

Question 5.6

Topic: Opacity Monitoring -- Exemption

Question: For a unit with a wet flue gas pollution control system, § 75.14(b) allows an exemption from the requirement of § 75.14(a) to install, certify, operate and maintain a continuous opacity monitoring system (COMS), 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." What is suggested for such a demonstration?

Answer: Alternatives for Opacity Monitoring in the Presence of Condensed Water Vapor

Section 75.14(a) requires that a coal- or oil-fired unit install, certify and operate a COMS and that each COMS "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, § 8.1 allows alternative COMS locations, (e.g., after the electrostatic precipitator (ESP) but before the scrubber), if approved by the Administrator. Thus, if an affected unit has an ESP preceding the scrubber, a source owner or operator could perform the § 75.14(a) required opacity monitoring after the ESP and before the scrubber and avoid the potential problem of condensed water and impeding accuracy of the COMS altogether. Furthermore, this approach would be consistent with Part 60 requirements.

Requesting an Exemption under § 75.14(b)

However, if an owner or operator wants an exemption from the COMS requirement under § 75.14(a), the designated representative should submit a petition under § 75.66 for an exemption to the Director of the Clean Air Markets Division (CAMD). We recommend that the petition include: (a) a written statement, certified by the designated representative, that the unit has a wet flue gas pollution control system, and (b) the results of the procedure, described below, demonstrating that the stack gas contains liquid water droplets. The Director of the Clean Air Markets Division would determine whether the petition satisfies the recommended criteria discussed in this guidance or is otherwise acceptable and whether to exempt the unit under § 75.14(b) from the COMS requirement of § 75.14(a). This guidance is not binding and does not represent EPA's final determination on how any particular demonstration must be made to satisfy § 75.14(b). While this guidance does not recommend specific alternative approaches to demonstrating the presence of condensed water or impeding COMS accuracy, it may be possible to make such showings by methods other than the one described below. Any demonstration that either follows or departs from this guidance will be considered on its own merits.

Demonstration of Presence of Condensed Water

To demonstrate whether liquid water droplets are present in the gas

stream, a source owner or operator could perform the procedures described in Sections 4.1, 11.0, and 12.1.7 of EPA Method 4 (see Appendix A-3 to 40 CFR Part 60) to demonstrate that the effluent gas stream is saturated. To be most accurate, these procedures for demonstrating saturation should be performed at sampling points representative of the stack gas stream, and under conditions representative of normal operations (e.g., normal load, normal fuel, common weather conditions, and normal control equipment operation) and at the COMS location or, if no COMS is currently installed, at the location that would meet the requirements of Performance Specification 1 in Appendix B of 40 CFR Part 60, except for measurement location condition (3) in § 8.1(2)(i). Under Method 4, applicants make a determination of moisture content for the same time period using two procedures: (1) the reference method (with impingers) specified under Section 11.0 of Method 4; and (2) using a temperature probe along with either a psychrometric chart or saturation vapor pressure tables with measured stack gas temperature as specified under Section 4.1 of Method 4. Section 12.1.7 provides for two calculations of stack gas moisture content, one calculation for each of these two procedures. If the moisture content from procedure (1) is greater than the moisture content from procedure (2) (at an appropriate level of numerical precision), then the stack gas is saturated and is assumed to have condensed water present.

Demonstration of Impeding Accuracy of Opacity Measurements

EPA would generally continue to consider the demonstration of the presence of condensed water, following the above procedure, sufficient to show impedance of accuracy of opacity measurements, unless the circumstances of a particular case indicate additional information is needed. In which case, EPA may ask for a more conclusive demonstration that moisture actually interferes with opacity measurement.

In addition, the Agency is awaiting the completion of additional tests relating to the use of wet stack opacity monitoring technology. Should such technology be adequately demonstrated, EPA may determine that the exemption authority of § 75.14(b) is of no further utility, and propose to amend or delete § 75.14(b) and thereby require the use of wet stack opacity monitoring technology in all wet stack situations.

Non-Part 75 COMS Requirements May Still Apply

EPA notes that, if a unit is exempted from the § 75.14(a) COMS requirement through an approved petition under §§ 75.14(b) and 75.66, a COMS or an alternative may still be required by another Federal or state program. For example, 40 CFR 60.49Da(a) states that if water droplets interfere with opacity measurements in the outlet stack following an FGD system, opacity must be monitored upstream of the interference, at the FGD inlet. In contrast, Part 75 allows a unit to fire residual oil for up to 15% of its annual heat input and still be considered gas-fired and exempt from the COMS requirement. (Note that in some cases, "the Administrator" refers to the EPA Regional Office and in other cases, where New Source Performance Standards (NSPS) enforcement authority has been delegated, it refers to the state or local agency). The regional, state, or local office should decide, on a case-by-case basis, whether the

information submitted with the application adequately demonstrates that an alternative monitoring approach is justified. To ensure national consistency in such demonstrations, the regional, state, and local offices should consult with EPA Headquarters.

Units Previously Exempted from COMS

For a unit exempted from installing a COMS under any previous version of this policy, the current policy does not trigger a requirement for resubmission of a request for exemption.

References: § 75.14(b), § 75.66; 40 CFR 60.13(i)(1); 40 CFR Part 60, Appendix A-3, Method 4; 40 CFR Part 60, Appendix B, Performance Specification 1; 40 CFR 60.11; 40 CFR Part 60, Appendix A-4, Method 9.

History: First published in November 1993, Update #2; revised in March 2000, Update #12; revised in October 2003 Revised Manual; Revised in 2013 Manual