

# THE MISSING LINK FOR CATHODIC PROTECTION INSPECTIONS

7 steps to implementing cathodic protection to meet key NFPA standards

BY BRENT CAMMETT



Many propane companies quietly put off cathodic protection testing and recordkeeping, even though it is a critical safety task required for all underground containers. This is mandated by the National Fire Protection Association (NFPA), yet some marketers fall short because they are unsure what is required.

In reality, the process is much more manageable than it appears. The following guide walks through the essential steps of cathodic protection implementation and shows how to embed this key safety practice into your company's underground container fleet.

## STEP 1: KNOW WHAT THE CODE EXPECTS

You can find the following NFPA 58 cathodic protection requirements in the Liquefied Petroleum Gas Code Handbook. This is also good information to keep in your company's policies and procedures manual, which should be easily accessible to every employee.

Installation and testing requirements include the following:

- Cathodic protection installed and tested in underground containers placed after their state adopted the

2011 edition of NFPA 58.

- Cathodic protection must be at least  $-0.85$  D.C. or more (meaning negative) using a copper-copper sulfate half cell.
- The test must be completed upon installation unless prohibited by climatic conditions, in which case testing shall be done within 180 days after installation of the system.
- For continued verification of the effectiveness of the system, test again 12 to 18 months after the initial test.
- Periodic follow-up testing shall be performed at intervals not to exceed 36 months.
- Systems failing a test shall be repaired as soon as practical unless climatic conditions prohibit this action, in which case the repair shall be made not more than 180 days thereafter. The testing schedule shall be restarted as required initially.
- Documentation of the results of the two most recent tests shall be retained.

## STEP 2: GATHER THE TOOLS TO TEST CORRECTLY

There are a few pieces of equipment you'll need to acquire to install and monitor cathodic values. This equipment

includes a volt meter and a copper-copper sulfate half cell. Basic cathodic protection inspection test kits can be purchased from all major liquefied petroleum equipment suppliers.

## STEP 3: BUILD A RELIABLE INSPECTION RECORD SYSTEM

To effectively implement cathodic testing and reporting, you'll need initial testing documentation, as well as follow-up inspection forms.

There are now software providers specializing in digital documentation, which can automatically flag inspections needing follow-up on your dashboard for management staff to see. Using software to store, retrieve and track cathodic protection documentation makes this process extremely efficient. Plus, software can notify you immediately when corrective action is necessary — unlike forms, which often sit unattended for months.

*Tip:* When you've decided on a tracking method, outline it in your policies and procedures manual so that both employees and auditors can clearly see how your company performs such inspections.

## STEP 4: STRENGTHEN EMPLOYEE TRAINING & FIELD SKILLS

Ensure all staff members have received hands-on field training to conduct cathodic tests appropriately per NFPA 58. Training should include:

- Review and complete the Certified Employee Training Program's (CETP) Topical Cathodic Training found in the Propane Education & Research Council's (PERC) Learning Center, as well as the PERC Education Program (PEP) for cathodic protection.
- Provide field training for your employees. After the required training, I've found the best way employees learn is by seeing the equipment in action. I take them to the jobsite and walk through an inspection in real time, then have them try it themselves.

In addition to formal CETP/PEP coursework, make sure employees are properly trained by contracting qualified in-person instructors. A strong approach is to start with in-house classroom training, then move directly into live inspections and testing on real accounts within your existing client portfolio that are due.

Many systems will fail on the first visit. Common issues include an anode bag not attached or expired or a copper gas line going from the regulator into the house with no dielectric separation to draw the readings down. When you train in real settings like this, you can start diagnosing problems right away and help your team build confidence quickly.

## STEP 5: DEFINE A CLEAR RESPONSE TO FAILED TESTS

It's critical that your company has a procedure in place for the installation or replacement of a missing or failing cathodic protection anode or container. This corrective process is referred to within the industry as retrofitting. Failed

cathodic protection inspections are often due to one of these common factors:

- The container does not have cathodic protection installed.
- Anodes are old and have worn out, needing replacement.
- The entire container needs a full replacement.
- Dielectric union is required to protect underground piping.

