

21 West Church Street  
Jacksonville, Florida 32202-3139



April 17, 2000

RECEIVED

APR 19 2000

BUREAU OF AIR REGULATION

Mr. Syed Arif, P.E.  
Permit Engineer  
Department of Environmental Protection  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, FL 32399-2400

RE: Northside Generating Station Combustion Turbines  
Kennedy Generating Station Combustion Turbines  
Fogging System Construction Permits

Dear Mr. Arif:

Per our conversation of this date, the proof of publications for the above referenced projects were submitted after the required seven days due to a misinterpretation of this requirement.

If you have any questions with regard to this matter, please contact me at (904) 665-6247.

Sincerely,

A handwritten signature in black ink, appearing to read 'N. Bert Gianazza', written in a cursive style.

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

JACKSONVILLE ELECTRIC AUTHORITY  
 ATTN: PAUL SCOTT  
 21 W CHURCH ST  
 JACKSONVILLE FL 32202

REFERENCE: 934335  
 R18479 Public Notice of Int  
 State of Florida  
 County of Duval

Before the undersigned attorney personally appeared Steven L. Smith who on oath says he is a Legal Advertising Representative of The Florida Times-Union, a daily newspaper published in Jacksonville in Duval County, Florida; that the attached copy of advertisement is a legal ad published in the Florida Times-Union; that further says that the Florida Times-Union is a newspaper published in Jacksonville, in Duval County, Florida, and that the newspaper has heretofore been continuously published in Duval County, Florida each day, has been entered as second class mail matter at the post office in Jacksonville, in Duval County, Florida for a period of one year preceding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission, or refund for the purpose of securing this advertisement for publication in said newspaper.

PUBLISHED ON: 04/01

FILED ON: 04/01/00

Name: Steven L. Smith Title: Legal Advertising Representative  
 In testimony whereof, I have hereunto set my hand and affixed my official seal, the day and year aforesaid.

NOTARY  
 JAMES L. LINDSAY  
 Notary Public  
 Commission # 00347806  
 Expires Jan 1, 2000  
 Tallahassee, Florida

RECEIVED  
 APR 14 2000

BUREAU OF AIR REGULATION

**PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT**  
 STATE OF FLORIDA  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
 DEP File no. 0310045-004-AC  
 Jacksonville Electric Authority  
 Northside Generating Station  
 Units 006 - 009 Inlet Fogger Project  
 Duval County

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit to Jacksonville Electric Authority (JEA). The permit is to install foggers at the compressor inlet of four 56-megawatt, No. 2 fuel oil-fired General Electric Model MS7000 combustion turbine-electrical generators at the Northside Generating station in Duval County. A Best Available Control Technology (BACT) determination was not required pursuant to Rule 62-212.400, F.A.C. The applicant's name and address are Jacksonville Electric Authority, 21 West Church Street, Jacksonville, Florida 32202.

These units normally achieve their maximum rated output on cold days because the greater compressor inlet density allows greater throughput in the rotor or expansion section of the combustion turbine. The maximum power output is lower on hot days because of the lower compressor inlet density. The foggers increase hot-day power input by approximately 2.5 MW through evaporative cooling of the compressor inlet air. The foggers provide no benefit on very humid or cold days and will not be used under those conditions. Maximum power production and emissions will continue to occur at low temperature conditions with the foggers turned off. The result is that maximum hourly emissions will not increase although actual annual emissions will increase because more fuel will be used on hot, relatively dry days.

The number of days which the foggers can economically operate probably limits emissions increases to levels below significance for the purpose of PSD applicability. JEA, however, proposes enforceable conditions to insure non-applicability. Each unit is already allowed to operate continuously (8760 per year) but typically operates less than 400 hours. The foggers may not be used more than 1000 hours at each unit, or 4,000 hours collectively, but will typically operate for fewer hours than allowed. The units are not presently subject of 40CFR60, Subpart GG, Standards of Performance for Stationary Gas Turbines. The Department has preliminarily determined that the project will not trigger applicability of Subpart GG, but has requested that EPA make the final determination on the matter.

The maximum increase in annual emissions caused by this project in tons per year is summarized below along with the PSD-significant levels.

