

Subtitle I Program Overview

Federal agencies that own/operate new underground storage tanks (USTs) storing regulated substances are subject to design, construction, installation, and compatibility standards, and leak detection, recordkeeping, reporting, closure, and corrective action requirements for new tanks and existing tanks.

By the end of this module, participants will be able to:

- Define “underground storage tank” (UST) systems. (p. 3)
 - Define “regulated substance.” (p. 3)
- Identify three UST systems for which most of the regulations have been deferred and list those that do apply. (p. 4)
- Briefly highlight key UST owner/operator responsibilities. (pp. 6-9)
- Identify the timelines associated with release reporting, investigation, and confirmation. (p. 11)
- Cite key elements of release response and corrective action. (p. 12)
- Identify the two types of UST closure. (pp. 13-15)
- List at least three instances in which UST owners/operators must report to the implementing agency. (p. 16)
- List four types of records that must be maintained. (p. 17)

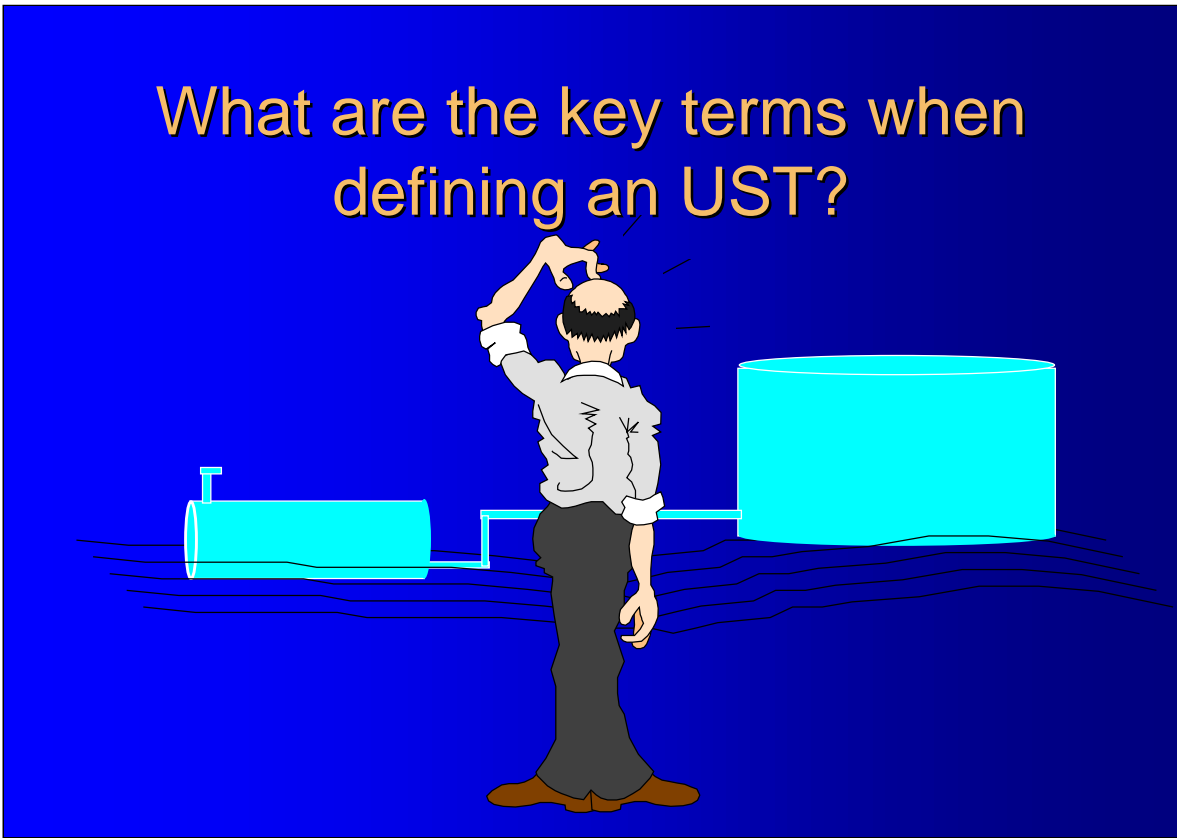
Purpose Of Subtitle I

- **In 1984 Congress enacted Subtitle I as part of the HSWA to control leaks from USTs.**
- **Subtitle I established design standards and operating requirements that affect USTs containing either petroleum or CERCLA hazardous substances.**

Since 1980, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA also known as “Superfund”), as amended by the Superfund Amendments and Reauthorization Act (SARA), has defined and governed uncontrolled environmental releases of “hazardous substances.”

