



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

September 10, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Wayne E. Tutt, Associate Engineer
Regulatory & Environmental Services
Department
Air & Water Quality Division
421 West Church Street, Suite 422
Jacksonville, Florida 32202-4111

Re: Site Certification No. PA 81-13
St. Johns River Power Park Units #1 & #2

Dear Mr. Tutt:

This correspondence is provided to address the July 30, 1997 letter to Buck Oven regarding semiannual testing for Carbon Monoxide (CO) and Sulfuric Acid Mist (H₂SO₄). The request to the Florida Department of Environmental Protection was related in the October 28, 1996 modifications to the Conditions of Certification for the St. Johns River Power Park (SJRPP). The modified conditions authorized the co-firing of petroleum coke and coal. Conditions I.A.2.h. and I.A.2.i. requires semiannual testing of CO and H₂SO₄ for the first two years of co-firing and annual testing for the next three years, as information demonstrating that the operational changes (i.e., co-firing petroleum coke and coal) did not result in a significant net increase in emissions. Additionally, quarterly continuous emission monitoring data for CO was required. The same conditions were included in the modification to the Prevention of Significant Deterioration (PSD) approval {PSD-FL-010(B), October 14, 1996}.

The conditions in the modified PSD permit and the Conditions of Certification were included as a mechanism to assure that a significant increase in CO or H₂SO₄ emissions did not occur as a direct result of co-firing petroleum coke. Because of the variability of these pollutants during the combustion process, SJRPP is required by the Department to perform semiannual testing during the first two years to determine if significant emission increases have occurred. The intent of the conditions were to review emissions over a long term i.e., two years, to determine if an increase has occurred.

In order to compare whether a significant increase has occurred, the test data should be evaluated against all the baseline information provided by SJRPP. For CO, the single 1995 testing is not representative, since CO emissions can be highly variable based on combustion conditions and fuel properties such as Hardgrove Grindability Index. SJRPP provided information during the permitting process that indicated that CO emissions could be highly variable; during normal

operation when firing coal could range from less than 10 ppm to 500 ppm. Therefore, a long-term baseline CO emissions level must be used for comparing semiannual or annual testing. The use of Appendix C is not an appropriate mechanism in determining significant increases. The June 1997 test data provided by SJRPP indicate CO emissions ranging between 75 and 120 ppm. These CO emissions are within the CO baseline emission when burning coal, therefore, there was no significant increase in CO emissions.

Similar to CO, H₂SO₄ emission were expected to vary due to combustion effects. While the 1995 baseline tests indicated a H₂SO₄ concentration of 6.19 ppm, further baseline tests conducted in February 1997 by SJRPP indicated a H₂SO₄ concentration of 8.16 ppm. The H₂SO₄ concentration for the June 1997 test was clearly below the baseline tests conducted for coal firing. Thus, no increase in emissions of H₂SO₄ has occurred.

Overall, no specific short-term emission limits were established for CO and H₂SO₄ as a result of petroleum coke use. The Department will make a future determination whether or not significant annual increases have occurred based on analysis of future actual representative annual emissions. This determination will be based on information provided by SJRPP through semi-annual tests, continuous emission monitoring data, etc.

For your information, the Sierra Club challenged issuance of the permit. SJRPP and the Sierra Club jointly obtained the independent assistance of Dr. William C. Zegel, now President of Air and Waste Management Association. He determined that CO and H₂SO₄ emissions increases are not occurring as a result of burning a petroleum coke blend. As a result, the Sierra Club dropped its request for an administrative hearing.

As more testing is conducted, similar test comparisons will be made. If there are any questions please call Syed Arif at (850) 488-1344.

