



Florida Department of Environmental Protection

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June 22, 2007

SENT BY ELECTRONIC MAIL – RECEIVED RECEIPT REQUESTED

Mkurtz@colectric.com

Mr. Michael L. Kurtz, Executive Director
Taylor Energy Center
3701 Northwest 98th Street
Gainesville, Florida 32606

Re: DEP File No. 1230052-001-AC (PSD-FL-391)
Taylor Energy Center
Nominal 800 megawatt (MW) Solid Fuel-fired Power Plant

Dear Mr. Kurtz:

On May 24, 2007 we received your application for an Air Construction Permit pursuant to the Rules for the Prevention of Significant Deterioration (PSD permit) to construct a solid fuel-fired power plant to be known as the Taylor Energy Center (TEC) in the vicinity Perry, Taylor County.

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.

1. Refer to the comments attached to this letter from the United States Fish and Wildlife Service Air Quality Branch (FWS). They will provide additional comments following their ongoing review of air-related information submitted within the Site Certification Application (SCA) but not as part of the PSD permit application. The Department requires the same information described in the FWS communication.
2. Please document the contacts and consultations to-date about this project with the Panama City or Jacksonville offices of the FWS related to endangered species on site and in the environs of the proposed site.
3. We reviewed the information provided in the separate SCA Volume III regarding the available coal options. This subject matter should also be discussed in the PSD permit application. Please update the emission profiles for the integrated gasification and combined cycle (IGCC) cases to represent the nitrogen oxides (NO_x) and sulfur dioxide (SO₂) limits available from suppliers for consideration as best available control technology (BACT).

The NO_x achievable limits are now less than the values of roughly 0.05 to 0.08 pounds per million Btu (lb/mmBtu) cited in Table 3-2. The project with the highest emission rate did not actually trigger a BACT determination for NO_x. The existing unit at the Tampa Electric Polk Power Station was constructed a decade ago and has a limit equivalent to roughly 0.057 lb NO_x/mmBtu. It achieves less than 0.05 lb NO_x/mmBtu when steam saturation is employed.

A final BACT determination was issued on June 5, 2007 by Illinois for the ERORA Taylorville IGCC project. The BACT for NO_x is 0.034 lb NO_x/mmBtu on a 24-hour basis. General Electric and Conoco Phillips have described bituminous coal IGCC reference plants characterized by even lower emissions than cited above when incorporating deep sulfur removal and selective catalytic reduction (SCR). The provider's descriptions are available at:

www.gasification.org/Docs/2005_Papers/29KEEL.pdf and

www.iea-coal.org.uk/publishor/system/component_view.asp?LogDocId=81264&PhyDocId=5653

[Rule 62-210.200, F.A.C. (Definitions-BACT); Rule 62-212.400, F.A.C. (PSD and BACT)]

4. Are there future phases planned for the facility?
5. Additional information is requested regarding the characteristics of the air pollution control equipment in terms of vessel sizes, reagents use estimates, air to cloth ratios, electrostatic precipitator capacities (ESP fields), etc. Please update the information in the application with the most recent information available to TEC based on the present status of front end engineering design (FEED).

[Rule 62-210.070, F.A.C. (Standards for Issuing or Denying Permits)]

6. Provide additional details on the types of candidate additives that are going to be added to the fuel and/or flue gas desulfurization (FGD) scrubber to enhance mercury (Hg) removal. Indicate how the additives will be applied and the mechanism by which they will enhance Hg removal. [Rule 62-070, F.A.C.]
7. In Table 2-1 Average Constituent Analysis of Coals and Petcoke average chlorine values by percent weight of 0.16, 0.01, 0.04, and 0.01 are given for central Appalachian, PRB, Latin American, and Petcoke fuels, respectively. However, in Table 2-2 chlorine design values by percent weight of 0.20, 0.04, and 0.21 are given for central Appalachian, PRB, and Petcoke fuels, respectively. Please explain this variation. Typically, higher chlorine amounts in coal enhances Hg oxidation in the flue gas and hence Hg removal by the fabric filter and FGD. [Rule 62-070, F.A.C.]
8. Provide the rationale for employing the fuel and wet scrubber additives strategy for Hg control instead of sorbent injection.
9. In Table A-7 Hg emission rates are calculated by fuel type mixture at 100 percent load. Include a mass balance calculation for each fuel type mixture including a simplified process flow diagram depicting the approximate average Hg flows in and out of the process steps including speciation. The flows should include: Hg in the incoming fuel including any additives to enhance Hg removal; the speciation of Hg entering and exiting the SCR; the amount captured by fabric filter; the amount removed by the wet scrubber

including any additives to enhance Hg removal; the amount removed by the wet ESP; and the amount exiting the stack. Also describe any discharges via scrubber effluent to treatment or disposal.

