



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733

FEB 10 2010

Mr. Richard Hyde, P.E.  
Deputy Director  
Office of Permitting and Registration  
Texas Commission on  
Environmental Quality  
P.O. Box 13087  
Austin, TX 78711-3087

Re: White Stallion Energy Center, PSD Permit Nos. PSD-TX-1160, PAL 26, and HAP 28,  
Matagorda County, Texas

Dear Mr. Hyde:

Enclosed is the U.S. Environmental Protection Agency (EPA) analysis of the above-referenced permit actions. We performed this analysis in light of the recent issuance of the Texas Commission on Environmental Quality (TCEQ) Response to Comments (RTC) regarding this matter on October 2, 2009, and the upcoming "Hearing on the merits", scheduled to begin on February 10, 2010. Our comments focus on aspects of the permit actions that appear to be inconsistent with the requirements of the federal Clean Air Act and the implementing regulations, including the federally-approved Texas State Implementation Plan (SIP).

If the issues detailed in this letter are not appropriately responded to by TCEQ prior to final resolution of this permitting action, EPA may consider using Clean Air Act authorities to object to the subsequent Title V operating permit for this facility, or other remedies under the statute. Please contact me at (214) 665-7200, or Jeff Robinson of my staff at (214) 665-6435, if you should have any questions concerning this matter.

Sincerely yours,

A handwritten signature in black ink, appearing to read "C. Edlund", written over a white background.

Carl E. Edlund, P.E.  
Director  
Multimedia Planning  
and Permitting Division

Enclosure

cc: TCEQ Commissioners  
Mark Vickery, TCEQ Executive Director  
Steve Hagle, TCEQ

## ENCLOSURE

### **I. Air Quality Impacts Analysis**

We commented on the draft permit for the proposed White Stallion facility on April 14, 2009. In the Executive Director's response to comments (RTC), the TCEQ disagreed with our comments that photochemical modeling for ozone was needed to demonstrate that the proposed source would cause or contribute to violation of the National Ambient Air Quality Standards (NAAQS). TCEQ also disagreed with our comment that the ozone analysis performed by the applicant was in direct conflict with NO<sub>x</sub> control strategies developed to reduce ozone in the nearby Houston, Galveston, Brazoria (HGB) non-attainment area. TCEQ indicated if an evaluation of ozone impacts on a non-attainment area is needed, that the non-attainment SIP process is best suited for such an evaluation. As you are aware, 40 CFR § 51.165 and 51.166 requires permitting authorities to demonstrate that the proposed source will not cause or contribute to violation of the ozone NAAQS per 40 CFR 52.21(k). However, since this facility is proposed immediately outside the HGB non-attainment area, we continue to believe that appropriate air quality modeling must be conducted to clearly demonstrate that the project will not negatively impact ozone concentrations at specific monitors in the HGB area.

The TCEQ also stated in its RTC that EPA has no preferred model to determine impacts from a single source; no requirement for photochemical modeling; and no requirement for applicant to conduct regional ozone analysis. Our PSD regulations at 40 CFR § 51 Appendix W 5.2.1 recommend models for evaluating ozone impacts. Specifically, control agencies with jurisdiction over areas with ozone problems are encouraged to use photochemical grid models such as Models-3/Community Multi-scale Air Quality (CMAQ) modeling system to evaluate the relationship between precursor species and ozone. In our April 14, 2009 comment letter to TCEQ on the draft permit we also discussed potentially using a CAMx based analysis, since TCEQ has multiple episode databases that evaluate ozone levels in the Houston area. Appendix W 5.2.1 also recommends that permitting authorities consult with EPA on estimating the impacts of individual sources to determine the most suitable approach for estimating ozone impacts on a case-by-case basis. In an effort to determine that the proposed source will not cause or contribute to an air pollution in violation of ozone NAAQS standard, we have offered to work on a modeling protocol with TCEQ for this facility. To date, neither TCEQ nor the applicant have elected to consult with us on use of a modeling protocol that would estimate potential ozone impacts from the proposed source despite EPA's direct comment to TCEQ on this matter.

In addition, the TCEQ RTC expressed concern that the scope of the modeling and associated review required for multiple episodes and monitors (and potential control scenarios for any monitors currently above the ozone standard) would be costly, take up to a year to complete, and still not provide information to definitively address EPA's concerns, since the EPA does not have an established significant impact level (SIL) for ozone. Other permit applicants and permitting authorities in Region 6 (including TCEQ) have worked with us to conduct photochemical modeling to demonstrate that a proposed source would not cause or contribute to a violation of the ozone NAAQS. These projects have typically only taken a few months to

conduct and the cost, when a contractor has been used, is minimal with most analyses costing less than the other criteria pollutant modeling.

