION  
(All Emissions Units)**

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

5. Segment Description (Process/Fuel Type) (limit to 500 characters):  Fly Ash Silo Pre-Mixers for EU026 and EU027		
6. Source Classification Code (SCC): 30501222	3. SCC Units: Tons Transferred or Handled	
4. Maximum Hourly Rate: 31.25	5. Maximum Annual Rate: 273,750.00	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):    		

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

1. Segment Description (Process/Fuel Type ) (limit to 500 characters):  		
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 (limit to 200 characters):    		

**F. EMISSIONS UNIT POLLUTANTS  
(All Emissions Units)**

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	017		EL
PM10	017		EL









**III. EMISSIONS UNIT INFORMATION**

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

**A. GENERAL EMISSIONS UNIT INFORMATION**

**(All Emissions Units)**

**Emissions Unit Description and Status**

<p>1. Type of Emissions Unit Addressed in This Section: (Check one)</p> <p><input type="checkbox"/> 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).</p> <p><input checked="" type="checkbox"/> 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.</p> <p><input type="checkbox"/> 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.</p>			
<p>2. Regulated or Unregulated Emissions Unit? (Check one)</p> <p><input checked="" type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.</p> <p><input type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.</p>			
<p>4. Description of Emissions Unit Addressed in This Section (limit to 60 characters):</p> <p>NGS – Bed Ash Silo Mixer Vent (EU052)</p>			
<p>4. Emissions Unit Identification Number:</p> <p>ID: 052</p>		<p><input type="checkbox"/> No ID</p> <p><input type="checkbox"/> ID Unknown</p>	
<p>5. Emissions Unit Status Code:</p> <p>C</p>	<p>6. Initial Startup Date:</p>	<p>7. Emissions Unit Major Group SIC Code:</p> <p>49</p>	<p>8. Acid Rain Unit?</p> <p><input type="checkbox"/></p>

**Emissions Unit Information Section \_\_\_\_\_ of \_\_\_\_\_**

9. Emissions Unit Comment: (Limit to 500 Characters)

Emission Unit consists of two (2) bed ash silo mixer units. Each mixer services a CFB boiler.

The emissions unit includes two emission points.

**Emissions Unit Control Equipment**

2. Control Equipment/Method Description (Limit to 200 characters per device or method):

2. Control Device or Method Code(s): 017

**Emissions Unit Details**

1. Package Unit: Manufacturer: _____ Model Number: _____
2. Generator Nameplate Rating: _____
3. Incinerator Information: N/A Dwell Temperature: _____ °F Dwell Time: _____ seconds Incinerator Afterburner Temperature: _____ °F

**B. EMISSIONS UNIT CAPACITY INFORMATION  
(Regulated Emissions Units Only)**

**Emissions Unit Operating Capacity and Schedule**

1. Maximum Heat Input Rate: N/A
2. Maximum Incineration Rate: N/A lb/hr tons/day
3. Maximum Process or Throughput Rate: N/A
4. Maximum Production Rate: N/A
5. Requested Maximum Operating Schedule:
7. Operating Capacity/Schedule Comment (limit to 200 characters):  Bed Ash Mixer receives ash at 62.5 TPH and 547,500 TPY

**C. EMISSIONS UNIT REGULATIONS  
(Regulated Emissions Units Only)**

**List of Applicable Regulations**

40 CFR 60, Subpart A- General Provisions	Emission unit applicable regulations hereby incorporates by reference the Title V Core List of Applicable Regulations that all Title V sources are presumptively subject.
Ordinance Code, City of Jacksonville (JOC), Title X, Chapter 376, Odor Control	
Jacksonville Environmental Protection Board (JEPB), Rule 2 Part IX, General Pollutant	
Ordinance Code, City of Jacksonville (JOC), Title V, Chapter 362, Air and Water Pollution	
62-297.520, Stationary Sources- Emissions Monitoring	