Sincerely,



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

AAL/sa

cc: H. Oven, DEP/SCO
W. Walker, RESD

P 265 659 452

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PA 81-13 SJRPP Units 1+2	

PS Form 3800, April 1995

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Wayne Tuttt AE
Regulatory & Env. Serv. Dept.
421 W. Church St.
Suite 422
Jacksonville, FL
32202-4111

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P 265 659 452

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X S. Dunn

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Jay Worley
FAX # 904-751-7719

JACKSONVILLE ELECTRIC AUTHORITY

21 WEST CHURCH STREET • JACKSONVILLE, FL 32202-3139



August 25, 1997

RECEIVED
AUG 29 1997
BUREAU OF
AIR REGULATION

Mr. Al Linero
Florida Department of Environmental Protection
Division of Air Resources Management
2600 Blair Stone Road, MS 5505
Tallahassee, FL 32399-2400

RE: Jacksonville Electric Authority
Northside Generating Station
Units 1 and 2 Repowering Project

Dear Mr. Linero:

Thank you for the recent opportunity to meet with you and discuss the repowering of JEA's Northside Units 1 and 2. I have attached a copy of a fact sheet that reflects many of the same items we discussed. In the coming months we will be sending out updates on the project as the design continues to finalize. We will highlight different aspects of the project as well as any changes. Our hope is to continue the open exchange of information, and we welcome your feedback and concerns.

During our meeting we took note of and appreciated your comments including your advice as how to best comply with Florida's PSD requirements. We are continuing to consider your input as the project plans are finalized.

As always, please feel free to contact me at 904/632-6245 or Bob Kappelman at 904/632-6249 if you have any questions concerning the project.

Sincerely,

Richard Breitmoser, P.E.
Vice President
Environmental Health & Safety Group

RB/RLK/pja

cc: S. Arif, BAR

Attachment

community and others to better understand their views and get their input and address concerns regarding the repowering plan.

During the third quarter of 1997, an engineering firm will be selected to develop the preliminary design which will support the permitting process. Public input will be factored into the design and permitting processes.

Fuel Price Is the Most Important Factor in the Cost of Electricity

A major consideration in the planning process was fuel prices. Fuel is by far the largest single component of the overall cost of electricity. Given the trends toward deregulation and greater competition in the electric utility industry, fuel price is of paramount importance in the evaluation of capacity additions.

Among the fuel options considered were petroleum coke, coal, high sulfur fuel oil, natural gas and low sulfur fuel oil. Petroleum coke, a byproduct of oil refining operations, is projected to have the best price and long term price stability of all the alternatives evaluated. JEA recently completed a successful test burn of petroleum coke at the St. Johns River Power Park and has been burning petroleum coke at the Power Park since February 1997.

Circulating Fluidized Bed Technology Is Cost Effective and Environmentally Friendly

As a final step in the planning process, an optimization model was run to determine the best generation alternatives for meeting the demand, considering demand and fuel forecasts, financial factors, the existing generating system, and options for building or purchasing generation. The result of this modeling effort was the proposal to repower Northside Generating Station Units 1 and 2, using petroleum coke as the fuel. The technology selected is circulating fluidized bed, an advanced and proven generating technology that is very fuel flexible and results in low air emissions.

Based on all the options considered in this multi-step planning process, the repowering of the existing units at Northside is the best option to improve the local environment, provide the needed power and maintain JEA's low electric rates.

For Further Information Contact

Anyone interested in obtaining additional information about the plan may contact:

Environmental Issues -

Robert Kappelmann - 632-6249

Richard Breitmoser - 632-6245

Construction, Labor, Equipment -

Reece Comer - 632-6312

**Northside Repowering Units 1 and 2
Jacksonville Electric Authority
Fact Sheet**

Jacksonville's Growth is Expected to Continue

In 1996, the annual update showed continuing load growth in the 3 percent per year range. Based on that forecast, there was a need for new generating capacity to come on line to meet demand by the year 2002, even considering energy conservation, interruptible and curtailable loads and other available resources, such as cogeneration, purchased power and renewables.

Integrated Resource Planning Process Updates Forecasts and Evaluates Alternatives

Following the recommendation of the Energy Policy Act of 1992, the Jacksonville Electric Authority adopted the Integrated Resource Planning Process in 1994 as its standard procedure for determining the need for new facilities. An integrated resource plan evaluates the full range of alternatives, including new generating capacity, power purchases, energy conservation and efficiency, cogeneration and renewable energy resources. Based on the results of the planning process, the JEA Board adopted a reference plan in 1995, which is reviewed and updated annually by staff.