To address uncontrolled releases from product storage tanks, Congress passed the Hazardous and Solid Waste Amendments of 1984 (HSWA). These amendments extended and strengthened the provisions of the Solid Waste Disposal Act (SWDA) by providing a statutory framework for the development and implementation of a comprehensive regulatory program for “underground storage tanks” (USTs).

What are the key terms when defining an UST?



Terms that appear in the statutory definition of underground storage tank offer valuable guidelines for owners/operators trying to define the types of units that are subject to Subtitle I. At the Federal level, final regulations that reflect this statutory definition as well as other provisions governing USTs are found in the Title 40 Part 280 of the *Code of Federal Regulations (CFR)*.

Consistent with the HSWA statute, EPA defines “underground storage tank” or “UST” as “any one or combination of *tanks* . . . that is used to contain an accumulation of *regulated substances* and the volume of which . . . is 10 percent or more *beneath the surface of the ground*.” By analyzing the key terms that are used in the statutory definition, we can begin to formulate a clearer picture of what constitutes an UST.

For example, “tank” is a stationary device designed to contain an accumulation of regulated substances and constructed of non-earthen materials. Subtitle I affects two categories of “regulated substances”:

- (1) petroleum or any fraction thereof, and
- (2) materials defined as “hazardous substances” under CERCLA section 101(14).

Be aware that Subtitle I broadened the scope of RCRA by requiring regulation of substances that are not wastes.

Statutory Exclusions from the Definition of UST

- **Subtitle I *statutory* language excludes nine types of tanks from the definition of UST**
- **EPA *regulatory* exclusions/deferrals**
 - **USTs holding hazardous wastes**
 - **UST systems containing radioactive material**

Subtitle I *statutorily* excludes the following tanks from the term “UST” (40 *CFR* 280.12):

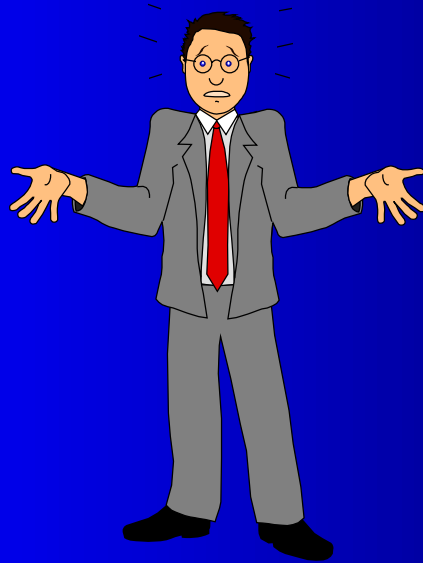
- farm or residential tank of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;
- tank used for storing heating oil for consumptive use on the premises where stored;
- septic tank;
- pipeline facility regulated under certain other laws;
- surface impoundment, pit, pond, or lagoon;
- storm-water or wastewater collection system;
- flow-through process tank;
- liquid trap or associated gathering lines directly related to oil or gas production and gathering operations; or
- storage tank situated in an underground area if the storage tank is situated on or above the surface of the floor.

In addition, Subtitle I *regulations* exclude/defer the following (40 *CFR* 280.10):

- any UST holding a RCRA “hazardous waste” or radioactive material;
- any wastewater treatment tank regulated under the Clean Water Act;
- equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks;
- any UST system whose capacity is 110 gallons or less;
- any UST system that contains a *de minimis* concentration of regulated substances;
- any emergency spill or overflow containment UST system that is expeditiously emptied after use; or
- any UST containing radioactive material regulated under the Atomic Energy Act.

Unlike statutory exclusions, regulatory exclusions may be modified by EPA in the future.

So . . . what are my responsibilities if I own and/or operate an UST?



UST Performance Standards And Operating Requirements

- **Subtitle I of HSWA directs EPA to develop performance standards for new tanks that address:**
 - design
 - construction
 - installation
 - release detection
- **EPA was also required to develop requirements applicable to owners and operators concerning:**
 - leak detection
 - record keeping
 - reporting
 - corrective action
 - closure

The performance standards, associated regulations, and state program approval regulations were promulgated on September 23, 1988 (53 FR 37082) and became effective December 22, 1988. All USTs and UST systems installed after this date (i.e., “new tank systems”) must meet all of the performance standards and requirements in the rule immediately upon installation.

USTs for which installation commenced on or before the effective date (i.e., “existing tank systems”) had until December 22, 1993 to comply with release detection requirements. Existing tank systems have until December 22, 1998 to comply with the design, construction, and installation requirements. The following pages describe each of the standards and requirements.

