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

JAN 28 2003

OFFICE OF
AIR AND RADIATION

Mr. Boyd A. Giles
Authorized Account Representative
Mead Coated Board
P.O. Box 940
Phenix City, Alabama 36868-0940

Dear Mr. Giles:

We have reviewed your petition dated June 17, 2002 for approval of a predictive emissions monitoring system (PEMS) at a gas-fired combustion turbine supplying steam and electricity to the Mahrt Paper Mill in Cottonton, Alabama. The Mahrt Paper Mill (Mahrt) is owned and operated by Mead Coated Board (Mead). The petition was submitted pursuant to 40 CFR Part 75, subpart E and §75.66(d). As explained below, EPA conditionally approves Mead's petition for a PEMS-based alternative monitoring system (AMS) producing lb nitrogen oxides (NO_x)/mmBtu, NO_x (ppm, dry), and oxygen (O_2) (%, dry) outputs for the Mahrt turbine when firing natural gas, without duct burner operation. This PEMS-based AMS, which includes part 75 missing data provisions, is conditionally approved for all operations, except for certain periods detailed below when emission factors shall be used.

The petition stated that, at a later date, the PEMS would be tested against the EPA reference methods for 24 successive unit operating hours during duct burner operation to gain approval for using the PEMS on the turbine when firing duct burners. However, because a duct burner is a combustion device, not just an alternative fuel under §75.41(a)(6), a full subpart E demonstration must be passed in order to approve the PEMS for this purpose. In the meantime, Mead shall use the maximum potential NO_x emission rate (MER), as defined in §72.2, for the turbine operating with duct burners. When the duct burners and the turbine fire gas, the MER shall be calculated using 150 ppm NO_x maximum potential concentration (MPC) for a new gas-fired turbine from part 75, appendix A, Table 2-2 and the procedures in appendix A, §2.1.2.1(b). When the turbine or duct burners fire oil, Mead shall use the NO_x MER, calculated using the 200 ppm NO_x MPC for a new oil-fired turbine from Table 2-2 and the procedures in appendix A, §2.1.2.1(b).

BACKGROUND

Mead has petitioned for approval of a Pavilion Technologies *Software CEM* NO_x and O_2 PEMS, which is a neural network based computer software system that utilizes turbine sensor inputs to produce NO_x and O_2 outputs. The PEMS is installed on a 25 MW GE Frame 5, Model MS5001P combustion turbine at the Mahrt Paper Mill in Cottonton, Alabama. The PEMS was installed on the turbine in June 1998 to comply with New Source Performance Standards, subpart GG.

The turbine was installed in 1998 and is designed to cogenerate steam and electricity for the

mill. Natural gas is the primary turbine fuel, and No. 2 fuel oil with less than 0.05% sulfur by weight is the secondary fuel. The turbine is equipped with duct burners rated at 170 mmBtu/hr to provide supplemental energy to the heat recovery steam generator. A dry low NO_x combustor controls NO_x during gas firing; water injection provides NO_x control during oil firing.

According to Mead, the turbine is subject to Alabama's NO_x trading program regulations under the NOx State Implementation Plan (SIP) Call. Mead must install a NO_x continuous emissions monitoring system (CEMS), or an approved alternative, on the Mahrt Paper Mill turbine by May 1, 2003 and must meet the requirements of part 75, subpart H.

EPA'S DETERMINATION

Under subpart E, the owner or operator of a unit applying to the Administrator for approval of an AMS must demonstrate that the AMS has the same or better precision, reliability, accessibility, and timeliness (PRAT) as provided by a CEMS. The demonstration must be made by comparing the AMS to a contemporaneously operating, fully certified CEMS. Sections 75.41 through 75.46 discuss the criteria for evaluating PRAT, daily quality assurance, and missing data substitution for the AMS. Section 75.48 details the information that must be included in the application in order to demonstrate that the criteria in §§75.41-46 are met.

