



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
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JUL 29 2011

Mr. Robert Stanton, P.E., Director
Bureau of Stationary Sources
Division of Air Resources
New York State Department of
Environmental Conservation
625 Broadway
Albany, New York 12233-3254

Re: EPA Comments on the Draft State Prevention of Significant Deterioration of Air
Quality (PSD) Permit for the Cricket Valley Energy Center, Dover, New York

Dear Mr. Stanton:

The Region 2 Office of the U.S. Environmental Protection Agency (EPA) has completed its review of the Cricket Valley Energy Center, LLC (CVE) draft State PSD permit that was issued by the New York State Department of Environmental Conservation (NYSDEC) on May 25, 2011, as indicated on the NYSDEC's website. Although the website indicates that the public comment period ended on June 24, 2011, the State's Environmental Notice Bulletin (ENB) published on July 27, 2011 states that the public comment period for this proposed project has been extended until August 5, 2011.

At the outset, we note that EPA was unaware of the issuance of the draft permit and thus had only limited time to conduct its review. As you know, EPA has an interest in reviewing all draft PSD permits, and in particular, those that list greenhouse gases (GHG) as a PSD-affected pollutant. Therefore, it is preferred that draft PSD permits be sent to EPA for review before the start of the public comment period. Providing EPA with sufficient time to review draft permits ensures that EPA has the time necessary to carefully review the existing record and provide NYSDEC with comments to help ensure that the project meets all federal requirements, that the permit provides all necessary information so that it is readily accessible to the public, and that the record provides adequate support for the permit decision. It is my understanding that given the late start of EPA's review of this draft permit and in order to ensure a complete permit record containing EPA's comments, NYSDEC has decided to extend the public comment period, at least in part, so that EPA has the opportunity to submit its comments.

Background

CVE is proposing to construct a nominal 1,000 megawatt (MW) combined-cycle electric generating facility, firing natural gas as the combustion turbines' sole fuel. The project comprises three units capable of operating independently to respond to energy demand with the maximum efficiency. Each unit consists of one F-Class Technology combustion turbine generator (CTG), one heat recovery steam generator (HRSG) with supplemental duct firing with

a maximum capacity of 596.8 MMBtu/hr heat input (HHV), one steam turbine generator (STG), and an associated air cooled condenser (ACC). The project is intended to operate as a base load facility and is proposing to be available to operate up to 8,760 hours per year, incorporating a range of load conditions. In addition to the combustion turbines, the facility will contain ancillary combustion equipment including one natural gas fired auxiliary boiler (maximum heat input capacity of 48.6 MMBtu/hr, limited to 4,500 hours/year of operation), one diesel fired fire pump engine and three diesel fired black-start generators (each with a maximum power rating of approximately 3 MW, firing ultra-low sulfur diesel, and limited to 500 hours/year of operation).

According to the PSD application submitted by the facility, the proposed project is subject to 6NYCRR Part 231 (PSD State Implementation Plan) for the following pollutants: NO_x (276.1 tpy), CO (680.5 tpy), PM₁₀ (196.1 tpy), PM_{2.5} (196.1 tpy), SO₂ (50.1 tpy), H₂SO₄ (10.3 tpy), and GHG (3,576,943 tpy). Accordingly, CVE conducted a “top-down” BACT analysis for all of the PSD-affected pollutants. To reduce the emission of NO_x, the turbines will be controlled through the use of a selective catalytic reduction (SCR). Emissions of CO and VOC will be controlled through an oxidation catalyst system. The turbines will also have dry low-NO_x combustion design. Emissions of PM₁₀ and PM_{2.5} will be minimized through the use of natural gas as the primary fuel and implementing good combustion practices. The BACT limit for PM₁₀ (or PM_{2.5}) emissions from each combustion turbine without duct burning will be limited to 0.006 lb/MMBtu, and the BACT limit for PM₁₀ (or PM_{2.5}) emissions from each combustion turbine with duct burning is limited to 0.007 lb/MMBtu. To minimize GHG emissions, CVE proposes as BACT to operate the turbines in combined-cycle mode and proposes a heat rate limit of 7,605 Btu/kW-hr to achieve a design thermal efficiency of 57.4% (LHV). (At ISO conditions with no duct firing.) In comparison to a similar combined cycle turbine configuration, the permit for Calpine’s Russell City Energy Center will achieve a thermal efficiency of 56.4% (LHV).

EPA Comments

- 1) Although not listed in the application or the draft PSD permit, PM is a PSD-affected pollutant, regulated under 6NYCRR Part 231, in addition to PM₁₀ and PM_{2.5}. Therefore, emissions of PM should be addressed in the PSD application, and emission limits for PM should be added for all the PSD-affected emission units that emit PM, as necessary.
- 2) Although the facility is subject to PSD for GHG as discussed in the April 2011 Draft Environmental Impact Statement (DEIS) submitted to NYSDEC by CVE, the draft permit does not contain GHG emission limits or specify efficiency design parameters for the combustion turbines (i.e., the units that will emit the largest amount of GHG). Note that we agree that the efficiency of the selected combustion turbines is at a level that meets BACT for this proposed source. Consequently, we recommend that the GHG BACT limits and conditions proposed in the DEIS be incorporated into the final permit for CVE. These permit limits and conditions include:
 - a) Each of the three GE 7FA.05 combustion turbines shall have a thermal efficiency of 57.4 percent (LHV) at ISO conditions with no duct firing. In addition, the GHG BACT limit for each combustion turbine shall be a heat rate of no greater than 7,605 Btu/kW-hr at ISO conditions with no duct firing (based on net output).

- b) Total annual CO₂e emissions from the three combined-cycle units shall not exceed 3,576,943 tons per rolling 12-month period. Each combustion turbine shall install a CO₂ continuous emissions monitoring system (CEMS), or alternative method as specified under 40 CFR 75, to demonstrate compliance with this combined limit.
- c) Total CO₂e emissions from the auxiliary boiler shall not exceed 15,887 tons per rolling 12-month period. The CO₂ emissions from this unit shall be monitored through fuel usage.
- d) Total CO₂e emissions from the emergency fire pump shall not exceed 114 tons per rolling 12-month period. The CO₂ emissions from this unit shall be monitored through fuel usage.
- e) Total CO₂e emissions from the four black-start generators shall not exceed 4,822 tons per rolling 12-month period. The CO₂ emissions from these units shall be monitored through fuel usage.

If you have any questions, please contact Ms. Suilin Chan of my staff at (212) 637-4019.

Sincerely,

for Suilin A. Chan
Steven C. Riva, Chief
Permitting Section
Air Programs Branch

cc: Ken Grzyb, NYSDEC Region 3
Stephen Tomasik, NYSDEC, Albany