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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

March 27, 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 Units 006-009  
Inlet Foggers


Dear Mr. Bussells:

Enclosed is one copy of the Draft Permit and Technical Evaluation and Preliminary Determination, for the referenced project in Duval County. The Department's Intent to Issue Air Construction Permit and the "PUBLIC NOTICE OF INTENT TO ISSUE AIR CONSTRUCTION PERMIT" are also included.

The "Public Notice of Intent to Issue Air Construction Permit" must be published one time only, as soon as possible, the legal advertisement section of a newspaper of general circulation in the area affected, pursuant to the requirements of Chapter 50, Florida Statutes. Proof of publication, i.e., newspaper affidavit, must be provided to the Department's Bureau of Air Regulation office within seven days of publication. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit.

Please submit any written comments you wish to have considered concerning the Department's proposed action to A. A. Linero, P.E., Administrator, New Source Review Section at the above letterhead address. If you have any questions, please call Syed Arif, P.E. at 850/921-9528.

Sincerely,

  
for C. H. Fancy, P.E., Chief,  
Bureau of Air Regulation

CHF/sa

Enclosures

"More Protection. Less Process"

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In the Matter of an  
Application for Permit by:

Mr. Walter P. Bussells, CEO and Managing Director  
Jacksonville Electric Authority  
21 West Church Street  
Jacksonville, Florida 32202

DEP File No. 0310045-004-AC  
Inlet Foggers Installation  
Simple Cycle Units 006-009  
Northside Plant

### INTENT TO ISSUE AIR CONSTRUCTION PERMIT

The Department of Environmental Protection (Department) gives notice of its intent to issue an air construction permit (copy of DRAFT Permit attached) for the proposed project, detailed in the application specified above and the attached Technical Evaluation and Preliminary Determination, for the reasons stated below.

The applicant, Jacksonville Electric Authority (JEA), applied on January 3, 2000 to the Department to add inlet foggers to four simple cycle combustion turbines (Units 006 thru 009) at the Northside Plant in Duval County.

The Department has permitting jurisdiction under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-210, and 62-212. The above actions are not exempt from permitting procedures. The Department has determined that an air construction permit is required to conduct the work.

The Department intends to issue this air construction permit based on the belief that reasonable assurances have been provided to indicate that operation of these emission units will not adversely impact air quality, and the emission units will comply with all appropriate provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297, F.A.C.

Pursuant to Section 403.815, F.S., and Rule 62-110.106(7)(a)1., F.A.C., you (the applicant) are required to publish at your own expense the enclosed "Public Notice of Intent to Issue Air Construction Permit." The notice shall be published one time only in the legal advertisement section of a newspaper of general circulation in the area affected. For the purpose of these rules, "publication in a newspaper of general circulation in the area affected" means publication in a newspaper meeting the requirements of Sections 50.011 and 50.031, F.S., in the county where the activity is to take place. Where there is more than one newspaper of general circulation in the county, the newspaper used must be one with significant circulation in the area that may be affected by the permit. If you are uncertain that a newspaper meets these requirements, please contact the Department at the address or telephone number listed below. The applicant shall provide proof of publication to the Department's Bureau of Air Regulation, at 2600 Blair Stone Road, Mail Station #5505, Tallahassee, Florida 32399-2400 (Telephone: 850/488-0114; Fax 850/ 922-6979). The Department suggests that you publish the notice within thirty days of receipt of this letter. You must provide proof of publication within seven days of publication, pursuant to Rule 62-110.106(5), F.A.C. No permitting action for which published notice is required shall be granted until proof of publication of notice is made by furnishing a uniform affidavit in substantially the form prescribed in section 50.051, F.S. to the office of the Department issuing the permit or other authorization. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rules 62-110.106(9) & (11), F.A.C.

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.

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 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 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 interests 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. Mediation is not available in this proceeding.