The following paragraphs describe how Mead meets the requirements of a subpart E AMS petition and EPA's conditions upon which approval is based. As detailed below, EPA's conditional approval applies only to the Mahrt turbine when firing natural gas, with no duct burner operation, and for certain PEMS outputs, i.e., lb NO_x/mmBtu, NO_x (ppm, dry), and O_2 (%, dry). If a PEMS input parameter value goes below certain minimum or above certain maximum values, that input parameter value shall not be used in the calculation of the PEMS hourly output values. If the PEMS alarms, the PEMS is out-of-control, and Mead shall use part 75, subpart D missing data procedures. During startups, shutdowns, and lean/lean turbine operation, Mead must use 200% of 150 ppm NO_x MPC (or 300 ppm NO_x), pursuant to part 75, appendix A, Table 2-2, and §§2.1.2.1(b) and 2.1.2.4(e). When the duct burners operate or when the turbine fires oil, emission factors shall be used, as detailed below.

1. Precision

Under §75.41, for the normal unit operating level, Mead must provide paired AMS and fully certified CEMS hourly data for at least 90 percent of the hours during 720 unit operating hours for the primary fuel supply and for at least 24 successive unit operating hours for all alternative fuel supplies that have significantly different sulfur content. Mead must not use missing data substitution procedures to provide sample data. Mead may also demonstrate, and adjust the data to account for, any lognormality and time dependency autocorrelation. Mead must pass three statistical tests, i.e., a linear correlation coefficient (r) $\geq$ 0.8, an F-test, and a one-tailed t-test for bias described in appendix A to part 75. Further, Mead must provide two separate time series plots for AMS and CEMS data. Each data plot must have a horizontal axis representing the clock hour and calendar date of the readings and must contain a separate data point for every hour for the duration of the test. One data plot must show percentage difference vs. time, and the other data plot must show AMS and CEMS readings vs. time. Finally, a plot of the paired AMS (on the vertical axis) and CEMS (on the horizontal axis) concentrations must be provided.

Mead provided 889 unit operating hours of paired CEMS vs PEMS data when the turbine was firing natural gas, with no duct burner operation. Since duct burners operated approximately 600 hours during the almost 1500 hour test period, only about 60% of the unit operating hours during the test period were utilized. Mead did not technically meet the requirement of using at least 90% of 720 consecutive unit operating hours, required by §75.41(a)(6). However, 889 unit operating hours of valid paired data (more than 90% of 720 hours or 648 hours) were submitted, and unit operation and testing were continuous. Therefore, the intent of the 90% requirement was met.

The table below shows the results of the statistical tests for three PEMS outputs.[1]

PEMS (NO_x ppm, dry)	PEMS (lbs NO_x/mmBtu)	PEMS (O_2 %, dry)
T-test: mean difference d = -1.175 abs. value of confidence coefficient cc = 0.069 Since $\|cc\| \geq d$, the model passed.	T-test: mean difference d = -0.005 abs. value of confidence coefficient cc = 0.000 Since $\|cc\| \geq d$, the model passed.	T-test: mean difference d = 0.002 abs. value of confidence coefficient cc = 0.007 Since $\|cc\| \geq d$, the model passed.
r-coefficient correlation: r = 0.82 Since $r \geq 0.8$, the model passed.	r-coefficient correlation: r = 0.78 Since $r \geq 0.8$, the model passed.	r-coefficient correlation: r = 0.13 Since $r < 0.8$, the model failed.
F-test: variance of PEMS = 1.519 variance of RM = 3.218 F = 0.472 Fcritical = 1.11 Since Fcritical $\geq$ F, the model passed.	F-test: variance of PEMS = 3.497×10^{-5} variance of RM = 6.187×10^{-5} F = 0.565 Fcritical = 1.11 Since Fcritical $\geq$ F, the model passed.	F-test: variance of PEMS = 0.004 variance of RM = 0.010 F = 0.431 Fcritical = 1.11 Since Fcritical $\geq$ F, the model passed.

The PEMS NO_x ppm, dry output passed all three statistics. For the second PEMS output, EPA recalculated the required statistics on a lb NO_x/mmBtu basis because Mead uses lb NO_x/mmBtu to calculate NO_x mass emissions for the turbine. EPA used the NO_x and O_2 dry-basis concentration data presented by Mead, equation 19-1 in Method 19 (40 CFR part 60, appendix A), and F-factor for natural gas (8710 dscf/mmBtu) to generate the lb NO_x/mmBtu data for the statistical tests. EPA finds that the PEMS NO_x lb/mmBtu output passed each of the three statistical tests.

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[1] Under §75.41(b), in preparation for conducting the required statistical tests, the data may be screened for lognormality and time dependency autocorrelation. If either is detected, certain calculation adjustments are required. Mead detected neither lognormality nor autocorrelation. Therefore, consistent with 75.41(b), no calculation adjustments were made to the data.

