

State of Florida

DEPARTMENT OF ENVIRONMENTAL REGULATION

INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee	
To: <u>Bob King</u>	Loctn.: _____
To: _____	Loctn.: _____
To: _____	Loctn.: _____
From: _____	Date: _____

TO: District, Subdistrict and Local Program Air Engineers
FROM: Edward Palagyi, BACT Coordinator
DATE: May 11, 1981
SUBJ: BACT as determined for Jacksonville Electric Authority

Attached please find one copy of the BACT as determined by the Florida Department of Environmental Regulation for the subject applicant.

Should you have any questions regarding this BACT, please contact me at (904) 488-1344 or Suncom 278-1344.

EP:dav

Best Available Control Technology (BACT) Determination

Jacksonville Electric Authority

Duval County

The proposed facility is the construction of two 600 megawatt coal-fired electric utility steam generating units to be located in Jacksonville, Florida. The units will be designed for possible conversion to oil, gas or refuse firing. There will be an oil fired auxiliary boiler rated at 200 million Btu/hr estimated to have an annual capacity factor of 5 percent compared to 74 percent for the two units.

The plant will be located in Duval County which is classified nonattainment for the pollutant Ozone (17-2.16(1)(c) F.A.C.). It will be located in the area of influence of the Jacksonville particulate nonattainment area (17-2.13(1)(b) F.A.C.), however, the plant will not significantly impact the nonattainment area and is therefore exempt from the requirements of Section 17-2, 17 & 18 & 19 with respect to particulate emissions. The facility must comply with the provisions of 17-2.04 F.A.C. (Prevention of Significant Deterioration).

BACT Determination Requested by the Applicant:

<u>Pollutant</u>	<u>Emission Limit</u>
Particulates	0.03 lb/million Btu input
SO ₂	0.76 lb/million Btu input
NO _x	0.60 lb/million Btu input
CO	0.05 lb/million Btu input

Particulate emissions to be controlled using an Electrostatic Precipitator (ESP). SO₂ emissions to be controlled with a limestone wet scrubbing² system. There is no specific control technology for control of NO_x and CO emissions. BACT to be manufacturer's guarantee for^xstate-of-the-art burner design parameters to minimize emissions.

Flyash emissions to be controlled using a pneumatic transfer system and bottom ash using a wet transfer system. Emissions from coal and limestone handling to be controlled by use of enclosed conveying systems with baghouses rated at 99.9 percent efficiency. Water suppression to control dust to be used as required.

Page Two

Date of Receipt of a Complete BACT Application:

February 27, 1981

Date of Publication in the Florida Administrative Weekly:

March 27, 1981

Review Group Members:

Steve Pace, Jacksonville Bio-Environmental Services
Johnny Cole, DER, St. Johns River Subdistrict
Buck Oven Power Plant Siting Section
Bob King, DER, Bureau of Air Quality Management
Tom Rogers, DER, Air Modeling Section

Bio-Environmental Services recommended a 65% reduction in NO_x emissions, or 0.5 lb/million Btu heat input. This was the only exception to unanimous acceptance of the NSPS emission limits as BACT.

BACT Determination by DER:

<u>Pollutant</u>	<u>Emission Limit</u>
Particulates	0.03 lb/million Btu input
SO ₂	0.76 lb/million Btu input
NO _x	0.60 lb/million Btu input
CO	0.05 lb/million Btu input

Justification of DER Determination:

NSPS, Subpart Da, Standards of performance for electric utility steam generating units for which construction is commenced after September 18, 1978, is determined as BACT for the proposed project. The proposed control equipment is state-of-the-art and determined as BACT.

Emissions from the auxiliary boiler are minor compared to the main units. The auxiliary boiler will operate only when one of the main units is not in operation. Limited operation of the auxiliary boiler is determined as BACT.

