EASTERN reliability

Tank Inspection Regulations for the Commonwealth of Massachusetts

Massachusetts Aboveground Storage Tank Program

502 CMR 5.00: Permit and Inspection Requirements of Aboveground Storage Tanks of more than 10,000-gallons capacity

5.04: Permit Requirements

1. General Provisions. Pursuant to M.G.L. c. 148, § 37, no person shall construct, maintain, or use any aboveground storage tank of more than 10,000 gallons capacity, for the storage of any fluid other than water, without first securing a permit therefore from the Marshal. A permit to construct or perform maintenance on a tank may be issued by the Marshal only after a completed application and supporting documents have been submitted, reviewed and approved in accordance with 502 CMR 5.04. The permit may be issued with certain conditions or contingencies.

2. Application for a Permit to Construct a Tank. The applicant shall complete and submit to the Marshal, at least 30 days in advance of the construction of such tank, the prescribed construction permit application form, permit fee and the following documents, in triplicate:

a. A plot plan certified by an Engineer or Surveyor. Said plot plan must clearly indicate the following:
   1. The existence of any nearby bodies of water, water courses, or public water supplies within and adjacent to the property;
   2. Proximity to any and all utility lines, cables or pipes within and adjacent to the property, whether above or below ground level and whether active or inactive;
   3. The existence of any public or private ways immediately adjacent to the property;
   4. Existence of any nearby building(s) and/or AST(s);
   5. All property boundaries;
   6. The distance of the tank(s) to the property boundaries; and
   7. Distance of tanks to potentially incompatible materials.

b. A foundation/footing plan, which includes:
   1. Construction details;
   2. The dimensional details of the foundation;
   3. The conclusions of the geotechnical investigation; and
   4. Statement that the soil is capable to support the proposed foundation/footings.

c. A dike plan (which may be included in the foundation plan) including:
   1. Calculations showing volume of area;
   2. Slope and height;
   3. Top width (if applicable);
   4. Floor and drainage;
   5. Distance from other tanks both within the dike and within adjacent diked areas including those of abutters;
   6. The total combined gallon capacity;
   7. The existence of intermediate diking; and
   8. Any penetration of the dike wall.

d. Mechanical drawings of the proposed tank indicating:
   1. Whether the tank is field erected and/or shop fabricated;
   2. The tank's construction standard;
   3. The dimensional details of the tank;
   4. All openings in the tank;

5. The locations and description of all appurtenances on the tank;
6. Material of construction;
7. Tank orientation;
8. Tank support description; and
9. Pending construction certifications.

e. For tanks containing a flammable gas, a fire safety analysis. The fire safety analysis shall be conducted by means of an engineering evaluation and application of sound fire protection and process engineering principles. The fire safety analysis shall include, but not be limited to, the following:

1. Analysis of the fire and explosion hazards;
2. Analysis of emergency relief from the tank(s), taking into consideration the properties of the materials used and the fire protection and control measures taken;
3. Analysis of local conditions, such as exposure to and from adjacent properties;
4. Analysis of the emergency response capabilities of the local fire department or responding agency; and
5. Analysis of applicable requirements under reference flammable gas codes and standards.

f. A fire safety analysis may be required for any proposed tank containing any fluid where the Marshal deems such an analysis is necessary for protection of life and property.

g. If the proposed tank to be installed has been previously used, a detailed inspection, investigation, and suitability assessment shall be conducted by an Engineer, concluding that the proposed tank is fit to be reused and such report shall state any conditions associated with its reuse.

h. The fire safety analysis, the suitability assessment and all foundation, mechanical and dike plans shall be reviewed and sealed by an Engineer

i. A copy of the Manufacturer's Data Report for Pressure Vessels, if applicable.

j. A copy of the land license (M.G.L. c. 148, § 13) issued by the city or town, if storing flammable or combustible products

k. A copy of the current Registration (M.G.L. c. 148, § 13) for the property, if storing flammable or combustible products.

l. The identification and declaration of the Approved Standard that will be used for the installation and inspection of the tank for the remaining life of the tank

m. If pre-manufactured, the designer or installer of the tank shall provide to the owner, a detailed list of inspection requirements under the applicable inspection standard and

3. Application for a Maintenance Permit.

a. The applicant shall complete and submit to the Marshal, at least 30 days in advance of the maintenance of such tank, the prescribed maintenance permit application form, permit fee, and the following documents in triplicate:

1. A copy of the current use permit issued by the Marshal and permit issued by the head of the fire department, if applicable;
2. Mechanical drawings of the existing tank;
3. Inspection report identifying failure mechanism, cause, and corrective action required to assure safe reliable service;
4. Description of repair and, if applicable, procedures and mechanical drawings of the proposed maintenance work to be conducted;
5. Name and address of the qualified person conducting the maintenance; and
6. Where applicable, evidence of the ASME code repair stamp.