**D. EMISSION POINT (STACK/VENT) INFORMATION  
(Regulated Emissions Units Only)**

**Emission Point Description and Type**

3. Identification of Point on Plot Plan or Flow Diagram? EU052		7. Emission Point Type Code:  3	
8. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point):  Two (2) Bed Ash Silo Mixer Vents			
9. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
10. Discharge Type Code: V	6. Stack Height: 120 feet	7. Exit Diameter: 1.0 feet	
8. Exit Temperature: 150 °F	9. Actual Volumetric Flow Rate: 3,500 acfm	10. Water Vapor: N/A	
11. Maximum Dry Standard Flow Rate: N/A		12. Nonstack Emission Point Height: N/A	
13. Emission Point UTM Coordinates: Zone: 17                      East (km): 446.700                      North (km): 3,365.100			
14. Emission Point Comment (limit to 200 characters):			

**E. SEGMENT (PROCESS/FUEL) INFORMATION  
(All Emissions Units)**

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

11. Segment Description (Process/Fuel Type) (limit to 500 characters):  Bed Ash Silo Mixer for EU026 and EU027		
12. Source Classification Code (SCC): 30501222		3. SCC Units: Tons Transferred or Handled
4. Maximum Hourly Rate: 62.50	5. Maximum Annual Rate: 547,500.00	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	9. Maximum % Ash:	9. Million Btu per SCC Unit:
11. Segment Comment (limit to 200 characters):    		

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

1. Segment Description (Process/Fuel Type ) (limit to 500 characters):  		
4. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	10. Maximum % Ash:	11. Million Btu per SCC Unit:
11. Segment Comment (limit to 200 characters):    		

**F. EMISSIONS UNIT POLLUTANTS  
(All Emissions Units)**

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	017		EL
PM10	017		EL







**H. VISIBLE EMISSIONS INFORMATION**  
**(Only Regulated Emissions Units Subject to a VE Limitation)**

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

1. Visible Emissions Subtype: VE05	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: 5 % Exceptional Conditions: 100 % Maximum Period of Excess Opacity Allowed: 6 min/hour	
4. Method of Compliance: Stack testing (USEPA Method 9 Visual Determination of Opacity)	
5. Visible Emissions Comment (limit to 200 characters):  Florida Air Regulation: Rule 62.296	

**III. EMISSIONS UNIT INFORMATION**

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

**A. GENERAL EMISSIONS UNIT INFORMATION**  
**(All Emissions Units)**

**Emissions Unit Description and Status**

<p>1. Type of Emissions Unit Addressed in This Section: (Check one)</p> <p><input type="checkbox"/> 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).</p> <p><input checked="" type="checkbox"/> 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.</p> <p><input type="checkbox"/> 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.</p>			
<p>2. Regulated or Unregulated Emissions Unit? (Check one)</p> <p><input checked="" type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.</p> <p><input type="checkbox"/> The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.</p>			
<p>5. Description of Emissions Unit Addressed in This Section (limit to 60 characters):</p> <p>NGS – Bed Ash Surge Hopper Bin (EU053)</p>			
<p>4. Emissions Unit Identification Number:</p> <p>ID: 053</p>		<p><input type="checkbox"/> No ID</p> <p><input type="checkbox"/> ID Unknown</p>	
<p>5. Emissions Unit Status Code:</p> <p>C</p>	<p>6. Initial Startup Date:</p>	<p>7. Emissions Unit Major Group SIC Code:</p> <p>49</p>	<p>8. Acid Rain Unit?</p> <p><input type="checkbox"/></p>

9. Emissions Unit Comment: (Limit to 500 Characters)

Emission Unit consists of two (2) bed ash surge hopper bins. Each surge hopper bin services a CFB boiler, along with an additional train between the two bed ash surge hopper bins to allow transfer of bed ash between surge hopper bins.

The emissions unit includes two emission points.