Pollutants Annual	Emission Increase	PSD Significant Levels
PM <sub>10</sub>	2	25/15
SO <sub>2</sub>	31	40
NO <sub>x</sub>	0	40
VOC	1	40
CO	0	100

An air quality impact analysis was not required or conducted. No significant impacts are expected to occur as a result of this project. It will not cause or contribute to a violation of an ambient air quality standard or increment.

The Department will issue the FINAL permit with the attached conditions unless a response received in accordance with the following procedures results in a different decision or significant change of terms or conditions.

The Department will accept written comments concerning the proposed permit issuance action for a period of fourteen (14) days from the date of publication of "Public Notice of Intent to Issue Air Construction Permit." Written comments should be provided to the Department's Bureau of Air Regulation at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, FL 32399-2400. Any written comments filed shall be made available for public inspection. If written comments received result in a significant change in the proposed agency action, the Department shall revise the proposed permit and require, if applicable, another Public Notice.

The Department will issue the permit with the attached conditions unless a timely petition for an administrative hearing is filed pursuant to Sections 120.569 and 120.57 F.S., before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below. Mediation is not available in this proceeding.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station # 35, Tallahassee, Florida, 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this notice of intent. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3) of the Florida Statutes must be filed within fourteen days of publication of the public notice or within fourteen days of receipt of this notice of intent, whichever occurs first. Under Section 120.60(3), however, any person who asked the Department for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205 of the Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner, the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interest will be affected by the agency determination; (c) A statement of how and when petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and (g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts upon which the department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

A complete project file is available for the public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through

Department of Environmental Protection Bureau of Air Regulation 111 S. Magnolia Drive, Suite 4 Tallahassee, Florida 32301 Telephone: 850/488-0114 Fax: 850/822-6879	Department of Environmental Protection Northeast District Office 7825 Baymeadows Way, Suite 200B Jacksonville, Florida 32256-7590 Telephone: 904/448-4300 Fax: 904/448-4366	Jacksonville Regulatory and Environmental Services Department Suite 225 Jacksonville, Florida 32202 Telephone: 904/630-3484 Fax: 904-630-6338
--	--	---

The complete project file includes the application, technical evaluation, Draft Permit, and the information submitted by the responsible official, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Administrator, New Resource Review Section at 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301, or call 850-448-0114, for additional information.

**Golder Associates Inc.**

6241 NW 23rd Street, Suite 500  
Gainesville, FL 32653-1500  
Telephone (352) 336-5600  
Fax (352) 336-6603

**RECEIVED**

FEB 28 2000



BUREAU OF AIR REGULATION

February 17, 2000

9937578a

A.A. Linero, P.E., Administrator  
New Source Review Section  
Florida Department of Environmental Protection  
2600 Blair Stone Road  
Tallahassee, Florida 32399

RE: JEA KENNEDY AND NORTHSIDE FOGGING SYSTEMS  
DEP FILE NO. 0310045-004-AC  
INFORMATION REQUEST

Attention: Mr. Syed Arif, P.E.

Dear Syed:

On behalf of JEA, this correspondence provides information requested in the Department's January 31, 2000 correspondence regarding the Kennedy and Northside Fogging Systems. The information is itemized in the same manner requested.

1. **Calculations of Emissions:** Please find attached an Excel spreadsheet for both the Kennedy and Northside applications. The tables on each sheet labeled Northside and Kennedy are identical to Table 2 of the applications. For the application regarding the fogger installation on the Kennedy turbines, the information on page 5 of the text was incorrect and reflected the information for the Northside facility. The emissions increase for the Kennedy turbines would be 1.92 tons/year for PM, 25.55 tons/year for SO<sub>2</sub>, and 0.85 tons/year for VOC. The calculation for each facility are identical and based on AP-42 emission factors for PM and VOCs; the sulfur limit in the Title V applications of 0.5 percent was the basis for the SO<sub>2</sub> emission calculations. The fogger test indicated no increase in NO<sub>x</sub> or CO. As noted in the application, the basis of the maximum potential emission increases is the temperature decrease, times the heat input change from the turbine data per °F, times the emission factor, times the hours per year and divided by 2,000 lb per ton. For PM emissions for the Kennedy turbines the emissions as calculated as follows:  
 $11 \text{ degrees F} \times 3.1 \text{ mmBtu/hr} \times 0.038 \text{ lb PM/mmBtu} \times 1,000 \text{ hours/year} \times \text{ton}/2000\text{lb} = 0.64 \text{ tons/year (1.92 tons/year for 3 turbines)}$ .
2. **PSD Potential Emissions:** The applications were based on the premise that the only physical change or change in the method of operation will be when the foggers are operated. This will lower the turbine inlet temperature and result in both a power increase and a improvement in heat rate. The latter results in more efficient operation and less emissions per unit of output (i.e., MW). While there is an increase in emissions, the increase is no different from when the turbine naturally experiences such ambient conditions (i.e., lower temperatures). During periods when the foggers are not operated, there is no physical or operational change