In addition to the above, a person subject to regulation has a right to apply for a variance from or waiver of the requirements of particular rules, on certain conditions, under Section 120.542 F.S. The relief provided by this state statute applies only to state rules, not statutes, and not to any federal regulatory requirements. Applying for a variance or waiver does not substitute or extend the time for filing a petition for an administrative hearing or exercising any other right that a person may have in relation to the action proposed in this notice of intent.


The application for a variance or waiver is made by filing a petition with the Office of General Counsel of the Department, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. The petition must specify the following information: (a) The name, address, and telephone number of the petitioner; (b) The name, address, and telephone number of the attorney or qualified representative of the petitioner, if any; (c) Each rule or portion of a rule from which a variance or waiver is requested; (d) The citation to the statute underlying (implemented by) the rule identified in (c) above; (e) The type of action requested; (f) The specific facts that would justify a variance or waiver for the petitioner; (g) The reason why the variance or waiver would serve the purposes of the underlying statute (implemented by the rule); and (h) A statement whether the variance or waiver is permanent or temporary and, if temporary, a statement of the dates showing the duration of the variance or waiver requested.

The Department will grant a variance or waiver when the petition demonstrates both that the application of the rule would create a substantial hardship or violate principles of fairness, as each of those terms is defined in Section

120.542(2) F.S., and that the purpose of the underlying statute will be or has been achieved by other means by the petitioner.

Persons subject to regulation pursuant to any federally delegated or approved air program should be aware that Florida is specifically not authorized to issue variances or waivers from any requirements of any such federally delegated or approved program. The requirements of the program remain fully enforceable by the Administrator of the EPA and by any person under the Clean Air Act unless and until the Administrator separately approves any variance or waiver in accordance with the procedures of the federal program.

Executed in Tallahassee, Florida.



*for* C. H. Fancy, P.E., Chief  
Bureau of Air Regulation

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this INTENT TO ISSUE AIR CONSTRUCTION PERMIT (including the PUBLIC NOTICE, Technical Evaluation and Preliminary Determination, and the DRAFT Permit ) was sent by certified mail (\*) and copies were mailed by U.S. Mail before the close of business on 3-29-00 to the person(s) listed:

- Walter P. Bussells, JEA\*
- Bert Gianazza, JEA
- Chris Kirts, DEP-NED
- Jim Manning, RESD
- Ken Kosky, P.E., Golder Associates

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Keri Jobu                          3-29-00  
(Clerk)    (Date)

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 MS 7000 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 output 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 during which the foggers can economically operate probably limits emissions increases to levels below significance for the purposes 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 to 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.

<u>Pollutants</u>	<u>Annual Emission Increase</u>	<u>PSD Significant Levels</u>
PM/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 any 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.

**NOTICE TO BE PUBLISHED  
IN THE NEWSPAPER**

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 interests 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 public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at:

Department of Environmental Protection  
Bureau of Air Regulation  
111 S. Magnolia Drive, Suite 4  
Tallahassee, Florida 32301  
Telephone: 850/488-0114  
Fax: 850/922-6979

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 850/488-0114, for additional information.

# TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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## 1. Applicant

Jacksonville Electric Authority (JEA)  
21 West Church Street  
Jacksonville, Florida 32202-3139

Authorized Representative: Walter P. Bussells, CEO and Managing Director

## 2. Source Name and Location

Northside Generating Station  
4377 Hecksher Drive  
Jacksonville, Duval County

UTM Coordinates: Zone 17, 446.9 km East and 3359.15 km North

## 3. Source Description

The Jacksonville Electric Authority (JEA) Northside Generating Station consists of three Fossil Fuel Fired-Steam Generators (FFFSG) and 4 simple cycle combustion turbines. The Department recently approved a repowering project that will increase electrical production from the existing FFFSG Units 1 and 2 while greatly reducing air emissions from historical levels.

The 4 combustion turbines (Emission Units 006 thru 009) are each 56 MW General Electric Model MS 7000 combustion turbine-electrical generators. These units are fired with No. 2 distillate fuel with a maximum sulfur content of 0.5%, by weight. Each combustion turbine-electrical generator unit is allowed to operate continuously (8,760 hours per year). These units actually operate as peaking units and typically operate less than 400 hours per year each.

