



Permit Application

AIR CONSTRUCTION PERMIT APPLICATION FOR DC-3 DUST COLLECTOR REMOVAL

Northside Generating Station and
St. Johns River Power Park

Prepared For: JEA
21 West Church Street
Jacksonville, FL 32202

Submitted By: Golder Associates Inc.
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Distribution: 1 copy – JEA
1 copy – Golder Associates Inc.

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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: JEA	
2. Site Name: Northside Generating Station (NGS) & St. Johns River Power Park (SJRPP)	
3. Facility Identification Number: 0310045	
4. Facility Location... Street Address or Other Locator: 4377 Heckscher Drive City: Jacksonville County: Duval Zip Code: 32226	
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. Facility Contact Name: Daniel (Nay) Hlaing, P.E., Environmental (Air Quality) Engineer	
2. Facility Contact Mailing Address... Organization/Firm: JEA Street Address: 21 West Church Street, T-8 City: Jacksonville State: FL Zip Code: 32202	
3. Facility Contact Telephone Numbers: Telephone: (904) 665-6247 ext. Fax: (904) 665-7376	
4. Facility Contact E-mail Address: hlaidn@jea.com	

Application Processing Information (DEP Use)

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

APPLICATION INFORMATION

Purpose of Application

This application for air permit is 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.

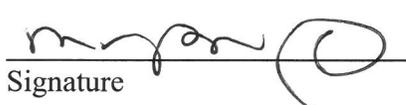
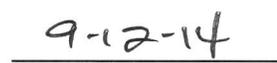
Application Comment

Application for an air construction permit to authorize removal of the fabric filter (DC-3) in the fuel handling building (EU 023I) associated with the SJRPP Fuel and Limestone Handling and Storage Operations (EU 023). This baghouse is not needed for PM control since the transfer points in the building are mostly enclosed and the characteristics of the coal do not generate large quantities of fugitive dust. JEA is also proposing to install water mist spray bars at several transfer points within the building, which were identified as the important contributors of fugitive emissions within the building during a recent industrial hygiene/process safety inspection. JEA will also employ regular house cleaning measures and best management practices to minimize generation of fugitive dust.

APPLICATION INFORMATION

Owner/Authorized Representative Statement

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

1. Owner/Authorized Representative Name : Michael J. Brost, VP/GM, Electric Systems
2. Owner/Authorized Representative Mailing Address... Organization/Firm: JEA Street Address: 21 West Church Street, T-16 City: Jacksonville State: FL Zip Code: 33202
3. Owner/Authorized Representative Telephone Numbers... Telephone: (904) 665-7547 ext. Fax: ()
4. Owner/Authorized Representative E-mail Address: brosmj@jea.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>  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 or CAIR source.			
3. Application Responsible Official Mailing Address...			
Organization/Firm:			
Street Address:			
City:	State:	Zip Code:	
4. Application Responsible Official Telephone Numbers...			
Telephone: ()	- ext.	Fax: ()	-
5. Application Responsible Official E-mail Address:			
6. Application Responsible Official Certification:			
<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: 6026 NW 1st Place City: Gainesville State: FL Zip Code: 32607
3. Professional Engineer Telephone Numbers... Telephone: (352) 336-5600 ext. 21156 Fax: (352) 336-6603
4. Professional Engineer E-mail Address: Ken_Kosky@golder.com
5. Professional Engineer Statement: <i>I, the undersigned, hereby certify, except as particularly noted herein*, that:</i> (1) <i>To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and</i> (2) <i>To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.</i> (3) <i>If the purpose of this application is to obtain a Title V air operation permit (check here <input type="checkbox"/> , if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.</i> (4) <i>If the purpose of this application is to obtain an air construction permit (check here <input checked="" type="checkbox"/> , if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here <input type="checkbox"/> , if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.</i> (5) <i>If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here <input type="checkbox"/> , if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.</i>  Signature: _____ Date: <u>9/15/14</u> (seal) 

* Attach any exception to certification statement.

