



Petroleum USTs

RCRA Subtitle I

Underground Storage Tanks

BACKGROUND: Underground tanks that contain petroleum or hazardous substances may be subject to the Federal Underground Storage Tank (UST) regulations. These regulations, issued by EPA under authority of Subtitle I of the Resource Conservation and Recovery (RCRA) [Section 9003 of the Hazardous and Solid Waste Amendments Act of 1984 (HSWA)], establish standards for installation, operation, release detection, corrective action, repair, and closure. The Department of Energy (DOE) is required by Section 9007 of RCRA to implement these regulations at DOE facilities with USTs.

DOE prepared a guidance document, *Regulated Underground Storage Tanks* (DOE/EH-231/004/0191, June 1992), that describes the UST procedural requirements which regulate tanks and piping for both petroleum and hazardous substance USTs as well as USTs containing radioactive material regulated under the Atomic Energy Act of 1954 (42 U.S.C. 2011). This Information Brief supplements the UST guidance by responding to critical questions concerning how the regulations apply to petroleum USTs. It is part of a series of Information Briefs which address issues pertinent to specific categories of USTs.

STATUTES: Resource Conservation and Recovery Act, Hazardous and Solid Waste Amendments of 1984, Subtitle I, Regulation of Underground Storage Tanks, Sects. 9001-9010, 42 U.S.C. 6991.

REGULATIONS: 40 CFR 280. *Final rule:* 53 FR 37082, September 23, 1988 (revision of the original final rule, 50 FR 28742, July 15, 1985). *Amendments:* 53 FR 43370, October 26, 1988; 54 FR 5452, February 3, 1989; 54 FR 47081, November 9, 1989; 55 FR 17753, April 27, 1990; 55 FR 18567, May 2, 1990; 55 FR 23738, June 12, 1990; 55 FR 46025, October 31, 1990; 56 FR 26, January 2, 1991; 56 FR 38344, August 13, 1991; 56 FR 66373, December 23, 1991. *Corrections:* 53 FR 51274, December 21, 1988.

REFERENCES: 1. *Regulated Underground Storage Tanks*, DOE/EH-231/004/0191, June 1992.
2. *Musts for USTs*, EPA/530/UST-88/008, September 1988.

What is a petroleum UST?

A petroleum UST is an UST that contains petroleum or a mixture of petroleum with *de minimis* quantities of other regulated substances. EPA does not define *de minimis*, leaving it to the state implementing agencies to define it on a case-by-case basis. The term *petroleum* includes crude oil or any fraction of crude oil that is liquid at standard temperature and pressure (i.e., 60°F and 14.7 lbs./in.² absolute). Such systems contain motor fuel, jet fuel, distillate fuel oil, residual fuel oil, lubricants, petroleum solvents, or used oil. Mixtures of regulated substances (e.g., petroleum products mixed with non-indigenous hazardous substances or contaminated petroleum products) should be considered on a case-by-case basis. (53 FR 37124)

INSTALLING OR UPGRADING

How can a new petroleum UST be installed or an existing petroleum UST be upgraded?

New USTs must prevent releases due to structural failure, corrosion, or spills and overfills. Spill and overfill controls must be installed with each new UST, and the installation must be properly conducted and certified by at least one of several methods described below. By December 22, 1998, all existing USTs must meet the new UST standards by being replaced or upgraded with lining and/or cathodic protection and must comply with the new

UST spill and overfill control requirements. (40 CFR 280.20 and 280.21)

What requirements must be met when installing a new UST?

The new UST system must be designed and constructed to provide protection for buried components from corrosion by using either non-corrodible materials or a cathodic protection system. EPA requires that the installation be conducted in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and in accordance with the manufacturers instructions. In addition, the installation must be certified, tested, or inspected by one of six procedures provided in the regulation. These are:

- the installer has been certified by the tank and piping manufacturers;
- the installer has been certified or licensed by the implementing agency;
- the installation has been inspected and certified by a registered professional engineer with training and experience in tank installation;
- the installation has been inspected and approved by the implementing agency;
- all work listed in the manufacturer's installation checklists has been completed; or

- ❑ the owner/operator may use another method if approved by the implementing agency.

