



**Jon  
Knodel/ARTD/R7/USEPA/US**

04/03/2007 07:37 AM

To mbowman@kdhe.state.ks.us, JHeitman@kdhe.state.ks.us

cc

bcc

Subject Westar Emporia Turbine PSD Permit Comments

Mindy, Jason,

Despite my earlier message indicating I wouldn't have a chance to review the Westar Emporia permit, I had a few moments this morning to look through the permit and have only one significant comment. Please consider the following as you finalize the permit.

Air Emission Limitation 2 sets a NO<sub>x</sub> BACT limit for the GE-LM6000 aeroderivative turbines to 25 ppm, corrected to 15% O<sub>2</sub>. The condition also caps operation of all four turbines to less than 13,200 hours of operation and 269.3 tons per year NO<sub>x</sub>.

The combined cap on hours is problematic from the standpoint that it does not limit the use of individual turbines consistent with the assumptions used in the NO<sub>x</sub> BACT analysis. In its analysis, Westar assumed each turbine would operate no more than 3,300 hours individually, resulting in a cost effectiveness of approximately \$17,700 per ton NO<sub>x</sub> removed. Under the cap approach specified in the permit, Westar could operate a single turbine at 8,760 hours while distributing the remaining hours among the other three turbines. In this case, the cost effectiveness for this single turbine would drop below \$7,000 per ton NO<sub>x</sub> removed. In conjunction with a very high capital recovery factor of 12.5%, well above the recommended 7%, the cost effectiveness drops to just over \$5,200, well within a range that many agencies have considered reasonable for installation of SCR.

Therefore, we recommend that the final permit include an explicit 3,300 hours-of-operation limit for each of the LM6000 turbines, consistent with the assumptions used in the BACT analysis. In the alternative, if Westar plans to operate any of the LM6000's more than 3,300 hours, then it should provide a revised BACT analysis and KDHE should make its BACT decision based on those assumptions.

If you have any questions, please let me know.

Thanks....

Jon Knodel  
EPA Region 7  
Air Permitting and Compliance Branch (ARTD/APCO-2119F)  
901 N. 5th Street  
Kansas City, Kansas 66101  
Phone: 913-551-7622  
Fax: 913-551-9622 (or 7844)  
E-mail: knodel.jon@epa.gov

For more information about the Region 7 Air Program, see....  
<http://www.epa.gov/region07/programs/artd/air/air.htm>