



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

October 21, 2009

Electronic Mail - Received Receipt Requested
rgreene@ingenco.com

Mr. Robert L. Greene
Industrial Power Generating Company (INGENCO), LLC
2250 Dabney Road
Richmond, Virginia 23230

Re: DEP File No. 0250623-007-AC (PSD-FL-408)
INGENCO Dade South – Installation of 24 reciprocating internal combustion engines
Second Request for Additional Information

Dear Mr. Greene:

The Department has received the response on September 21, 2009, for our initial request for additional information regarding construction and operation of an electric generation facility at the Dade South Landfill Facility in Miami-Dade County. Based on our review of the response, we have determined that additional information is needed in order to continue processing this application package.

Pursuant to Rules 62-296.340, 62-4.055 and 62-4.070 F.A.C., Permit Processing, the Department requests submittal of 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.

1. The applicant provided Table 1 which was the stack test results of nitrogen oxides (NO_x) and carbon monoxide (CO) emissions from the engines at its King and Queen Plant located in Virginia. Please explain if these and similar results from other facilities were used in developing the linear equation presented in Section 2.1.1 of the application. How does the linear equation in Section 2.1.1 apply for CO emissions? Is the same equation true for both NO_x and CO emissions? Additionally, explain why the Dade South requested emissions in Table 1 for NO_x and CO in lb/MMBtu given in the last column are less than the actual results for mixed fuel (GF + Bio-diesel) given under the stack test results column.
2. The Department indicated that a 1-micron filter (primary and polishing) will be required for treatment of the landfill gas. The applicant indicated that a 10-micron filter is sufficient based on USEPA determinations. The Department's regulatory authority of requiring a 1-micron filter comes from the Prevention of Significant Deterioration rules as follows:
 - Rule 62-212.400(4)(c) states that the owner or operator of a proposed source or modification shall submit all information necessary to perform any analysis or make any

determination required under this section. Such information shall include a proposed best available control technology (BACT).

- Rule 62-210.200(38) defines BACT as an emission limitation, including a visible emissions standard, based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, taking into account:
 - a. Energy, environmental and economic impacts and other costs;
 - b. All scientific, engineering and technical material and other information available to the Department; and
 - c. The emission limiting standards or BACT determinations of Florida and any other state; determines is achievable through application of production processes and available methods, systems and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of each such pollutant.

The rule further states that in no event shall application of BACT result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR Parts 60, 61 and 63.

The Department through the application of BACT can set standards more stringent than required by EPA. Recently issued Florida Permits for Trail Ridge Energy, Seminole Energy and Brevard Energy landfill gas (LFG) fired engines indicates the use of 1-micron primary and polishing filters for pretreatment of LFG as follows:

Brevard Energy, LLC Technical Evaluation and Preliminary Determination (January 19, 2007) – The Department has required the applicant to use 1 micron primary and polishing filters to remove particulate matter from the LFG fuel pretreatment process. EPA in the New Source Performance Standards for Landfill (40 CFR 60, Subpart WWW) requires removal of particulate matter down to only 10 microns. This additional requirement by the Department to remove particulate matter down to 1 micron will enable the applicant to meet the PM₁₀ BACT limit of 0.24 g/bhp-hr. BACT for the control of PM₁₀ emissions from the proposed IC engine operations is treatment of the LFG fuel down to 1 micron and proper equipment maintenance that minimizes the amount of particulate emissions produced during the LFG combustion process. (pg 14)

Based on the above BACT requirements, please provide the Department with cost effectiveness data of using 10 micron filter in the final knock-out chamber as a baseline for particulate matter less than 10 microns (PM₁₀) emissions. Provide the cost effectiveness estimate (\$ per ton of PM₁₀ removed) of installing 1-micron primary and polishing filters. This requested information must be certified by a professional engineer registered in the State of Florida.

3. The applicant indicated that siloxane removal system is technically infeasible for LFG to energy projects, and therefore a cost analysis is not required for a technically infeasible

control technology. The Department in its research found at least four facilities that were permitted to install siloxane removal system and of the four, two facilities were permitted to install selective catalytic reduction (SCR) for NO_x control. The facilities are as follows:

- a. Santee Cooper (Lee County Landfill Gas Electric Generation Facility; 4/2008)
- b. University of New Hampshire Landfill Gas Project, NH (6/2007)
- c. Ridgewood Power Facility, Johnston, Rhode Island (3/2009) – SCR included
- d. Tullytown Resource Recovery Facility, Tullytown, PA – SCR included

Additionally, the Department reviewed the Bio Energy (Washington), LLC application at the Cedar Hills Regional Landfill facility in Maple Valley, Washington. The applicant submitted cost effectiveness estimates for the installation of SCR for NO_x control and Oxidation Catalyst for CO control. The data reflected that the installation of SCR with ammonia control will amount to \$5,480 per ton of NO_x removed while Oxidation Catalyst will amount to \$4,979 per ton of CO removed.