Anyone bringing an UST system into use after May 8, 1986, must within 30 days of bringing such tank into use, submit the "Notification for Underground Storage Tanks" form (EPA form 7530-1) or the corresponding state form to provide notice of the existence of the tank to the administering agency. This notification also includes a certification of compliance with the installation certification requirement. [53 FR 37125, 40 CFR 280.20 (a); 40 CFR 280.20 (d) and (e) and 280.22 (a) and (b)]

How can an existing tank meet EPA standards?

Existing tanks may meet the new tank performance standards (see above) or they may be retrofitted with an internal lining, cathodic protection, or an internal lining combined with cathodic protection. In addition, EPA has established inspection requirements for these upgraded tanks. If an existing tank does not meet the upgrading requirements by December 22, 1998, it must be replaced or closed. [40 CFR 280.21 (b)]

What notification requirements must be met for existing USTs that were in the ground on or after May 8, 1986?

Owners/operators of these tanks, unless taken out of operation on or before January 1, 1974, were required to notify the designated state or local agency on EPA form 7530-1 published on November 8, 1985 (50 FR 46602) under Section 9002 (a)(1) (52 FR 12705) of HSWA. If notification was previously given to EPA under Section 103(c) of CERCLA, indicating that the tank has contained hazardous substances, the UST notification is not required. Owners and operators who have not complied with this notification requirement may use the EPA form 7530-1 (see above). [40 CFR 280.20 (a)]

OPERATION

What day-to-day operating requirements must be met for an UST?

Spill and overfill control procedures must be followed, and corrosion protection must be operated and maintained, USTs must be compatible with their contents, reports must be made and records must be kept (see the "Reporting" section below), and any repairs must be performed in accordance with the regulations. (40 CFR 280.30 - .34)

What spill and overfill control procedures are required for USTs?

Before a transfer is made, owners/operators must ensure that the volume available in the tank is greater than the volume of product to be transferred. The transfer operation also must be monitored continuously to prevent overfilling and spilling. [40 CFR 280.30 (a)]

REPORTING

What reporting must be made for an UST?

The following UST reporting is mandatory:

- ❑ notification for all UST systems, which includes certification of installation for new UST systems;
- ❑ reports of all releases including suspected releases, spills and overfills, and confirmed releases;

- ❑ notification of corrective actions planned or taken including initial abatement measures, initial site characterization, free product removal, investigation of soil, ground-water cleanup, and corrective action plans; and
- ❑ notification before permanent closure or change-in-service. [40 CFR 280.34 (a)]

What records must be kept?

All of the following records must be kept, if applicable:

- ❑ a corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used,
- ❑ documentation of corrosion protection equipment operation,
- ❑ documentation of UST system repairs,
- ❑ recent compliance with release detection requirements, and
- ❑ results of the site investigation conducted at permanent closure. [40 CFR 280.34 (b)]

RELEASES

What basic requirements must be met for petroleum UST leak detection?

Leak detection methods used by the owner/operator must be able to detect a release from any portion of the tank and piping system that routinely contains product. Allowable methods of release detection include:

- ❑ monitoring for vapors in the excavation area,
- ❑ monitoring for petroleum floating on the water table,
- ❑ secondary containment with interstitial monitoring,
- ❑ continuous product level gauging,
- ❑ tank system integrity (or tightness) testing, and
- ❑ inventory control.

Monitoring for vapors or liquids in the environment around the tank or in the interstitial space of secondary containment can be done manually or automatically. If done manually, the sampling activity must be done once every 30 days. Tank tightness testing, however, is only required once every five years if the tank meets the corrosion protection and overfill requirements. If the tank does not meet these requirements, testing must be done once each year. In both cases, tank inventories must be recorded daily and reconciled monthly.

Whichever method is selected, the release detection system must be installed, calibrated, operated, and maintained in accordance with the manufacturer's instructions. In addition, the method(s) used must meet EPA performance standards specified for each type. Performance standards have been promulgated for each type of release detection method. (40 CFR 280.43 and 44)

What release detection records must be maintained?