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

PROJECT DESCRIPTION

PROJECT DESCRIPTION

JEA is seeking authorization from the Florida Department of Environmental Protection (FDEP) to remove the fabric filter (DC-3) in the fuel handling building (EU 023I) associated with the SJRPP Fuel and Limestone Handling and Storage Operations (EU 023). JEA has determined that this baghouse is not needed for particulate matter (PM) control since the transfer points in the building are mostly enclosed and the characteristics of the coal do not generate large quantities of fugitive dust. Also, this baghouse is located on the top of the building and difficult to service. As a result, JEA is requesting removal of the baghouse. JEA is also proposing to install water mist spray bars at several transfer points within the building, which were identified as the important contributors of fugitive emissions within the building during a recent industrial hygiene/process safety inspection. JEA will also employ regular house cleaning measures and best management practices to minimize generation of fugitive dust and maintain the low level.

The fabric filter to be removed is identified as Emission Unit 023I Fuel Handling Building with Fabric Filter (DC-3) in Title V Permit No. 0310045-039-AV. Currently, there are six transfer points and two coal crushers within the fuel handling building that are serviced by this fabric filter. However, the nature of the coal and transfer points within the fuel handling building results in minimum fugitive emissions. This building is almost entirely enclosed and most of the equipment within the building is enclosed or partially enclosed that limits fugitive emissions. PM is effectively controlled through the existing enclosed system rendering the fabric filter unnecessary. In addition, water sprays will be available that can further limit fugitive emissions. As a result, the fugitive emissions that can be emitted are mitigated without the need of the baghouse.

Table 1 presents emissions from the fuel handling building fabric filter (DC03) authorized in the current Title V Permit and emission calculations without the fabric filter using EPA's AP-42 Emission Factors for materials handling and storage operations. The existing emissions for the fuel handling building fabric filter (DC-3) are listed in Table 6 of Appendix SJRPP to the Title V Permit and PSD-FL-010(C). The authorized emission is 0.24 pounds per hour (lb/hr) and was based on 99.5 percent removal using coal with a moisture content of 5 percent. These assumptions were included in the SJRPP PSD Permit Update, Materials Handling and Storage Operations May 3, 1999 that updated Table 6.

For calculating emissions without the fabric filter, 87.7 percent control efficiency was assumed based on a wind speed of 1 mph (reduced wind speed due to building enclosure) through the building in contrast to the 5 mph factor in the AP-42 Emission Factor for Batch Drop Processes (Equation 1 of AP-42 Section 13.2.4). The AP-42 emission factor (Section 11.19.2) for rock crushing was used to estimate emissions for the coal crushing. The transfer and crushing of coal is almost entirely enclosed and shielded directly from the wind with most of the equipment enclosed. The emission calculations without the fabric filter

shows the maximum potential PM emission rate is less than 2.5 tons/year which is less than the criteria for insignificant activities in FDEP Rule 62-213.430(6)(b)3.b., F.A.C. Moreover, the actual moisture content in the coal is approximately 12 percent and even higher which significantly reduces fugitive emissions relative to the potential emissions (the batch drop emission factor is reduced by about 70 percent using a moisture content of 12 percent).

It should also be noted that the magnitude of PM emissions in Table 1 is less than that for a generic exemption from permitting pursuant to Chapter 62-210.300(3)(b), F.A.C. and would otherwise be considered an insignificant activity.

TABLE

TABLE 1 Emission Calculations

August 2014

FACILITY AND SOURCE DESCRIPTION

Facility: St. Johns River Power Park (SJRPP)
Emission Source Description: Dust Collector for Transfer House (Fuel Handling Bldg.)
Title V Permit ID/EU ID: 0310045-039-AV / EU0231 (DC-3)

EMISSIONS ESTIMATION EQUATIONS

Transfer Point Emissions w/o DC-3 (lb/hr) = k x 0.0032 x Material Transferred (tph) x (U/5)^{1.3} / (M/2)^{1.4} x [(100 - CF)/100] x A
Transfer Point Emissions w/o DC-3 (tpy) = k x 0.0032 x Material Transferred (tpy) x (U/5)^{1.3} / (M/2)^{1.4} x [(100 - CF)/100] x (1 ton/2000 lb)
Source: Section 13.2.4 - Aggregate Handling and Storage Piles, AP-42, November 2006.

