Lalit Sharma/Alex
01/19/2006 02:10 PM To
Erica Bannerman/Alex@ALEX
cc

bcc

Subject
Fw: DEQ response to David Sullivan's Review of the ENSR Report Titled "Update 1 to: A Dispersion Modeling Analysis of Downwash from Mirant's Potomac River Power Plant."

Lalit Sharma, P.E.
Division of Environmental Quality
Transportation and Environmental Services
City of Alexandria
Phone: 703-519-3400 X-164
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----- Forwarded by Lalit Sharma/Alex on 01/19/2006 02:10 PM -----
"ecchimento" <ecchimento@comcast.net>
01/09/2006 05:17 PM
To
<Lalit.Sharma@alexandriava.gov>
cc

Subject
Fw: DEQ response to David Sullivan's Review of the ENSR Report Titled "Update 1 to: A Dispersion Modeling Analysis of Downwash from Mirant's Potomac River Power Plant."

Lalit,
Just received this from DEQ.
Elizabeth
----- Original Message -----
From: Dowd,Michael
To: ecchimento
Cc: Burnley,Robert ; Steers,Jeffery ; Owens,Amy ; Darton,Terry ; Gayne,Andrew
Sent: Monday, January 09, 2006 4:19 PM
Subject: DEQ response to David Sullivan's Review of the ENSR Report Titled "Update 1 to: A Dispersion Modeling Analysis of Downwash from Mirant's Potomac River Power Plant."

Ms. Chimento:

The following are DEQ's responses to the five specific issues raised in David Sullivan's document entitled Review of the ENSR Report Titled "Update 1 to: A Dispersion Modeling Analysis of Downwash from Mirant's Potomac River Power Plant."

1. Stack tests should be made public to allow confirmation of the assumed PM10 emission rate reductions as well as the assumed SO2 emissions. If these data cannot be made public, the DEQ should confirm the data.

All stack tests received by DEQ are public information. We will provide you with a copy of the results of the PM testing Mirant conducted under DEQ supervision at the Potomac River plant after we have received them. Attached is a copy of PM testing Mirant conducted in October that was not performed under DEQ supervision.

DEQ concurs in the assumption made in Mirant's modeling for the unit 1 scenario that the Potomac River plant emits SO2 at an actual rate of approximately 1.2 lb/MMBTU based on analyses of the coal burned at the plant. If one knows the sulfur content of coal and its caloric value, the formula used to determine the SO2 emission rate of the coal when burned in a power plant is relatively simple:

$$\frac{(\%S)*(2)*(1{,}000{,}000)}{\text{(Heating Value)}} = \text{SO2 lb/MMBtu}$$

The value "2" in the equation is for adjusting molecular weight between S and SO2. (S = 16 and O = 8, so SO2 = (16+8+8) = 32, which is two times S.)

Mirant's coal supplier routinely samples the sulfur content and caloric value of coal delivered to the Potomac River plant. The table below sets forth the sulfur content and caloric value for four shipments of coal delivered to the plant in August 2005. The coal contained in these August shipments is representative of the Appalachian coal that the plant has burned in recent years and continues to burn. Although state regulations allow the plant to emit SO2 at a rate of 1.52 lb/MMBtu (the rate assumed in Mirant's August downwash modeling analysis), you can see by use of the above formula, that the actual average SO2 emission rate at the plant when combusting these shipments of coal was 1.102 lb/MMBtu.

Appalachian Coal		
		As received sulfur content % by weight
0.71%	date of shipment=	08/10/2005
0.77%	date of shipment=	08/16/2005
0.72%	date of shipment=	08/26/2005
0.65%	date of shipment=	08/26/2005
0.71% =AVG		
		Gross calorific value MMBtu/pound
12847		
12827		
13085		
12994		
12938 =AVG		
		SO2 Emissions Rate pounds of SO2/MMBtu
1.105		
1.201		
1.100		
1.000		
1.102 =AVG		

Attached are copies of the coal sampling analysis reports for these four shipments of Appalachian coal. Not only is 1.102 lbSO2/MMBtu

substantially below the plant's allowable rate of 1.52 lb/MMBtu, it is also below the emission rate of 1.2 lb/MMBtu Mirant assumed in its modeling analysis for the unit 1 scenario.

2. Revised permit limits for SO2 would need to be promulgated for the plant at the 1.2 lb SO2/MMBtu level if the modeling results from this report are to be used as the basis for the modeling. Otherwise, this modeling report is incomplete because it does not show the impacts from the current permitted 1.52 lb SO2/MMBtu level.

The new or revised State Operating Permit (SOP) that DEQ will issue to the Potomac River plant will contain enforceable SO2 emission limits substantially lower than those now allowed under state regulations. The SO2 emission limits to be contained in the new or revised SOP will be low enough to assure SO2 emissions from the plant do not result in modeled exceedances of the National Ambient Air Quality Standards (NAAQS).

3. Hours of operation need to be specifically incorporated into the analysis. If emissions from some sources only occur during daylight hours, the emissions should be set up to simulate actual assumptions, including both stack and fugitive sources.

The new or revised SOP that DEQ will issue to the Potomac River plant may contain enforceable operational restrictions necessary to assure emissions from the plant do not result in modeled exceedances of the NAAQS.

4. PM10 and SO2 monitors should be placed on the top of the Marina Towers building to confirm on an ongoing basis that the concentrations meet ambient air quality standards.

DEQ is currently is considering placing PM and SO2 monitors at Marina Towers but has not reached a decision on whether to do so.

5. Sullivan Environmental Consulting, Inc. agrees with ENSR that the slightly lower substitution background concentration of 51 ug/m3 for SO2 averaged over 24-hours can be used for this modeling because it is consistent with EPA modeling policy.

DEQ concurs.

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