## 4. Current Permit and Major Regulatory Program Status

The four simple cycle combustion turbines commenced commercial operation as early as February 1974. These four peakers and the other three conventional units at the plant are operated under Title V Air Operation Permit No. 0310045-002-AV effective date January 1, 1999.

According to the Title V permit, these combustion turbines are not subject to 40 CFR 60, New Source Performance Standard (NSPS) Subpart GG - Standards of Performance for Stationary Gas Turbines, adopted by reference in Rule 62-204.800, F.A.C.

## 5. Permit Modification Request

On January 3, 2000 the Department received a request from JEA for a permit to install foggers at the compressor inlets of Emissions Units 006 through 009. These units normally achieve their maximum rated output on cold days because the greater compressor inlet air 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 output by approximately 2-3 MW through evaporative cooling of the compressor inlet air. The foggers provide little or no benefit on humid or cold days and will not be used under those conditions.

Inlet foggers are routinely included in new combustion turbine projects whether or not subject to Prevention of Significant Deterioration or Best Available Control Technology.



# TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

## 6. Emissions Increases Due to Modification/Method of Operation

The foggers are physical pieces of equipment whose addition and use can increase emissions on hot or dry days. The use of the foggers can also be considered a change in method of operation of the inlet "air conditioning system" that is already used to filter incoming air.

The maximum short-term emissions increases were estimated by JEA using the heat input associated with a 16 degree F decrease in compressor inlet temperature. The maximum annual increases were estimated by JEA using the annual average inlet cooling of 11 degrees F. The increase in heat-input rate as a function of temperature was estimated by the applicant as 2.8 mmBtu for every degree F temperature decrease. This was then used with the hours of operation to calculate the increases of particulate matter (PM), sulfur dioxide (SO<sub>2</sub>) and volatile organic compounds (VOC) in tons per year. Actual fogging tests were performed on emission unit 8 at Northside Generating Station to evaluate nitrogen oxides (NO<sub>x</sub>) and carbon monoxide (CO) emission rates. The results indicated that the NO<sub>x</sub> emission rate in lb/mmbtu for the fogging operation is statistically lower at the 95 percent confidence level than at base load operation without fogging. All the data for CO demonstrated no increase in emissions. The results were estimated by JEA and are summarized below together with annual emission increase estimates. These are based on 1000 hours of operation per fogger per year (4000 hr/yr for all 4 units) and use of No. 2 fuel oil.

### TOTAL EMISSIONS INCREASES DUE TO USE OF INLET FOGGERS AT FOUR UNITS

Pollutant	Emission Rate <u>lb/mmBtu</u>	Annual Increase <u>tons/yr</u>	PSD Threshold <u>tons/yr</u>
NO <sub>x</sub>	—	0	40
PM/PM <sub>10</sub>	0.038	2.33	25/15
CO	—	0	100
VOC	0.017	1.04	40
SO <sub>2</sub>	0.505	30.92	40

The emissions increases calculated are the direct result from the physical change in or change in method of operation, i.e. the installation and use of the inlet foggers. These assume that the ability to achieve greater power output when the foggers are used does not result in emissions increases outside the turbines original power curve. The rationale is discussed below.

The emissions characteristics (GE performance curves) do not change as a result of the use of the foggers from what would normally occur throughout the entire range of temperatures and relative humidity. Rather, the foggers move the operating points along the same curve toward the power and emissions that normally occur at lower temperatures. The worst case emissions scenario will still occur during the winter months and will occur with the foggers off. This is because of the higher air density and mass flow during cold weather allows higher heat input and power output. At low temperature, very little cooling can be attained because cold air cannot evaporate and hold much moisture. Under such conditions, icing can occur which is detrimental to the units.