b. Emergency Repairs. Repairs made on an emergency basis as a result of an unexpected tank or component failure may be conducted prior to the issuance of a permit if necessary to avoid harm to persons, property or the environment. In such an emergency, the Marshal shall be notified in writing as soon as reasonably possible of such emergency repairs. An application for a maintenance permit shall be submitted to the Marshal in accordance with 502 CMR 5.00 within two business days after such an emergency.

c. Application for a Permit for Maintenance Involving the Decommissioning of a Tank. If the owner intends to take the tank out-of-service with the intention of placing such tank back into service at a future date, the owner shall notify the Marshal and comply with the following:

1. Notify the Marshal and declare the tank inactive and decommissioned;
2. Disconnect all associated piping from the tank, and cap all openings;
3. Secure the tank by bolting and locking all manways and valves;
4. Cap or plug all fill lines, gauge openings, or pump lines;
5. Completely remove all sludge, solids and residuals inside the tank;
6. Dispose of tank bottom sludge in accordance with state and federal regulations;
7. Rid the tank of vapors so an explosive atmosphere cannot exist; and
8. Atmospheric and emergency vents shall be left in proper working order.

4. Application for a Permit to Change Use of a Tank. A permit to change the use of a tank may be issued by the Marshal only after the prescribed application and any other supporting documents have been submitted, reviewed, and approved by the Marshal. Where a flammable or combustible liquid is stored, a permit is required for a change of use between classes of liquids as defined in 527 CMR 1.00: Massachusetts Comprehensive Fire Safety Code.

5. Temporary Permit. If a tank will be in service for less than six months from the date of installation, a permit for such temporary service, may be issued by the Marshal only after the prescribed application and any other supporting documents have been submitted, reviewed and approved by the Marshal.

6. Final Review Testing and Issuance of the Use Permit. Upon completion of construction or maintenance that is structural in nature, as the case may be, the tank shall be hydrostatically tested in accordance with the Approved Standard filed with the Marshal. Where the Approved Standard does not contain a test protocol, then the test shall be in accordance with the requirements in 502 CMR 5.04. If water is not appropriate, a request must be filed with the application to the Marshal identifying why the tank cannot be hydrostatically tested using water. The request shall identify the nationally accepted standard and method proposed to test the tank. A visual inspection is not an accepted method of testing. Tanks containing fluids of a cryogenic nature or fluids that are lighter than water and have foundations designed for less than a water test may be tested by an alternative means acceptable to the Marshal. Upon final satisfactory review, inspection and test results, the Marshal may issue a use permit. Unless otherwise specified, the use permit shall expire five years from the date of issuance.

a. Special Requirements for the Testing of LP-gas Tanks. Testing of LP-gas tanks shall comply with the provisions of 527 CMR 1.00: Massachusetts Comprehensive Fire Safety Code and the following:

1. Upon completion of the tank, the tank shall be hydrostatically tested in accordance with 502 CMR 5.04.
2. Within 48 hours of filling the tank with LP-gas, the tank shall be tested and comply with 527 CMR 1.00: Massachusetts Comprehensive Fire Safety Code.
3. The tank shall be tested per 527 CMR 1.00: Massachusetts Comprehensive Fire Safety Code for a second time within 30 days of the initial LP-gas filled tank test.
4. If any test fails, the Marshal shall be notified and may set further testing requirements.

b. Application for a Use Permit for Tanks Installed Without a Permit. If the tank was found to be installed without a permit from the Marshal prior to the issuance of a use permit: a detailed inspection, investigation and suitability assessment shall be conducted by an Engineer, concluding that the proposed tank is fit to be used, and such report shall state any conditions associated with its use. Such suitability assessment shall be provided to the Marshal.

1. If the tank was installed before January 1, 2000, the suitability assessment and an affidavit from an Engineer confirming compliance with the applicable code at the time of installation shall be provided to the Marshal.
2. If the tank was installed on or after January 1, 2000, an application to install, and associated documentation, in accordance with 502 CMR 5.00 shall be submitted to the Marshal.

7. Written Records. An accurate record for each tank shall be maintained in such form at least equivalent to or greater than the inspection standards established in the Approved Standard. Such record shall contain a history of all inspections, including the condition of all parts inspected, and a record of all examinations and tests. Such record shall also include all data accumulated on each tank, including a history of any repairs, alterations, replacements and service. The person principally in charge of the tank facility shall sign each inspection record. The records shall be kept at the storage facility or at another location readily available for inspection by the Marshal. Such records shall be maintained for a period of five years beyond the demolition of the tank. The records shall be subject to the inspection of the Marshal during regular business hours. An electronic record keeping method is acceptable, as long as it meets the requirements of this section for review and oversight.