

following successful completion of the field audit performance tests outlined in PS-1.

2. What are the basic functions of Procedure 3? The basic functions of Procedure 3 are assessment of the quality of your COMS data, and control and improvement of the quality of the data by implementing QC requirements and corrective actions. Procedure 3 provides requirements for:

(1) Daily instrument zero and upscale drift checks, as well as daily status indicators check,

(2) Quarterly performance audits, which includes the following assessments:

- (i) Optical alignment,
- (ii) Calibration error,
- (iii) Zero compensation, and
- (3) Zero alignment.

3. What Special Definitions Apply to Procedure 3? The definitions of Procedure 3 include those provided in PS-1 and ASTM D 6216-98 (incorporated by reference into PS-1), with the following additions:

3.1 *Out-of-Control Periods*. "Out of control" means that one or more COMS parameters falls outside of the acceptable limits established by this rule.

(1) *Daily Assessments*. Whenever the calibration drift (CD) exceeds twice the specification of PS-1, the COMS is out-of-control. The beginning of the out-of-control period is the time corresponding to the completion of the daily calibration drift check. The end of the out-of-control period is the time corresponding to the completion of appropriate adjustment and subsequent successful CD assessment.

(2) *Quarterly and Annual Assessment*. Whenever a quarterly performance audit or annual zero alignment indicates unacceptable results, the COMS is out-of-control. The beginning of the out-of-control period is the time corresponding to the completion of the performance audit indicating an unacceptable performance. The end of the out-of-control is the time corresponding to the completion of appropriate corrective actions and subsequent successful audit (or, if applicable, partial audit).

4. What interferences must I avoid? Opacity cannot be measured accurately in the presence of water droplets. Thus, COMS opacity compliance determinations cannot be made when water droplets are present such as downstream of a wet scrubber without reheat or other saturated flue gas locations. Therefore, COMS must be located to avoid interferences with moisture or water droplets.

5. What Do I Need to Know to Ensure the Safety of Persons Using Procedure 3? People using Procedure 3 may be exposed to hazardous materials, operations, and equipment. Procedure 3 does not purport to address all of the safety issues associated with its use. It is your responsibility to establish appropriate safety and health practices, and determine the applicable regulatory limitations before performing this procedure. You should consult the COMS user's manual for specific precautions to take.

6. What Equipment and Supplies Do I Need? The equipment and supplies you need are those specified in PS-1.

7. What Reagents and Standards Do I Need? The reagents and standards you need are those specified in PS-1.

8. What Sample Collection, Preservation, Storage, and Transport Are Relevant to This Procedure? [Reserved]

9. What Quality Control Measures Are Required by This Procedure for My COMS? You must develop and implement a QC program for your COMS. Your QC program must, at a minimum, include written procedures which describe in detail complete step-by-step procedures and operations for the activities in paragraphs (1) through (4):

(1) Procedures for performing drift checks, including both zero and upscale drift, and the status indicators check,

(2) Procedures for performing the quarterly performance audits,

(3) A means of checking the zero alignment of the COMS, and

(4) A program of corrective action for a malfunctioning COMS. The corrective action must include, at a minimum, the requirements specified in Section 10.5.

9.1 What QA/QC documentation must I have? You are required to keep the QA/QC written procedures on record and available for inspection by us, the State and/or local enforcement agency for the life of your COMS or until you are no longer subject to the requirements of this procedure.

9.2 What are the consequences of failing QC audits? Your QC procedures are deemed to be inadequate or your COMS incapable of providing quality data if you fail two consecutive QC audits (*i.e.*, out-of-control conditions revealed by the annual audits or quarterly audits). Therefore, if you fail the same two consecutive quarterly audits or five consecutive daily checks, you must either revise your QC procedures or repair (or replace) your COMS to correct the deficiencies causing the excessive inaccuracies. If you determine your COMS requires extensive repair, you may use a substitute COMS provided the substitute meets the requirements specified in Section 10.6.

10. What Calibration and Standardization Procedures Must I Perform for My COMS? You must perform routine system checks to assure proper operation of system electronics and optics, light and radiation sources and detectors, electric or electro-mechanical systems, and general stability of the system calibration. You must subject your COMS to a performance audit, to include checks of the individual COMS components and factor affecting the accuracy of the monitoring data, at least once per calendar quarter. At least annually, you must compare the COMS simulated zero to the actual clear path zero.

10.1 What routine system checks must I perform on my COMS? Necessary components of the routine system checks will depend upon design details of your COMS. At a minimum, you must verify the system operating parameters listed in paragraphs (1) through (3) on a daily basis. Some COMSs may perform one or more of these functions automatically, or as an integral portion of unit operations; other COMS may perform one or more of these functions manually.

(1) You must check the zero drift to assure stability of your COMS response to the zero

check value. The simulated zero device, an automated mechanism within the transmissometer that produces a simulated clear path condition or low-level opacity condition, is used to check zero drift. You must, at a minimum, take corrective action on your COMS whenever the daily zero drift exceeds twice the applicable drift specification given in appendix B.

(2) You must check the upscale drift to assure stability of your COMS response to the upscale drift value. The upscale calibration device, an automated mechanism (employing a filter or reduced reflectance device) within the transmissometer that produces an upscale opacity value, is used to check the upscale drift. You must, at a minimum, take corrective action on your COMS whenever the daily upscale drift check exceeds twice the applicable drift specification given in appendix B.

(3) You must, at a minimum, check the status indicators, data acquisition system error messages, and other system self-diagnostic indicators. You must take appropriate corrective actions based on manufacturer's recommendations when the COMS is operating outside preset limits. All COMS data recorded during periods in which the fault status indicators are illuminated are to be considered invalid.

10.2 What are quarterly auditing requirements for my COMS? At a minimum, the parameters listed in paragraphs (1) through (3) are to be included in the quarterly performance audit.

(1) For units with automatic zero compensation, you must determine the zero compensation for the COMS. The value of the zero compensation applied at the time of the audit must be calculated as equivalent opacity, corrected to stack exit conditions, according to the procedures specified by the manufacturer. The compensation applied to the effluent recorded by the monitor system must be recorded.

(2) You must conduct a three-point calibration error test of the COMS. For either calibration error test methods identified below, three neutral density filters, meeting the requirements of PS-1, must be placed in the COMS light beam path for three nonconsecutive readings. The monitor responses must then be independently recorded from the COMS permanent data recorder. Additional guidance for conducting this test is included in section 8.1(3)(ii) of PS-1. The low-, mid-, and high-range calibration error results must be computed as the mean difference and 95 percent confidence interval for the difference between the expected and actual responses of the monitor as corrected to stack exit conditions. The equations necessary to perform the calculations are found in section 12.0 of PS-1. For the calibration error method, you must use the external audit device. You must confirm that the external audit device produces the proper zero value on the COMS data recorder.

(3) You must check the optical alignment of the COMS. The optical alignment must be checked when the stack temperature is ± 20 percent of the typical operating temperature as measured in degrees Fahrenheit.

10.3 What are the annual auditing requirements for my COMS?