## 7. Evaluation of PSD Applicability

As a major source, a modification or change in method of operation of Emissions Units 006 thru 009 resulting in **significant net emissions increases** (major modification) is subject to PSD review. Significant net emissions increase is defined in Rule 62-212.400, F.A.C as follows:

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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*Significant Net Emissions Increase – A significant net emissions increase of a pollutant regulated under the Act is a **net emissions increase** equal to or greater than the applicable significant emission rate listed in Table 212.400-2, Regulated Air Pollutants – Significant Emission Rates.*

The significant emission rates are included (see PSD Threshold) in the Table above. The meaning of a net emissions increase is given in Rule 62-212.400, F.A.C. as:

*Net Emissions Increase - A modification to a facility results in a net emissions increase when, for a pollutant regulated under the Act, the sum of all of the contemporaneous creditable increases and decreases in the **actual emissions** of the facility, including the increase in emissions of the modification itself and any increases and decreases in quantifiable fugitive emissions, is greater than zero.*

The definition of actual emissions is given in Rule 62-210.200, F.A.C. (definitions) as follows:

*Actual Emissions - The actual rate of emission of a pollutant from an emissions unit as determined in accordance with the following provisions:*

- (a) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during a two year period which precedes the particular date and which is representative of the normal operation of the emissions unit. The Department may allow the use of a different time period upon a determination that it is more representative of the normal operation of the emissions unit. Actual emissions shall be calculated using the emissions unit's actual operating hours, production rates and types of materials processed, stored, or combusted during the selected time period.*
- (b) The Department may presume that unit-specific allowable emissions for an emissions unit are equivalent to the actual emissions of the emissions unit provided that, for any regulated air pollutant, such unit-specific allowable emissions limits are federally enforceable.*
- (c) For any emissions unit (other than an electric utility steam-generating unit specified in subparagraph (d) of this definition) which has not begun **normal operations** on a particular date, actual emissions shall equal the **potential emissions** of the emissions unit on that date.*

The term normal operations appear to be undefined and subject to some interpretation. Potential emissions are defined as follows:

*Potential Emissions or Potential to Emit - The maximum capacity of an emission unit or facility to emit a pollutant under its physical and operational design. Any enforceable physical or operational limitation on the capacity of the emission unit or facility to emit a pollutant, including any air pollution control equipment and any restrictions on hours of operation or on the type or amount of material combusted, stored, or processed shall be treated as part of its design provided that, for any regulated air pollutant, such physical or operational limitation is federally enforceable.*

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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According to information in the Department's emission database and information provided by JEA, there has been increased annual usage of these units over the years as shown below. Annual actual hours of operation since 1994 are as follows:

Unit/Year	Annual Operating Hours 1994 - 1998				
	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>
All Units	49	200	212	219	1,366

There was an increase during 1995-97 compared with 1994 and a big increase in 1998 compared to previous years. Despite the relatively large increase in 1998, the usage represents little more than 3 percent of the allowable annual operation.

As it can be seen from the Table, recent hours of operation have increased. They are actually fairly high compared with the historically low levels of operation characteristic of these peaking units. Among the reasons for the relatively high levels since 1994 are the very hot summers, especially in 1998, and the recognized low electrical power reserve margin in the State. These units are allowed to operate continuously.

If these units were being entirely replaced by larger units, it would be clear that they have not begun normal operations. In such a case, a comparison of future to past actual emissions would be based on a comparison of potential emissions to past actual emissions. Such a comparison would undoubtedly result in a determination that PSD is applicable unless the company took an extreme limitation in hours of operation.

If a like-kind replacement was being made, the same comparison would also result in a determination that PSD is applicable. That particular case was addressed for the purposes of comparison to the specific case addressed in the Puerto Rican Cement Decision. This is the watershed Federal Circuit Court of Appeals decision that upheld the past actual-to-potential emission comparison applicable to (at least) modernization projects. The comments of interest for the purposes of the present review are as follows:

*"One can imagine circumstances that might test the reasonableness of EPA's regulation. An electricity company, for example, might wish to replace a peak load generator -- one that operates only a few days per year -- with a new peak load generator that the firm could, but almost certainly will not, operate every day. And, uncertainties about the precise shape of future electricity peak demand might make the firm hesitate to promise EPA it will never increase actual emissions (particularly since EPA insists, as a condition of accepting the promise and issuing the NAD, that the firm also promise not to apply for permission for an actual increase under the PSD review process). Whatever the arguments about the "irrationality" of EPA's interpretation in such circumstances, however, those circumstances are not present here. The Company is not interested in peak load capacity; it operated its old kilns at low levels in the past; its new, more efficient kiln might give it the economic ability to increase production; consequently, EPA could plausibly fear an increase in actual emissions were it to provide the NAD. Thus, this seems the very type of case for which the regulations quoted above were written. We can find nothing arbitrary or irrational about EPA applying those regulations to the Company's proposal."*

## TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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The JEA inlet fogger project is yet another step removed from a modernization project than the like-kind replacement example. The units will not be replaced at all. The modification and its effects can be isolated and directly estimated. The units began commercial operation in 1974. The addition of the inlet foggers will not change that fact or cause an increase in hours of operation. The modification itself (i.e. installation and operation of the foggers), however, has not yet begun normal operation. The future actual emissions based on potential to emit and estimated through the use of increases in heat input associated with the use of the fogging system are below the PSD significant levels.

The number of days during which the foggers can economically operate probably limits actual emissions increases to levels below significance for the purposes of PSD applicability. However, JEA proposes to limit operation of the foggers to 4000 hours per year (total of 1000 hours per unit). Emissions will increase under these limitations (as previously tabulated) by levels less than the significant emissions rates. The Department concludes, therefore that PSD does not apply to this project.

### **8. Evaluation of NSPS , Subpart GG Applicability**

As a major source, a physical change in or change in the method of operation resulting in an increase in the amount of any air pollutant (which a standard applies) is subject to applicable requirements of 40 CFR 60, Standards of Performance for New Stationary Sources. Modification under 40 CFR 60.2 [Rule 62.204.800 F.A.C.] is defined as follows:

*Modification means any physical change in, or change in the method of operation of, an existing facility which increase the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emissions of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.*

The installation of the foggers does not change maximum short-term emissions rates as these are already achieved under natural conditions of low ambient temperatures without the use of the foggers. The inlet fogger installation only changes the ambient conditions that do occur during the normal operation of the turbines. Therefore, the inlet foggers installation do not make the combustion turbines subject to 40 CFR 60 Subpart GG because, the physical change in or change in the method of operation of, caused by the foggers installation does not increase the (maximum short-term) amount of any air pollutant. The Department will request EPA concurrence on this matter.

### **9. Proposed Addition of New Conditions to Title V and Issuance of a Construction Permit**

The JEA Northside combustion turbines units 006 through 009 do not have construction permits. Appendix H-1, Permit History of the Title V permit lists only one operation permit No. AO16-173886 issued on March 9, 1990. The Department will issue an air construction permit incorporating all applicable requirements stated in the Title V permit and adding a condition authorizing installation and operation of the inlet foggers.

The new condition applicable to the inlet foggers proposed for Units 006 through 009 are shown in the draft construction permit. It limits operation of the inlet foggers to 1000 hours per unit per year or a cumulative amount of 4,000 hours of operation for the four combustion turbines.

# TECHNICAL EVALUATION AND PRELIMINARY DETERMINATION

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## 10. Conclusions

The changes authorized by this permit modification will not cause increases in hours of operation and will not result in significant net emissions increases. The project will not increase the maximum short-term emission rates as these are already achieved under natural conditions of low ambient temperatures without the use of the foggers. Therefore, the Department concludes that the 40 CFR60 NSPS Subpart GG is not applicable to these units as a result of the installation of the foggers.

The Department also concludes that PSD is not applicable to this project since the project as presented is not a major modification to a major facility. The changes will not cause a significant impact or cause or contribute to a violation of any ambient air quality standard or PSD increment.

The Department's conclusion does not set a precedent for other projects implemented at any facilities other than simple cycle peaking units. It does not set precedents related to any physical changes within the compressors, combustors, rotors, or other key components at such units. The application and determination of the Department's rules does not constitute an interpretation of the EPA rules under 40CFR52.21, Prevention of Significant Deterioration or 40CFR60, New Source Performance Standards. The Department has requested EPA's concurrence on applicability of 40 CFR, Subpart GG.