The PEMS O_2 output passed the T-test and F-test, but failed the r correlation. However, the PEMS O_2 concentration was always within 0.5% O_2 of the reference method, except for one hourly value that was 0.8% O_2 different. Because this hourly value was the second data point collected and was more than 11 standard deviations below the mean of the PEMS O_2 concentration values, EPA considers the hourly value suspect. Further, both the part 75 calibration error and linearity check performance specifications for an O_2 monitor are 0.5% O_2. Under these circumstances, EPA finds that the PEMS O_2 output was within the error allowed by part 75 for a CEMS and is acceptable.

Further, Mead supplied the appropriate data plots concerning the paired AMS and CEMS data under §§75.41(a)(9) and (c)(2)(i).

2. Reliability

Under §75.42, Mead must demonstrate that the PEMS is capable of providing valid 1-hr averages for 95.0 percent or more of unit operating hours over a 1-yr period and that the system meets the applicable requirements of appendix B of part 75. Mead complied with the reliability requirements by submitting four quarters of excess emissions reports with monitor equipment malfunction times indicating greater than 95.0% PEMS availability. If the conditions, described later, are met, Mead will also meet the applicable appendix B quality assurance and quality control (QA/QC) requirements.

3. Accessibility and Timeliness

Under §§75.43 and 75.44, Mead must demonstrate that the PEMS meets the recordkeeping and reporting requirements of subparts F and G of part 75. According to Mead, the PEMS meets the subpart F and G requirements. For example, the PEMS "will provide a continuous, quality assured permanent record of certified emissions data on an hourly basis," and, coupled with the selected recordkeeping and reporting system, "will be capable of issuing a record of data for the previous day within 24 hours." Provided the PEMS meets the applicable subpart F recordkeeping requirements, including certification and QA/QC record provisions, and the subpart G reporting requirements, including timely submittals of quarterly electronic data reports (EDRs), EPA agrees that the subparts F and G requirements will be met by the PEMS.

4. Quality Assurance

Under §75.45, Mead must demonstrate either that daily tests equivalent to those in appendix B of part 75 can be performed on the PEMS or that such tests are unnecessary for providing quality-assured data. Sections 75.48(a)(8)-(11) require Mead to submit: a detailed description of the process used to collect data, including location and method of ensuring an accurate assessment of operating hourly conditions on a real-time basis; a detailed description of the operation, maintenance, and quality assurance procedures for the AMS as required in part 75, appendix B; a description of methods used to calculate diluent gas concentration; and results of tests and measurements necessary to substantiate the equivalency of the AMS to a fully certified CEMS. EPA finds that the PEMS will meet these requirements if the following conditions are met:

(a) The PEMS uses the following input parameters: splitter valve position, gas flow, load, inlet air temperature, exhaust gas temperature, and burner mode. The PEMS input

parameters must stay within the minimum and maximum values (inclusive) in the below table (referred to as "the PEMS operating envelope"), unless the PEMS is retrained according to paragraph (g) below, in which case, the new training values will supercede the values in the below table. Except for the burner mode parameter, if a PEMS input parameter value goes below the minimum or above the maximum table values, that input parameter value shall not be used in the calculation of the PEMS hourly average output values. If the burner mode is not steady state (mode 2), Mead shall follow the procedures in paragraph (h).

PEMS Input Parameter	Minimum Value	Maximum Value
Splitter valve (steps open)	60.0	100.8
Gas flow (lbs/sec)	2.0 $\pm$ 0.8% of reading	4.0 $\pm$ 0.8% of reading
Load (MW)	17.0 $\pm$ 0.1 MW	27.0 $\pm$ 0.1 MW
Inlet air temp (°F)	44 $\pm$ 4 °F	119 $\pm$ 4 °F
Exhaust gas temp (°F)	480 $\pm$ 4 °F	663 $\pm$ 4 °F
Burner mode [a]	2	2

[a] Three modes: 0 = Startup (0-35% load with primary gas going in and being fired) or shutdown; 1 = Lean/Lean (35-70% load with primary and secondary gas going in and both being fired); 2 = Steady state (70-100% load with primary and secondary gas going in, but combustion only in the secondary zone).

