7105.0080 TANK SERVICE PROVIDER; TRAINING COURSE REQUIREMENTS.

Subpart 1. **Initial training course.** The initial storage tank service provider training course must be at least five days in length and must include lectures, demonstrations, four hours of hands-on training, course review, and a final written examination.

Subp. 2. **Renewal training course.** The renewal storage tank service provider training course must be at least two days in length and must include lectures, demonstrations, course review, and a final written examination.

Subp. 3. **Training course requirements.** All the following topics must be included in the initial course. One or more of the following topics must be included in the renewal course. The commissioner shall approve topics to be included in the renewal course based on a list submitted by training providers and based on the requirements of part 7105.0100. Publications cited are incorporated by reference in part 7105.0130:

A. regulatory review providing familiarity with the following codes, statutes, rules, and recommended practices and how they relate to the other course requirements, with particular emphasis on subitem (9):

(1) PEI's Recommended Practices for Installation of Underground Liquid Storage Systems (PEI/RP 100);

(2) API's Installation of Underground Petroleum Storage Systems (API Recommended Practice 1615);

(3) API's Removal and Disposal of Used Underground Petroleum Storage Tanks (API Recommended Practice 1604);

(4) EPA's Underground Storage Tanks - Technical Requirements at Code of Federal Regulations, title 40, part 280, subparts A to G;

(5) parts 7510.3120 and 7510.3240, incorporating by reference and amending Article 79 of the Uniform Fire Code;

(6) parts 7001.0580, 7045.0020, 7045.0528, 7045.0580, 7045.0628, and 7045.0629, relating to hazardous waste tanks;

(7) Minnesota Statutes, sections 116.46 to 116.50;

(8) Minnesota Statutes, chapter 115C; and

(9) state technical tank rules, chapter 7150, adopted under Minnesota Statutes, section 116.49, subdivision 1;

B. legal liabilities and defenses:

(1) responsibilities of the contractor;

(2) a discussion of comprehensive general liability policies, claims-made and occurrence policies, and environmental and pollution liability policy clauses;

(3) state tank contractor liability insurance requirements;

(4) bonding and the relationship of insurance availability to bond availability;

(5) a discussion of EPA's Underground Storage Tanks Containing Petroleum - Financial Responsibility Requirements at Code of Federal Regulations, title 40, part 280, subpart H; and

(6) third party liabilities and defenses;

C. safety aspects, including discussions on:

(1) OSHA's Safety and Health standards relating to excavations, trenching, and shoring; confined space; and competent person requirements;

(2) Minnesota Department of Labor and Industry Employee Right-to-Know training standards in part 5206.0700;

(3) fire and explosion hazards;

(4) working around heavy equipment, excavations, hazardous materials, vehicular traffic, overhead and underground obstacles such as power and sewer lines, and other hazardous situations;

(5) personal protective equipment and its proper use; and

(6) safety considerations and precautions, including erecting physical barriers and signs, and trench shoring;

D. underground storage-tank installation:

(1) project management:

(a) establishing lines of responsibility;

(b) financial parameters;

(c) planning and mobilization, including lining up work crews and tools, calling subcontractors, and picking up materials;

(d) site visit before bidding;

(e) project team, assigning a project leader;

(f) timing, including completion date and schedules for equipment, materials, and crews;

(g) subcontractors and material suppliers, including coordination of schedules and ordering materials, with consideration given to material compatibility between other equipment and product to be stored;

(h) job site management and allocation of work areas, including areas to safely stockpile materials such as backfill, tanks, and piping, and safe and effective traffic flow for heavy equipment as well as civilian traffic;

(i) safety, including assessing hazards and planning for proper safety equipment;

(j) employee training, including informal field training and formal in-house or outside training;

(k) contingency planning;

(l) progress reports; and

(m) plans and specifications, as-built drawings;

(2) material handling:

(a) transportation, unloading, lifting, lowering, and storage;

(b) steel, fiberglass, and composite tanks and pipe handling requirements; and

(c) single-wall versus double-wall;

(3) preinstallation inspection and testing:

(a) inspection of tanks, pipes, and other materials for size, as well as scratches, dents or other damages, and minor repairs;