For further details regarding this review, contact:

*Syed Arif, P.E., Review Engineer  
New Source Review Section  
Bureau of Air Regulation  
850/921-9528*

# DRAFT

**PERMITTEE:**

Jacksonville Electric Authority  
21 West Church Street  
Jacksonville, Florida 32202

*Authorized Representative:*

Mr. Walter P. Bussells

DEP File No.	0310045-004-AC
Project	Emissions Units 006 -009 Inlet Foggers
SIC No.	4911
Expires:	December 31, 2000

**PROJECT AND LOCATION:**

Permit for the installation of inlet foggers on the four 56 (gross capacity) megawatt simple cycle General Electric Model MS 7000 combustion turbine-electrical generators Emissions Units 006 thru 009.

The units are located at the JEA Northside Generating Station, 4377 Hecksher Drive, Jacksonville, Duval County. UTM coordinates are: Zone 17; 446.9 km E and 3359.15 km N.

**STATEMENT OF BASIS:**

This construction permit is issued under the provisions of Chapter 403 of the Florida Statutes (F.S.), and Chapters 62-4, 62-204, 62-210, 62-212, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.). The above named permittee is authorized to modify the facility in accordance with the conditions of this permit and as described in the application, approved drawings, plans, and other documents on file with the Department of Environmental Protection (Department).

**ATTACHED APPENDIX MADE A PART OF THIS PERMIT:**

Appendix GC

Construction Permit General Conditions

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Howard L. Rhodes, Director  
Division of Air Resources  
Management

## FACILITY DESCRIPTION

Currently, this facility generates electric power from two residual fuel oil-fired steam Units 1 and 3 with a combined generating capacity of 870 megawatts (MW) and four distillate fuel oil-fired simple cycle combustion turbines with a combined net generating capacity of 210 MW. A Prevention of Significant Deterioration (PSD) construction permit (PSD-FL-265) was recently issued to repower Units 1 and 2 with coal and petroleum coke fired circulating fluidized bed boilers which will be connected to the existing steam turbines for Units 1 and 2. It is expected the repowering project to be in operation by the year 2002.

This permitting action is for the installation of inlet foggers at the four (4) distillate fuel oil-fired simple cycle combustion turbines that commenced commercial operation in 1974.

This Project is exempt from the requirements of Rule 62-212.400, F.A.C., Prevention of Significant Deterioration as discussed stated in the Technical Evaluation and Preliminary Determination dated March xx, 2000.

## REGULATORY CLASSIFICATION

This facility, JEA Northside Generating Station, is classified as a Major or Title V Source of air pollution because emissions of at least one regulated air pollutant, such as particulate matter (PM/PM<sub>10</sub>), sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), or volatile organic compounds (VOC) exceeds 100 tons per year (TPY).

This facility is within an industry included in the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. Because emissions are greater than 100 TPY for at least one criteria pollutant, the facility is also a Major Facility with respect to Rule 62-212.400, Prevention of Significant Deterioration (PSD).

This facility is a major source of hazardous air pollutants (HAPs) and is also subject to the provisions of Title IV, Acid Rain, Clean Air Act as amended in 1990.

## PERMIT SCHEDULE

- 04/xx/00 Notice of Intent published in \_\_\_\_\_
- 03/xx/00 Distributed Intent to Issue Permit
- 01/03/00 Received Application
- 02/24/00 Application deemed complete

## RELEVANT DOCUMENTS:

The documents listed below are the basis of the permit. They are specifically related to this permitting action, but not all are incorporated into this permit. These documents are on file with the Department.

- Application received on January 3, 2000.
- Department's incompleteness letter dated January 31, 2000
- JEA's response to Department's incompleteness letter received on February 24, 2000.
- Department's Intent to Issue and Public Notice Package dated March xx, 2000.

