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

NOV 14 2013

REPLY TO THE ATTENTION OF:

Mr. Bob Bernoteit
Bureau of Air
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, Illinois 62794-9276

Dear Mr. Bernoteit:

The U.S. Environmental Protection Agency has reviewed the draft Prevention of Significant Deterioration (PSD) permit No. 11050042 (Draft Permit) proposed by the Illinois Environmental Protection Agency (IEPA) for Hoosier Energy REC, Inc., located at 8290 Highway 251 South, Davis Junction, Illinois. The Draft Permit is for the construction of a landfill gas-to-energy facility at the existing Veolia Orchard Hills Landfill. The facility would use treated Landfill Gas (LFG) from the landfill as fuel in reciprocating engines to generate electricity. EPA has the following comments on the Draft Permit:

1) **The Draft Permit's exemption of emissions of Greenhouse Gases (GHGs) from PSD review is inconsistent with the July 12, 2013 D.C. Circuit decision that vacated EPA's rule deferring for a period of three (3) years the application of PSD and Title V permitting requirements to biogenic Carbon Dioxide (CO_2) emissions from bioenergy and other biogenic stationary sources (Biogenic CO_2 Deferral Rule).**

According to the Draft Permit, the affected facility would not be a major modification under the PSD rules for emissions of GHGs "because the emissions of GHG from the facility other than biogenic carbon dioxide (CO_2) will not be significant .... and [EPA] has deferred regulation of biogenic CO_2 emissions under the PSD rules." Draft Permit at 2-3 (Finding 3(b)(ii)).

In the case *Center for Biological Diversity v. EPA*, No. 11-1101 (decided July 12, 2013), the D.C. Circuit vacated the Biogenic CO_2 Deferral Rule. Although the D.C. Circuit Court has not yet issued the mandate vacating the rule, the Draft Permit, to the extent it relies on the Biogenic CO_2 Deferral Rule to exempt GHGs from PSD review, is inconsistent with the D.C. Circuit decision. If the mandate issues before IEPA issues a final permit decision, the vacatur would be final and effective at the time of that final permit decision and IEPA would be unable to rely on the Biogenic CO_2 Deferral Rule to support its permitting decision. Even if the mandate has not issued at the time IEPA issues a final permit, a permit relying on the Biogenic CO_2 Deferral Rule

may be difficult to defend if it is challenged. For these reasons, EPA recommends that IEPA not issue this permit as proposed.

2) **The proposed frequency of fuel sulfur monitoring is inadequate to assure continuous compliance with the sulfur content limit or the Sulfur Dioxide (SO_2) emissions limit in the Draft Permit.**

The permit application submitted by Hoosier in September 2013 states that the Veolia Orchard Hills Landfill "has a history of variable sulfur compound emissions," with historical sulfur concentrations as high as 1,700 parts per million (ppm) and recent levels near 400 ppm of sulfur in the LFG. Permit Application at 4-5 (section 1.2.2). Both the permit application and the Draft Permit base emission limits and other calculations on a maximum sulfur content of 140 ppm. The Draft Permit requires the Permittee to conduct sampling of LFG burned in the engines to determine the sulfur and heat content on a quarterly basis until three consecutive samples meet certain requirements and then sampling is required annually. Condition 2.3.9(a)(i)-(ii).

Given the historical and expected variability in sulfur concentrations at this landfill, and the need to maintain sulfur levels in the LFG combusted by the engines to no more than 140 ppm, the frequency of fuel sulfur monitoring in condition 2.3.9(a)(ii) (i.e., quarterly or annually) is not sufficient to assure continuous compliance with the 140 ppm sulfur content limit. EPA requests that the permit be modified to require the Permittee to monitor sulfur content of the LFG being fired in the engines as follows:

(a) Daily monitoring of sulfur content of LFG fed to the engines with an onsite total sulfur analyzer; or

(b) Daily monitoring of sulfur content of LFG fed to the engines with an onsite Hydrogen Sulfide (H_2S) analyzer, provided H_2S comprises 95% or more of the total sulfur content of the LFG, and total SO_2 emissions from any engine are less than the SO_2 emissions limits in condition 2.3.6, as measured during the most recent performance test.

Under options (a) and (b), above, the sulfur content value of the LFG must be determined and recorded once per unit operating day.

Additionally, because the Draft Permit considers the proposed sulfur removal system as a control device for SO_2 emissions (*see* condition 2.1.1), EPA recommends that the Draft Permit include a requirement that the engines only combust LFG that has been treated by the sulfur removal system except that "raw" LFG (i.e., LFG that has not been processed through the sulfur removal system) may be fed directly to the engines if the sulfur content of the "raw" LFG is no more than

112 ppm (i.e., 80% of the sulfur content limit), based on daily measurements of the "raw" LFG using either an onsite total sulfur or H_2S analyzer as provided for in (b), above.

3) **The Draft Permit does not specify how the Permittee will demonstrate continuous compliance with the Best Available Control Technology (BACT) emission limits for the engines.**

The Draft Permit contains BACT emission limits for the engines in condition 2.3.2. To demonstrate compliance with the BACT limits, the Draft Permit requires a combination of initial performance testing (condition 2.3.7), work practices (condition 2.3.5(c) and (d)), and recordkeeping (condition 2.3.10(a)). After the initial performance tests, the engines are required to comply with certain work practices in the New Source Performance Standards for Stationary Spark Ignition Internal Combustion Engines, 40 C.F.R. Part 60, Subpart JJJJ (the SI NSPS). Pursuant to condition 2.3.7(b), subsequent performance tests would only be required "if the affected engines are non-certified by the manufacturer or the certified engines are not operated and maintained in accordance with the manufacturer's emissions related written instructions."

While the proposed monitoring scheme may be appropriate for some emission limits (e.g., emission limits derived from the SI NSPS), EPA is concerned with the Permittee's ability under the provisions of the Draft Permit to demonstrate continuous compliance with the BACT limits in condition 2.3.2 for the engines (expressed as grams per horsepower-hour, g/hp-hr) because those limits are more stringent than the SI NSPS limits. Compliance with the SI NSPS monitoring requirements, in combination with the Draft Permit's recordkeeping and inspection requirements, does not provide the assurance that the more stringent g/hp-hr limits in condition 2.3.2 would not be exceeded. To address this concern, EPA requests that subsequent performance tests on the engines be required at a frequency of at least once every five years. In addition, to facilitate the calculation of g/hp-hr (output) emissions, EPA suggests that each performance test be accompanied by concurrent measurement of engine power output.

To facilitate the calculation of hourly, daily, monthly or annual emissions for compliance demonstration, EPA requests that the Permittee be required to use emission factors derived from the most recent performance test approved by IEPA unless an alternate method is approved in writing by IEPA.

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 our comments. If you have any questions, please feel free to contact me at (312) 353-4761 or David Ogulei, of my staff, at (312) 353-0987.

Sincerely,

Genevieve Damico

Genevieve Damico
Chief
Air Permits Section