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Hazardous Substance 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 the Environmental Protection Agency (EPA) under authority of Subtitle I of the Resource Conservation and Recovery Act (RCRA) [Section 9003 of the Hazardous and Solid Waste Amendments of 1984 (HSWA)], established 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 hazardous substance 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 hazardous substance UST?

A hazardous substance UST contains hazardous substances as defined in Section 101(14) of CERCLA (but does not include any substance regulated as a hazardous waste under RCRA Subtitle C) or contains any mixture of these hazardous substances and petroleum, and is not considered a petroleum UST system. A petroleum UST system 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.

Although hazardous substance and petroleum USTs are subject to many of the same regulations, hazardous substance USTs differ because they are required to be equipped with secondary containment that is compatible with the UST contents.

INSTALLING OR UPGRADING

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

New USTs must prevent releases due to structural failure, corrosion, or spills and overfills. Only properly designed and constructed tanks and piping may be installed. Spill and overfill equipment must be installed with each new UST and the installation must be properly conducted and certified by

one of the six procedures in the regulation discussed 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 prevention equipment requirements. (40 CFR 280.20 and 280.21)

What requirements must be met when installing a new hazardous substance UST?

The new hazardous substance UST must be constructed so buried structures are protected 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 manufacturer's instructions. In addition, the installation must be certified, tested, or inspected by one of six procedures provided in the regulation:

- the installer must be certified by the tank and piping manufacturers;
- the installer must be certified or licensed by the implementing agency;
- the installation must be inspected and certified by a registered professional engineer with training and experience in tank installation;
- the installation must have been inspected and approved by the implementing agency;

- all work listed in the manufacturer's installation checklist must have been completed; or
- the owner/operator may use another method if approved by the implementing agency.

Anyone bringing a hazardous substance UST system into use after May 8, 1986, must, within 30 days, submit a "Notification for Underground Storage Tanks" form (EPA form 7530-1) or the corresponding state form to notify the administering agency of the existence of the tank. [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 already meet the new tank construction performance standards (see above) or they may be retrofitted with an internal lining, cathodic protection, or an internal lining combined with cathodic protection to meet the standards. 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 and operators of these tanks, unless the tanks were taken out of operation on or before January 1, 1974, were required to notify the designated state or local agency on a form published by EPA 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 a hazardous substance UST?

Spill and overfill control procedures must be followed, corrosion protection must be operated and maintained, the UST must be compatible with its contents, reports must be made and records must be kept (see section titled "Reporting"), 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 hazardous substance USTs?

Before a transfer is made, owners and 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 a hazardous substance 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 release detection must be provided for new hazardous substance USTs?

Required release detection includes secondary containment or other methods approved by the implementing agency. The secondary containment must contain regulated substances released from the tank system until they are detected and removed, prevent the release of regulated substances to the environment at any time during the operational life of the UST system, and be checked for evidence of a release at least every 30 days.

Secondary containment may be provided through the use of double-walled tanks and piping or trench liners. Double-walled tanks must be designed, constructed, and installed to contain a release from any portion of the inner tank within the outer wall and to detect the failure of the inner wall. An external trench liner (including a vault) must be designed, constructed, and installed to contain 100% of the capacity of the largest tank within its boundary, prevent the interference of precipitation or ground-water intrusion with the ability to contain or detect a release of regulated substances, and surround the tank completely (i.e., be capable of preventing lateral as well as vertical migration of regulated substances).

Other methods of release detection may be used if owners/operators:

- demonstrate to the implementing agency that an alternative method can detect a release as effectively as any of the petroleum release detection methods;
- provide information to the implementing agency about effective corrective action technologies, health risks, and chemical and physical properties of the stored substance, as well as the characteristics of the UST site; and

- obtain approval from the implementing agency to use the alternative release detection method before the installation and operation of the new UST system. [40 CFR 280.42 (b)]

What release detection is required for new hazardous substance piping?

New hazardous substance underground piping must be equipped with secondary containment that satisfies the tank secondary containment requirements (e.g., trench liners and jacketing of double-walled pipe). In addition, underground piping that conveys regulated substances under pressure must be equipped with an automatic line leak detector. [40 CFR 280.42 (b)]

What release detection is required for existing hazardous substance tanks and piping?

By December 22, 1998, all existing hazardous substance UST systems must meet the release detection requirements for new UST systems. Until then, the existing USTs must meet the same release detection requirements that apply to petroleum USTs. If available release detection methods are ineffective or inappropriate for the particular hazardous substance, than the tank system must be upgraded or replaced to meet secondary containment requirements. (40 CFR 280.42)

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 hazardous substances at the UST site or in the surrounding area (such as the presence of free 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 kinds of spills and overfills must be reported and are subject to corrective action:

- spills or overfills of a hazardous substance that result in a release equal to or exceeding its reportable quantity (RQ) under CERCLA (40 CFR Part 302) and
- spills or overfills below the RQ if cleanup cannot be accomplished within 24 hours. (40 CFR 280.53)

CORRECTIVE ACTION

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

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

- 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 hazardous 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 or 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, or within another reasonable period of time determined by the implementing agency, 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 a 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 a tank as a hazardous substance UST?

If a facility stops using a tank as an UST, the tank must undergo temporary closure, a change-in-service, or permanent closure. Temporary closure generally lasts less than 12 months. If a tank is out of service longer than 12 months, it must be permanently closed. A change-in-service occurs when an UST system is no longer used to contain a regulated substance, but it is used to store a non-regulated substance. (40 CFR 280.70 and .71)

What must be done when temporarily closing an UST?

When temporarily closing an UST, the owner or operator must continue operation and maintenance of corrosion pro-

tection 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 or upgraded UST performance standards (40 CFR 280.20 and 280.21). Under this upgrading provision, an owner/operator of an operating UST has until December 22, 1998, to meet the upgrading requirements. Thus, the owner/operator may postpone upgrading his or her temporarily closed UST until December 22, 1998, but not after this date. 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 performance standards of 40 CFR 280.20 or the technical upgrading requirements under 40 CFR 280.21. (40 CFR 280.70)

What must be done to permanently close an UST?

To permanently close a tank, the operator or owner must empty and clean the tank by removing all liquids and accumulated sludges. All tanks taken out of service permanently must be removed from the ground or filled with an inert solid material. 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)

What records must be maintained to document closure?

First, records demonstrating compliance with the closure requirements must be maintained to document closure; 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 owners or operators who took the UST system out of service or by the current owners and operators of the UST system. 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 DiCarbo, RCRA/CERCLA Division, EH-231, (202) 586-5047.



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