

Florida Department of Environmental Protection

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

December 10, 2008

Electronically sent – Received Receipt requested.

chris.bradley@pgnmail.com

Mr. Chris Bradley, Senior Environmental Specialist
Progress Energy Florida (PEF)
P.O. Box 14042, MAC PEF-903
St. Petersburg, Florida 33701

Re: DEP File No. 1030011-011-AC (PSD-FL-381)
Biofuel Test Burn
Bartow, Pinellas County

Dear Mr. Bradley:

On March 24, 2008, the Department of Environmental Protection (Department) received your air permit application to allow the test burning of an E-grass based biofuel in steam units (SU) and combustion turbines (CT) at the referenced facility. At the request of PEF, various extensions of time to process the permit application were granted by the Department to allow PEF to finalize various aspects of the project. Additionally, on November 10, 2008, the Department received supplemental information to the original permit application to allow the test burning of another biofuel in the SU and CT units at the Bartow facility.

After review of the supplemental information you provided to the Department and reviewing the project overall in its increased scope, the Department Pursuant to Rules 62-4.055, and 62-4.070 F.A.C., Permit Processing, requests submittal of the additional information indicated below to address the Departments' concerns with regard to burning the two biofuels in the SU and CT units at the referenced facility.

Should your response to any of the below items require new calculations, please submit the new calculations, assumptions, reference materials and appropriate revised pages of the application forms.

1. On page one of the Application Report (paragraph 4) it is stated that "no plant changes to existing process equipment are necessary to test burn the proposed biofuels." However it has been indicated to the Department via phone conversations with the representative of PEF and in the supplemental application that an ethanol purging system along with a fuel skid will be required to test the biofuels in the SU and CT units at the facility. Please explain this discrepancy, because use of a purging system (including ethanol) and a fuel skid with the ability to heat the biofuels appears to constitute a change to the existing process equipment. [Rule 62-4.070, F.A.C. Reasonable Assurance]
2. Are the material properties for the E-grass biofuel that were provided in the original application (dated March 24, 2008) still accurate or has the fuel properties changed over time? If the E-grass biofuel properties have changed, please provide the new material property values to the Department. [Rule 62-4.070, F.A.C. Reasonable Assurance]

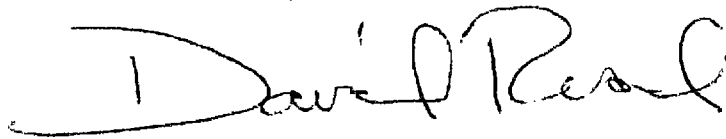
3. Since the date of the original application, has any emissions data become available with regard to the burning of the E-grass biofuel in SU or CT units? If so, please provide the data to the Department. [Rule 62-4.070, F.A.C. Reasonable Assurance]
4. Is any emissions test data available comparing emissions from SU and CT units firing the NGB and/or the E-grass based biofuels to the similar units burning biodiesel meeting the ASTM 6751 international biodiesel specification? If any test results are available, please provide them to the Department. [Rule 62-4.070, F.A.C. Reasonable Assurance]
5. The lower heating value (LHV) energy contents of the E-grass biofuel (81,232 Btu/gal) and NGB biofuel (93,741 Btu/gal average, assuming LHV energy content is provided in the supplemental application) are significantly less than the typical LHV energy content of No. 2 distillate fuel oil (132,000 Btu/gal). Since the throughput of either biofuel must be greater than No. 2 fuel oil to maintain the same energy rating for the SU and CT units, explain how this will effect air emissions. It does not appear this factor was taken into consideration in either application when estimating the effects on pollutant emissions when burning the biofuels in the SU and CT units. [Rule 62-4.070, F.A.C. Reasonable Assurance]
6. What biofuel property testing procedures will be utilized by PEF to ensure that the specifications of the delivered biofuels meet the specifications of the biofuels provided in the air permit applications (original and supplemental)? Will vendor certification be used or will PEF conduct their own testing on the delivered biofuels? [Rule 62-4.070, F.A.C. Reasonable Assurance]
7. On page 5 of the Application Report, the effects on pollutant emissions that are anticipated by PEF while burning the biofuels are provided. Please provide a more detailed rational behind each of the anticipated pollutant emissions effects. Include in this rational, the anticipated effect on pollutant emissions of blends of the biofuels with No. 2 fuel oil, including the effect of the lower energy content of the biofuels. [Rule 62-4.070, F.A.C. Reasonable Assurance]
8. As per phone conversations with the PEF representative and the supplemental permit application, please describe the systems and procedures (pumping, injection, blending and purging) that will be required when burning the biofuels in the SU and CT units. [Rule 62-4.070, F.A.C. Reasonable Assurance]
9. Please provide any drawings or schematics of the pumping, injection, blending and purging systems indicated in Question No. 8. This information should include the fuel skid that will be required to inject the biofuels into the SU and CT units. According to the supplemental application, it appears that the skid will also have the ability to heat the biofuels prior to injection into the SU and CT units. Please provide to the department any drawings or schematics of the heating units. [Rule 62-4.070, F.A.C. Reasonable Assurance]
10. Please provide to the department information on how the biofuels and ethanol will be delivered to the site, stored on site and, if necessary, disposed of after testing is completed. [Rule 62-4.070, F.A.C. Reasonable Assurance]
11. Please provide to the Department a test matrix and schedule for the proposed biofuels test burn project. The matrix and schedule can be preliminary in nature, but should at a minimum indicate the number of blends (biofuels and No. 2 fuel oil mixtures by percent) that will be tested and the schedule associate with the testing of each blend. For example, will the initial testing take place with 100% biofuels or will blends initially be used. Also how long is it expected to take to test each biofuel blend. [Rule 62-4.070, F.A.C. Reasonable Assurance]
12. Please provide estimates of the pollutant emissions from the biofuel and ethanol storage tanks and the associated transportations systems to the SU and CT units. Also provide to the Department

information on how the biofuels will be heated (steam, heated coils, etc.) and what will be the pollutant emissions associated with the heating process. [Rule 62-4.070, F.A.C. Reasonable Assurance]

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 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."*

If you have any questions regarding this matter, please contact me at 850-414-7268.

Sincerely,

A handwritten signature in black ink that reads "David Read". The signature is written in a cursive, flowing style with a large initial "D".

David Read, Engineering Specialist II
Special Projects Section
Bureau of Air Regulation

DL

Cc: Scott Osbourn, P.E., Golder: sosbourn@golder.com
Mara Nasca, DEPSWD: mara.nasca@dep.state.fl.us
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Walker, Elizabeth (AIR)

From: Read, David
Sent: Wednesday, December 10, 2008 3:56 PM
To: 'Bradley, Chris'; 'sosbourn@golder.com'; Nasca, Mara; 'mayor@stpete.org'; 'sspratt@pinellascounty.org'; 'phesslin@pinellascounty.org'
Cc: Walker, Elizabeth (AIR)
Subject: RAI Bartow Biofuel Test Burn (DEP No. 1030011-011-AC)
Attachments: RAI_1.pdf

Mr. Bradley attached is a request for additional information (RAI) with regard to the permit application (original dated March 24, 2008 with a supplemental application dated November 7, 2008) by Progress Energy Florida (PEF) to test burn two biofuels in the steam units and combustion turbines (CT) at their Bartow facility.

If you have any questions in regard to this matter please do not hesitate to contact me.

David Lyle Read

Engineering Specialist II

Phone: 850-414-7268

Email: David.Read.dep.state.fl.us

Special Projects Section

Bureau of Air Regulation (BAR)

Division of Air Resource Management (DARM)