TCEQ also stated that EPA does not have a requirement for photochemical modeling of SIP attainment demonstration modeling techniques for NSR permitting purposes for sources of VOC or NO<sub>x</sub> within 100 and 200 kilometers, respectively of these precursors outside a non-attainment area. However, the TCEQ has developed multiple ozone SIPs where sources of NO<sub>x</sub>, that were at least 100-200 km outside the non-attainment areas, have been controlled to yield ozone decreases in the non-attainment areas (DFW and HGB SIPs in 2000/2001, DFW SIP 2007). TCEQ also commented that winds would not transport the proposed source's emissions to the HGB nonattainment area, but considering the proximity of the source to the HGB area, we are concerned because previous modeling episodes have had multiple days with winds from the west that could transport emissions towards the HGB nonattainment area.

We remain extremely concerned about the TCEQ guidance referenced by the applicant in the Modeling Report that was submitted as an assessment of the ozone impacts from the proposed source in its PSD permit application. Based on the results of this guidance, TCEQ and the applicant determined that the project is "ozone neutral." In the past, TCEQ has relied upon large NO<sub>x</sub> reductions to decrease ozone levels in ozone SIPs for the HGB and DFW areas. The current TCEQ approach for this permit relies upon science that assumes that the source has to emit VOCs at a sufficient level to chemically react with the source's NO<sub>x</sub> emissions to generate ozone. We disagree that VOC emissions have to be co-emitted at the source to cause impacts on ozone levels. Although TCEQ indicated this analysis is not based on the Scheffe Point Source Screening Tables for determining ozone ambient impacts, the approach and interpretation does not clearly demonstrate that the source will not adversely impact control strategies developed to reduce ozone in the nearby HGB non-attainment area. TCEQ and the applicants should utilize a technically appropriate modeling technique and should work with us (in accordance with PSD regulations and Appendix W) to determine whether a potential impact from this facility would cause or contribute to a potential violation of the ozone NAAQS standards or impacts on nearby non-attainment areas. TCEQ has not provided us a demonstration that this facility will not negatively impact ozone levels in Matagorda County or the HGB non-attainment area. If such modeling has been prepared by the applicant or TCEQ, we request that it be made available to us and the public for review.

## **II. Plantwide Applicability Limit (PAL)**

Since EPA has not approved TCEQ's PAL provisions into the SIP and proposed disapproval of such provisions on September 23, 2009, (74 FR 48474), any PAL permit issued by TCEQ to a new major stationary source may be considered a non-SIP-approved permit by EPA. We identified in our Federal Register notice that PAL permits can only be issued to *existing* major stationary sources, which precludes applicability of a PAL to a new major stationary source, as required under 40 CFR §§ 51.165(f)(1)(i) and 51.166(w)(1)(i). Without at least 2 years of operating history, a potential source like White Stallion Energy Center has not established actual emissions to facilitate development of a PAL.

required under 40 CFR §§ 51.165(f)(1)(i) and 51.166(w)(1)(i). Without at least 2 years of operating history, a potential source like White Stallion Energy Center has not established actual emissions to facilitate development of a PAL.

### **III. Particulate Matter (PM) 2.5**

We reviewed the TCEQ's Response No. 4 in the RTC filed on October 2, 2009, regarding PM<sub>2.5</sub>. However, we have concerns regarding TCEQ's reliance on the PM<sub>10</sub> surrogate policy. It is now necessary to provide a demonstration to support the use of PM<sub>10</sub> as a surrogate for PM<sub>2.5</sub>. The applicant should submit a revised application or demonstration addressing PM<sub>2.5</sub> emissions. See, *In re Louisville Gas and Electric*, Petition No. IV-2008-3 (Order on Petition). The additional information should either address PM<sub>2.5</sub> emissions directly or show how compliance with the PSD requirements for PM<sub>10</sub> will serve as an adequate surrogate for meeting the PSD requirements for PM<sub>2.5</sub> in this specific permit, after considering and identifying any remaining technical difficulties with conducting an analysis of PM<sub>2.5</sub> directly. The permit record must reflect a demonstration to support the use of PM<sub>10</sub> as a surrogate for PM<sub>2.5</sub>. We have worked with other permitting authorities and permit applicants to establish an appropriate PM<sub>2.5</sub> modeling protocol. If the applicant chooses to model for PM<sub>2.5</sub> impacts directly, please contact us to develop a methodology that will ensure that an appropriate analysis is performed.

### **IV. Integrated Gasification Combined Cycle (IGCC) Consideration**

The TCEQ indicated in its RTC on page 29 of 61 in the Executive Director's Response to Comments that neither the applicant nor TCEQ evaluated any other electrical generation methods such as IGCC or pulverized coal (PC) boilers. TCEQ indicated that inclusion of IGCC in the Best Available Control Technology (BACT) evaluation would require substantial redesign of the applicant's proposed facility. Later in the same response, TCEQ indicates that it does not require a review of IGCC as part of the BACT review for electric generating units (EGUs).

