Title 159 – Underground Storage Tanks

CHAPTER 4 DESIGN AND INSTALLATION STANDARDS FOR NEW UST SYSTEMS

001. DESIGN STANDARDS AND NEW TANK INSTALLATION

The requirements of 40 CFR 280.20(a)-(d) and (f) as they existed on July 15, 2015 are adopted and incorporated by reference.

001.01 All underground storage tanks, or piping connected to any such tanks that are installed or replaced after September 19, 2007 will be secondarily contained and the interstice will be monitored for leaks. This provision will include the installation of tank sumps and under-dispenser containment sumps.

001.01A. Tank and piping secondary containment will be compatible with the substance stored in the tank system.

001.01B. Interstitial monitoring will be provided for all new tanks and piping installed after September 19, 2007.

001.01C. Secondary containment systems must be designed, constructed and installed to:

001.01C1. Contain regulated substances released from the tank system until they are detected and removed;

001.01C2. Prevent the release of regulated substances to the environment at any time during the operational life of the UST system; and

001.01C3. Be checked for evidence of a release at least every 30 days.

001.01D. Double-walled tanks must be designed, constructed, and installed to:

001.01D1. Contain a release from any portion of the inner tank within the outer wall; and

001.01D2. Detect the failure of the inner wall.

001.01E. External liners (including vaults) must be designed, constructed, and installed to:

001.01E1. Contain 100 percent of the capacity of the largest tank within its boundary;

001.01E2. Prevent the interference of precipitation or ground-water intrusion with the ability to contain or detect a release of regulated substances; and

001.01E3. Surround the tank completely (i.e., it is capable of preventing lateral as well as vertical migration of regulated substances).

001.01F. Underground piping, including “safe suction” piping, must be equipped with secondary containment that satisfies the requirements of 001.01C above (e.g., trench liners). In addition, underground piping that conveys regulated substances under pressure must be equipped with an automatic line leak detector in accordance with 004 of Chapter 7.

001.02 All new tanks, their welds, seams, and connecting fittings, must be tested prior to installation for tightness using standard engineering practices.

001.02A. Pre-installation tank testing will be in accordance with Petroleum Equipment Institute/RP 100 or the tank manufacturer’s installation instructions.

001.02B. All new single-wall tanks installed in excavation liners will be tested with 3 to 5 psig of air pressure. Gauges must have a scale that will permit detection of small changes in pressure. A gauge with a maximum limit of 10 to 15 psig is required. The test will include the application of a soap solution over the entire surface of the tank and its fittings, followed by careful inspection for bubbles. The soap solution should be applied uniformly with a mop or spray.

001.02C. All new double-walled tanks will be tested with 3 to 5 psig of air pressure, unless prohibited by manufacturer’s instructions. Gauges must have a scale that will permit a detection of small changes in pressure. A gauge with a maximum limit of 10 to 15 psig is required. The test will include pressurizing the inner tank from 3 to 5 psig then sealing the inner tank disconnecting the external air supply and monitoring the pressure for one hour. The interstice will be tested using the air from the inner tank. A second gauge, as described above, must be used in monitoring the interstice. The entire surface of the tank will be soaped followed by a careful inspection for bubbles. The soap solution should be applied uniformly with a mop or spray.

001.02D. All defects or scratches in the tanks coating will be repaired in a manner approved by the manufacturer.

001.03 Precaution will be taken to prevent tank floating during the installation process. Fuel will not be used as a ballast.

001.04 Backfill material will be pea gravel, crushed rock, or clean sand free of cinders, stones, and any other foreign material. Tank installation instructions may require specific aggregate sized crushed rock or gravel. Instructions may also specify mechanical compaction or layered placement of bedding and backfill. The installation instructions provided by the manufacturer must always be consulted prior to installation.

001.04A. All product lines will slope a minimum of 1/8 of inch per foot towards the tank and be installed in a single trench between the tank area and pump island. All vent lines will slope a minimum of 1/8 inch per foot towards the tank and be installed in a single trench.

001.04B. All unions and fittings will be a minimum of 250 pounds. All joints, damaged pipe coating or unprotected threads will be wrapped or coated with a material approved by the manufacturer.

001.04C. All new product lines will be pneumatically tested for tightness with air pressure. All joints, seams and connections will be soaped to detect leakage. For non-metallic piping, the joints and connections will be soaped. The test will be maintained for a minimum of 1 hour, and all soaped areas will be visually inspected for bubbles or any other indication of a leak. Piping will be tested at not less than 50 psig at the highest point of the system. Any loss of pressure or appearance of bubbles will constitute failure of the test.

001.04D. Vent and fill lines must be coated but need not be cathodically protected. Metallic product lines must be cathodically protected.

001.05 Underground storage tank systems storing hazardous substances will meet the requirements of this Chapter 4.

001.06 All used steel and fiberglass reinforced plastic tanks will require the manufacturer’s certification for re-installation. Installations will follow all procedures of this chapter.

001.07 Owners and Operators must have the following records submitted to the State Fire Marshal’s Office pertaining to all new tanks and piping installations prior to placing UST system into operation.

001.07A. Four Page Notification Form (Provided by Fire Marshal Office);

001.07B. As Built Drawings;

001.07C. Post Installation tank and piping tests; and

001.07D. Manufacturers install checklist.