(b) preinstallation "soap test" on single-wall and double-wall tanks, including proper soaping techniques, selection of gauges, and proper pressures;

(c) preinstallation testing of tanks shipped under a vacuum;

(d) holiday testing techniques for composite tanks;

(e) isolating and soap testing pipe runs before backfilling;

(f) inspection and testing of impervious liners before backfilling; and

(g) testing and visual inspection of cathodic-protection systems, secondary containment, monitoring systems, and overfill prevention systems before placing the tank facility into operation;

(4) excavating and trenching:

(a) excavation size, depth, bedding, and backfill;

(b) filter fabrics, sloping, and water problems;

(c) storage and disposal of excavated materials, contaminated versus uncontaminated;

(d) adjacent structures;

(e) safety considerations, including properly sized equipment; and

(f) piping trench slope and depth considerations;

(5) supplemental restraints:

(a) reasons for supplemental restraints;

(b) types and proper installation of supports, foundations, and anchorage;

(c) water table, flooding, and weather considerations; and

(d) factors influencing buoyancy, including flotation and anchorage calculation exercises;

(6) backfilling and compaction:

(a) ballasting;

(b) types and sizes of backfill materials suitable for composite tanks and steel and fiberglass tanks and piping;

(c) placement of tanks and piping, including bedding depth and distances between tanks or pipes;

(d) backfilling and compaction procedures, including the special compaction requirements of sand;

(e) measuring tank deflection;

(f) prevention of backfill migration using filter fabrics; and

(g) grading and paving precautions;

(7) secondary containment:

(a) types, including double-walled tanks and piping, impervious liners, catchment basins, piping sumps, and concrete vaults;

(b) installation methods and considerations; and

(c) material compatibility;

E. piping:

(1) leak statistics concerning improperly installed piping;

(2) installation methods:

(a) types and specific installation requirements, including galvanized steel, fiberglass, coated, and single-walled and double-walled;

(b) piping layout and design;

(c) pipe trenches, backfilling, compaction, and paving;

(d) pipefitting, including curing times for fiberglass adhesives, compatibility of product with pipe dope, minimizing fittings, tightness, and pipe support;

(e) swing joints and flexible connectors;

(f) emergency shutoff valves;

(g) tank fittings and bushings;

(h) vent capacity, location, arrangement, and height; and

(i) visual inspections;

(3) material compatibility;

(4) manifolded tanks; and

(5) vapor recovery systems;

F. electrical installation:

(1) regulatory review, including:

(a) parts 7510.3120 and 7510.3240, incorporating by reference and amending Article 79 of the Uniform Fire Code; and

(b) API's Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems (API Recommended Practice 1632);

(2) Class I locations, Divisions I and II, requirements and restrictions as described in parts 7510.3120 and 7510.3240, incorporating by reference and amending Article 79 of the Uniform Fire Code;

(3) definitions, including explosion proof apparatus and intrinsically safe equipment and wiring;

(4) general installation considerations, including trenching, cover, grounding, backfill, seals, bushings, supports, and stray currents;

(5) circuit disconnects;

(6) accessibility of circuit breakers for monitoring devices and impressed cathodic-protection systems by unauthorized personnel; and

(7) as-built drawings;

G. ancillary equipment placement and installation:

(1) fuel dispensing systems;

(2) emergency power cutoffs;

(3) suction and remote pumping systems;

(4) fill-pipe and spill catchment basin;

(5) tank fittings;

(6) observation and monitoring wells, including a discussion of Minnesota Department of Health's Water Well Construction Code in chapter 4725;

(7) interstitial tank and piping monitors; and

(8) identification of wells, manholes, and fill pipes;

H. tank system testing:

(1) methods and appropriate uses:

(a) a detailed discussion of how to conduct a proper "soap" or air test;

(b) tightness and precision tests;

(c) spark testing for holidays on composite steel tanks;

(d) testing of new cathodic-protection systems for continuity and isolation;

(e) vapor testing during tank closure;

(f) testing impervious liners according to the manufacturers' instructions; and

(g) testing of other associated equipment for proper installation and operation;

(2) testing considerations:

(a) new versus existing tanks or piping;

(b) single-wall versus double-wall tanks or piping;

(c) manufacturers' instructions;

(d) safeguards;