Details of the Analysis May be Obtained by Contacting:

Edward Palagyi, BACT Coordinator
Department of Environmental Regulation
Bureau of Air Quality Management
2600 Blair Stone Road
Tallahassee, Florida 32301

Page Three

Recommended By:

CTA
for Steve Smallwood, Chief, BAQM

Date:

5/6/81

Approved:

Victoria Tschinkel
Victoria Tschinkel, Secretary

Date:

5/7/81

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From: _____	Date: _____	
Reply Optional []	Reply Required []	Info. Only []
Date Due: _____	Date Due: _____	

TO: Buck Oven, Power Plant Siting Section

THRU: Bill Thomas ^{BT}, Bureau of Air Quality Management

THRU: Willard Hanks ^{wmh}

FROM: Bob King ^{BK}

DATE: April 17, 1981

SUBJ: Comments on Sufficiency Review - JEA's St. Johns River Power Park Unit 1 and Unit 2.

1. Did JEA conduct any on-site monitoring program at Northside Site before or after the construction of Northside Unit 3? If JEA did, send us the results of the monitoring program.
2. According to the application (page 2.7-7), EPA Region IV approved the use of on-site monitoring data for baseline/background determination. We need confirmation of this approval.
3. What are the maximum sulfur dioxide and particulate matter emission rates when burning No. 2 fuel oil during start-up and low load operation of Unit 1 and 2?
4. According to the application (page 3.8-6), a small fraction of flue gas will bypass the absorbers to reheat the gases exiting the absorbers. What is maximum flow rate of the bypassing flue gas? What is the overall SO₂ removal efficiency including bypassed flue gas of the system?
5. Cooling towers are subject to both BACT and PSD requirements. Ambient particulate concentrations and drift impacts must be included in the application.
6. If maximum cooling tower drift is 1.5 percent of the circulating water, what is the particulate matter emission rate for each tower?
7. What is maximum particulate matter emission rate in lb/hr and tons/yr from auxiliary boiler?

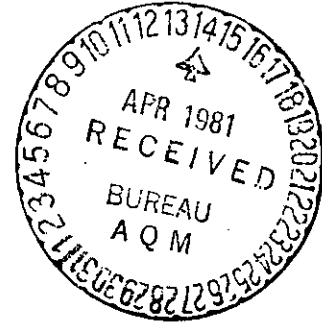
BK:BT:WH:dav

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

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From: _____	Date:	_____
Reply Optional []	Reply Required []	Info. Only []
Date Due: _____	Date Due: _____	

TO: Power Plant Siting Review Committee
FROM: Hamilton S. Oven, Jr. *HSO*
DATE: April 14, 1981
SUBJECT: JEA Power Plant

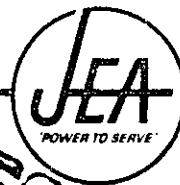


Attached for your review and comment is a partial response from JEA to our questions on sufficiency.

HSOjr:my

Jacksonville Electric Authority

233 WEST DUVAL STREET • P. O. BOX 53015 • JACKSONVILLE, FLORIDA 32201



April 9, 1981

RECEIVED
APR 13 1981

DIV. ENVIRONMENTAL
PERMITTING

Mr. Hamilton S. Oven, Jr.
Administrator - Power Plant Siting Section
Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Dear Mr. Oven:

In response to your letter dated March 19, 1981, we are forwarding the attached set of responses to sixteen of your forty initial questions concerning the application for the St. Johns River Power Park Units 1 & 2 (PA 81-13). We are continuing to address the remaining questions and will provide those responses as soon as possible.

Sincerely,

Dale Moehle
Division Chief
New Fossil Generation

DAM:DHL:cb

xc: R. Howard, EPA
T. Bisterfield, EPA
R. Lyles
R. Breitmoser
D. Lucas
J. Walden
L. Leskovjan

B.M. Wirz
D.J. Pike, Ebasco

File: 3.3.4.1.1.9.

RESPONSES TO FDER INTERROGATORIES (MARCH 19, 1981)
SET 1

Question 16: Does JEA/FPL have any programs for aiding the impacted residents other than monetary recompense for the property and moving expenses?

Response: According to Mr. Jack H. Weitzel, Right-of-Way Agent for JEA, there are no other programs to aid residents who may have to relocate due to property acquisition associated with the routing of a transmission line.