In at least one federal permitting action, IGCC was considered an available control option in the BACT analysis for a facility proposed to generate electricity from coal. See *Prairie State Generating Company* (Illinois). Further, in a recent decision, the EPA Environmental Appeals Board (EAB) remanded the permit because it did not contain an adequate justification for excluding IGCC from the BACT analysis for a coal fired power EGU. See *Desert Rock Energy Company, LLC*, PSD Appeal Nos. 08-03 et.al. Slip. Op. at 76-77 (EAB Sept. 25, 2009). This EAB decision was followed in the Title V order for the petition on the American Electric Power Service Corporation, Southwestern Public Service Company John W. Turk order responding to a Title V petition (Petition Number VI-2008-1), where the EPA Administrator found that the Arkansas Department of Environmental Quality (ADEQ) failed to provide an adequate justification to support its conclusion in the PSD BACT analysis that IGCC technology should be eliminated from consideration on the grounds that it would "redefine" the proposed source. To meet the applicable legal criteria under the PSD program, a BACT analysis for each pollutant must consider "application of production processes or available methods, systems, and techniques ... for control of such pollutant." See 40 C.F.R. §§ 51.166(b)(12) and 40 C.F.R. § 52.21(b)(12). Therefore,

when a potential pollution control strategy is not considered in a BACT analysis, the record should provide a reasoned basis to show why that option is not available in a particular instance. We recognize that TCEQ has made a good faith effort to address this issue consistent with prior EPA determinations. However, in light of the EAB's recent conclusions, we strongly recommend that TCEQ and the permit applicant specifically address any IGCC technology considerations as a part of their BACT analysis and provide a reasoned explanation consistent with the EAB's position to support any decision to eliminate such an option or to exclude it altogether from a BACT analysis for this proposed source.

#### **V. BACT Limits Based on Clean Fuels**

It is unclear if the TCEQ or the applicant considered "clean fuels" in its BACT analysis. Comment 27 in the response to comments indicates that commenters stated that the applicant and TCEQ failed to consider alternative fuels to reduce emissions such as using only Powder River Basin (PRB) coals. TCEQ stated in its response that the "applicant proposes the facility to accomplish its objective based upon its business decisions. Those decisions include the applicant's choice of fuels. The applicant designed the plant using its choice of fuels and TCEQ reviewed the application as it was submitted. TCEQ does not specify the type of fuel to use in a fossil fuel electric generation plant because the cost of fuel is a primary business decision consideration that is up to the applicant to determine."

We believe the TCEQ should analyze the possibility of cleaner fuels as an alternative primary fuel source in the RTC. At this time, TCEQ does not include a federally approved definition of BACT in its State rules. The Clean Air Act includes the term "clean fuels" in the definition of BACT after the term "fuel cleaning." 42 U.S.C. § 7479(1). Thus, when a potential pollution control strategy is not evaluated in detail in a BACT analysis, the record should provide a reasoned basis to show why that option is not "available" in a particular instance. EPA has recognized that "available" options for a particular facility do not necessarily have to include options that would fundamentally "redefine" the source proposed by the permit applicant. See, e.g., *In re: Desert Rock Energy Company, LLC, PSD Appeal No. 08-03 et al*, slip op. at 59-65 (EAB, September 24, 2009). However, EPA interprets the Act to require a reasoned justification, based on an analysis of the underlying administrative record for each permit, to support a conclusion that an option is not "available" in a given case on the grounds that it would fundamentally "redefine the source." *Desert Rock*, slip op. at 63-72, 76. Based on the record here, it does not appear that TCEQ has provided a reasoned explanation demonstrating why the option of using PRB coals is not "available" for this facility.

We believe TCEQ must clearly provide a rationale for why utilizing fuels other than Illinois coal and/or petroleum coke, or blends from each of the proposed identified fuels constitutes "redefining the source". Further, the rationale should state if there are economic, environmental, or energy impacts from the use of PRB coals (or lower sulfur petroleum coke) that weigh against its selection as BACT. We acknowledge that States with SIP-approved PSD programs have independent discretion and are not necessarily required to follow all EPA policies or interpretations. See, e.g., 57 Fed. Reg. 28093, 28095 (June 24, 1992). However, states that issue PSD permits under SIP-approved regulations are required to conduct a BACT analysis that is

reasoned and faithful to the statutory framework. See *Alaska Dept of Env'tl Conservation v. EPA*, 540 U.S. 461, 484-91 (2004).

On the question of whether an option may be excluded because it redefines the proposed source, the EAB has developed an analytical framework that EPA uses to assess this issue in its own permitting decisions. See, e.g., *Prairie State*, slip op. at 26-37 ; *Desert Rock*, slip op. at 59-65. Since the EAB has articulated a foundation for its approach that has been upheld by one U.S. Court of Appeals, we strongly recommend that SIP-approved States follow the framework articulated by the EAB. We are not concluding that the present permit limits do not represent BACT - only that the present permit record does not appear to provide a sufficient rationale to demonstrate the adequacy of the BACT determinations for this facility. In addition, we are not expressing a policy preference for utilization of a particular coal type, or coal from a particular coal basin. EPA supports the development and use of a broad range of fuels and technologies across the energy sector including those that will enable the sustainable use of coal. Our primary concern is the adequacy of TCEQ's response and rationale for excluding PRB or the possibility of utilizing lower sulfur coal or lower sulfur petroleum coke as fuel options.