**Emissions Unit Control Equipment**

3. Control Equipment/Method Description (Limit to 200 characters per device or method):

2. Control Device or Method Code(s): 017

**Emissions Unit Details**

1. Package Unit:

Manufacturer:

Model Number:

2. Generator Nameplate Rating:

3. Incinerator Information: N/A

Dwell Temperature:

°F

Dwell Time:

seconds

Incinerator Afterburner Temperature:

°F

**B. EMISSIONS UNIT CAPACITY INFORMATION  
(Regulated Emissions Units Only)**

**Emissions Unit Operating Capacity and Schedule**

1. Maximum Heat Input Rate: N/A
2. Maximum Incineration Rate: N/A lb/hr tons/day
3. Maximum Process or Throughput Rate: N/A
4. Maximum Production Rate: N/A
5. Requested Maximum Operating Schedule:
8. Operating Capacity/Schedule Comment (limit to 200 characters):  Bed Ash Surge Hopper Bin receives ash at 31.25 TPH and 273,750 TPY

**C. EMISSIONS UNIT REGULATIONS  
(Regulated Emissions Units Only)**

**List of Applicable Regulations**

40 CFR 60, Subpart A- General Provisions	Emission unit applicable regulations hereby incorporates by reference the Title V Core List of Applicable Regulations that all Title V sources are presumptively subject.
62-297.520, Stationary Sources- Emissions Monitoring	
Ordinance Code, City of Jacksonville (JOC), Title X, Chapter 376, Odor Control	
Jacksonville Environmental Protection Board (JEPB), Rule 2 Part IX, General Pollutant	
Ordinance Code, City of Jacksonville (JOC), Title V, Chapter 362, Air and Water Pollution	



**D. EMISSION POINT (STACK/VENT) INFORMATION  
(Regulated Emissions Units Only)**

**Emission Point Description and Type**

5. Identification of Point on Plot Plan or Flow Diagram? EU053		13. Emission Point Type Code:  3	
14. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point):  Two (2) Bed Ash Surge Hopper Bins			
15. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:			
16. Discharge Type Code: V	6. Stack Height: 95 feet (estimated)	7. Exit Diameter: 1 foot	
8. Exit Temperature: 150 F	9. Actual Volumetric Flow Rate:	10. Water Vapor: N/A	
11. Maximum Dry Standard Flow Rate: N/A		12. Nonstack Emission Point Height: N/A	
13. Emission Point UTM Coordinates: Zone: 17                      East (km): 446.700                      North (km): 3,365.100			
14. Emission Point Comment (limit to 200 characters):			

**E. SEGMENT (PROCESS/FUEL) INFORMATION  
(All Emissions Units)**

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

17. Segment Description (Process/Fuel Type) (limit to 500 characters):  Bed Ash Surge Hopper Bin for EU026 and EU027		
18. Source Classification Code (SCC): 30501222		3. SCC Units: Tons Transferred or Handled
4. Maximum Hourly Rate: 31.25	5. Maximum Annual Rate: 273,750.00	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	10. Maximum % Ash:	9. Million Btu per SCC Unit:
12. Segment Comment (limit to 200 characters):     		

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

1. Segment Description (Process/Fuel Type ) (limit to 500 characters):  		
6. Source Classification Code (SCC):		3. SCC Units:
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	12. Maximum % Ash:	13. Million Btu per SCC Unit:
12. Segment Comment (limit to 200 characters):     		

**F. EMISSIONS UNIT POLLUTANTS  
(All Emissions Units)**

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	017		EL
PM10	017		EL





**H. VISIBLE EMISSIONS INFORMATION**  
**(Only Regulated Emissions Units Subject to a VE Limitation)**

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

1. Visible Emissions Subtype: VE05	2. Basis for Allowable Opacity: [X] Rule                    [ ] Other
3. Requested Allowable Opacity: Normal Conditions:                    5 %    Exceptional Conditions:                    100 % Maximum Period of Excess Opacity Allowed:                    6 min/hour	
4. Method of Compliance: Stack testing (USEPA Method 9 Visual Determination of Opacity)	
5. Visible Emissions Comment (limit to 200 characters):  Florida Air Regulation: Rule 62.296	

**Attachment D**  
**Proposed Changes to Permit Conditions**

**Proposed Changes to Permit Condition 24 of Construction Permit 0310045-003-AC, PSD-FL-265.**

24. Standards: The materials handling sources at Northside shall be regulated as follows, and the emission limits and standards shall apply upon completion of the initial compliance tests for each of the units or activities.