Design And Construction Of USTs

EPA developed performance standards for:

- tanks
- piping
- spill and overflow prevention equipment

Tanks: All tanks must be made from fiberglass-reinforced plastic, cathodically-protected steel, or a composite of these two. Alternative designs are acceptable when approved by a corrosion expert or regulatory authority. Any cathodic protection system used in a UST system must be inspected by a qualified person within 6 months of installation and every 3 years thereafter, according to a code of practice developed by a nationally recognized association.

Piping: The design standards for piping are similar to those for tanks.

Spill and overflow prevention equipment: These requirements include, for example, use of catchment basins and automatic shutoff systems when a tank is nearly full. 40 *CFR* 280.20

UST Installation

- **All tanks and piping must be installed in accordance with a code of practice developed by a recognized association or independent testing laboratory and in accordance with manufacturer instructions.**
- **Owners and operators must certify on the UST notification form that tanks have been properly installed.**

For the purpose of this requirement, EPA lists several publications from recognized testing laboratories and a number of acceptable methods of certifying proper installation. 40 *CFR* 280.20

Release Detection

All facilities must have a release detection method that:

- is capable of detecting a release from any portion of the tank or piping;**
- is installed and maintained in accordance with the manufacturer's instructions, including routine inspections; and**
- is capable of meeting performance standards that have been designed for the chosen release detection method.**

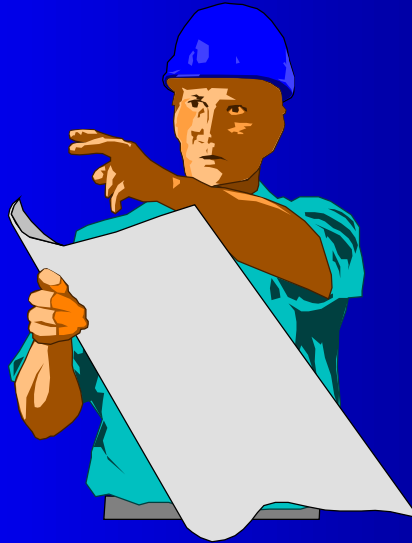
Existing UST systems must install a release detection system following a 5-year phase-in period, which ended December 22, 1993. Owners and operators of petroleum tanks may use a variety of release detection methods such as inventory control combined with tank tightness testing, soil gas monitoring, and ground-water monitoring to comply with the release detection requirements. The appropriateness of the different detection methods is highly dependent on whether the UST meets the performance standards for new tanks/upgraded tanks. Petroleum USTs must be monitored at least every 30 days.

EPA also requires release detection for piping. Requirements differ depending on whether pressurized piping or suction piping is in use. Suction piping that meets five prescribed conditions is not subject to release detection.

In addition to complying with the release detection provisions for petroleum USTs, EPA requires existing hazardous substance UST systems to be retrofitted with secondary containment, or replaced with/surrounded by a double-walled tank or an external liner by December 22, 1998.

Any existing UST system that cannot comply with the specified release detection requirements should have closed (i.e., the owner/operator should have removed the tank or filled it with an inert material and completed a site assessment) by the applicable phase-in date. 40 *CFR* 280.40-280.44

What if my detection system indicates a release has occurred?



Release Reporting, Investigation, And Confirmation

- **Owners and operators must report suspected releases to their regulator within 24 hours.**
- **Unless corrective action is initiated, owners and operators must investigate and confirm all suspected releases within 7 days.**
- **Investigation and confirmation require a system test and site check.**

Because UST systems are hidden from direct observation, suspected releases must be investigated to identify, or confirm, that an UST system is the source of a release. Monitoring results and other indicators in the environment are only suggestions of a release. In general, corrective action cannot be started until the UST system and UST site are investigated and a release is confirmed.

Owners and operators may discover a release based on the presence of free product or vapors, the sudden loss of product or unexplained presence of water, and/or monitoring results from release detection. As the first step in responding to suspected releases, owners and operators must report to the regulatory agency within 24 hours and investigate and confirm all suspected releases within 7 days.

If an investigation confirms that a leak exists, owners and operators must repair, replace, or upgrade the UST system and begin corrective action under Subpart F of 40 *CFR* part 280. If the investigation does not indicate that a leak exists, then no further action is necessary, provided environmental contamination is not the basis for suspecting the release. If, however, environmental contamination is the basis, then owners and operators must sample for the presence of a release (i.e., conduct a site check). 40 *CFR* 280.52

Oh no. I've confirmed a release . . . WHAT NOW???

