7150.0215 OPERATING AND MAINTAINING CORROSION PROTECTION.

Subpart 1. **Operating and maintaining cathodic protection.** Owners and operators of a UST system must operate and maintain cathodic-protection systems to continuously provide cathodic protection to the metal components of the parts of the tank and piping that routinely contain regulated substances and are in contact with the ground.

Subp. 2. **Sacrificial-anode systems.** Owners and operators with a sacrificial-anode system for cathodic protection must test for proper operation according to the following requirements:

A. systems must be tested by a cathodic-protection tester:

(1) within six months of installation and at least every three years thereafter; and

(2) within six months after any repairs and at least every three years thereafter;

B. one of the codes of practice under subpart 5 must be used to determine that cathodic protection is adequate as required by this subpart; and

C. repairs to sacrificial-anode systems must be conducted within 60 days of failing test results and must be:

(1) conducted according to one of the industry standards under subpart 5 by a certified tank contractor under chapter 7105, a cathodic-protection tester, or a corrosion expert; or

(2) conducted according to the design and recommendations of a corrosion-protection expert by a certified tank contractor under chapter 7105, a cathodic-protection tester, or a corrosion expert.

Subp. 3. **Impressed-current systems.** Owners and operators with an impressed-current system for cathodic protection must test for proper operation according to the following requirements:

A. the rectifier must be read every 60 days to ensure that current is being delivered to the system, and the voltage and amperage readings must be recorded;

B. systems must be tested by a corrosion expert or a cathodic-protection tester:

(1) within six months of installation and at least annually thereafter; and

(2) within six months after any repairs and at least annually thereafter;

C. one of the codes of practice under subpart 5 must be used to determine that cathodic protection is adequate as required by this subpart; and

D. repairs to the impressed-current system must be conducted:

(1) within 60 days of a failing test result;

(2) by a certified tank contractor under chapter 7105, a cathodic-protection tester, or a corrosion expert; and

(3) in accordance with the design and written approval of a corrosion expert.

Subp. 4. **Internally lined tanks.**

A. Owners and operators must ensure that a tank with an internal lining for corrosion protection is internally inspected and evaluated within ten years after lining and every five years thereafter and found to be structurally sound with the lining performing according to original design specifications as follows:

(1) internal inspection and evaluation must be conducted according to American Petroleum Institute, Interior Lining and Periodic Inspection of Underground Storage Tanks, API 1631, incorporated by reference under part 7150.0500;

(2) the lining inspector must be approved by the manufacturer of the lining, if an approval process exists, or must be qualified by training and experience in the application and inspection of the type of internal lining to be inspected;

(3) the owners, operators, or lining inspector must notify the agency at least ten days before performing an inspection according to part 7150.0090, subpart 1;

(4) inspections must include a thorough cleaning of the lining; visual inspection of the lining for cracking, blistering, perforation, disbonding, and excessive wear; ultrasonic thickness testing; holiday (spark) testing for lining continuity; lining thickness measurement; lining hardness testing; and representative photographs of internal surfaces;

(5) inspections must be primarily by manned entry. Video-camera observation alone is not allowed;

(6) minor abnormal conditions of the lining, such as short cracks or localized disbonding, may be repaired if the conditions do not constitute more than five percent of the lining surface area and the repairs will return the lining to substantially the original design specifications; and

(7) if a repair to the tank or to the internal lining as allowed under subitem (6) is performed, the tank must pass a tightness test according to part 7150.0330, subpart 4, before or within 30 days after returning the tank to service.

B. A written inspection report must be produced that describes the results of all tests and evaluations required by item A, subitem (4), and the results of tightness testing under item A, subitem (7). The report must identify any abnormal conditions found during the inspection and the measures taken to correct the conditions. The inspector must certify in the report that, in the professional judgment of the inspector, the tank is structurally sound, the lining is performing according to original design specifications, and the tank and lining will maintain their integrity for at least five years under the anticipated conditions of use. The inspection report must be submitted to the agency within 60 days after the internal inspection.

C. A tank with an internal lining as the sole method of corrosion protection must be permanently closed and site assessment completed according to parts 7150.0345 and 7150.0410 if at any time abnormal conditions other than minor abnormal conditions described in item A, subitem (6), are found to exist. The lining may not be replaced, nor may the tank be upgraded with cathodic protection or another corrosion-protection method to meet the requirements of this subpart.

Subp. 5. **Codes of practice.** The following codes of practice for operating and maintaining cathodic protection must be used to comply with this part, as applicable, and the codes are incorporated by reference under part 7150.0500:

A. NACE International, Control of External Corrosion on Underground or Submerged Metallic Piping Systems, SP0169-2013;

B. NACE International, Corrosion Control of Underground Storage Tank Systems by Cathodic Protection, SP0285-2011;

C. NACE International, Measurement Techniques Related to Criteria for Cathodic Protection of Underground Storage Tank Systems, TM101-2012;

D. NACE International, Measurement Techniques Related to Criteria for Cathodic Protection on Underground or Submerged Metallic Piping Systems, TM0497-2012;

E. Petroleum Equipment Institute, Recommended Practices for Installation of Underground Liquid Storage Systems, PEI/RP100-11;

F. Steel Tank Institute, Cathodic Protection Testing Procedures for sti-P3® UST's, R051;

G. Steel Tank Institute, Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing Systems, R892; and

H. Steel Tank Institute, Recommended Practice for the Addition of Supplemental Anodes to sti-P3® UST's, R972.

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