## PERMIT SPECIFIC CONDITIONS

**This permit addresses the following emissions units.**

<u>E.U. ID No.</u>	<u>Brief Description</u>
-006	Combustion Turbine No. 3
-007	Combustion Turbine No. 4
-008	Combustion Turbine No. 5
-009	Combustion Turbine No. 6

1. This permit, 0310045-004-AC, is limited to the installation of four inlet foggers on Emission Units 006-009 as described in Permit 0310045-002-AV.
2. The provisions of Permit 0310045-002-AV remain in effect. However, an application shall be submitted to revise that permit to reflect the installation of four inlet foggers on Emission Units 006-009.
3. Inlet foggers may be installed at the compressor inlet to each of the four General Electric Model MS 7000 combustion turbine-electric generators. The four foggers may operate up to 4,000 hours per year in aggregate (average 1000 hours per unit per year). Maximum heat input shall not exceed 634 mmBtu/hr/unit and NOx emissions shall not exceed 300 lb/hr/unit at 90° F and 63 percent RH. This maximum heat input rate will vary depending upon ambient conditions and the combustion turbine characteristics. Manufacturer's curves corrected for site conditions or equations for correction to other ambient conditions shall be provided to the Department of Environmental Protection (DEP) within 45 days of completing the initial compliance testing after the foggers are installed. Thereafter, compliance shall be demonstrated as required in Rule 62-297.310(7). Nitrogen oxides emissions shall be demonstrated by a stack test on one representative turbine. Testing shall be performed each federal fiscal year, no later than September 30th. [Rule 62-296.570(4)(a)3, and (4)(b)5., F.A.C.]
4. The permittee shall record on a monthly basis in a written log the number of hours of operation for each evaporative cooling system and the total combined hours of operation for the previous 12 months for all four evaporative cooling systems. [Rule 62-4.160(15), F.A.C.]
5. The test method for visible emissions shall be EPA Method 9 and the test method for nitrogen oxides shall be EPA Method 7, incorporated and adopted by reference in Rule 62-204.800, F.A.C., and referenced in Chapter 62-297, F.A.C. [Rules 62-204.800, 62-296.320(4)(b)4.a. and 62-297.401, F.A.C.; and, Part XI, Rule 2.1101, JEPB]



**APPENDIX GC**  
GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]

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- G.1 The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
- G.2 This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings or exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
- G.3 As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
- G.4 This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
- G.5 This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
- G.6 The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
- G.7 The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
- a) Have access to and copy and records that must be kept under the conditions of the permit;
  - b) Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
  - c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.
- Reasonable time may depend on the nature of the concern being investigated.
- G.8 If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
- a) A description of and cause of non-compliance; and
  - b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

**APPENDIX GC**  
GENERAL PERMIT CONDITIONS [F.A.C. 62-4.160]

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The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

- G.9 In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
- G.10 The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
- G.11 This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
- G.12 This permit or a copy thereof shall be kept at the work site of the permitted activity.
- G.13 This permit also constitutes:
- a) Determination of Best Available Control Technology ( )
  - b) Determination of Prevention of Significant Deterioration ( ); and
  - c) Compliance with New Source Performance Standards ( ).
- G.14 The permittee shall comply with the following:
- a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
  - b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
  - c) Records of monitoring information shall include:
    - 1. The date, exact place, and time of sampling or measurements;
    - 2. The person responsible for performing the sampling or measurements;
    - 3. The dates analyses were performed;
    - 4. The person responsible for performing the analyses;
    - 5. The analytical techniques or methods used; and
    - 6. The results of such analyses.
- G.15 When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

# Memorandum

# Florida Department of Environmental Protection

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TO: C. H. Fancy

THRU: Al Linero *Al Linero* 3/23

FROM: Syed Arif *Syed Arif* 3/22

DATE: March 22, 2000

SUBJECT: JEA's Northside Plant Fogger Project  
DEP File No. 0310045-004-AC

Attached is the draft public notice package including the Intent to Issue and the Technical Evaluation and Preliminary Determination for the inlet fogger project. The application is to install inlet foggers ahead of the compressor inlets of four simple cycle combustion turbines. The foggers will operate on hot days and days of relatively low humidity. The evaporative cooling effected by the foggers will allow the units to operate closer to their rated capacity.