Question 17: Elaborate on the apparent discrepancy regarding the groundwater requirements. Page 5.2-6 indicates a 3400 GPM continuous demand, while page 3.3-1 indicates an annual average of 1000 GPM.

Response: The major groundwater demand will be for makeup to the flue gas desulfurization system (FGDS). As noted on page 3.3-5, groundwater requirements for the FGDS system could vary from 800 to 3,150 gallons per minute (gpm). For an FGDS groundwater requirement of 3,150 gpm, the total groundwater requirement for all uses would be 3,380 (approximately 3,400) gpm average and 4,020 (approximately 4000) gpm maximum. The annual average groundwater demand of approximately 1,000 gpm noted on page 3.3-1 refers to conditions of minimum groundwater demand (800 gpm) for the FGDS system. The actual groundwater demand will be more accurately defined when the specific FGDS is selected.

Question 18: Has any consideration been given to the construction of an overpass for either the trains or the auto traffic in the plant vicinity?

Response: Consideration has been given to the construction of an overpass for trains or auto traffic at crossing points on Heckscher Drive, Eastport Road, and Main Street. Delay times as presented in the SCA/EID document for "worst case" conditions were evaluated for probability of coal train crossings during peak traffic hours. Given the low expected frequency of a "worst case" occurrence, the savings in social costs that could be realized by construction of an overpass would not likely outweigh the costs of overpass construction and maintenance over the life of the plant.

Question 19: Discuss any variances that may be sought from water quality standards for leachates from the coal pile runoff.

Response: A petition for variance from groundwater standards or a separate petition for chemicals present in coal pile drainage discharged into the St. Johns River via the existing Northside Generating Station (NGS) is not anticipated. However, in filing for any variances at the proposed point of discharge (through the NGS), the contribution of chemicals present in the coal pile drainage will be addressed. Chapter 5.1.3 (Table 5.1-9) and in Appendix C.6, (Table C-38, C-39, C-40 and C-41 and Figures C-40 through C-49) address the predicted influence of plant discharges which include coal pile drainage.

A separate petition for variance may be sought, however, for chemicals present in coal pile drainage discharge into the percolation pond at the Blount Island coal unloading facility. At present no direct discharge to the St. Johns River from this facility exists; however, as a practical matter the possibility for filing a petition for variance is retained as an option.

Question 21: Will sludges from the chemical wastewater treatment facility require acceptable hazardous waste disposal?

Response: Where the spent cleaning solutions and rinse waters generated during the boiler cleaning procedure prove to be a hazardous, corrosive waste under RCRA (i.e., pH less than 2.0 or greater than 12.5), the associated sludges resulting from treatment of this waste will require appropriate hazardous waste disposal. Disposal of these sludges is planned to be off-site of the SJRPP property in an EPA RCRA permitted facility.

Question 24: Why is the chemical quality of leachate based on mean values and not on worst-case values?

Response: Appendix D.5, pages D-46 through D-55, presents a discussion of the sensitivity of calculated quality and quantity of leachate to variations in a variety of hydrologic and engineering parameters. Within the context of that parametric sensitivity analysis, it is noted on page D-53 that some Florida Class I-B water quality standards could be exceeded for worst-case leachate quality. However, it is also noted that the parametric sensitivity analysis is inherently based on several conservative assumptions, one of which is that the leachate generated by solid-waste disposal areas at the SJRPP site could exhibit worst-case concentrations of dissolved constituents.

The analysis of the groundwater effects of solid-waste leachate presented on page 5.1-13 is based on a relaxation of some of the extremely conservative assumptions made for the worst-case analysis. Specifically, it was assumed that the rate of infiltration of precipitation can be reduced by appropriate engineering of the solid-waste landfill as described in Section 3.5.2.2. Furthermore, the solid-waste leachate data summarized on Table D-21, Appendix D, indicate that observed fly ash leachate can exhibit ranges of concentrations varying over as much as four orders of magnitude between minimum and maximum values for several parameters. Similarly, the reported data for FGD sludge liquors exhibit ranges of concentrations varying over one to two orders of magnitude between median and maximum values. Consequently, it was assumed that the chemical quality of leachate will not continuously approach the worst-case values reported in the literature. This latter assumption was quantified by using median rather than maximum reported values of concentrations of dissolved constituents in solid-waste leachate.

