

From: [Read, David](#)
To: [Walker, Elizabeth \(AIR\)](#)
Cc: [Vielhauer, Trina](#); [Lineró, Alvaro](#)
Subject: FW: Review Comments - Gainesville Renewable Energy Center
Date: Thursday, September 16, 2010 10:36:49 AM

Elizabeth, I think this is the EPA email you were talking about.

David

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

From: Nelson, Deborah
Sent: Thursday, March 18, 2010 1:40 PM
To: Linero, Alvaro; Read, David
Subject: FW: Review Comments - Gainesville Renewable Energy Center

Fyi

From: Krivo.Stanley@epamail.epa.gov [Krivo.Stanley@epamail.epa.gov]
Sent: Thursday, March 18, 2010 1:34 PM
To: Nelson, Deborah
Cc: Abrams.Heather@epamail.epa.gov
Subject: Review Comments - Gainesville Renewable Energy Center

Debbie,

The following are my review comments on the above referenced air quality permit application for the Gainesville Renewable Energy Center (GREC), a 100-megawatt biomass-fired electric generating facility to be located in Gainesville, FL. Because you may have information that can resolve some of my questions, I suggest we discuss the comments prior to providing them to the applicant.

1. Project Emissions – The project BFB boiler emissions are provided in Tables 2-4 through 2-12. These emissions are associated with 100 percent load conditions. The criteria pollutant emission rates are provided (i.e., in TPY, lbs/hr, and g/sec) are associated with different averaging periods (i.e., 24-hour and annual; 3-hour and annual). Pollutants with shorter period standards, SO₂ and CO, the emission rates applicable to the shorter periods should be provided. Confirmation is needed that the provided values are the maximum allowable hourly emission rate for each averaging period for each pollutant.

Tables 2-4 and 2-8 appear to assume PM_{2.5} emissions are equal to PM₁₀ emissions. Although this would be a conservative assumption, it is suggested that the PM_{2.5} emissions be provided with all PSD permit application to facilitate the development of PM_{2.5} emission inventories. Even if the PM₁₀ surrogate policy is applicable to address PM_{2.5} emissions, estimates of PM_{2.5} emissions from the project should be provided.

The maximum hourly emission rates for the emergency generators and firewater pump diesel engines were provided in Table 2-8. Because these generators are indicated to operate 500 hours per year, the emergency generators should be included in the impact modeling.

2. Assessment of PM_{2.5} Impacts – The USEPA PM₁₀ surrogate policy is

only acceptable for a project if the policy is shown to be applicable. The appropriateness of the policy for this project must be addressed (e.g., the characteristics of the project PM2.5 emissions are such that meeting the PM10 PSD and NSR program requirements will be protective of the PM2.5 ambient air quality). Otherwise the impacts of PM2.5 project emissions should be addressed.

3. New NO2 1-Hour NAAQS – This comment is just a heads-up that the new 1-hour NO2 NAAQS will be effective on 12 April 2010 for all PSD applicants that have not already obtained their permit.

4. BFB Boiler Operation – The air quality impact assessment was limited to BFB boiler operation between 70 and 100 percent load. This limited load range should be included as a permit condition.

5. Receptor Grids – The application indicates the initial modeling of the BFB boiler emissions showed the maximum impacts occurred within 1 km of the boiler stack. All future modeling used, except for CO, a Cartesian receptor grid centered on the boiler power block area with 100-m spacing extending 2 km. The following comments are associated with the selected final modeled grid.

- The location of receptors with concentrations greater than and equal to the significant impact level (SIL) should define the final receptor grid not just the maximum impacts. Confirmation is needed that all project impacts equal to and greater than the SIL are contained in these grids.

- If the initial modeling showed the maximum impacts for all pollutants within the near-field Cartesian 100-m spaced grid that extended to 3 km; why was a new grid developed and why was CO modeled with the full receptor grid?

6. Modeled Project Emissions – The following comments are associated with the modeled project emissions.

- Section 7.8 indicates the SIL modeling assessments were performed with just the BFB boiler emissions. Section 7.10.1 indicates all PM10 project emission sources were included in the PM10 impact assessment while SO2 and NO2 modeling only included emissions from the BFB boiler. Section 8.1.1 further states that the diesel generators were only included in CO modeling. Because of the different descriptions of project emissions used in the various impact modeling, the project emission sources included in each pollutant's impact modeling should be provided.

7. Inventory of Additional Emission Sources – The following comments are associated with the development of NAAQS and PSD inventories of other sources used in cumulative PM10 compliance modeling.

- Section 7.10.1 indicates the emergency diesel engines will operate only 97 hours per year while Table 2-8 has these engines operating 500 hours per year. This discrepancy should be resolved.

- The 20D procedure is used to identify sources for elimination consideration. Emissions from sources located in close proximity should be combined before application of the 20D procedure. These sources impact the SIA as if they were one source.

- Total facility emissions, including fugitives and other non-stack emissions, should be used in the 20D assessment.

- The lack of numerical emission rates for the 3 combustion turbines at J.R. Kelly Generating Station does not appear to be an appropriate reason to eliminate these units from the impact modeling. It appears that appropriate values could be obtained or estimated.

- No emission units from Deerhaven Generating Station should be

eliminated. The proposed project is located on land leased from Deerhaven so their emissions are most important in the cumulative NAAQS and PSD compliance assessment.

- The reason use of the silo filters release parameters is conservative for all the Specialty Construction Brands Inc. emissions should be explained.
- The fugitive emission units that were eliminated from Thompson S. Baker Cement Plant should be explained. Fugitive emissions are important in PM10 NAAQS and PSD compliance modeling.
- The emissions associated with vent only sources in Table 7-4 should be provided and included, as appropriate, in the NAAQS and PSD increment modeling. This is especially true for the vent sources located within and close to the SIA.
- All emission sources within the SIA should be included in the modeling.
- The basis for the lb/hr emission rates in Table 7-5 should be provided. These emission rates should be the allowable 24-hour average lb/hr values associated with each emission unit.
- The total plant emissions used in the 20D procedure are provided in Table 7-4. These total facility emissions appear much larger than the sum of the modeled emissions provided in Table 7-5 for John R. Kelly Power Plant, Specialty Construction Brands, and Thompson S. Baker Cement Plant. The apparent difference between the total plant PM10 emissions in these two tables should be explained.

8. PSD Significant Impact Analysis – The significant impact analysis included the BFB boiler at 70 and 100 percent loads. The emission rates used appear to be based on the annual TPY provided in Table 2-11 and were the same for all averaging periods. The correct emission rate should be the maximum allowable hourly emission rate associated with the averaging period of concern. Confirmation is needed that the annual average hourly emission rates are appropriate for the shorter-term SO₂, CO, and PM10 standards.

The difference between the CO SIL model concentrations provided in Tables 8-1 through 8-4 and those provided in Table 8-9 was the inclusion of the emergency diesel engines. Inclusion of the emergency engines does not appear sufficient to explain the large difference in modeled concentrations.

9. Additional Impact Analyses – The soils and vegetation analysis should use the estimated ambient pollutant compare concentrations including project emissions (e.g., NAAQS compliance concentrations) with the applicable sensitivity or harmful target concentrations. The application just compares project impacts (i.e., concentrations used for SIL analyses) to the target concentrations. For pollutants with project impacts less than the SIL, the sum of the project only impacts and representative background ambient monitored concentrations could be used as a surrogate for this comparison analysis.

Please let me know of any questions and when you are available for a telephone discussion
Thanks...sjk

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