Crusher Emissions w/o DC-3 (lb/hr) = EF (lb/ton) x Material Crushed (tph) x [(100 - CE)/100]
Crusher Emissions w/o DC-3 (tpy) = EF (lb/ton) x Material Crushed (tpy) x [(100 - CE)/100] x (1 ton/2000 lb)

Crusher Emission Factors (lb/ton) based on AP-42 Table 11.19.2-2 for Tertiary Rock Crushing. PM = 0.0054; PM₁₀ = 0.0024; PM_{2.5} = 0.0004 based on 15% of PM as PM from WRAP Fugitive Dust Handbook, Section 11.1 (Mineral Product Industry), September 2006.

INPUT DATA

Parameter	Value	Units	Source
Mean Wind Speed	8.4	mph	Average Wind Speed Jacksonville from NWS.
PM Size Multiplier, k:	0.74	for PM ₃₀	AP-42, Sec. 13.2.4; 11/06.
	0.35	for PM ₁₀	AP-42, Sec. 13.2.4; 11/06.
	0.053	for PM _{2.5}	AP-42, Sec. 13.2.4; 11/06.
Coal Crushing Emission Factor (EF):	0.0054	lb/ton for PM	AP-42, Sec. 11.19.2-2; 8/04; PM ₁₀ = 0.0024, PM _{2.5} = 0.0004
Coal Moisture Content (M):	5	% wt. (minimum)	PSD-FL-C-010(C) appli
Control Efficiency (CE) for Enclosure:	87.7	% (minimum)	Assumes 1.0 mph and wind speed factor in batch drop equation
Existing DC-3 emissions	0.237	lb/hr	Table 6 Title V Permit

Emission Points in Transfer House

Potential Coal Throughput

Equipment	Description	Potential Coal Throughput		Basis (1)
		(ton/hr)	(ton/yr)	
C-2	Conveyor from Rotary Car Dumper	4,000	3,229,286	6,144 MMBtu/hr; 11,000 Btu/lb, 66% of total
C-3	Conveyor from Emergency Reclaim Hoppers	2,000	538,214	6,144 MMBtu/hr; 11,000 Btu/lb, 23% of total
C-4a	Conveyor to Stacker/Reclaimer	4,000	1,125,357	6,144 MMBtu/hr; 11,000 Btu/lb, 11% of total
C-4b	Conveyor from Stacker/Reclaimer	2,000	562,679	Assumes 50% of C-4a
Crushers	Crushers (2)	2,500	4,892,858	Sum of C-2, C-3 and C-4a
C-7	Conveyor to Tripper Floor	1,250	2,446,429	50% of total to Crushers
C-8	Conveyor to Tripper Floor	1,250	2,446,429	50% of total to Crushers

Notes: (1) annual throughput (ton/yr) was estimated by assuming two boilers operating at maximum capacity of 6144 MMBtu/hr, with an average coal heating value of 11,000 Btu/lb; Storage capacity is assumed to be 100,000 tons. (2) Enclosures include wind guards around the transfer points as well as the transfer building. (3) Water sprays also exist and can be used as needed.

EMISSIONS CALCULATIONS

Potential Emissions without DC-3

Emission Points	lb/hr			tpy		
	PM	PM ₁₀	PM _{2.5}	PM	PM ₁₀	PM _{2.5}
C-2	0.6362	0.3009	0.0456	0.257	0.121	0.018
C-3	0.3181	0.1504	0.0228	0.043	0.020	0.003
C-4a	0.6362	0.3009	0.0456	0.089	0.042	0.006
C-4b	0.3181	0.1504	0.0228	0.045	0.021	0.003
Crushers	1.6660	0.7404	0.1111	1.630	0.725	0.109
C-7	0.1988	0.0940	0.0142	0.195	0.092	0.014
C-8	0.1988	0.0940	0.0142	0.195	0.092	0.014
Totals	2.6998	1.2294	0.1851	2.45	1.11	0.17

Potential Emissions with DC-3

Emission Point	lb/hr			tpy		
	PM	PM ₁₀	PM _{2.5}	PM	PM ₁₀	PM _{2.5}
DC-3	0.24	0.11	0.02	0.15	0.07	0.01

Note: Potential Emissions with DC-3 based on SJRPP Materials Handling and Storage Operations PSD Permit Update, May 3, 1999 (basis for PSD-FL-010(C))

DATA CONTROL

Calculated by: Kennard F. Kosky, P.E. **Date:** 8/8/2014
Reviewed by: Sal Mohammad, P.E. **Date:** 8/8/2014