Question 25: Has monitoring been performed to determine whether contaminated leachate emanates from the site currently? If so, what plans are there for site rehabilitation?

Response: The site is currently in an undisturbed natural state, containing no facilities which could generate a leachate. Baseline groundwater quality monitoring has been conducted on a quarterly basis since the summer of 1980. Results of the first two quarters of monitoring of site wells and piezometers are given on Table D-20, sheets 1 through 11, Appendix D. These results indicate that the shallow groundwater beneath the site is generally of good to excellent quality, with the exception of high iron concentrations. Consequently, site rehabilitation relative to pre-existing groundwater contamination is not required.

Question 26: JEA's NGS has applied for a Part "A" permit, No. FL0000735860. Is this for existing or proposed chemical waste disposal sites? Will this interact with the SJRPP site?

Response: The RCRA permit application for JEA NGS is for wastes generated at the NGS alone. A separate RCRA permit application has been submitted for wastes generated, treated and stored at the SJRPP facility.

The hazardous wastes from the two power plants will not interact with each other.

Question 27: Has any research been done on the recycling or reclamation of hazardous wastes as an option to disposal?

Response: No disposal of hazardous wastes will take place at the proposed plant. As identified in the facility's RCRA Part A application, all hazardous wastes will be handled through either treatment or storage. Additionally, the demineralizer regeneration wastes, which may be hazardous because of corrosivity, will be addressed for storage and treatment under the proposed permit-by-rule regulations for an elementary neutralization unit (45 FR 76076-76083). Since disposal, on-site, of the anticipated hazardous wastes is not proposed, the option of treatment was selected over possible recycling or reclamation.

Question 28: Will the hazardous wastes listed in the facility's Part A application be generated at the proposed facility? If so, what disposal plans have been made?

Response: The wastes listed in the NGS RCRA Part A application are not the same as those listed in the SJRPP RCRA Part A application (see Appendix O). Hazardous wastes anticipated to be generated at the proposed facility include wastes from demineralizer regeneration, boiler cleaning, and equipment cleaning and maintenance. Those wastes listed in the Part A application are the corrosive wastes produced by the chemicals used for boiler cleaning, and the spent solvents from equipment degreasing activities. A separate permit-by-rule will be requested for the demineralizer regeneration wastes, which are hazardous solely because of their corrosive nature and will be neutralized in a tank prior to treatment in the power plant's wastewater treatment facility.

Question 29: Will proposed dredge materials be classified as a hazardous waste?

Response: The results of elutriate tests taken in the proposed dredge area demonstrate that the dredged materials will not be hazardous wastes under RCRA.

Question 34: Has consideration been given to using fly ash and gypsum as road base material as well as low strength building blocks?

Response: JEA/FPL are keenly aware and are considering the many proven and commercially acceptable uses for fly ash, particularly in the construction industry, which include: (1) highway construction, (2) cement manufacturing, (3) brick manufacturing, (4) block manufacturing, and (5) lightweight aggregate production. With recent publication of the U.S. EPA's Proposed Guidelines for Federal Procurement of Cement and Concrete Containing Fly Ash (45 FR 76906-76921) the use of fly ash should continue to expand. Also, the Federal Highway Administration, various state highway departments, the Transportation Research Board and the National Ash Association have acknowledged that coal ash has a variety of highway construction applications.

Utilization of fly ash mixed with gypsum produced by FGD processes is still in the conceptual stage of development. Although some field experience has been obtained with road bases (e.g., Dulles Airport, Washington, D.C.) and block (e.g., underwater reef in the Atlantic Ocean off the coast of Long Island), no established markets exist to allow a demand forecast. The volumes of fly ash and flue gas desulfurization sludge being generated nationally should increase the amount of research of utilization of these materials as recoverable resources.