JEA Board Approves Plan

On May 21, 1997, the Jacksonville Electric Authority Board approved a plan to move forward with the repowering of Northside Generating Station Units 1 and 2. The project will involve the installation of new circulating fluidized bed boilers, burning petroleum coke as the primary fuel with coal as the back-up fuel. The repowering proposal was identified as the preferred option as a result of an extensive evaluation of energy needs and alternatives for meeting those needs, called the Integrated Resource Planning Process.

Targets Set for Environmental Improvement at the Northside Generating Station

JEA's management has established a target of a 10 percent reduction in total annual emissions of sulfur dioxide (SO₂), nitrogen oxide (NO_x), and particulate matter compared to emissions during the most recent typical two-year operating period at Northside, 1994-1995. Also targeted for a 10 percent reduction is total annual groundwater consumption at Northside. This is to be accomplished while increasing the total annual energy output from 2,320,000 megawatt hours to 6,220,000 megawatt hours.

Based on a conceptual design developed by staff, these reductions appear to be achievable and have been established as a target for the selected engineering firm to meet or exceed.

Formal Regulatory Approval Process to be Preceded by Public Input

Following the Board's approval of the plan, the permitting process and preliminary design are set to begin. A number of environmental issues will need to be addressed. Prior to starting the formal permitting process, JEA officials will be consulting with Northside and other Jacksonville residents, environmental interests, the business



Department of Environmental Protection

Lawton Chiles
Governor

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

Virginia B. Wetherell
Secretary

June 23, 1997

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Jay Worley
Environmental & Safety Manager
St. Johns River Power Park
11201 New Berlin Road
Jacksonville, Florida 32226

Re: Site Certification No. PA 81-13
St. Johns River Power Park

Dear Mr. Worley:

The Department has reviewed your request for utilization of lime mud in lieu of limestone as a flue gas desulfurization reagent. Based on the analytical data submitted in your letter of June 4, 1997, the Department needs additional information to process this request.

1. Please resubmit the request and the findings through a Professional Engineer. Any conclusions reached based on this request should be sealed by this Professional Engineer.
2. The Material Safety Data Sheet submitted for the lime mud indicates its incompatibility with acids which could result in release of dangerous concentrations of hydrogen sulfide gas. Please indicate how will this affect the operation, since the scrubber does have a fluctuating pH. What will be the effect of odor with the release of hydrogen sulfide gas?
3. What kind of storage facilities will be provided for this reagent, and how will this material be delivered?

The Department will resume processing this request after receipt of the above information. If you have any questions on this matter, please call Syed Arif at 904/488-1344.

Sincerely,

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

AAL/sa

cc: H. Oven, DEP/SCO
S. Pace, RESD

P 265 659 230

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PA 81-13 6-24-97	

PS Form 3800, April 1995

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	3. Article Addressed to: Jay Worley, Encl. E Safety Mr. St. Johns River Power Park 11201 New Berlin Rd Jacksonville, GA 32226	4a. Article Number P 265 659 230
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Thank you for using Return Receipt Service.

EV 970528

VIA FAX



May 28, 1997

Mr. Syed Arif
Florida Dept. of Environmental Protection
Bureau of Air Regulation
Mail Station 5505
2600 Blair Stone Rd.
Tallahassee, FL 32399-2400

RE: St. Johns River Power Park Units 1 & 2
Site Certification No. PA 81-13

Dear Mr. Arif:

Pursuant to your request, the following is a description of the temporary modification that was incorporated to co-fire petroleum coke with coal at the above referenced facility.

A temporary enclosed conveyor with an enclosed hopper for reclaiming petroleum coke was installed on the permanent loading conveyor. The petroleum coke can be reclaimed to the permanent conveyor where it is transported to the crusher building surge bin. At this location the petroleum coke is blended with coal as reclaimed by a second conveyor. Again using the temporary conveyor, petroleum coke can be blended with coal reclaimed by the stacker reclaimer which feeds the permanent conveyor. Feed rates and scales are utilized to ensure a proper 80% coal and 20% petroleum coke blend.

