

Question 8.22

Topic: Use of Short RM Measurement Line after Wet Scrubber

Question: Section 6.5.6 in Appendix A of Part 75 states that the Reference Method (RM) traverse points for gas RATA tests must meet the location requirements of Performance Specification # 2 (PS 2) in Appendix B of 40 CFR Part 60. Section 8.1.3.2 of PS 2 specifies that downstream of wet scrubbers, the RM traverse points must be located on a long measurement line, with points at 16.7%, 50%, and 83.3% of the stack diameter. Use of the alternative short RM measurement line, with points located 0.4 m, 1.2 m and 2.0 m from the stack wall is disallowed in such instances. However, for large-diameter stacks, use of a long measurement path is difficult and presents many logistical problems. Is it possible for the owner or operator of a scrubbed unit to conduct a test or demonstration in order to be allowed to use the short RM measurement line?

Answer: Yes. Part 75 includes provisions in Section 6.5.6 of Appendix A which allow the short measurement line to be used following a wet scrubber, provided that, just prior to each RATA, stratification is demonstrated to be minimal at the sampling location.

To demonstrate this, an initial 12-point stratification test is required at the sampling location (see Section 6.5.6.1 of Appendix A). Reference Methods 6C, 7E, and 3A are used to measure SO₂, NO_x, and CO₂, respectively. Sampling is required for at least two minutes at each traverse point. A stratification test is also required for each subsequent RATA at the sampling location. However, for the subsequent RATAs, in lieu of repeating the initial 12-point test, an abbreviated 3-point or 6-point stratification test may be done (see Section 6.5.6.2 of Appendix A).

For each pollutant or diluent gas, Section 6.5.6.3(a) of Appendix A specifies that stratification is considered to be minimal if the concentration at each traverse point is within $\pm 10.0\%$ of the mean concentration value for all the points. The results are also acceptable if the concentration at each traverse point differs by no more than five ppm or 0.5% CO₂ or O₂ from the average concentration for all traverse points. If stratification is found to be minimal, the short RM measurement line may be used for the RATA tests.

The data and calculated results from all stratification tests are to be kept on file at the facility, available for inspection, with the rest of the RATA information.

References: Appendix A, Sections 6.5.6, 6.5.6.1, 6.5.6.2, and 6.5.6.3; 40 CFR Part 60, Appendix B (PS 2)

History: First published in March 1997, Update #11; revised in October 1999 Revised Manual; revised in October 2003 Revised Manual; revised in 2013 Manual