Periodic Testing of the Interstitial Monitoring Cables and Alarm Consoles (PermAlert PAL-AT, Tyco/Raychem TraceTek)

BUREAU OF WEIGHTS AND MEASURES

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RESOURCES

Wis. Admin. Code ATCP 93.510(2):

https://docs.legis.wisconsin.gov/code/admin_code/atcp/090/93/v/510/2

Forms

TR-WM-139 and TR-WM-123

https://datcp.wi.gov/Pages/Programs_Services/PetroleumHazStorageTanksForms.aspx

This fact sheet applies to underground storage tank owner/operators with PAL-AT Interstitial Monitoring Cable leak detection systems. Underground storage tank leak detection systems require annual equipment verification, per ATCP 93.150 (2)(a). Interstitial Monitoring Cable leak detection systems have multiple methods of meeting this code requirement of annual equipment verification. This fact sheet outlines the methods service companies can use to test these systems.

PermAlert PAL-AT System Annual Testing Requirements

While the PAL-AT system does continually check for leaks, shorts, breaks, and probe sensor activation, it does not test the cable and the alarm console system as a whole. The cable might successfully activate the alarm, but the alarm must also be functional.

According to the manufacturer of the PAL-AT system, periodic testing of the alarm, cable, and probe sensors are recommended, and DATCP requires this testing be performed on an annual basis. The PAL-AT AT30 series operating manual specifies the periodic test recommendations in Section 4 of the manual:

- Section 4.2 (Alarm Test) addresses testing the panel's alarm circuitry.
- Section 4.3 (Cable Test) addresses the test performed when a permanent 5-foot AGW Gold test loop of cable is installed in the Terminating Jumpers Junction box. The loop can be pulled out of the box and 6 to 12 inches of the cable dipped in a container of water (or 2 or 3 feet of diesel if desired) to activate the alarm. For the sensor cables where fuel is used for the test, the cable will have to be replaced every time the cable is tested.
- Section 4.4 addresses the testing of probe sensors in sumps.
- Section 4.5 addresses battery tests and if necessary, replacement.

PAL-AT Manufacturer Alternative Test

As an acceptable alternative to the section 4.3 test above, the manufacturer has stated the end of the cable can be temporarily shorted to verify it registers at the panel. This tests the same mechanism as a leak, and it would verify the entire cable is being scanned. If the cable being monitored is a coaxial cable, there should be a connector at the end that can be easily shorted with something as simple as a piece of wire, or a paperclip if in a pinch. A switch can be permanently installed at the cable end to provide the shorting mechanism in place of directly shorting the connector. This is equivalent to dipping a test section to artificially create a leak but does not require post-testing cable replacement.

Tyco/Raychem TraceTek System Annual Testing Requirements

Similar to the PAL-AT system, the Tyco/Raychem TraceTek system does continually check for leaks, shorts, breaks, and probe sensor activation, but it does not test the cable and the alarm console system as a whole. The cable might successfully activate the alarm, but the alarm must also be functional.

Per the manufacturer: Do not use fuel to test the TT5000-HS cable. Do not use solvent to test the TT5001-HS cable. The TT500X-HS cable is not resettable after exposure. Leak testing should be done by bending the sensor cable tightly between fingers, or with a mapping cap (TT-MAPPING CAP-MC). The TT-MAPPING CAP-MC simulates a leak at the location where it is installed in the system. For more information, refer to the Raychem TraceTek instructions.

DATCP's Bureau of Weights and Measures will verify compliance during the annual permit renewal process or the periodic on-site inspection. Contact DATCPWMCompliance@wisconsin.gov with questions.

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