(b) The sensors for the PEMS' input parameters must be maintained in accordance with the manufacturer's recommendations. Further, the PEMS' Sensor Validation System identifies and reconciles failed sensors by: comparing each sensor to several other sensors; determining, based on the comparison, if a sensor has failed; and calculating a value for any failed sensor. Mead must check, and demonstrate, that the Sensor Validation System: validates sensor data in this way every minute of PEMS operation; and computes hourly averages using at least one valid data point in each fifteen minute quadrant of an hour (producing at least four valid data points per hour), where the unit combusted fuel during that quadrant of an hour, to comply with §75.10(d)(1).

(c) Mead must implement a sensor validation compliance alarm in order to inform Mead when sensors need repair and to indicate that the PEMS is out-of-control. A sensor value drift limit shall be established for each sensor such that the sensor drift does not result in a PEMS inaccuracy of greater than $\pm$10.0% from the corresponding reference method value. In setting the alarm, a demonstration shall be performed at a minimum of four different PEMS training conditions, which must be representative of the entire range of expected turbine operations. For each of the four or more training conditions, the demonstration shall consist of the following:

(1) Perform one sensor failure analysis: artificially fail each sensor and then ascertain the accuracy of the PEMS hourly average outputs when utilizing the calculated sensor value;

(2) Identify the sensor failure that results in the worst accuracy; if the worst accuracy is greater than the above 10.0% criterion, then stop the analysis and set up the PEMS to alarm with one sensor failure;
(3) Perform two sensors failure analysis: artificially fail the sensor that results in the worst accuracy in combination with the other sensors, failing each of the other sensors one at a time, and then ascertain the accuracy of the PEMS hourly average outputs when utilizing the two calculated sensor values;
(4) Identify the combination of dual sensor failures that result in the worst accuracy; if the worst combination is greater than 10.0%, then stop the analysis and set up PEMS to alarm with two sensor failures;
(5) Perform three sensors failure analysis: artificially fail the two sensors that result in the worst accuracy in combination with the other sensors, failing each of the other sensors one at a time, and then ascertain the accuracy of the PEMS hourly average outputs when utilizing the three calculated sensor values;
(6) Identify the combination of three sensor failures that result in the worst PEMS accuracy; if the worst combination is greater than 10.0% then stop the analysis and set up PEMS to alarm with three sensor failures;
(7) If the worst combination of three sensor failures result in PEMS hourly average outputs inaccuracy less than or equal to 10.0% then set up PEMS to alarm with four sensor failures.

The results of this demonstration shall be reported in the subpart H initial certification hardcopy test report and in the quarterly EDR submittal in record type (RT) 910. When the PEMS alarms, the PEMS is out-of-control. Subpart D missing data procedures shall be followed, starting with the hour after the alarm sounds and ending the hour after the problem is fixed and the alarm no longer sounds.

(d) A daily QA/QC test must be performed. Mead shall input to the PEMS a set of turbine operating parameters collected during the most recent RATA. The resulting PEMS NO_x lb/mmBtu output shall be compared to the reference method NO_x lb/mmBtu value, measured during the most recent RATA. If the PEMS NO_x output is within $\pm$ 10.0% of the reference method value, the daily QA/QC test is passed. If the daily QA/QC test is failed, the PEMS is out-of-control. Subpart D missing data procedures shall be followed starting with the hour after the failed test or, if the test is not timely conducted, the hour after the test due date and ending with the hour in which the test is passed. The results of this check (pass/fail) shall be reported in RT 624 in either EDR version 2.1 or 2.2. (Note: Use code '04' in start column 53 (QA test code) for the daily QA/QC check.)

(e) Mead shall use a portable NO_x/O_2 analyzer to perform direct NO_x and O_2 measurement checks against the PEMS, if and when EPA determines that portable NO_x analyzers and associated measurement methodologies can provide an adequate PEMS accuracy check. Over the next few months, EPA will test several portable chemiluminescence and electrochemical NO_x analyzers at two combustion turbine sites to determine how well these analyzers work. EPA reserves the right, as a condition on today's approval of the PEMS, to add a requirement to use a portable NO_x /O_2 analyzer. EPA will provide the necessary information to Mead on, e.g., performance specification, sampling frequency, methodology, and reporting, should this become a requirement.

