Question 7.12

Topic: Testing Requirements for Time-shared Backup Systems

Question: Two affected units discharge to a common stack. The required SO_2, NO_x, and CO_2 monitoring is done in the individual ducts leading to the common stack, using separate primary dilution systems for each unit. However, the monitoring systems are configured in such a way that the Unit 2 analyzers can serve as backups for Unit 1 (and vice-versa) by time-sharing the analyzers between the two units. What are the certification and QA requirements for the backup monitoring systems in this configuration?

Answer: In the electronic monitoring plan, it is necessary to define each system including the probe component in order to distinguish one system from another. In the case described above, the backup monitoring systems should be classified as non-redundant backups in the monitoring plan, and not as redundant backups. This implies that they will operate only occasionally.

For example, the Unit 2 analyzer is not *continuously* timeshared between Units 1 and 2 (as was the case in Question 7.8), but timesharing is done only when the Unit 1 analyzer is out of service. Similarly, the Unit 1 analyzer is only time-shared when the Unit 2 analyzer is out-of-service. Use the following guidelines to determine how many and what types of initial certification tests are required for each non-redundant backup monitoring system:

(1) A linearity check of each non-redundant backup monitor is required, without exception.

(2) A cycle time test is required in the time-shared mode to ensure that at least one data point will be obtained every 15 minutes from each unit. Report the result of this test for each system.

(3) A RATA and bias test are required for each non-redundant backup system and a bias test of each backup system is required. If, for each unit, the RATAs are conducted in the time-shared mode, separate RATAs and bias tests for the primary systems in the normal sampling mode are not required.

(4) A 7-day calibration error test is not required.

For on-going quality assurance (QA) activities, each time that a nonredundant backup monitoring system is brought into service for measuring emissions, it must pass a linearity check. If a non-redundant backup system is used for one or more days, the system must pass a daily calibration error test on each day on which it is used to report data. If its usage continues from one calendar quarter into the next, it becomes subject to the same quarterly linearity requirements as a primary monitoring system. A RATA of each non-redundant backup system must be performed, at a minimum, once every eight calendar quarters.

References: § 75.20(d); Appendix A; Appendix B

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