Emissions will increase because the heat rate through the units will increase when the foggers are used and effectively cool the inlet air. JEA proposes to limit operation of the coolers to 1000 hours per unit per year to insure PSD is not triggered by their use. The issue of making a future potential to past actual annual emission increase calculation is extensively addressed in the Technical Evaluation. We will request EPA concurrence on NSPS non-applicability.

I recommend your signature and approval of the cover letter and Intent to Issue.

SA/a

Attachments

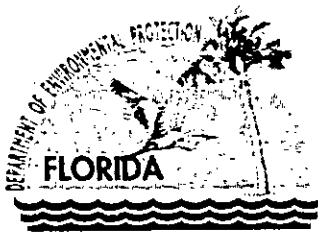
SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	A. Received by (Please Print Clearly)	B. Date of Delivery
1. Article Addressed to:  Mr. Doug Neeley, Section Chief Air, Radiation Technology Branch Preconstruction/HAP Section U.S. EPA - Region IV 61 Forsyth Street Atlanta, GA 30303	C. Signature <b>X</b> <b>JOYCE EVANS</b>	<input type="checkbox"/> Agent <input type="checkbox"/> Addressee
2. Article Number (Copy from service label)	D. Is delivery address different from item 1? If YES, enter delivery address below:	
PS Form 3811, July 1999	MAR 31 2000 <input type="checkbox"/> Yes <input type="checkbox"/> No	
Domestic Return Receipt	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.	
102595-99-M-1789	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes	
Z 031 391 892		

Z 031 391 892

US Postal Service  
**Receipt for Certified Mail**  
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 Do not use for International Mail (See reverse)

Sent to		Doug Neeley
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Postage	\$	
Certified Fee		
Special Delivery Fee		
Restricted Delivery Fee		
Return Receipt Showing to Whom & Date Delivered		
Return Receipt Showing to Whom, Date, & Addressee's Address		
TOTAL Postage & Fees	\$	
Postmark or Date		3-29-00
N.S. Kennedy		Inlet Fogers
		0310045-004-AC
		0310047-004-AC

PS Form 3800, April 1995



# Department of Environmental Protection

Jeb Bush  
Governor

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

David B. Struhs  
Secretary

March 27, 2000

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. R. Douglas Neeley, Chief  
Air, Radiation Technology Branch  
US EPA Region IV  
61 Forsyth Street  
Atlanta, Georgia 30303

Re: DEP File No. 0310045-004-AC & 0310047-004-AC  
Northside Generating Station Units 6-9, Inlet Foggers  
Kennedy Generating Station Units 3-5, Inlet Foggers  
Subpart GG Non-Applicability

Dear Mr. Neeley:

Enclosed is a copy of our Intent to Issue a permit to Jacksonville Electric Authority (JEA) for the installation of inlet foggers for use during the summer season on the simple cycle peaking units at the Northside and Kennedy Generating Stations. We request your concurrence with our preliminary determination or your own separate determination regarding the non-applicability of the 40CFR 60, NSPS Subpart GG for these units.

There are presently 4 GE Model MS 7000 combustion turbines at the Northside facility and 3 Westinghouse Model W501 at the Kennedy site. Each has a nominal capacity of 56 megawatts. The units are permitted to operate continuously, but have historically operated 400 hours per year or less. These units normally achieve their maximum rated output on cold days because the greater compressor inlet air 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 output by approximately 2-4 MW through evaporative cooling of the compressor inlet air. The foggers provide little or no benefit on humid or cold days and will not be used under those conditions.

The foggers will not increase the maximum short-term emission rates for the units, as these are already achieved under natural conditions of low ambient temperatures without the use of the foggers. Therefore the Department believes that Subpart GG is not triggered by the project.

We would appreciate your early review and concurrence. If you have any questions on these matters please call me at 850/921-9523.

Sincerely,

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

AAL/sa

Enclosures

"More Protection, Less Process"

Printed on recycled paper.