

21 West Church Street
Jacksonville, Florida 32202-3139

September 16, 2005

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BUREAU OF AIR REGULATION



Mr. Jeffrey F. Koerner, P.E.
Program Administrator
Permitting North
Bureau of Air Regulation
Division of Air Resource Management
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

E L E C T R I C

W A T E R

S E W E R

RE: Northside Generating Station
Project Nos. 0310045-015-AC/PSD-FL-265 and 0310045-016-AV

Dear Mr. Koerner:

JEA is planning on using a temporary cooling tower to provide additional cooling for the air compressors at the Northside Generating Station (NGS). The purpose of this request is to seek concurrence of our understanding that a construction permit is not required for this temporary cooling tower because the temporary emissions from the cooling tower will be exempt under both the temporary emissions exemption rule (F.A.C. 62-212.400(3)(c)) and the exemption for generic emissions unit (F.A.C. 62-210.300(3)(b)(1)).

At major prevention of significant deterioration (PSD) sources, the temporary emissions exemption under F.A.C. 62-212.400(3)(c) is applicable if the duration of emissions does not exceed two years, and if the net emissions increase of the modification would not cause or contribute to a violation of Ambient Air Quality Standards (AAQS) or have significant impact on any Class I area. Additionally, the generic emissions unit exemption rule under F.A.C. 62-210.300(3)(b)(1) is applicable if an emission unit emits less than 5 tons per year (tpy) of any regulated pollutant and the unit does not have a unit-specific applicable requirement.

NGS is an existing PSD major source. As discussed below, potential emissions from the proposed temporary cooling tower will be significantly less than the PSD significant emission rates and will also qualify as exempt temporary emissions under Florida's PSD rules. It should also be noted the temporary cooling tower will not result in any emission increases in other parts of NGS.

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Cooling Tower Emissions Calculations

The only pollutant of concern from the proposed temporary cooling tower is particulate matter (PM). PM calculations are based on the following cooling tower design data:

Water Circulation Rate: 1500 gallons per minute (gpm)

Design Drift Flow Rate: 0.027 gpm

Total Dissolved Solids (TDS) in Make-up Water = 600 ppm

Cycles of Concentration: 3

TDS in Circulating Water = 600 ppm x 3 cycles of concentration = 1,800 ppm

PM Calculation Formula

$$\text{PM (ton/yr)} = \text{Drift Flow Rate (gpm)} \times \text{TDS in Circulating Water (ppm)} / 10^6 \times 8.34 \text{ lb/gal} \\ \times 60 \text{ min/hr} \times 8760 \text{ hr/yr} \times 2000 \text{ lb/ton}$$

$$\text{PM} = 0.027 \times 1800 / 10^6 \times 8.43 \times 60 \times 8760 \times 1 / 2000 = 0.11 \text{ ton/yr}$$

Temporary Emissions Exemption

The temporary cooling tower will not be in operation for more than two years. JEA intends to replace the temporary cooling tower with a small permanent cooling tower within the next two years. (A minor source construction permit will be obtained for this permanent cooling tower installation.) As the emissions from the proposed temporary cooling tower are an order of magnitude less than the 5 tpy generic emissions unit exemption threshold, it can also be reasonably assured that the PM emissions from the cooling tower will not violate any AAQS, and will not have any significant impact on a Class I area.

Generic Emissions Unit Exemption

The temporary cooling tower does not have any unit specific applicable requirement such as the maximum achievable control technology (MACT) for cooling towers because JEA will not use any chromium based chemicals for cooling water treatment. Also, as shown above, potential PM emissions are significantly less than the 5 tpy generic emissions unit exemption threshold.

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Summary

Based on the information provided above, JEA believes that the proposed temporary cooling tower will meet both the temporary exemption and the generic emissions unit exemption requirements. Additionally, the temporary cooling tower will not result in any emission increases in other parts of NGS. We are requesting written concurrence that no permitting is required for this temporary cooling tower.

Sincerely,

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

N. Bert Gianazza, P.E.
Environmental Services

cc: Richard Robinson, P.E., EQD

ENVIRONMENTAL RESOURCE MANAGEMENT DEPARTMENT

Environmental Quality Division



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BUREAU OF AIR REGULATION

April 11, 2006

Ms. Trina L. Vielhauer
Chief, Bureau of Air Regulation
Division of Air Resource Management
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 5500
Tallahassee, FL 32399-2400

**RE: Draft Air Construction Permit Project Nos: 0310045-15-AC/ PSD-FL-010G/
PSD-FL-265C
Draft Title V Air Operating Permit Revision Project No.: 0310045-016-AV
JEA – Northside Generating Station/St. Johns River Power Park/
Separation Technologies, Inc.**

Dear Ms. Vielhauer:

The City of Jacksonville, Environmental Quality Division (EQD) has reviewed the referenced permit revisions with the Jacksonville Environmental Protection Board (JEPB) and JEA. At the JEPB meeting on April 10, 2006, the JEPB and JEA agreed to the following change in the revised specific condition 26. (0310045-003-AC/PSD-FL-265) and revised specific condition H.21. (0310045-011-AV):

FROM:

26. and H.21. Authorized Emissions. Notwithstanding other emission limits and standards established by this permit, excess emissions resulting from startup, shutdown, or malfunction shall be permitted provided (1) that best operational practices are adhered to and (2) the duration of excess emissions shall be minimized but not exceed sixty (60) hours in any calendar month per emissions unit (CFBs Units Nos. 1 and 2). The permittee shall keep operational records necessary to demonstrate compliance with this restriction. Emissions data collected during periods of startup, shutdown, and malfunction shall be included when determining compliance with annual emission limits. The CFB Units shall not be started up at the same time. The permittee shall update the written procedure summarizing the current best operational practices to be followed every 5 years (at operating permit renewal).

Pursuant to Rule 62-210.200, F.A.C., Definitions, the following are defined:

- a. Startup: The commencement of operation of any emissions unit which has shut down or ceased operation for a period of time sufficient to cause temperature, pressure, chemical or pollution control device imbalances, which result in excess emissions.
- b. Shutdown: The cessation of the operation of an emissions unit for any purpose.



117 West Duval Street, Suite 225 Jacksonville, Florida 32202

Air Quality: (904) 630-4900
Groundwater: (904) 630-4900

Hazardous Materials: (904) 630-3404
Water Quality: (904) 630-3404

Fax: (904) 630-3638
Web: www.coj.net

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c. Malfunction: Any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner.

{Permitting Note: See Specific Conditions **H.49.** and **H.51.** for reporting of excess emissions.}

[Rules 62-210.200, 62-210.700(1) & (5), F.A.C.; and, 0310045-015-AC/PSD-FL-265C]

TO:

26. and H.21. Authorized Emissions. Notwithstanding other emission limits and standards established by this permit, excess emissions resulting from startup, shutdown, or malfunction shall be permitted provided (1) that best operational practices are adhered to and (2) the duration of excess emissions shall be minimized but not exceed sixty (60) hours ~~on a 30 day rolling average in any calendar month~~ per emissions unit (CFBs Units Nos. 1 and 2). The permittee shall keep operational records necessary to demonstrate compliance with this restriction. Emissions data collected during periods of startup, shutdown, and malfunction shall be included when determining compliance with annual emission limits. The CFB Units shall not be started up at the same time. The permittee shall update the written procedure summarizing the current best operational practices to be followed every 5 years (at operating permit renewal).

Pursuant to Rule 62-210.200, F.A.C., Definitions, the following are defined:

- a. Startup: The commencement of operation of any emissions unit which has shut down or ceased operation for a period of time sufficient to cause temperature, pressure, chemical or pollution control device imbalances, which result in excess emissions.
- b. Shutdown: The cessation of the operation of an emissions unit for any purpose.
- c. Malfunction: Any unavoidable mechanical and/or electrical failure of air pollution control equipment or process equipment or of a process resulting in operation in an abnormal or unusual manner.

{Permitting Note: See Specific Conditions **H.49.** and **H.51.** for reporting of excess emissions.}

[Rules 62-210.200, 62-210.700(1) & (5), F.A.C.; and, 0310045-015-AC/PSD-FL-265C]

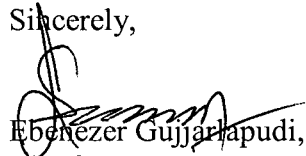
EQD believes the requested change will prevent the potential for CFB Units No. 1 and 2 from operating in an excess emissions mode for 5 straight days per unit (2.5 days at the end of a month and 2.5 days at the beginning of the next month). EQD has concerns over violations of the National Ambient Air Quality Standards, under such prolonged conditions.

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As always, DEP's consideration and assistance in protecting the air quality of Jacksonville is appreciated.

If you have any questions concerning this requested change, please contact me at (904) 630-1212 ext. 3118.

Sincerely,



Ebenezer Gujjalapudi, P.E.
Chief

EG/RSP/rdr

c: Jacksonville Environmental Protection Board
Ms. Christi Veleta, EQD
Mr. Bert Gianazza, JEA
File: 0045K

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October 12, 2005

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Mr. Jeffrey F. Koerner, P.E.
Program Administrator
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Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

BUREAU OF AIR REGULATION

ELECTRIC

WATER

SEWER

RE: Northside Generating Station/St. Johns River Power Park
Project Nos. 0310045-015-AC/PSD-FL-265 and 0310045-016-AV

Dear Mr. Koerner:

This purpose of this letter is to request a revision to the conditions related to Northside Units 1 and 2 circulating fluidized bed (CFB) boilers in the above referenced permits. These are state-of-the-art, low-emitting, clean coal technology units and are the largest CFBs in the world.