Diagnosing the problem will become second nature. The first step is ensuring the issue is not the lack of a dielectric union. Look under the dome of the container to see if a dielectric union is installed on the container connection to the gas line. The second spot the dielectric union may be located is between the underground piping and the house. If there is no dielectric union, you will need to install one.

If you do find a dielectric union but continue to have a bad reading, you should determine if the issue is the anode or the container itself. Start by attaching an anode bag and wire to the container. If there is a decrease in the protection number (e.g. -.5 to -.85), you now have a good reading.

If there is no decrease in the number when you complete this procedure, you will need to disconnect the container from the gas line and retest the system, which will show whether the problem is with the container or the line.

## STEP 6: MAKE ONGOING TESTING PART OF EVERYDAY OPERATIONS

It's now time to decide the most efficient way for your company to maintain this important inspection requirement. The two most common methods I've seen in the field are to:

- Train all drivers on cathodic protection and have them test containers when they make deliveries. You will not have to send employees on return jobsite

visits, and once your delivery team is fully trained and caught up, this is often the easiest way to stay caught up. Because systems must be tested at installation, then again 12 to 18 months after installation, and then at least every three years thereafter, building testing into routine delivery visits helps ensure you don't miss the three-year recurrence.

- Train a few specialists who drive around focused specifically on cathodic testing. You will not have to buy as many cathodic test kits, and you can concentrate expertise in a smaller group of technicians.

Many companies struggle to get testing done even after they have the training and equipment in place. The biggest challenge is not understanding the requirements, but consistently executing them on schedule. Remember:

- Systems must be tested when installed.
- They must be tested again 12 to 18 months after that initial test.
- After that, they must be tested at intervals not to exceed 36 months.

Where companies often fall short is on that recurring three-year requirement. To avoid missing tests, cathodic protection cannot live on the back burner; it must be moved to the front and treated as a core, ongoing safety task rather than a "when we have time" project.

A robust tracking system is key. Some marketers still rely on "tickle files" or manual work orders (writing a work order to test a container in March 2027, then another for March 2030, and so on). This method is very manual and prone to problems: messy handwriting, lost paper, misplaced files or missing/noncompliant values that never get corrected. Others use spreadsheets to track due dates, but spreadsheets do not automatically alert you; a customer service representative or

manager must remember to open the file, review dates and notice what is overdue. In practice, this step is often missed.

More than half of marketers don't track cathodic protection intervals at all; they test at installation and then have no structured plan to go back in the future. Leveraging a modern compliance or documentation platform that automatically alerts you when a test is due again can significantly reduce this risk and help ensure that repeat testing doesn't fall through the cracks.

## STEP 7: RECOGNIZE THE REAL-WORLD CONSEQUENCES

Including cathodic protection testing as a routine, scheduled part of your operations is not just about checking a regulatory box; it is critical risk reduction for your customers and your company. An underground propane container without effective cathodic protection can corrode over time and ultimately leak. At

a minimum, that means a loss of product and costly remediation. At worst, it can contribute to a catastrophic incident.

When all cathodic protection tests are set in a row (initial test, 12- to 18-month follow-up and consistent three-year intervals thereafter), you dramatically reduce the likelihood of an incident. Think of this as preventive medicine for your container portfolio: small, scheduled checkups that catch issues like missing anode bags, expired anodes or missing dielectric pigtails before they can turn into something serious.

## HOW TO GET STARTED

If you are ready to strengthen your program, consider partnering with a team that specializes in both cathodic protection software and propane safety training tailored to your state and jurisdiction. They will help you translate NFPA 58 requirements into practical workflows, equip your staff with field-

ready skills and implement a tracking system that keeps every underground container on schedule for testing and follow-up.

Making cathodic protection part of your everyday operations is ultimately about protecting people, property and your business for the long term. By pairing clear procedures with reliable documentation and consistent training, you can turn what often feels like a "procrastination task" into a routine, well-managed safety function that stands up to audits and real-world events alike. 📌

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Brent Cammett is the director of safety and training services at P3 Propane Safety. Cammett can be reached at [brent\\_cammett@bostonenv.com](mailto:brent_cammett@bostonenv.com) or [p3propane.com](http://p3propane.com).

