



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

AUG 03 2012

REPLY TO THE ATTENTION OF:

Edwin C. Bakowski, P.E.  
Bureau of Air  
Illinois Environmental Protection Agency  
1021 North Grand Avenue East  
Springfield, Illinois 62794-9276

Dear Mr. Bakowski:

The U.S. Environmental Protection Agency has reviewed the draft Prevention of Significant Deterioration (PSD) permit (Application No. 11050042) prepared by the Illinois Environmental Protection Agency (IEPA) for Hoosier Energy REC, Inc., located at 8290 Highway 251 South, Davis Junction, Illinois. The draft PSD permit is for a landfill gas-to-energy facility. EPA has the following comments on the draft PSD permit:

- 1) In the permitting record (project summary and application), the facility has estimated the potential to emit of Sulfur Dioxide emissions (SO<sub>2</sub>) to be 39.9 tons per year (TPY). The emissions of SO<sub>2</sub> includes a total amount of 36.9 TPY coming from the reciprocating internal combustion engines (RICE), as well as 3.1 TPY coming from the thermal oxidizer used for the Siloxane removal system (SRS).
  - a. Though the proposed increase of SO<sub>2</sub> emissions is 39.9 TPY, the addition of emissions from the SRS and the RICE equal to 40 TPY. As clarified by Mr. Robert Smet, of your staff, the permit contains SO<sub>2</sub> limits intended to restrict the PTE of the source such that PSD review is not triggered. However, the total increase in emissions of SO<sub>2</sub> is equal to or greater than the significant emission rate (SER) for SO<sub>2</sub>. Thus, the separate limits taken in the permit do not fulfill the intention of limiting potential to emit (PTE) under the PSD thresholds. Please either adjust the individual limits so that the sum of all emission increases is less than or equal to the 40 TPY SER for SO<sub>2</sub> or revise the permit to include the review of PSD for SO<sub>2</sub>.
  - b. According to the limits in conditions 2.2.6.a and 2.3.6.a, the permit uses both, annual and hourly limits to restrict PTE for SO<sub>2</sub>. Are both limits intended to be synthetic minor restrictions for limiting the PTE of SO<sub>2</sub>? The proposed annual emission limits are not practically enforceable as written. The annual limits must be rolled at least monthly in order to be considered enforceable as a practical matter.
  - c. The permit and the permit record must clearly identify all synthetic minor limits. This would help ensure that all future requests by the source to relax those limits will be reviewed against the requirements of 40 C.F.R. § 52.21(r)(4).

- d. The permit does not contain the appropriate requirements for practical enforceability and assuring compliance with the synthetic minor SO<sub>2</sub> limits. According to the permit record, the landfill gas (LFG) will be treated with a sulfur removal system, thereby reducing the sulfur concentration to less than 140 parts per million (ppm). Compliance with the synthetic minor limits is based on the assumption that the sulfur concentration in the LFG will be less than 140ppm. To provide a more appropriate method of demonstrating compliance with the limits and for the limits to be enforceable as a practical matter, IEPA should consider supplementing the permit's monitoring requirements with the following provisions:
  - i. Include a requirement to operate the sulfur removal system at all times the RICE are being operated.
  - ii. Add the requirement to route all LFG combusted by the RICE through the sulfur removal system. Condition 2.1.4.a implies that not all LFG is processed by the sulfur removal system. This could result in LFG with sulfur concentration higher than 140 ppm being fired by the engines, which could result in emissions of SO<sub>2</sub> higher than calculated and would violate the synthetic minor limits.
- 2) The permit lacks monitoring requirements necessary for demonstrating compliance with Best Available Control Technology (BACT) limits in conditions 2.3.2 and 2.2.6.a. Conditions 2.3.2 and 2.2.6.a appear to include the BACT limits for the RICE and the SRS, respectively; however, the permit does not specify the necessary monitoring that would be associated with these BACT limits. Condition 2.3.10 involves requirements to keep records of the maximum hourly emission rates for NO<sub>x</sub>, CO, and SO<sub>2</sub> as well as emission factors used to determine emissions. However, it is not clear how the BACT limits (in units of g/hp-hour, lb/mmBtu, etc.) will be monitored to assure compliance. Please add monitoring requirements to assure compliance with the BACT limits or explain how the permit assures compliance.
- 3) According to conversations and email exchanges with IEPA staff, we have found that an Ozone impacts analysis was indeed conducted for the project. The Ozone impacts analysis includes a discussion concluding that the impacts from the background concentration along with impact from the facility would not result in a threat to the Ozone National Ambient Air Quality Standard. This is not clear from the sole review of the permit and project summary. The project summary includes an Air Quality Analysis for NO<sub>2</sub>, PM<sub>2.5</sub>, and CO, but does not contain any discussion on impacts to Ozone as a result of the project triggering PSD for VOCs and NO<sub>x</sub>. We recommend that the Project Summary clarifies that an Ozone impacts analysis was done, and further include the results shared with EPA.

EPA has also further considered other areas that can be improved to increase the overall quality as well as support the permitting record. For the sake of issuing a more effective permit, the comment below is provided as a recommendation.

The permit contains BACT limits, which can be identified by the title of the condition ("Control Technology Determination"), as well as synthetic minor and other limits. However, it is not certain from the conditions alone the specific authority used to establish the limitations in the permit. For the sake of permit quality, and assurance that the limits will be identified and maintained into the future, we recommend that IEPA cite to the origin and authority for each applicable limit and monitoring requirements so that the basis for the condition is clear.

We provide these comments to help ensure that the PSD permit meets all federal requirements, and that the record provides adequate support for the permit decision. We look forward to working with you to address all of our comments. If you have any questions, please feel free to contact me at (312) 353-4761 or Danny Marcus, of my staff, at (312) 353-8781.

Sincerely,



Genevieve Damico  
Chief  
Air Permits Section