Question 12.5

Topic: Diagnostic and Recertification Tests for Flow Monitor Component Replacements

Question: What tests are required when a major component of a flow monitoring system is replaced?

Answer: A major component of a flow monitoring system is any part of the system that is involved in the direct sensing of the flow velocity or in calculating the total volumetric flow rate. Examples of major flow components include sensors, pitot tubes, transducers, thermal bridges, and microprocessors. Non-major components include power supplies, blower motors and other inactive components not involved in the direct sensing of flow or in the subsequent calculations.

When a major component of a flow monitoring system is replaced, the component replacement may significantly affect the monitor's ability to accurately measure flow rate, and recertification may be required in accordance with § 75.20(b) -- see also Question 12.10 below. For this reason, EPA recommends that, to the extent practicable, replacement of major flow system components be done at the time of scheduled semiannual or annual quality assurance RATAs, so that if recertification is necessary, a single RATA may be done for a dual purpose, i.e., to satisfy both the recertification and routine QA requirements.

When a major component is replaced, the owner or operator may either perform recertification testing of the flow monitor or may, instead, perform an abbreviated flow-to-load ratio diagnostic test, as described in Section 2.2.5.3 in Appendix B to Part 75. If the flow-to-load diagnostic test is passed, no further testing of the flow monitor is required. However, if the test is failed, RATA testing is required, in accordance with Section 2.2.5.3 (c).

When the abbreviated flow-to-load ratio diagnostic test is performed, operation at normal load is preferred. However, if normal load is unattainable at the time of the component replacement, the diagnostic may be performed at another load. If this becomes necessary, then the appropriate pre-replacement RATA information (mean reference method flow rate, load and, if necessary, % CO_2) must be obtained for that load level in order to perform the diagnostic test properly.

References: § 75.20(b)(1); Appendix B, Section 2.2.5.3

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