Please let me know if you have any questions or comments regarding this information.

Sincerely,

Jay Worley
Director, Environmental & Safety

ML

**REGULATORY & ENVIRONMENTAL
SERVICES DEPARTMENT**
Air & Water Quality Division

RECEIVED
APR 08 1997
BUREAU OF
AIR REGULATION



April 3, 1997

Mr. Hamilton Oven, P.E.
Administrator Power Plant Siting
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

**RE: St. Johns River Power Park
Site Certification No. PA 81-13
Request to Utilize Lime Mud**

Dear Mr. ^{Brent}Oven:

The Regulatory and Environmental Services Department, Air and Water Quality Division (AWQD), has reviewed your memo dated March 17, 1997 and has the following comment.

What reasonable assurance will be provided to prevent potential contaminants contained in the lime mud from being emitted to the atmosphere, or entering the solid waste and waste water streams?

The AWQD appreciated the opportunity to comment on the proposed change at the St. Johns River Power Park.

Very truly yours,

Robert S. Pace, P.E.
Air Quality Branch Manager

RSP/be

- c: ✓ Mr. Clair Fancy, FDEP
- Mr. Chris Kirts, DEP/NED
- Mr. Wayne Tutt, AWQD
- AWQD Permitting File
- AWQD File 1710-A



EV 970307

March 07, 1997

DEPARTMENT OF
ENVIRONMENTAL PROTECTION
MAR 12 1997
SITING COORDINATOR



Mr. Hamilton Oven, P.E.
Administrator Power Plant Siting
Florida Dept. of Environmental Protection
2600 Blair Stone Rd.
Mail Station 48
Tallahassee, FL 32399-2400

RECEIVED
MAR 12 1997
BUREAU OF
AIR REGULATION

RE: St. Johns River Power Park (SJRPP)
Site Certification No. PA 81-13
Request to Utilize Lime Mud

Dear Mr. Oven:

Pursuant to our telephone conversation of 03-07-97, the utilization of lime mud as a flue gas desulfurization reagent is requested. As you are aware, this material is generated from the pulp and paper industry in their process. Please find enclosed a copy of the Material Safety Data Sheet (MSDS) and the TCLP analytical metals for this material.

Please contact me at (904)751-7729 if you have any questions regarding this request.

Sincerely,

Jay Worley
Director Environmental & Safety

CC: S. Arif, BAR

MANUFACTURER: CONTAINER CORP. OF AMERICA

MAY 21, 1986

TRADE NAME

LIME MUD (UNWASHED)

SYNONYMSCAS. NO.

Calcium Carbonate (1317-65-3)
Sodium Hydroxide (1310-73-2)
Sodium Sulfide (1313-82-2)

DESCRIPTION

A slurry of mainly calcium carbonate, sodium hydroxide and sodium sulfide formed when lime (CaO) is reacted with green liquor in kraft chemical recovery.

PHYSICAL DATA

Boiling Point Not Applicable
Specific Gravity Not Available
Vapor density Not Applicable
% Volatiles by Vol. Not Applicable
Melting Point Not Applicable
Vapor Pressure Not Applicable
Solubility in H₂O (% by Wt.) Not Available
Evaporation Rate (Butyl Acetate=1). Not Applicable
pH Highly Alkaline
Appearance and Odor Green-tinted mud, odorless

FIRE AND EXPLOSION DATA

Flash Point Not Applicable
Autoignition Temperature Not Applicable
Explosive Limits in Air Not Applicable
Extinguishing Media Not Applicable
Special Fire Fighting Procedures Not Applicable
Unusual Fire and Explosion Hazard Not Applicable

HEALTH EFFECTS INFORMATION

Exposure Limit. OSHA PEL for NaOH: 2mg/M³
Skin and eye contact. Can cause irritation, reddening or burning up to severe burns. Contact with eyes can also cause blindness.
Ingestion Will cause serious damage to mouth, throat and stomach if accidentally ingested. Death may result.
Skin Absorption Not known to occur.
Inhalation Inhalation may cause respiratory tract irritation or destructive burns.
Chronic Effects: None that are known.