(a) The following materials handling sources shall be equipped with fabric filter controls and visible emissions shall not exceed 5 percent opacity:

- Crusher house (EU29)
- Boiler fuel silos (EU31)
- Limestone receiving bins (EU32)
- Limestone crusher conveyor transfer (EU34)
- Limestone feed silos (EU35)
- Fly ash waste bins (EU36)
- Fly ash transfer and storage systems (EU37)
- Bed ash transfer and storage systems (EU38)
- ~~Bed ash truck loadout systems (EU40)~~
- ~~Fly ash truck loadout systems (EU41)~~
- Pebble lime silo (EU42)
- Fly ash silo pre-mixers (EU51)
- Bed ash silo mixers (EU52)
- Bed ash surge hoppers (EU53)

(b) The following materials handling sources shall use wet suppression, water spray, coverings, and/or conditioned materials to control particulate emissions as needed, and visible emissions shall not exceed 5 percent opacity:

- Transfer towers (EU28c, EU28g, EU28I, EU28o and EU28q)
- Coal and petroleum coke storage building (EU28h)
- Stacker/reclaimers (EU28)
- Limestone lowering well (EU28d)
- Conveyors (EU28)
- ~~Ash hydrator loadouts (EU28r)~~

(c) The following materials handling sources shall use wet suppression, water spray, partial enclosures, and/or conditioned materials to control particulate emissions as needed, and visible emissions shall not exceed 10 percent opacity:

- Northside dock ship unloading operations – shiphold and receiving hoppers (EU28a)
- Northside dock receiving conveyor (EU28a)
- Limestone storage pile (EU28p)
- Limestone reclaim hopper (EU28p)

(d) ~~The fly ash and bed ash silo hydrators (EU39) shall use a venturi scrubber and visible emissions shall not exceed 5 percent opacity.~~



- (e) The limestone dryer/mill building shall have no visible emissions (other than from a baghouse vent).
- (f) The maximum particulate matter emissions from the following operations shall not exceed 0.01 grains per dry standard cubic foot:

- Limestone receiving bins (EU32)
- Limestone crusher conveyor transfers (EU34)
- Limestone feed silos (EU34)

**Proposed Changes to Permit Condition 41 of Construction Permit 0310045-003-AC, PSD-FL-265.**

Other				
Fly Ash Waste Bin – Baghouse Exhaust (EU36)	9	IVE – 30 min RVE – 30 min	I & R	Ash
Fly Ash Silos – Baghouse Exhaust (EU37)	9	IVE – 30 min RVE – 30 min	I & R	Ash
Bed Ash Silos – Baghouse Exhaust (EU38)	9	IVE – 30 min. RVE – 30 min	I & R	Ash
Fly Ash Hydrators – Scrubber Exhaust (15 min/hydrator) (EU39)	9	IVE – 60 min RVE – 60 min	I & R	Ash
Bed Ash Hydrators – Scrubber Exhaust (15 min/hydrator) (EU39)	9	IVE – 30 min RVE – 30 min	I & R	Ash
<del>Fly Ash Truck Loadout – Baghouse Exhaust (EU41)</del>	<del>9</del>	<del>IVE – 30 min RVE – 30 min</del>	<del>I &amp; R</del>	<del>Ash</del>
<del>Bed Ash Truck Loadout – Baghouse Exhaust (EU40)</del>	<del>9</del>	<del>IVE – 30 min RVE – 30 min</del>	<del>I &amp; R</del>	<del>Ash</del>
Pebble Lime Silo – Baghouse Exhaust (EU42)	9	IVE – 30 min. RVE – 30 min	I & R	Ash
Fly ash silo pre-mixers (EU51)	9	IVE – 60 min RVE – 60 min	I & R	Ash
Bed ash silo mixers (EU52)	9	IVE – 30 min RVE – 30 min	I & R	Ash
Bed ash surge hoppers (EU53)	9	IVE – 60 min RVE – 60 min	I & R	Ash