

Question 1.3

Topic: Use of Optical In-situ Monitoring

Question: Can I use an optical in-situ monitoring system for monitoring under Part 75? If so, how do I challenge the system with calibration gases and what procedure should I use to calculate the required gas tag values?

Answer: Yes. An optical in-situ system may be used so long as it is approved under the Part 75 regulations via issuance of a monitoring system certification. This means the system must undergo all required tests and pass. To test the instrument linearity and calibration error, EPA Protocol gases must be used. The use of a calibration cell that is placed in the measurement path is acceptable. The calibration cell must be located so as to challenge the entire measurement system. This is analogous to the injection of calibration gas to the probe tip of extractive systems. For path measurement systems where the calibration gas materials are introduced into a cell of different optical path length than the measurement optical path length, use the following equation to calculate the calibration gas tag values needed for daily calibration error tests or linearity checks:

Where:

EAV = Equivalent Audit Value

SAV = Specified Audit Value

MPL = Measurement Path Length

CCPL = Calibration Cell Path Length

The EAV is the actual tag value of the EPA protocol gas to be injected. The SAV is the required reference gas concentration specified in Section 5.2 of Appendix A of the rule as a percentage of the calculated span value. The design should be such that the audit calibration gas is maintained at the same temperature and pressure as the stack gas to be measured. Alternatively, the owner or operator could determine the calibration cell temperature and apply appropriate corrections to the audit measurements to represent monitor performance at actual effluent conditions, subject to the approval of the Administrator. Any such petitions must be approved by the Administrator prior to implementation of acceptable testing.

References: § 75.10

History: First published in March 1995, Update #5; revised in October 1999 Revised Manual; revised in October 2003 Revised Manual