Release Response & Corrective Action

Owners and operators must comply with the following upon confirmation of a release:

- **Initial response**
- **Initial abatement measures and site check**
- **Initial site characterization**
- **Free product removal**
- **Investigation for soil and ground-water cleanup**
- **Development of corrective action plan**
- **Public participation requirements**

Initial response requires the following actions within 24 hours:

- reporting to your regulator;
- taking immediate action to prevent further release; and
- identifying and mitigating fire, explosion, and vapor hazards

Initial abatement measures include such actions as removing as much substance from the UST as is necessary to prevent further release into the environment, and taking measures to prevent further migration.

Initial site characterization is the stage in which data on the nature and estimated quantity of the release and on the surrounding area are collected.

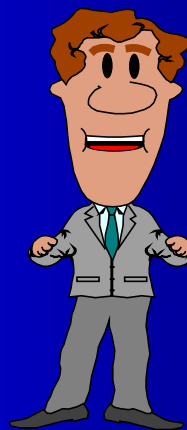
Free product removal involves removing as much free product as possible while continuing the actions listed above and while preparing for the remaining actions.

Owners and operators must next conduct an investigation to determine the full extent and location of soils contaminated by the release and the presence and concentrations of dissolved product contamination in the ground water.

After reviewing information submitted by the owner/operator, the implementing agency may require submittal of a corrective action plan (CAP) according to a schedule developed by the regulatory agency. The CAP will be approved if it will adequately protect human health and the environment. For each confirmed release that requires a CAP, the implementing agency must notify members of the public directly affected by the release and the planned corrective action. Before approving a CAP, the regulators may hold a meeting to consider comments by the public.

Based on site-specific conditions, owners and operators may elect to continue operations by repairing, replacing, or upgrading the UST system and begin corrective action. In other cases, owners and operators may decide that temporary or permanent closure of the UST system is more appropriate. 40 CFR Part 280, Subpart F

To Close OR Not to Close?



The principal objective of the UST system closure requirements is to identify and contain existing contamination and to prevent future releases from out-of-service UST systems. To accomplish this, EPA specifies conditions that govern systems that temporarily close for less than 12 months. Closure provisions also address USTs that are taken out of service for 12 months or longer and USTs that do not meet the requirements for new or upgraded USTs (i.e., UST systems that are required to close permanently), as well as UST systems that were taken out of service prior to December 22, 1988.

Temporary Closure

- When a UST system is temporarily closed, owners and operators must continue to comply with all Subtitle I regulations except that release detection is not required when the system is empty.
- When a system is closed for 3 months or more, owners and operators must leave vent lines open and functioning and must cap and secure all other lines, pumps, manways, and ancillary equipment.
- If closed for more than 12 months, the system must be permanently closed if it does not meet performance or upgrade standards.

A UST is considered empty when all materials have been removed using commonly employed practices so that no more than 1 inch of residue, or 0.3% by weight of the total capacity of the UST system, remain in the system.

40 *CFR* 280.70 outlines temporary closure requirements.

Permanent Closure

- **Owners and operators must notify their regulator within 30 days of beginning permanent closure (or initiating a change of service).**
- **To permanently close a tank it must be cleaned and either filled with an inert material or removed from the ground.**
- **Before permanent closure (or change in service) is completed owners and operators must conduct a site assessment.**

40 *CFR* 280.71 outlines permanent closure requirements.

Reporting

Owners and operators must submit the following to their regulator:

- **Notification of all UST systems**
- **Reports of all releases including suspected releases, spills and overfills, and confirmed releases**
- **Corrective actions planned or taken in response to a release**
- **Notification before permanent closure or change in service**

The section on reporting appears under Subpart C, General Operating Requirements. Also under Subpart C are requirements pertaining to spill and overfill control,

- operation and maintenance of corrosion protection,
- compatibility (of tank construction material with substance),
- repairs allowed, and
- recordkeeping.

Specifically, 40 *CFR* 280.34 outlines reporting requirements.

Recordkeeping

Owners and operators must maintain the following information:

- **□ A corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used**
- **□ Documentation of operation of corrosion protection equipment**
- **□ Documentation of UST system repairs**
- **□ Recent compliance with release detection requirements**
- **□ Results of the site investigation conducted at permanent closure**

40 *CFR* 280.34 also outlines recordkeeping requirements.

Subtitle I In Summary

- □ **Subtitle I regulates USTs containing**
 - Petroleum
 - CERCLA hazardous substances
- □ **Owners and operators of UST systems must meet the technical and administrative requirements of 40 CFR 280 including those addressing:**
 - Design and construction
 - Installation and notification
 - Reporting and record keeping
 - Release detection
 - General operating requirements
 - Release reporting, response, and corrective action