resulting in an increase in annual emissions. The basis of the maximum potential emissions was, therefore, on the physical change during fogger operation and not other conditions, which the turbine operates. This also is a worst case estimate since the assumption of a 11 °F average increase is conservative and 1,000 hours were assumed. The proposed operating condition of 1,000 hours per year is the same approach that was used for the Florida Power & Light Company's Fort Myers' combustion turbines. This project involved 12 similar peaking units and was approved by the Department with EPA Region IV review.

3. Potential Increase in Emissions: The emissions increase in the applications represent a maximum "worst case" potential emissions, which are less than the PSD significant emission rates. As noted in Item 2 above, the only physical or operational change is when the foggers operate. During certain times the foggers will not operate and the units would not operate any different than currently permitted by the Department.

Please call if there are any further questions. Your assistance is appreciated.

Sincerely,



Kennard F. Kosky, P.E.  
Principal

Enclosures

KFK/jkw

cc: Bert Gianazza, JEA  
Walter Bussells, JEA  
J. Manning, RESD ✓

\\GATORBAIT\DP\Projects\99\9937\9937578a\02a\02tr.doc

CC: NED

**Table 2** Emission Estimates of the Kennedy Generating Station Simple Cycle Combustion Turbines with Inlet Air Cooling System with Direct Water Spray Inlet Fogging (No. 2 fuel Oil Combustion).

**Performance Basis**

Temperature Decrease	°F (1)	11	
Power Increase		6.30%	GE Curves @ 80 °F
Heat Rate Decrease		1.78%	GE Curves @ 80 °F
Heat Input Increase		4.27%	GE Curves Average
Heat Input Change	mmBtu/°F	3.1	GE Curves Average
Hours/year		1,000 (2)	

**Pollutants Units Emissions(3) Comments**

PM	Ib/MMBtu	0.038	AP-42 Section 3.1 per machine
	TPY	0.64	
NO <sub>x</sub>	Ib/MMBtu	0	No Increase in Ib/hr emission rate per machine
	TPY	0.00	
SO <sub>2</sub>	Ib/MMBtu	0.505	AP-42 Section 3.1 (S=0.5%) per machine
	TPY	8.52	
CO	Ib/MMBtu	0	No Increase in Ib/hr emission rate per machine
	TPY	0.00	
VOC	Ib/MMBtu	0.017	AP-42 Section 3.1 per machine
	TPY	0.29	

Legend - TPY: tons per year

- (1) Temperature decrease is average temperature differential of ambient temperature to compressor inlet temperature utilizing inlet fogger during tests.
- (2) Hours of fogger operation based on estimate of 8 hours per day and 125 days per year.
- (3) Emission factor references - Title V Permit No. 0310045-002-AV, EPA AP-42 Emission Factors Section 3.1 "Stationary Gas Turbines".

**Table 2** Emission Estimates of the Northside Generating Station Simple Cycle Combustion Turbines with Inlet Air Cooling System with Direct Water Spray Inlet Fogging (No. 2 fuel Oil Combustion).

**Performance Basis**

Temperature Decrease	°F (1)	11	
Power Increase		4.88%	GE Curves @ 80 °F
Heat Rate Decrease		0.55%	GE Curves @ 80 °F
Heat Input Increase		4.34%	GE Curves Average
Heat Input Change	mmBtu/ °F	2.8	GE Curves Average
Hours/year		1,000 (2)	

**Pollutants Units Emissions (3) Comments**

PM	lb/MMBtu	0.038	AP-42 Section 3.1 per machine
	TPY	0.58	
NO <sub>x</sub>	lb/MMBtu	0	No Increase in lb/hr emission rate per machine
	TPY	0.00	
SO <sub>2</sub>	lb/MMBtu	0.505	AP-42 Section 3.1 (S=0.5%) per machine
	TPY	7.73	
CO	lb/MMBtu	0	No Increase in lb/hr emission rate per machine
	TPY	0.00	
VOC	lb/MMBtu	0.017	AP-42 Section 3.1 per machine
	TPY	0.26	

Legend - TPY: tons per year

(1) Temperature decrease is average temperature differential of ambient temperature to compressor inlet temperature utilizing inlet fogger during tests.

