F. Primary Element Inspection Reports

Regulatory references: In Part 75, Appendix D, § 2.1.6.4

Primary elements are the components of the fuel flow measurement system, which create very specific differential pressure patterns (or other technology specific responses) as the fluid they are monitoring flows around them. These primary elements are actual immersed in the fluid flow pipe. These fluids can sometimes be corrosive or contain particulates which might damage or distort the shape or profile of the element. This inspection is intended to find or identify damage or corrosion to these devices. Damage or corrosion will cause these systems to operate in a manner that is unacceptable (what is created are non-characteristic differential pressure or response patterns).

As you prepare to perform this inspection, prepare in the following ways:

1. Find and review the procedure that your facility has prepared to perform these inspections and follow it. Make sure you know what a “normal” element looks like.
2. A visual inspection of the metering system’s primary element is to be performed and passed within every twelve (12) calendar quarters. Under certain conditions, P75 also allows this deadline to be extended to twenty (20) calendar quarters.
3. Document the time, date, and what you observed in this inspection. Using a baroscope is acceptable. Taking photographs of what you see is a very good idea. All of this documentation must be retained on site for a period of not less than 5 years (> 60 months).
4. If you replace the primary element, you are required to follow up with a calibration check on the fluid flow metering system. See the One Page Tip for fuel flow metering accuracy checks.
5. Be sure to keep maintenance records documenting what activities were performed in association with these accuracy tests. Taking pictures of the “as found” and “as left” condition of the primary element is a good idea for documenting your work.
6. A primary element inspection needs to be documented in a “Miscellaneous Tests” record for evaluation in ECMPS and eventual submission to USEPA.
7. In StackVision, you need to prepare test records for the element inspection which was performed. In SV, click on Tools > QA and Certification > Fuel Systems to open the Element Inspection Tab. Click the Flowmeter Accuracy or Transmitter Transducer tab. Click on the Add icon ( ) to launch Wizard for Creating Fuel Flowmeter Accuracy or Transmitter Transducer Tests. For details on using this Wizard, see the StackVision User Guide related to this topic.