All written performance claims for release detection systems must be maintained for five years. The results of any sampling, testing, or monitoring must be maintained for at least one year except that the results of tank tightness testing must be retained until the next test is conducted. Written documentation of all calibration, maintenance, and repair of release detection equipment

permanently located on-site must be maintained for at least one year after the servicing work is completed. Any schedules of required calibration and maintenance provided by the release detection equipment manufacturer must be retained for five years from the date of installation. The implementing agency is authorized to modify recordkeeping time limits. (40 CFR 280.45)

When should a release be suspected and reported?

The following would be considered causes to suspect releases:

- discovery of released regulated substances at the UST site or in the surrounding area (such as the presence of vapors in soils, basements, or sewer and utility lines, or emanating from nearby surface water);
- unusual operating conditions (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST system, or an unexplained presence of water in the tank); and
- monitoring results from a release detection method indicating that a release may have occurred. Suspected releases must be reported to the implementing agency within 24 hours. (40 CFR 280.50)

What types of spills and overfills must be reported and are subject to corrective action?

The following types of spills and overfills must be reported and are subject to corrective action: (1) spills or overfills of petroleum that result in the release of 25 gallons or that cause a sheen on nearby surface water; and (2) and spills or overfills below 25 gallons if cleanup of the spill or overfill cannot be accomplished within 24 hours. The implementing agency has the authority to establish reasonable quantities or time periods different from those listed above. If they do, then follow the limits established by the implementing agency. (40 CFR 280.53)

CORRECTIVE ACTION

What are the elements of a corrective action when a release occurs from an UST?

When a release from an UST has been confirmed, the UST owners/operator must perform:

- initial response actions,
- initial abatement measures,
- a site check,
- a site characterization,
- free product removal if necessary, and
- investigation for soil and ground-water cleanup if certain conditions exist (see below).

In addition, upon request of the implementing agency or by the decision of the UST owner or operator, a corrective action plan may need to be developed. For each confirmed release that requires a corrective action plan, the implementing agency should provide for public participation. (40 CFR 280.60 - .67)

What initial response actions must be taken upon confirmation of a release?

The following initial response actions must be taken within 24 hours of a release or within another reasonable period of time determined by the implementing agency:

- the release must be reported to the implementing agency (e.g., by telephone or electronic mail);
- immediate action must be taken to prevent any further release of the regulated substance into the environment; and
- fire, explosion, and vapor hazards must be identified and mitigated. (40 CFR 280.61)

What initial abatement measures must be performed after a confirmed release?

After a confirmed release, the owner/operator must:

- remove as much of the regulated substance from the UST system as is necessary to prevent further release to the environment;
- visually inspect any above-ground or exposed below-ground releases and prevent further migration of the released substance into surrounding ground water and soils;
- continue to monitor and mitigate fire and safety hazards;
- remedy hazards posed by soils and, if necessary, treat and dispose of soils according to applicable state and local requirements;
- measure for the presence of a release where contamination is most likely to be present at the UST site, unless the presence and source of the release has already been confirmed; and
- investigate to determine the possible presence of free product and begin free product removal as soon as practicable. Within 20 days after release confirmation, submit a report to the implementing agency summarizing the initial abatement steps taken. (40 CFR 280.62)

Should an UST owner or operator wait until the implementing agency approves a corrective action plan before beginning corrective action?

No, owners and operators may, in the interest of minimizing environmental contamination and promoting more effective cleanup, begin cleanup of soil and ground water before the corrective action plan is approved by the implementing agency, provided that they:

- notify the implementing agency of their intention to begin cleanup;
- comply with any conditions imposed by the implementing agency, including halting cleanup or mitigating adverse consequences from clean-up activities; and
- incorporate these self-initiated clean-up measures in the corrective action plan that is submitted to the implementing agency for approval. (40 CFR 280.66)

When must corrective action at an UST be conducted under RCRA Subtitle C rather than Subtitle I?