Question 37: What is the expected loading of heavy metals from the Blount Island coal pile leachate/runoff percolation pond on the St. Johns River?

Response: Assuming the present proposed location of the percolation pond, a net groundwater flow into the St. Johns River of 61,000 gpd, as discussed in Section 5.6.1.2 of the SCA/EID, and groundwater chemical characteristics as described in Table 5.6-10 of the SCA/EID, loading rates can be estimated for the following referenced heavy metals:

<u>Metal</u>	<u>Loading (lb/day)</u>
Chromium, total	0.002
Copper	0.33
Iron	71.38
Magnanese	0.015
Nickel	0.92
Zinc	2.34

Question 38: What are the safeguards that will be used to protect against oil spills from the handling and storage of No. 2 fuel oil?

Response: Standard oil spill prevention methods will be used at SJRPP, including construction of dikes or berms in oil storage areas; installation of curbine and drainage systems in oil handling areas; and, provisions for booms, weirs, and sorbent materials as required on-site to contain any oil spill and prevent its discharge into waterways. Details of oil containment systems will be included in the Spill Prevention Control and Countermeasure Plan which will be prepared for the proposed facility in accordance with EPA regulation 40 CFR Part 112.

Question 39: What are the expected air quality impacts in downtown Jacksonville if operation of SJRPP 1 and 2 causes Kennedy and Southside to be shut down?

Response: The ambient air quality impacts resulting from the current operation of the JEA Kennedy and Southside units are presently larger than the incremental impacts which will result from the operation of SJRPP Units 1 and 2. This is because of: a) lower stack heights at Southside and Kennedy, b) the absence of SO₂ and TSP removal equipment, and c) adjacent building down wash effects. Therefore, should Kennedy and Southside be shut down following SJRPP 1 & 2 startup, the local air quality would improve. The extent of this improvement in the air quality is not quantifiable, however, without verification by additional numerical modelling. Presently no plan has been adopted to prematurely retire the Southside and Kennedy stations.

Table 5.3-6 of the SCA/EID presents the results of modelling the ambient air quality impacts of SJRPP 1 and 2 along with background concentrations and other major sources in Jacksonville. Because the effects of the Southside and Kennedy units were thus indirectly factored into these predicted concentrations, the maximum ambient levels without Southside and Kennedy would necessarily become less than the concentrations presented in Table 5.3-6.

Question 40: Where can one obtain a copy of FPL's Energy Management Plan for the 80's referred to on Page 1.1-18?

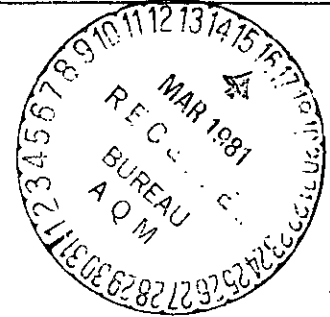
Response: A copy for your use will be provided at our meeting on 4/9/81 in Jacksonville. Additional copies can be obtained from the Florida Public Service Commission.

DEPARTMENT OF ENVIRONMENTAL REGULATION

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To: _____	Loctn.: _____
To: _____	Loctn.: _____
From: _____	Date: _____

TO: Power Plant Siting Review Committee
 FROM: Karen Anthony, Power Plant Siting Section ^{KWA}
 DATE: March 13, 1981
 SUBJECT: JEA/FPL St. Johns River Power Park Units 1 & 2



We will have another PPS review committee meeting (1) to update you on the new timelines we are working on with EPA and JEA for this review, (2) regarding interactions with EPA and their consultants, Wapora, Inc., for the joint EIS/State analysis, and (3) regarding your progress on making a sufficiency determination.

The meeting will be held at 9:00 a.m. on April 2nd in 4th floor conference room B.

KA/bh

*Applicat - 80 months.
 public hearing - 10 months.
 200 days
 EIS - Oct 1 - 15
 mini size 50 MW.*