10. It will be necessary to install an ambient air monitoring station near the point of maximum concentration in the vicinity of the project to include at least the following pollutants: SO₂; NO_x; fine particulate matter (PM_{2.5}); ozone; and speciated Hg. A PM_{2.5} monitor should also be considered in the nearby community of Perry. Please submit a monitoring plan with the response.
11. Review the possibility of installing a particulate continuous emissions monitoring system (PM-CEMS) and of including a speciation feature in the required Hg-CEMS.
12. Provide information comparing the Hg emissions from the proposed project with stationary source information from other emitters of Hg in the region. Estimate the relative contribution and increase of the proposed project to the total Hg emissions from substantial stationary sources of Hg such as waste to energy plants, other power plants, etc.
13. Indicate the measures that will be taken to insure that Hg removed by the various air pollution control processes and discharged via the coal combustion by-products, scrubber effluents, etc. will not reenter the environment (such as from facilities that use fly ash as a raw material).
14. Explore the possibilities for further reductions of Hg at the proposed project and at existing facilities operated by or affiliated with the participating utilities to mitigate additional Hg emissions from the proposed project. Evaluate other possibilities for such mitigation.
15. Information about carbon dioxide (CO₂) was included in Volume I of the SCA. A 5-acre area has been designated for possible future CO₂ capture equipment. To what extent has TEC evaluated the possibilities of processes under development such as chilled ammonia scrubbing to remove CO₂? Provide plans to conduct studies prior to or pilot demonstration projects related to CO₂ capture during the early operation of the facility. Provide any reviews conducted or plans to conduct assessments regarding the availability of deep confined geological strata within a reasonable distance (e.g. <200 kilometers) of the proposed plant site for possible future CO₂ storage.
16. A projection of annual emissions of CO₂ was provided. Has TEC considered the possibility of reducing those emissions beyond what is currently contemplated?
17. Are there opportunities for multi-pollutant emissions reductions associated with CO₂ controls?
18. According to the SCA, the power plant will use some portion of the treated wastewater effluent from Buckeye for cooling purpose. It is unclear how much they will use. Buckeye presently collects at least methanol and probably turpentines from their pulping system to meet the relevant maximum achievable control technology (MACT-1) clean condensate alternative standard. Please estimate potential air emissions and odor from the use of the wastewater for cooling. Update the PSD permit application accordingly.

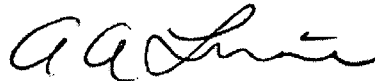
19. Provide more information regarding air emissions during the construction phase of the proposed project, including number and types of vehicles, description of heavy equipment, etc. Describe the measures to minimize the effects of construction activities at the site.
20. Please identify the likely sources of the various fuels mentioned in the application.
21. Provide the protocol for the start up and shutdown to minimize emissions and quantify emissions during this period.
22. The application included a brief discussion and emission estimates from the mobile source activities during the construction of the facility. Please provide more information regarding air emissions during the construction phase of the proposed project, including number and types of vehicles, description of heavy equipment, etc. Describe the measures to minimize the effects of construction activities at the site.
23. Provide a discussion of the expected mobile source activities during operation of the facility (coal delivery, coal movement, ash management, etc.). Provide emission estimates for these activities and reasonable precautions to be employed to minimize emissions from these mobile source activities.
24. Is there a plan to minimize construction and transportation equipment emissions by using ultra low-sulfur diesel fuel and minimizing idling?
25. Please provide more information regarding the types of vehicles and equipment used during operation of the proposed facility. Will there be a commitment to minimizing pollution by reducing idling and utilizing the use of ultra low sulfur fuel? Further, provide a detailed assessment of all traffic, including vehicle used, purpose of vehicle and miles traveled.
26. Please provide active spreadsheets for the emission rate calculations included in the tables in Appendix A. Please provide links between emission rates in the spreadsheets and modeling inputs used in the air dispersion modeling. Please expand the narrative description of the material handling and volume sources. Include each emission point. Please explain how the Initial Vertical Dimension was determined for volume sources.
27. Site layouts were provided in Figures 2-2 and 2-3. However, these plans are not sufficiently detailed to provide a way of matching emission point locations with modeling inputs. Please provide a plot plan of the facility in AUTOCAD format. The plot plan should be in UTM coordinates in meters, and should have a scale in meters. The digital plot should be at least as detailed as Figures 2-2 and 2-3, and include the location of all buildings, structures, equipment, piles, onsite roads and the rail line.
28. The proposed project triggers PSD review for VOC and NO_x, which are both precursors to the pollutant ozone. VOC and NO_x emissions in excess of 100 TPY require an ambient air quality analysis for ozone. The projected NO_x emissions were not included in the submitted air quality analysis for ozone. Please include NO_x emissions in this analysis.