(e) tank deflection; and

(f) variables specific to certain tests, such as pressure, temperature, and vapor traps; and

(3) documentation and record keeping requirements;

I. release detection:

(1) leak detection:

(a) interstitial monitoring;

(b) observation wells located in the excavation zone and collection sumps of secondary-containment systems;

(c) automatic tank gauging;

(d) vapor monitoring;

(e) groundwater monitoring;

(f) inventory control; and

(g) line pressure monitoring;

(2) spill and overfill prevention:

(a) catchment basins;

(b) automatic shutoff devices; and

(c) ball float valves; and

(3) identification and security considerations for monitoring systems;

J. corrosion protection:

(1) requirements for external corrosion protection in Code of Federal Regulations, title 40, part 280, subparts A to G, and state technical tank rules adopted under Minnesota Statutes, section 116.49, subdivision 1, when adopted;

(2) a discussion of API's Cathodic Protection of Underground Storage Tanks and Piping Systems (API Recommended Practice 1632);

(3) coatings for external corrosion protection:

(a) desirable characteristics;

(b) handling, inspection, and installation; and

(c) minor, on-site repairs according to the manufacturers' instructions;

(4) cathodic protection:

(a) sacrificial anode versus impressed current;

(b) isolation of tank and piping;

(c) rule of thumb and mathematical determination of adequate corrosion protection;

(d) periodic inspections and testing;

(e) considerations when choosing a cathodic-protection system;

(f) stray current corrosion;

(g) proper installation of a cathodic-protection system, including an in-depth discussion of the installation of the factory-installed cathodic-protection systems; and

(h) installation and use of test cells and monitoring ports;

K. tank closure and removal:

(1) regulatory discussion:

(a) requirements for external corrosion protection in EPA's Underground Storage Tanks - Technical Requirements at Code of Federal Regulations, title 40, part 280, subparts A to G;

(b) API's Removal and Disposal of Used Underground Petroleum Storage Tanks (API Recommended Practice 1604);

(c) API's Cleaning Petroleum Storage Tanks (API Recommended Practice 2015);

(d) NFPA's Cleaning Small Tanks and Containers (NFPA Standard 327);

(e) requirements for tank closure in parts 7510.3120 and 7510.3240, incorporating by reference and amending Article 79 of the Uniform Fire Code; and

(f) state technical tank rules, chapter 7150, adopted under Minnesota Statutes, section 116.49, subdivision 1;

(2) temporary and permanent closure requirements;

(3) tank cleaning methods:

(a) purging procedures, pros and cons:

i. inert gas: carbon dioxide (CO_2) or nitrogen (N_2);

ii. solid carbon dioxide (dry ice);

iii. compressed air;

iv. diffused air;

v. water; and

vi. steam;

(b) compatibility of method with product;

(c) safety procedures and equipment; and

(d) proper disposal of residues and sludge;

(4) testing for flammable and combustible vapors and oxygen content;

(5) closure in place, filling with inert substances such as sand, concrete slurries, or polyurethane-type foams;

(6) tank removal;

(7) site assessment requirements:

(a) sampling equipment and methods;

(b) reporting requirements; and

(c) records; and

(8) disposal of tanks;

L. role of other consultants, including corrosion experts, environmental contamination consultants, and engineers;

M. contract specifications and discussion of key elements that are included in contract specifications;

N. demonstrations and hands-on training that gives actual experience performing tasks associated with tank projects:

(1) soap testing and leak detection procedures;

(2) cathodic-protection demonstrations;

(3) tank and piping installation procedures; and

(4) safety considerations for installation, repair, and removal;

O. record keeping:

(1) records required by state and federal regulations in item A;

(2) records recommended for legal and insurance purposes; and

(3) use of photographs or videotapes for installation and removal records;

P. supervisory techniques for tank activities to enforce and reinforce the required work practices and discourage unsafe work practices;

Q. a discussion of the possible environmental consequences resulting from improper installation, repair, and closure of underground storage-tank systems;

R. course review covering the key aspects of the training course; and

S. other subjects that the commissioner determines should be taught to reflect advances in tank installation, repair, and removal methods or safety practices.

Statutory Authority: *MS s 116.491; 116.497*

History: *14 SR 1718; 18 SR 1059*

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