# Florida Department of Environmental Protection

Bob Martinez Center
2600 Blairstone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor
Jeff Kottkamp
Lt. Governor
Michael W. Sole
Secretary


October 15, 2008

*Electronically Sent - Received Receipt Requested*

ChanJM@jea.com
Mr. James M. Chansler, P.E., D.P.A.
Chief Operating Officer
Jacksonville Electric Authority (JEA)
21 West Church Street
Jacksonville, Florida 32202

Re: DEP File No. 0310561-002-AC (PSD-FL-405)
Greenland Energy Center
Nominal 563 megawatts (MW) Combined Cycle Unit

Dear Mr. Chansler:

On September 16, 2008 we received your application for an Air Construction Permit pursuant to the Rules for the Prevention of Significant Deterioration (PSD permit) to construct a nominal 563 MW "2-on-1"combined cycle (CC) power plant to be known as Greenland Energy Center site in Duval County. The new project is a conversion of the simple cycle (SC) project for which a draft permit was already issued.

Pursuant to Rules 62-4.055, and 62-4.070 F.A.C., Permit Processing, the Department requests submittal of the additional information prior to processing the application. Should your response to any of the below items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

**Application General Information**

1. When is the anticipated construction date for this project?
2. According to the application, it appears as if the CC project will be capable of operating in SC mode for all the hours and at the emission rates requested by JEA for the SC project. Please clarify that the nature of the operation after completion of the CC project will reflect operation similar to that of the Brandy Branch Plant (that also went through an SC phase prior to the CC conversion).

   If serious consideration is given to extensive future SC operation (e.g. 4,000 hours per year per CT), then the option of hot selective catalytic reduction (SCR) should be considered as an alternative to medium temperature SCR.
3. Section 2.2.4 states that this project will utilize a multiple cell cooling tower. To the extent possible at this point in the design, please provide nominal characteristics of the cooling tower.
4. Section 2.2.1 states the each CT will include, among several features, static inlet filtration. Please explain. Would this project use inlet fogging or evaporative cooling?

**Best Available Control Technology (BACT) Analysis**

5. In Appendix of the application please refer to Table 3-4 "Alternative Capital Cost" and to Table 3-5 "Alternative Annualized Cost". Table 3-4 lists the total capital investment as $5,243,000 and Table 3-5 lists the total annualized cost of using a $NO_X$/CO combined SCR/oxidation technology as $1,952,000. The total cost effectiveness ($/ton) for $NO_X$/CO combined was not calculated. Please explain.

6. In the BACT analysis included in the application, the use of selective catalytic reduction was considered cost effective for the control of $NO_X$ at $6,715 per ton of $NO_x$ removed. Please explain why oxidation catalyst to further reduce CO emissions was not considered cost effective at $2,161 per ton of CO removed.

7. Provide estimates of ammonia ($NH_3$) emissions and strategies to minimize slip and fine particulate formation potential. What kind of ammonia is proposed to be used (aqueous or anhydrous)? What safety measures will be in place for the transportation and storage?

**Air Quality Analysis**

8. In Table 4-3, the annual surface roughness length as calculated by the AERSURFACE tool for the Jacksonville meteorological site is given as 0.32, while the facility's is given as 0.61. The department's calculations show a value near 0.1. Please do additional modeling for the worst case years of 2001 for NOx and 2002 for $PM_{10}$ using the facility's surface characteristics. The facility's surface characteristics as calculated by the AERSURFACE tool may be used in the AERMET preprocessor as Stage 3 input.

Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. Please advise the professional engineer to make sure he/she uses the correct seal in compliance with the applicable requirements of the Florida Board of Professional Engineers. Please note that per Rule 62-4.055(1): "The applicant shall have ninety days after the Department mails a timely request for additional information to submit that information to the Department... Failure of an applicant to provide the timely requested information by the applicable date shall result in denial of the application."

We will forward any comments from EPA Region IV and the National Park Service as soon as they are received. If you have any questions regarding this matter, please contact Teresa Heron (review engineer) at 850/921-9528 or Cleve Holladay (meteorologist) at 850/921-8986.

Sincerely,

A.A. Linero, Program Administrator
Special Projects Section
Bureau of Air Regulation

cc: Greg Strong, DEP NED: greg.strong@dep.state.fl.us
Heather Abrams, EPA Region 4: abrams.heather@epa.gov
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Richard Robinson, Jacksonville EQD: robinson@coj.net

## Walker, Elizabeth (AIR)

**From:** Linero, Alvaro
**Sent:** Wednesday, October 15, 2008 8:35 PM
**To:** ChanJM@jea.com
**Cc:** *Kirts, Christopher; Strong, Greg; Halpin, Mike;* MannAT@JEA.com; worley.gregg@epa.gov; abrams.heather@epa.gov; krivo.stanley@epa.gov; davis.scottr@epa.gov; robinson@coj.net; catherine_collins@fws.gov; meredith_bond@fws.gov; giannb@jea.com; forney.kathleen@epa.gov
**Subject:** Greenland Combined Cycle Project
**Attachments:** PSD405JEAInc.pdf

Dear Mr. Chansler:

Attached is our request for additional information related to your application for an air construction permit to complete the Greenland simple cycle project to combined cycle operation. For the benefit of the other reviewers, the application details are at the following web link:

www.dep.state.fl.us/Air/permitting/construction/greenland.htm

Feel free to have your assigned engineer or consultant call us to discuss the comments at an early date.

Thank you,

Alvaro Linero, Program Administrator
State of Florida
Department of Environmental Protection
Bureau of Air Regulation
1-850-921-9523

## Walker, Elizabeth (AIR)

**From:** Linero, Alvaro
**Sent:** Friday, October 17, 2008 11:05 AM
**To:** Walker, Elizabeth (AIR)
**Subject:** FW: Delivery Status Notification (Relay)
**Attachments:** ATT139600.txt; Greenland Combined Cycle Project

Elizabeth:

Please adjust permit tracking to show RAI went out for JEA Greenland (PSD-405).

The letter and email are in the attachment.

Also the email below confirms receipt from the key person, Mr. Chansler, who is the only person from whom I actually need receipt.

Thanks.

Al.

-----Original Message-----
From: Exchange Administrator
Sent: Wednesday, October 15, 2008 8:35 PM
To: Linero, Alvaro
Subject: Delivery Status Notification (Relay)

This is an automatically generated Delivery Status Notification.

Your message has been successfully relayed to the following recipients, but the requested delivery status notifications may not be generated by the destination.

ChanJM@jea.com
MannAT@JEA.com
giannb@jea.com