Currently, Northside Units 1 and 2 CFBs are permitted to allow 2 hours of excess emissions for shut and malfunction. Statistical analyses have revealed that during shut down or in the event of a malfunction resulting in a loss of limestone feed to these units the inertia associated with the large mass of bed material (typically on the order of 300 tons) results in a longer response time than a traditional solid fuel unit.

We request that the permit language pertaining to allowable excess emissions resulting from malfunction and shut down be revised as summarized below. The basis for the conclusion that this permit revision is necessary was presented to EQD staff during a meeting on June 8th and, subsequently, to DEP permitting personnel in Tallahassee on June 17th. As always, best operating practices will be adhered to at all times and excess emissions will be minimized. The suggested language changes to specific condition 26 on page 11 of permit 0310045-015-015-AC and specific conditions H.19 and H.21 on page 63 of permit 0310045-016-AV are as follows:

Specific condition H.19 of 0310045-011-AV:

From: "Excess emission resulting from startup, shutdown or malfunction of any

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emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration [Rule 62-210.700(1), F.A.C.]”

To: “Excess emission resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized. All excess emissions resulting from a documented malfunction shall be excluded when calculating 24-hour and 30-day SO₂ averages for permit compliance.” [Rule 62-210.700(1), F.A.C.]

Specific Condition 26 of PSD-FL-265 and Specific Condition H.21 of 0310045-011-AV

From: “Authorized Emissions. Notwithstanding other emission limits and standards established by this permit, excess emissions resulting from startup, shutdown, or malfunction shall be permitted provided that best operational practices are adhered to and the duration of excess emissions shall be minimized but in no case exceed twelve (12) hours in any 24-hour period for a startup on CFB Boilers Nos. 1 and 2 (which shall not be started up at the same time) or two (2) hours in any 24-hour period for other reasons unless specifically authorized by DEP or RESD for longer duration. The permittee shall submit a written procedure summarizing the current best operational practices to be followed and the anticipated emissions for startup and shutdown conditions within one year after initial startup of CFB Boiler No. 2, and shall update this document every 5 years (at operating permit renewal). The twelve (12) hours duration of excess emissions may be reduced through a permit revision based on the operating experience on CFB Boilers Nos. 1 and 2. [Rule 62-210.700 FAC; and, 0310045-003-AC/PSD-FL-265.]”

To: “Authorized Emissions. Notwithstanding other emission limits and standards established by this permit, excess emissions resulting from startup, shutdown, or malfunction shall be permitted provided that best operational practices are adhered to and the duration of excess emissions shall be minimized but in no case exceed twelve (12) hours in any 24-hour period for a startup or shut down on CFB Boilers Nos. 1 and 2 (which shall not be started up at the same time). All excess emissions resulting from a documented malfunction shall be excluded when calculating 24-hour and 30-day SO₂ averages for permit compliance. For every emissions exceedance resulting from malfunction of two hours or longer in duration, the following information will be

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submitted to the appropriate enforcement authority in writing (such as email) within one business day of correcting the malfunction: hourly data (CEM data) showing the extent and duration of excess emissions, pertinent information as to the cause of the problem, and action taken to minimize excess emissions and correct the malfunction. In addition, for every emissions exceedance resulting from malfunction of two hours or longer in duration, the following information, certified by the R.O., will be submitted to the appropriate enforcement authority in writing within ten (10) business days of correcting the malfunction: hourly data (CEM data) showing the extent and duration of excess emissions, pertinent information as to the cause of the problem, action taken to minimize excess emissions and correct the malfunction, steps being taken to prevent recurrence, and where applicable, the owner's intent toward reconstruction of destroyed facilities. The permittee shall submit a written procedure summarizing the current best operational practices to be followed and the anticipated emissions for startup and shutdown conditions within one year after initial startup of CFB Boiler No. 2, and shall update this document every 5 years (at operating permit renewal). The twelve (12) hours duration of excess emissions may be reduced through a permit revision based on the operating experience on CFB boilers Nos. 1 and 2. [Rule 62-210.700 FAC; and, 0310045-003-AC/PSD-FL-265.]”

The frequency of CFB malfunctions and related excursions has been reduced significantly since these units were commissioned. In conjunction with the major capital investments made to date (approximately \$58M), operating experience with these scaled up CFBs improves daily and every effort is being made to minimize upsets. Overall these units have contributed measurably to improved air quality in our area while providing the necessary power for a growing community.

If you have any questions, please call Bert Gianazza at (904) 665-6247.

Sincerely,



James M. Chansler, P.E., D.P.A.
Responsible Official
Vice President, Operations and Maintenance

cc: Bruce Mitchell, FDEP
Mike Halpin, P.E., FDEP
Steve Pace, P.E., RESD