(f) Mead shall perform initial certification tests on the PEMS prior to May 1, 2003. These tests should be performed in the following order: (1) ensure that the Sensor Validation System meets the requirements of paragraph (b); (2) train or retrain, as applicable, the PEMS according to the manufacturer's recommendations; (3) ensure that the requirements in paragraph (c) are met; (4) perform a RATA at the normal load level according to part 75, appendix A, §6.5, using paired PEMS and reference method data and calculated on a lb NO_x/ mmBtu basis;[2] and (5) calculate and apply a bias adjustment factor (BAF) at the normal load level according to part 75, appendix A, §7.6. If all tests and procedures in (1), (3), and (4) are not passed, and all the procedures in (2), are not completed, by May 1, 2003, the NO_x MER, calculated with the appropriate NO_x MPC value from part 75, appendix A, Table 2-2, must be used with the measured heat input to calculate and report NO_x mass emissions until all tests and procedures in (1)-(4) are passed. If an incorrect BAF is applied, the correct BAF shall be applied and the data resubmitted.

(g) After initial certification, if a RATA is failed due to a problem with the PEMS, or if changes occur that result in a significant change in NO_x emission rate (e.g., turbine aging, process modification, new process operating modes, or changes to emission controls), the tests and procedures in paragraph (f) shall be performed on the PEMS in the order specified in that paragraph. In addition, prior to performance of the RATA (see (4) in paragraph (f)), the PEMS must pass a linear correlation (r) and an F-test using the paired PEMS vs. reference method data used in retraining the PEMS (see (2) in paragraph (f)). The linear correlation (r), the F-test, and the tests and procedures in (1), (3), and (4) in paragraph (f) shall be passed, and the procedures in (2) in paragraph (f) shall be completed, by the earlier of 60 unit operating days (as defined in §72.2) or 180 calendar days after the failed RATA or after the change that caused a significant change in NO_x emission rate. Mead shall use subpart D missing data procedures starting from the hour of the failed RATA or the hour after the change that caused a significant change in NO_x emission rate, as applicable, and ending the hour after successful passage or completion of the tests and procedures, as required above. If an incorrect BAF is applied, the correct BAF shall be applied and the data resubmitted.

(h) For any hour or partial hour of startup, shutdown, or lean/lean turbine operation (burner modes 0 or 1), Mead must use 200% of 150 ppm NO_x MPC (or 300 ppm NO_x), pursuant to part 75, appendix A, Table 2-2, and §§2.1.2.1(b) and 2.1.2.4(e), to calculate NO_x MER, as defined in §72.2, and to determine O_2 level for the purpose of reporting emissions.

(i) When the duct burners operate or when the turbine fires oil, the normal PEMS lb NO_x/mmBtu output shall not be used to report emissions, and Method of Determination Code "55 Other substitute data approved through petition by EPA" shall be used in RT 320 for reporting lb NO_x/mmBtu emission rate. When the turbine or duct burners fire oil, Mead shall use the NO_x MER, calculated using the 200 ppm NO_x MPC for a new oil-fired turbine

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[2] RATAs must be calculated on a lb NO_x/mmBtu basis because Mead indicated that NO_x mass emissions for the Mahrt turbine are calculated using heat input (mmBtu/hr) from a fuel meter and gas heat content times NO_x emission rate (lb/mmBtu).

from Table 2-2 and the procedures in appendix A, §2.1.2.1(b) to determine NO_x and O_2 level for the purpose of reporting emissions. When the duct burners and the turbine fire gas, Mead shall use the NO_x MER, calculated using 150 ppm NO_x MPC for a new gas-fired turbine from part 75, appendix A, Table 2-2 and the procedures in appendix A, §2.1.2.1(b) to determine NO_x and O_2 level for the purpose of reporting emissions.

(j) Ongoing QA/QC tests shall be performed according to the following table.

