



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

APR 30 2002

OFFICE OF  
AIR AND RADIATION

Mr. Al De Paoli  
Alternate Authorized Account Representative  
AES-Beaver Valley LLC  
394 Frankfort Road  
Monaca, PA 15061

Re: Petition for Variance from 3-Load Flow RATA Testing and Exemption from  
Flow-to-Load Ratio Test for AES-Beaver Valley Units 032 through 035

Dear Mr. DePaoli:

This is in response to your letter, dated March 26, 2002, in which AES-Beaver Valley LLC ("AES-BV") requested an exemption from the requirements of 40 CFR Part 75 to perform 3-load relative accuracy test audits (RATAs) of the flow monitors installed on Units 032 through 035 at its Monaca, Pennsylvania facility. AES-BV also requested an exemption from the quarterly flow-to-load ratio test described under section 7.7 of Appendix A and section 2.2.5 of Appendix B to Part 75. EPA approves the request for exemption from 3-load flow RATA testing, but denies the request for exemption from the flow-to-load ratio test, as discussed below.

### Background

AES-BV owns and operates four coal-fired boilers, Units 032 through 035 at its Monaca, Pennsylvania facility. Three of the units have a maximum design heat input of 550 mmBtu/hr, and the fourth unit (i.e., Unit 035) has a maximum design heat input capacity of 285 mmBtu/hr. Each boiler is fitted with a forced-draft fan, an induced draft fan, and a booster fan. The units provide steam to two chemical plants and up to 125 megawatts of electricity to a local utility. The units are regulated under the NO<sub>x</sub> Budget Program and are required to install and certify continuous monitoring systems that meet Part 75 requirements and to report NO<sub>x</sub> mass emissions and heat input data under 25 Pa.Code Chapter 145, beginning on May 1, 2002.

Subpart H of Part 75 requires coal-fired units to install and certify stack flow monitors to quantify NO<sub>x</sub> mass emissions (see § 75.71 (a)). To certify a flow monitor, relative accuracy test audits are required at three load levels, covering the range of operation of the unit (see § 75.20 (c)(2) and section 6.5.2 of Appendix A to Part 75). The purpose of the 3-load test is to assess the accuracy of the flow monitor over the normal range of stack gas velocities. For most combustion

processes, as the unit load increases, there is a corresponding increase in the stack gas velocity and, hence, the stack gas flow rate.

AES-BV requested an exemption from 3-load flow RATA testing for Units 032 through 035. AES stated that multiple-load flow testing is not appropriate for these units because of the way in which they are operated. According to AES-BV, the boilers are very old and have simple controls. The booster fan controls are set at a constant (high) level and do not adjust the air flow at different steam loads. This results in the stack flow rate remaining nearly constant throughout the normal range of steam loads. To demonstrate this, AES-BV provided graphs of steam load versus stack flow rate for Unit 032 (identified as Unit # 2 on the graphs), covering a 7-month period. At the request of EPA, AES-BV provided similar graphs for Units 034 and 035 (identified as Units # 4 and 5 on the graphs) on April 10, 2002. Data for Unit 033 were not provided, due to mechanical problems with the steam load recorder. However, according to AES-BV, the unit is operated in identical fashion to the other three, and AES-BV would be willing, upon request, to work with the CEMS vendor to attempt to recover the Unit 033 steam load information from the data acquisition system and to create graphs for Unit 033, if necessary.

AES-BV also requested an exemption from the quarterly flow-to-load ratio test required under section 7.7 of Appendix A and section 2.2.5 of Appendix B to Part 75. According to AES-BV, the flow-to-load test would be "irrelevant" to Units 032 through 035 because the plant maintains its operation at full load for the vast majority of the time.

#### EPA's Determination

EPA reviewed the graphs of steam load versus stack flow rate for Units 032, 034 and 035. The graphs clearly indicate that the stack flow rate does not increase and decrease in the expected manner when the load is increased or decreased. Rather, the stack flow rate stays nearly constant over the full range of operating loads, including the transitional hours of unit startup and shutdown. From these data it is evident that performing flow RATAs at three evenly-spaced steam load points across the range of operation of the unit would serve no useful purpose. Rather, flow RATA testing at the normal (high) load level would be sufficient. Therefore, EPA approves AES-BV's petition to perform only single-load flow RATAs for these units.

Regarding the requested exemption from performing the quarterly flow-to-load ratio test. EPA does not agree with AES-BV that the test is "irrelevant" for Units 032 through 035. Therefore, the Agency denies the request. The purpose of the flow-to-load ratio test is to demonstrate that the flow monitor continues to generate accurate data between the annual RATAs. The test compares a segment of the quarterly flow rate data against a reference flow-to-load ratio established during the previous normal load flow RATA. In particular, all hourly flow rates recorded during the quarter at unit loads within  $\pm 10\%$  of the average load during the previous RATA are evaluated. The fact that Units 032 through 035 operate most of the time at high load does not in any way diminish the usefulness of the flow-to-load ratio test. Rather, performing the test will provide EPA assurance that the flow monitors are providing accurate data from quarter-to-quarter at the normal (high) operating load level.

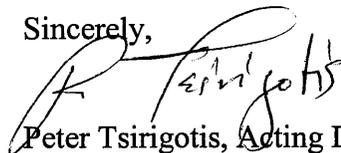
Conditions of Approval

The following are conditions of approval of the request to perform only single-load flow RATAs for Units 032 through 035:

1. AES-BV may perform only single-load flow RATAs of these units, at the "high" operating load level (as defined in section 6.5.2.1 of Appendix D to Part 75), provided that the manner of operating the units does not change.
2. If the manner of operating the units and setting the fan controls permanently changes, such that the expected increases and decreases in stack flow rate occur when the unit load increases or decreases, AES-BV shall perform a 3-load flow RATA.
3. AES shall perform quarterly flow-to-load ratio tests for Units 032 through 035, as required by section 7.7 of Appendix A and section 2.2.5 of Appendix B to Part 75.

EPA's determination in this letter relies on the accuracy and completeness of the information provided by AES-BV in the March 26, 2002 petition, and on April 10, 2002 and is appealable under Part 78. If you have any questions or concerns about this determination, please contact Robert Vollaro, at (202) 564-9116. Thank you for your continued cooperation

Sincerely,



Peter Tsirigotis, Acting Director  
Clean Air Markets Division

cc: Renee McLaughlin, EPA Region III  
Joseph Nazzaro, Pennsylvania DEP  
Robert Vollaro, CAMD