If an UST is located at a RCRA-permitted hazardous waste treatment, storage, or disposal (TSD) facility and the UST contained hazardous waste, then the corrective action must be performed in accordance with the hazardous waste regulations under Subtitle C of RCRA found in 40 CFR 264.100 and 264.101. (55 FR 30857)

CLOSURE

What must be done if a facility stops using an UST?

The UST must undergo temporary closure, a change-in-service, or permanent closure. Temporary closure lasts less than 12 months. A change-in-service occurs when an UST system is no longer used to contain a regulated substance. If an UST is closed for longer than 12 months, it must be permanently closed. (40 CFR 280.70 and 71)

What must be done to temporarily close an UST?

For an UST to remain temporarily closed, the owner or operator must continue operation and maintenance of corrosion protection and release detection. However, if the UST system has been emptied, then release detection is not required (the UST system is empty when all materials have been removed using commonly employed practices so that no more than 2.5 cm (1 in.) of residue or 0.3% of the weight of the total capacity of the UST system remain). When an UST is temporarily closed for three months or more, the vent lines must be left open and functioning, and all other lines, pumps, manways, and ancillary equipment must be capped and secured. Any UST system temporarily closed for more than 12 months must be permanently closed unless it meets the new UST performance standards (40 CFR 280.20 and 280.21). Under this upgrading provision, an owner/operator of an operating existing UST has until December 22, 1998, to meet the new tank requirements. Thus, the owner/operator may postpone upgrading his or her temporarily closed UST until December 22, 1998. After December 22, 1998, any tank that is temporarily closed for more than 12 months must be permanently closed unless it meets the new UST standards of 40 CFR 280.20 or the technical upgrading requirements under 40 CFR 280.21. (40 CFR 280.70)

If a temporarily closed UST meets the performance standards, are there any regulations or special requirements that must be met before returning it to service?

No special procedures are required before returning this tank to service.

How long can a temporarily closed UST remain closed, provided it meets either the performance standards in 40 CFR 280.20 for new UST systems or the upgrading requirements in 40 CFR 280.21, excluding spill and overfill requirements?

As long as the performance standards for new or upgraded USTs are met and the UST systems remain in compliance with the operation, maintenance, and release

detection requirements of the rule, they may remain out-of-service indefinitely. (53 FR 37283)

Can an UST be converted into an underground tank that holds non-regulated substances?

Yes. Continued use of an UST system to store a non-regulated substance is considered a change-in-service. Before a change-in-service, the UST must be emptied and cleaned by removing all liquid and accumulated sludge and a closure site assessment must be performed. At least 30 days before beginning a change-in-service, or within another reasonable time period determined by the implementing agency, the implementing agency must be notified of the intent to perform a change-in-service. Closure records also must be maintained. (40 CFR 280.71)

What must be done to permanently close an UST?

To permanently close a tank, it must be emptied and cleaned by removing all liquids and accumulated sludges. All tanks taken out of service permanently must be either removed from the ground or filled with an inert solid material. (Note: Many state regulations require that closed USTs must be removed unless the removal would endanger a building, road, or other structural foundation.) At least 30 days before beginning permanent closure, or within another reasonable time period determined by the implementing agency, the implementing agency must be notified of the intent to close the UST. Before permanent closure, owners and operators must perform a closure site assessment. Closure records also must be maintained. (40 CFR 280.71)

Has an UST that has been emptied and left in the ground satisfied the closure standards?

No. Closed USTs must either be removed from the ground, or, if left in the ground, filled with an inert solid material.

What records must be maintained to document closure?

First, records demonstrating compliance with the closure requirements must be maintained; second, the results of the excavation zone assessment for the closure or change-in-service site assessment must be maintained for at least three years after completion of permanent closure or change-in-service; and third, the records may be maintained by the owner or operator who took the UST system out of service or by the current owner or operator of the UST system site. The records may be mailed to the implementing agency if they cannot be maintained at the closed facility. (40 CFR 280.74)

Questions of policy or questions requiring policy decisions will not be dealt with in EH-231 Information Briefs unless that policy has already been established through appropriate documentation. Please refer any questions concerning the subject material covered in this Information Brief to Jerry DiCerbo, EH-23, (202) 586-5047.