Based on the above discussion, it clearly reflects that siloxane removal system is technically feasible for LFG to energy projects and that a cost analysis for the installation of SCR for NO_x control and an Oxidation Catalyst for CO control is warranted for the INGENCO project. Therefore, please submit the cost effectiveness estimate (in \$ per ton of pollutant removed) for the installation of siloxane removal system and SCR and Oxidation Catalyst for NO_x and CO control. This requested information must be certified by a professional engineer registered in the State of Florida.

4. Laboratory results of the LFG sampling for total sulfur compounds indicate that sample EFF-1700 was not included in the results. Please explain.
5. The applicant indicated that the LFG treatment system for LFG routed to INGENCO will be the responsibility of INGENCO. Does this imply that the LFG routed to the flares will not go through the treatment system? If so, what are the reasons for not routing all the LFG through the treatment system?
6. Please check the first page of the model input parameters for PM₁₀ increment/NAAQS emissions submitted with your response to the request for additional information. For example, the values for Florida Power & Light Cutler Power Plant Units 3 and 4 and Turkey Point Power Plant Units 1 and 2 emissions seem too low. According to the PM₁₀ modeling report sent in April, 2009, giving emission rates for sources in the vicinity of the project, the Cutler Unit 3 and 4 rates are 11.84 and 20.41 grams per second, respectively. The Turkey Point Unit 1 and 2 rates are 48.51 grams per second each. Please correct and remodel PM₁₀ emissions, if necessary.
7. Enclosed are comments submitted by the National Park Service. Please address their concerns.

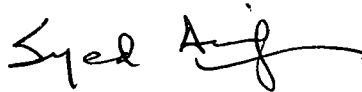
Mr. Robert L. Greene
Page 4 of 4
October 21, 2009

Any additional comments from EPA will be forwarded to you after we receive them.

The Department will resume processing this application after receipt of the requested information. 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. A new certification statement by the authorized representative or responsible official must accompany any material changes to the application. Rule 62-4.055(1), F.A.C. now requires applicants to respond to requests for information within 90 days.

We will be happy to meet and discuss the details with you and your staff. If you have any questions, I can be contacted at 850/921-9528. You may discuss the modeling requirements with Mr. Cleve Holladay at 850/921-8986.

Sincerely,



Syed Arif, P.E.
New Source Review Section

Enclosure

cc: German Hernandez, Miami-Dade Solid Waste Management: germanh@miamidade.gov
Kathleen Forney, EPA Region 4: forney.kathleen@epa.gov
Lee Hoefert, DEP-SED: lee.hoefert@dep.state.fl.us
Mallika Muthiah, DERM: muthim@miamidade.gov
James A. Susan, P.E., Fishbeck, Thompson, Carr & Huber, Inc.: jasusan@ftch.com
Dee Morse, NPS: dee_morse@nps.gov
Vickie Gibson, DEP-BAR: (victoria.gibson@dep.state.fl.us) (for read file)

Holladay, Cleve

From: Dee_Morse@nps.gov
Sent: Tuesday, October 20, 2009 10:46 AM
To: Holladay, Cleve
Subject: INGENCO Visibility Modeling Analysis Addendum for 8-MW Landfill Gas Generating Station

Cleve,

The National Park Service reviewed the Addendum to Visibility Modeling Analysis for INGENCO's 8-MW Landfill Gas Generating Station (August 2009). Based on the information provided in the addendum, a more refined assessment was conducted to assess plume impacts at Biscayne NP. As reported in Table A-1 and Table A-2 of the addendum there will still be significant plume impacts at Biscayne NP. Results of the refined analysis show plume perceptibility impacts (exceeding a delta E of 2.0) occur at several locations in Biscayne NP. While we understand the PSD regulations treat Class I and Class II areas differently with respect to visibility impact analyses, the National Park Service is concerned about the air quality of all its areas. Therefore, we are still concerned about the plume impacts at Biscayne NP and ask that INGENCO continue to look at mitigating measures to reduce emissions and plume impacts at Biscayne NP.