29. Please provide the modeling input and output files for the Hg deposition value given in Table 9-2. Provide the assumptions regarding the speciation of Hg used in the deposition calculations. Extend the deposition estimates to the nearest Class I areas.
30. Address the potential for methylation of Hg already in the environment through biological transformation fed by sulfate deposition.
31. The CALPUFF modeling system was used to model impacts from the proposed project for the Class I areas. However, there are various versions of the modeling system, which includes CALPUFF, CALMET, POSTUTIL and CALPOST. The VISTAS version of the CALMET part of the system was used in the analysis for the TEC project. Because of ongoing discrepancies between impacts predicted using the CALPUFF system with the VISTAS CALMET data set, the federal land managers and the Department are unable to consider the use of this version for predicting impacts in the Class I areas. TEC could proceed with Class I modeling using one of the following methods:
 - (a) Reproduce the entire CALMET (3 years) data set using the regulatory version. Presently, the regulatory version is CALMET 5.53a, CALPUFF 5.711a, POSTUTIL 1.4 and CALPOST 5.51. The federal land managers' and the Department's preference would be for TEC to continue to use the modern (2001 to 2003) years of MM5 as utilized by VISTAS, instead of the older 1990, 1992 and 1996 data or
 - (b) TEC can wait and use the new regulatory version of the CALMET/CALPUFF model system when it is released.
32. For determining regional haze impacts in the Class I areas, TEC should either use a Rayleigh value of 10 with the old IMPROVE equation, or site specific data with the new IMPROVE equation. VISTAS offers a spreadsheet for using the new equation option.
33. The project is within 50 kilometers of the St. Marks PSD Class I area at its closest point. TEC provided a regional haze analysis for receptors greater than 50 kilometers from the project site, however there are eleven receptors identified by the federal land manager in the St. Marks Class I area that are within 50 kilometers. Because there could be near field visibility impacts, please provide a VISCREEN/PLUVUE plume blight analysis.
34. The FWS commented that in reviewing the modeled deposition results submitted with this application, the predicted sulfur and nitrogen deposition were each lower than what they typically see for a facility of this size and distance from a Class I area. Please check into the results and provide any explanation.
35. The PSD source inventory for the SO₂ Class I PSD increment analyses in the PSD Class I areas should be based on "actual" emissions from all facilities near the Class I areas. This includes both baseline (circa late 70's) and current/future emissions, with the exception of TEC's proposed emission limits. In addition, Jacksonville area sources should be included in the emission inventory.
36. Please provide an expanded discussion of the appropriateness of using Tallahassee National Weather Service data in the Class II air quality analysis. Please provide the aerial photographs used to classify the land use parameters at the TEC site. Provide the rationale for the values given at the bottom of page 6-12.

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.

If there are any questions, please call me at 850-921-9523 or Cleve Holladay at 850/921-8986.

Sincerely,



Alvaro A. Linero, Program Administrator
Bureau of Air Regulation
South Permitting Section

AAL/al

cc:

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