



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

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August 3, 2001

OFFICE OF
AIR AND RADIATION

Mr. Mark Mansfield
Alternative Designated Representative
PacifiCorp
Naughton Unit 3
P.O. Box 191
Kemmerer, Wyoming 83101

Dear Mr. Mansfield:

We have reviewed your January 22, 2001 petition, under §§75.14(b) and 75.66(a) of the Acid Rain regulations, and supplemental information provided April 10 and June 4, 2001 requesting an exemption from the continuous opacity monitoring (COM) requirements at §75.14 for PacifiCorp's Naughton Power Station, Unit 3. As discussed below, EPA denies the petition.

Background

PacifiCorp's Naughton Unit 3 is a coal-fired boiler equipped with an electrostatic precipitator (ESP) and a wet flue gas desulfurization system (scrubber). Section 75.14 requires the owner or operator of a coal-fired unit to monitor for opacity using a continuous emission monitoring system. However, §75.14(b) states: "If the owner or operator can demonstrate that condensed water is present in the exhaust flue gas stream *and would impede the accuracy of opacity measurements*, then the owner or operator of an affected unit equipped with a wet flue gas pollution control system for SO₂ emissions or particulates is exempt from the opacity monitoring requirements of this part." [emphasis added] Section 75.14(b) does not describe procedures that can be used by an affected unit to demonstrate either that condensed water is present or that such water interferes with COM performance.

In your original petition, you provided information on stack water content and temperature which you assert demonstrates that condensed water is present in the stack of Unit 3. The information was provided in a form consistent with guidance in EPA's Policy Question 5.6.

EPA's Policy Manual Question 5.6, published in March 2000 and still in effect, requires the designated representative seeking an exemption to submit a petition that includes: "... a written statement, certified by the designated representative, that the unit has a wet flue gas pollution control system, and the results of procedures that demonstrate that the stack gas contains liquid water droplets." The policy requires simultaneous determination of moisture content using two procedures to demonstrate whether liquid water droplets are present in the gas stream. "(1) the reference method (with impingers) and (2) using either a psychrometric chart or saturation vapor pressure tables with measured stack gas temperature." The policy states if the moisture content from procedure (2) is significantly less than the moisture content from

procedure (1), then the stack gas is saturated and is assumed to have condensed water present. "The Director of the Clean Air Markets Division will determine whether the petition meets these requirements, and whether to exempt the unit under §75.14(b) from Part 75 opacity monitoring requirements."

Based on test results submitted in the January 22, 2001 petition and in the April 10, 2001 response to EPA questions, EPA believes that, in some circumstances, condensed water can exist in the Naughton Unit 3 stack gas. For one of the five test periods, however, results suggest that condensed water is not present. Regardless, a demonstration that those condensed droplets would impede the accuracy of any COM measurements (as required by §75.14(b)) has not been provided.

As a follow up to a conference call with Naughton Unit 3 representatives on April 30, 2001, EPA proposed the following procedure for demonstrating that condensed water "... would impede the accuracy of opacity measurements" as stated in §75.14(b): Compare certified COM readings with concurrent readings from Method 9 performed by a certified observer under normal operating conditions. The submission should also include boiler and emissions control equipment operating parameters, and stack flue gas parameters at the COM location, e.g., flue gas temperature, at the time of each comparison. Pursuant to 40 CFR 60.11, any COM vs Method 9 comparison must be for a minimum of three consecutive hours (30 six-minute observations) during each of three separate days. EPA committed to decide, on the basis of this information, whether the difference between the COM readings and Method 9 readings is significant enough to warrant an exemption from continuing to operate a COM.

In a June 4, 2001 response, PacifiCorp presented a number of objections to EPA's suggested demonstration and stated that EPA's request to provide additional information by comparing certified COM readings with concurrent Method 9 observations is not required by EPA's rules and is technically infeasible. To support the statement that EPA's request for additional information is not required by rules, PacifiCorp cites:

- "(1) the plant already has demonstrated by its earlier submittal that condensed water exists in the flue gas stream that would impede the accuracy of any COM measurements; and
- (2) EPA's rules and guidance documents do not require the plant to conduct the comparison as outlined by EPA. If, in fact, EPA's rules or guidance documents do require such a comparison in this circumstance, please direct us to that reference."

PacifiCorp also stated that EPA's request to provide additional information by comparing certified COM readings with concurrent Method 9 observations is technically infeasible and will be of little value in determining whether condensed water droplets exist that will impair the accuracy of COM readings. To support these statements, PacifiCorp states:

"Any comparison must be run during conditions that represent all weather and operating conditions experienced throughout the year at the Naughton Plant, and that fluctuations in ambient temperature, wind speed/direction and relative humidity significantly affect the length of the condensed water vapor plume and, consequently, the ability to accurately

conduct a Method 9 opacity determination. Performing the comparison in all of these conditions would, of course, prove to be extremely difficult, time consuming and costly.”

Finally, in the June 4, 2001 response, PacifiCorp stated:

“The concurrent COM and Method 9 readings must be conducted in all seasons if a fair representation of observations during actual site weather conditions is to be obtained. Method 9 states that “opacity observations for an attached steam plume shall be made beyond the point in the plume at which condensed water vapor is no longer visible.” This guidance regarding determination of the observation point is vague and subjective, therefore, it becomes imperative that a strategy be developed that ensures that observations are made at the same point.”