(2) Hours of fogger operation based on estimate of 8 hours per day and 125 days per year.

(3) Emission factor references - Title V Permit No. 0310045-002-AV, EPA AP-42 Emission Factors Section 3.1 "Stationary Gas Turbines".

Fold at line over top of envelope to the right of the return address

Is your RETURN ADDRESS completed on the reverse side?

**SENDER:**

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- 1.  Addressee's Address
- 2.  Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:  
 Walter P. Russells, CEO  
 JEA  
 21 W. Church St.  
 Jacksonville, FL  
 32202

4a. Article Number  
 Z 031 391 928

4b. Service Type  
 Registered  Certified  
 Express Mail  Insured  
 Return Receipt for Merchandise  COD

7. Date of Delivery  
 3.3.00

5. Received By: (Print Name)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature: (Addressee or Agent)  
 W. P. Russells

PS Form 3811, December 1994

102595-98-8-0229

Domestic Return Receipt

Thank you for using Return Receipt Service.

Z 031 391 928

US Postal Service  
**Receipt for Certified Mail**  
 No Insurance Coverage Provided.  
 Do not use for International Mail (See reverse)

Sent to Walter Russells	
Street & Number JEA	
Post Office, State, & ZIP Code JAX FL	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	(Not on side)
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date	0310945-004 AC 2-1-00

PS Form 3800 April 1995



Jeb Bush  
Governor

# Department of Environmental Protection

Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

David B. Struhs  
Secretary

January 31, 2000

## CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Walter P. Bussells, CEO and Managing  
Director

Jacksonville Electric Authority  
21 West Church Street  
Jacksonville, Florida 32202

Re: DEP File No. 0310045-004-AC  
Northside Plant, Spray Fogging Systems

Dear Mr. Bussells:

The Department has received the application on January 3, 2000 for the installation of direct water spray fogging systems in the inlet ducts of the existing 4 simple cycle combustion turbines at the above referenced facility in Duval County. Based on our initial review of the proposed project, we have determined that additional information is needed in order to continue processing this application package. Please submit the information requested below to the Department's Bureau of Air Regulation:

1. Please submit Table 2 as referenced in the application on Page 4, Part II. The table provides a summary of the operating conditions and emission increases resulting from fogging.
2. Please provide the necessary calculations to support the maximum annual emissions numbers for PM, SO<sub>2</sub>, and VOC as outlined on Page 5, Part II of the application.
3. Please indicate if the PSD analysis for increase in annual potential emissions were done assuming that the past actual emissions were zero. There are no calculations available in the application for the determination of past actual emissions. Normally, the PSD applicability review requires a comparison of past actual emissions with future potential emissions.
4. Please indicate if the 1000 hrs/yr fogging operation for each of the 4 combustion turbines is in excess of the past 2-year average base operation for the same units. Will there be an increase in the base operation of these units compared to their past 2-year average. If so, was that taken into account when determining the increase in annual potential emissions on Page 5, Part II of the application.

*"Protect, Conserve and Manage Florida's Environment and Natural Resources"*

*Printed on recycled paper.*



The Department will resume processing this application after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. A new certification statement by the authorized representative or responsible official must accompany any material changes to the application. Rule 62-4.055(1), F.A.C. now requires applicants to respond to requests for information within 90 days. If there are any questions, please call Syed Arif, P.E. at (850) 921-9528.

Sincerely,

A handwritten signature in cursive script, appearing to read "A.A. Linero", followed by the date "1/31".

A.A. Linero, P.E. Administrator  
New Source Review Section

AAL/sa

cc: Ken Kosky, Golder Associates, Inc.  
Bert Gianazza, JEA  
C. Kirts, DEP-NED  
J. Manning, RESD