Question 9.4

Topic: Calibration Error Test -- Differential Pressure Flow Monitors

Question: How should differential pressure flow monitors perform the calibration error test (Part 75, Appendix A, Section 2.2.2.1)?

Answer: In part, Appendix A, Section 2.2.2.1 states: "Design and equip each flow monitor to allow for a daily calibration error test consisting of at least two reference values: (1) Zero to 20% of span *or an equivalent reference value (e.g., pressure pulse or electronic signal)* and (2) 50 to 70% of span" (emphasis added). For differential pressure flow monitors, the above quote means that the 7-day and daily calibration error tests may be performed in units of Δ P (e.g., inches of water).

For initial certification or recertification of a differential pressure-type flow monitor, the allowable calibration error (in inches of H_2O) in a 7-day calibration error test is therefore 3.0% of the "calibration span value" (i.e., the Δ P value that is equivalent to the velocity span value (in wet, standard ft/min) from Section 2.1.4 of Appendix A to Part 75). The results are also acceptable if the absolute value of the difference between the flow monitor response and the reference signal value (i.e., | R - A | in Equation A-6) does not exceed 0.01 inches H_2O.

The control limits for daily operation of a differential pressure-type flow monitor are · ± 6.0% of the calibration span value (see Section 2.1.4 of Appendix B). The results of a daily calibration error test are also considered acceptable if the absolute value of the difference between the monitor response and the reference signal value does not exceed 0.02 inches H_2O.

References: Appendix A, Sections 2.1.4 and 2.2.2.1

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