EPA’s Determination

Inasmuch as Naughton has declined to provide EPA requested information on opacity measurement interference caused by condensed water droplets, the Agency has no option but to deny the petition. Despite a requirement finalized in 1993 to demonstrate interference to obtain an exemption from opacity monitoring, very few units have requested such an exemption.

In fact, there are many situations where COM have been successfully applied to wet scrubbed units. Nevertheless, in response to less clear situations, we have attempted over time to provide greater specificity on the types of demonstration which might distinguish cases where COM cannot be applied. The importance of the requested information has been demonstrated in a comparison performed at the Craig Plant in Colorado. This information, which became available to us subsequent to the March, 2000 issuance of Policy Manual Question 5.6, is similar to what we have requested of your unit. The Craig Plant demonstration showed comparability of COM and Method 9 readings, especially for Unit 2, where the COM was occasionally reading slightly lower than Method 9; this is opposite of what would be expected if condensed water droplets were present. Readings for Unit 1 distinguished a systematic bias between the two sets of readings. Although that bias was not large in the case of the Craig Plant¹, it does provide a strong basis for suggesting the methodology would successfully distinguish situations where COM readings were not reliable.

In response to your specific concerns with the proposed methodology and the necessity of its application, we offer the following points for your consideration. As to your demonstration that condensed water exists in the stack, we would note that the data of April 6, 1999 seem to suggest the opposite. Further, even if condensed water is present, it is not a foregone conclusion that this water would interfere with COM readings sufficiently to obviate the value of such a system. Section 75.14(b) requires both a demonstration that condensed water is present and a demonstration that it will interfere with readings. It is especially important to have a COM system where there are visibility and other impact concerns in the national recreation area, national wildlife refuge, national monument and national forest that surround your plant.

¹In part, this may be attributable to the fact that only 75% of the gas stream was scrubbed at the plant.

Your second concern was that EPA rules and guidance do not require a demonstration such as the one we have specified. To the contrary, Section 75.14(b) very specifically requires a demonstration. The Agency is not asserting that the proposed approach is the only one which could provide an adequate demonstration. Rather, we have encouraged you to identify other options, if you so choose. The approach we are providing is one which we believe would be fairly successful in distinguishing cases where condensed water interfered with the COM readings. We also believe that it would provide a very cost effective demonstration. Using your own information, you cite monthly rental costs for a COM to be \$3,995 with an additional \$5-6,000 for set up and other non-specified costs for stack penetrations, blower mounts and communication interfaces. EPA estimates that only one month COM rental would be required, that the total non-specified costs should be less than \$1,000, for a total estimated cost of \$11,000. This does not appear to be unreasonable.

We likewise do not agree with your assessment that the demonstration would need to be conducted under all weather and operating conditions to be successful. If testing is conducted according to our proposal for three days under normal operating conditions, EPA will accept the results. Testing over a longer period of time under normal operating conditions would likely produce more robust results and EPA would have no objection to PacifiCorp performing such an extended test. We would further note that, since Naughton has an ESP preceding the scrubber, the option exists to perform required opacity monitoring after the ESP and before the scrubber (as other Acid Rain Program units have) and avoid the problem of condensed water altogether. Part 75 supports this option. Section 75.14(a) requires coal- or oil-fired units to install, certify and operate a COM and that each COM "shall meet the design, installation, equipment, and performance specifications in Performance Specification 1 in appendix B to part 60 of this chapter." Part 60, appendix B, Performance Specification 1, §4 Installation Specifications allows alternative COM locations, e.g., after the ESP but before the scrubber, if approved by the Administrator.

As to your final point, the appropriate point for Method 9 readings, Albion Carlson of our Regional Office or Bob Gill of the Wyoming Department of Environmental Quality are prepared to provide you specific assistance in interpreting the Method for your particular situation.

EPA understands that PacifiCorp may have believed that their petition would be approved based on previous approvals under the old policy that did not require a demonstration of the presence of condensed water in the gas stream. In March 2000, EPA updated the policy to address how to demonstrate whether condensed water is present in the flue gas. That revised policy did not address how to demonstrate that the condensed water impedes the accuracy of opacity measurements, as required by §75.14(b). The Craig Plant demonstration reflects EPA's current policy position on how to meet the requirements of 75.14(b), and, consistent with what was learned at the Craig Plant, EPA intends to update Policy Manual Question 5.6 to provide guidance on how an affected unit could make the required demonstration that condensed water droplets in the flue gas impede the accuracy of opacity measurements.

In summary, EPA disapproves the January 22, 2001 petition requesting an exemption from the COM requirements at §75.14 for PacifiCorp's Naughton Power Station, Unit #3. EPA's disapproval is based on PacifiCorp's failure to demonstrate that condensed water droplets in the flue gas at Naughton Power Station, Unit #3 would impede the accuracy of opacity

measurements as required by §75.14(b).

EPA's disapproval of PacifiCorp's petition relies on the accuracy and completeness of the information in PacifiCorp's January 22, 2001 petition and supplemental submissions on April 10, 2001 and the June 4, 2001 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,

A handwritten signature in black ink, appearing to read "Brian J. McLean". The signature is fluid and cursive, with a long horizontal stroke at the end.

Brian J. McLean, Director
Clean Air Markets Division

cc: Albion Carlson, Region VIII
Bob Gill, WYDEQ