

DEPARTMENT OF INDUSTRIAL RELATIONS
Division of Occupational Safety & Health
Pressure Vessel Unit
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Circular Letter PV-2007-2

Effective Date: November 7, 2007

Subject: Underground and Mounded Liquid Propane Gas Installations

To: All Parties Involved in the Supply, Transportation, Delivery, Storage, and Handling of LP-Gas in Places of Employment

California Code of Regulations Title 8 Unfired Pressure Vessel Safety Orders Section 477 requires that LP-Gas containers shall not be buried or mounded unless written permission to do so has been obtained from the Division. Partially underground or partially mounded containers are prohibited.

In order to receive written permission from the Division, detailed plans shall be submitted to the attention of the Principal Safety Engineer at the address above for acceptance prior to installation.

NFPA 58 1998 Edition and Title 8 require, as a minimum, that the detailed plans address the following areas:

- The plot plan distances and depth for the container installation. Distances from the container to buildings, roads, parking lots, sidewalks, mechanical installations, areas of agricultural activity (e.g. vineyards, etc.) must be easily readable on the plot plan.
- Vehicular traffic.
- The location and details of the test holes required for the leak test surveys.
- A drawing showing the routing of LPG piping.
- A drawing showing the details and locations of the anodes used in the cathodic protection system.
- The tank manufacturer's data report showing adequacy for underground installation and the manufacturer's tank drawing showing the ASME nameplate data.
- The safety relief valve(s) set pressure and capacity.



- The specifications for the propane valves for liquid and vapor service.
- The material used for the backfill in addition to the time and date for the inspector to witness the backfill.
- Buried vessels shall be protected against corrosion by coating the container with a corrosion resistant material approved for buried installations provided the material is applied in accordance with the manufacturer's recommendations. A copy of the manufacturer's data sheet for the coating material showing the method and procedures for coating shall be submitted.
- All containers shall be cathodically protected and electrically isolated from connecting piping or electrically conductive structures in accordance with good engineering practice. The cathodic protections system shall be described.
- Voltage readings from the cathodic system shall be taken and recorded annually and shall produce a negative voltage of at least 0.85 volts with reference to a saturated copper-sulfite half cell. Describe how these readings will be recorded and by whom.
- Where impressed current is used, amperage and voltage readings shall be recorded at 6-month intervals. Describe how these readings will be recorded and by whom.
- Leak surveys shall be conducted annually using combustible gas indicator or comparably effective instrument to sample the air from the tests holes surrounding the container at intervals not greater than 10 feet. Describe how these surveys will be performed and by whom.
- The detailed plans shall describe how and by whom the following documents will be maintained for the life of the system:
 1. The construction requirements shall be documented through the use of photographs and other appropriate means.
 2. All tests required shall be recorded in a system log showing the date the tests were taken, the related readings, and the name of the person making the tests. These tests shall be available to the Division at any time for the purpose of inspection and verification. A sample copy of the system log shall be submitted with the detailed plan.
 3. The owner or operator of an underground tank shall send a copy of the system log for that tank to the Division's Principal Safety Engineer each year



during the month of June. Failure to do so may require that the tank be uncovered for inspection.

The detailed plan documents shall be reviewed and accepted by the Division prior to starting the installation.

It should also be noted that Title 8 and NFPA 58 stipulate that:

- LP –Gas piping shall not be used as a grounding electrode.
- All underground containers shall be completely uncovered for an inspection of all external surfaces at intervals of at least once every 5 years. The intervals shall be extended when no failure in the cathodic protection has been detected, provided that every container shall be uncovered at least once every 30 years.
- Alternate methods of inspection such as internal inspection and ultrasonic testing may be used to check and verify the integrity of the container in lieu of it being uncovered.

A Permit to Operate will not be issued until an inspection has been performed by a Qualified Inspector and the Division is satisfied that the installation complies with all applicable regulations.

Penalties may include but are not limited to fines or penalties for illegal use and removal from service for each vessel not in compliance.

Sincerely,

Original signed by Donald C. Cook

Donald C. Cook
Principal Safety Engineer