

Cathodic Protection Testing

Department of Environmental
Quality

Storage Tank Division

Types of Cathodic Protection

- Galvanic cathodic protection system consists of sacrificial anodes fixed to the UST during manufacturing.
- Impressed current cathodic protection system has ground beds of electrodes and include a rectifier that converts alternating current power to direct current.

CP Personnel

- Corrosion Expert - NACE certified as a senior corrosion technologist, CP specialist, corrosion specialist or a P.E. which specializes in corrosion control.
- Cathodic Protection Tester - NACE certified or acceptable to the department.

CP Testing Requirements

- All CP systems shall be tested by a qualified cathodic protection tester upon completion of underground piping, tank installation, and backfilling, but before placement of a hard surface over the system.
- Testing shall be done within 6 months of installation.

CP Testing Requirements

- Testing shall also be conducted every 3 years after the initial testing.
- All UST systems with impressed current CP systems must be inspected every 60 days to ensure the equipment is running properly.

CP Testing

- Records of testing and inspection of CP systems must demonstrate compliance with the testing criteria specified by the corrosion expert or engineer that designed the CP system.
- Steps that were followed to determine whether the CP system is working or not must be included in the report.

CP Testing

- CP reports must provide enough information about the testing that any qualified cathodic protection tester would be able to perform the same steps and arrive at the same conclusion within a reasonably short period of time.

CP Testing

- A simple statement to effect that the system "PASSED" or did not "PASS" the test is not adequate documentation for a CP system test.

Impressed Current Testing

- Measurements should include potential (voltage) measurement made at appropriate and adequate locations in both the current-on and current-off status.
- Current-off - (- 0.85V) criteria met or starting point for the 100-millivolt polarization decay measurement

Galvanic System Testing

- Current-on measurements are the only option possible because anodes are permanently attached.
- Measurements indicate the distribution of current on the structure and where the weak spots in protection are located.

Galvanic & Impressed Current

- Both must include continuity determination measurements.
- Minimum of 3 measurements with a reference cell: one at each end of the tank and one in the middle.
- Measurements shall be made for each 10 feet of tank or piping length.