Test	Performance Specification	Frequency
Daily QA/QC	$\leq 10.0\%$	Daily (paragraph (d))
Direct NO_x/O_2 measurement with portable analyzer	To be provided	To be provided (paragraph (e))
RATA	$\leq 7.5\%$ or $\leq 10.0\%$	Annual or semiannual and after each PEMS training (paragraphs (f) and (g))
Sensor Validation System	Check for production of at least 1 data point per 15 minutes (paragraph (b))	Before each RATA (paragraphs (f) and (g))
Bias adjustment factor	If $d_{avg} \leq \lvert cc \rvert$, bias test is passed	After each RATA (paragraphs (f) and (g))
PEMS training	$r \geq 0.8$, and $F_{critical} \geq F$	According to paragraphs (f) and (g)
Sensor validation compliance alarm	Perform demonstration (paragraph (c))	After each PEMS training (paragraphs (f) and (g))

The daily QA/QC test is described in paragraph (d) above. The direct NO_x/O_2 measurement, if and when it is required by EPA, is discussed in paragraph (e) above. Ongoing RATAs shall be performed at the normal load level according to the procedures in part 75, appendix B, §2.3.1 and, as discussed in paragraphs (f) and (g), shall be calculated on a lb NO_x/mmBtu basis. Before each RATA, Mead shall check that the Sensor Validation System is set to provide one valid data point per 15 minute period, as discussed in paragraph (b). After each RATA, Mead shall calculate and apply a bias adjustment factor at the normal load level according to part 75, appendix A, §7.6. Mead shall train or retrain the PEMS according to paragraphs (f) and (g). After each training, Mead shall perform the compliance alarm demonstration in paragraph (c).

(k) Over the next few months, EPA will test several statistical procedures at two combustion turbine sites to determine how well these procedures predict PEMS accuracy.

Although Mead is currently required to perform a linear correlation (r) and an F-test in paragraph (g), EPA reserves the right, as a condition on today's approval of the PEMS, to add new statistical procedures or to change the ones currently required. EPA will provide the necessary information to Mead should new or changed statistical procedures become a requirement.

5. Missing Data Substitution

Under §75.46, Mead must demonstrate that all missing data can be accounted for in a manner consistent with the applicable missing data procedures in subpart D. Mead stated that the PEMS meets the subpart D requirements. According to Mead, the PEMS can determine monitor data availability, assess the operating times for which data must be substituted, and recover historical data from the PI data historian. The elapsed out-of-control time of the PEMS will be monitored, allowing the PEMS to retrieve the data necessary to perform the substitution. Once the data has been retrieved, the required calculations will be performed. To assist in analyzing missing data, the software will provide data managing reports that will allow the user to monitor the out-of-control time (or monitor data availability), data gap analysis, recovered data queries, substituted data usage, and the standard reporting requirements. Provided the PEMS meets the applicable subpart D requirements for missing data substitution, including the initial missing data procedures, determination of monitor data availability, and standard missing data procedures, and either the PEMS or data acquisition and handling system meet the appendix D, §2.4 requirements for determining missing data for heat input, EPA agrees that the subpart D and appendix D missing data requirements will be met.

6. Additional Requirements

A monitoring plan is due 45 days prior to the initial certification tests (§75.62) described in paragraph (f) above. The PEMS operating envelope shall be included in the hardcopy monitoring plan. More information on monitoring plan submittals and other submittals can be found at: http://www.epa.gov/airmarkets/monitoring/submissions/monplan.html

Mead shall follow the regular EDR instructions (see web address below), supplemented by the following instructions, to report the PEMS in the EDR.

Record Type	Start Column	Instructions
201	30	Use '03' as the method of determination code.
211	29	Use '03' as the method of determination code.
320	53	Use '03' as the method of determination code.
510	23	Use 'NOXL' for the component type code.
510	27	Leave the sample acquisition method blank.
585	10	Use 'NOXR' for parameter code.
585	14	Use 'AMS' for monitoring methodology.

624	53	Use RT 624 instead of RT 230. Use '04' for daily QA/QC test. Use '05' for direct NO_x/O_2 measurement with portable analyzer.

For submitting the required quarterly EDR reports, Mead should go to the following web site to access EDR version 2.2 forms and instructions: http://www.epa.gov/airmarkets/reporting/edr21/. The following address has software that can be used to quality assure the electronic reports prior to submission: http://www.epa.gov/airmarkets/reporting/index.html.

EPA's approval of Mead's petition under §75.66(d) and subpart E relies on the accuracy and completeness of the information in Mead's June 17, 2002 petition and is appealable under part 78 of the Acid Rain regulations. If there are any further questions or concerns about this matter, please contact John Schakenbach of my staff at 202-564-9158 or at (schakenbach.john@epa.gov) .

Sincerely,

Sam Napolitano, Acting Director
Clean Air Markets Division

cc: John Schakenbach, EPA, CAMD
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