Please let me know if you have any questions concerning our comments.

Thanks,

Dee Morse
Environmental Protection Specialist
Air Resources Division
Natural Resource Program Center
National Park Service
Phone: 303 969-2817
Fax: 303 969-2822
e-mail: dee_morse@nps.gov

Please consider the environment before printing this email. Think Green!

Livingston, Sylvia

From: Robert L. Greene [rgreene@ingenco.com]
Sent: Wednesday, October 21, 2009 2:56 PM
To: Livingston, Sylvia
Subject: RE: Request for Additional Information - INGENCO Dade South 0250623-007-AC/ PSD-FL-408

received

-----Original Message-----

From: Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]
Sent: Wednesday, October 21, 2009 1:35 PM
To: Robert L. Greene
Cc: germanh@miamidade.gov; forney.kathleen@epa.gov; Hoefert, Lee; muthiam@miamidade.gov; jasusan@ftch.com; dee_morse@nps.gov; Gibson, Victoria; Walker, Elizabeth (AIR); Holladay, Cleve; Arif, Syed
Subject: Request for Additional Information - INGENCO Dade South 0250623-007-AC/ PSD-FL-408

Dear Sir/Madam:

Please send a "reply" message verifying receipt of the attached document(s); this may be done by selecting "Reply" on the menu bar of your e-mail software, *noting that you can view the documents*, and then selecting "Send". We must receive verification of receipt and your reply will preclude subsequent e-mail transmissions to verify receipt of the document(s).

The document(s) may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible.

The document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: <<http://www.adobe.com/products/acrobat/readstep.html>> .

The Bureau of Air Regulation is issuing electronic documents for permits, notices and other correspondence in lieu of hard copies through the United States Postal System, to provide greater service to the applicant and the engineering community. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record.

Thank you,

Sylvia Livingston
Bureau of Air Regulation
Division of Air Resource Management (DARM)
850/921-9506
sylvia.livingston@dep.state.fl.us

The Department of Environmental Protection values your feedback as a customer. DEP Secretary Michael W. Sole is committed to continuously assessing and improving the level and quality of services provided to you. Please take a few minutes to comment on the quality of service you received. Simply click on [this link to the DEP Customer Survey](#). Thank you in advance for completing the survey.

Livingston, Sylvia

From: Susan, Jim [jasusan@FTCH.com]
Sent: Wednesday, October 21, 2009 2:58 PM
To: Livingston, Sylvia
Subject: RE: Request for Additional Information - INGENCO Dade South 0250623-007-AC/ PSD-FL-408

Sylvia, we can view the document. Jim

From: Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]
Sent: Wednesday, October 21, 2009 1:35 PM
To: rgreene@ingenco.com
Cc: germanh@miamidade.gov; forney.kathleen@epa.gov; Hoefert, Lee; muthiam@miamidade.gov; Susan, Jim; dee_morse@nps.gov; Gibson, Victoria; Walker, Elizabeth (AIR); Holladay, Cleve; Arif, Syed
Subject: Request for Additional Information - INGENCO Dade South 0250623-007-AC/ PSD-FL-408

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Thank you,

Sylvia Livingston
Bureau of Air Regulation
Division of Air Resource Management (DARM)
850/921-9506
sylvia.livingston@dep.state.fl.us

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Livingston, Sylvia

From: Hernandez, German (SWM) [germanh@miamidade.gov]
Sent: Wednesday, October 21, 2009 2:13 PM
To: Livingston, Sylvia
Subject: RE: Request for Additional Information - INGENCO Dade South 0250623-007-AC/PSD-FL-408

I am in receipt of the document and am able to view it. Thanks.

German Hernandez, P.G.
Manager, Environmental Affairs
Department of Solid Waste Management
305-514-6673
"Delivering Excellence Every Day"

From: Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]
Sent: Wednesday, October 21, 2009 1:35 PM
To: rgreene@ingenco.com
Cc: Hernandez, German (SWM); forney.kathleen@epa.gov; Hoefert, Lee; muthiam@miamidade.gov; jasusan@ftch.com; dee_morse@nps.gov; Gibson, Victoria; Walker, Elizabeth (AIR); Holladay, Cleve; Arif, Syed
Subject: Request for Addtional Information - INGENCO Dade South 0250623-007-AC/ PSD-FL-408

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