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RCRA, Superfund & EPCRA Hotline Training Module

Introduction to:

**RCRA Subtitle I:
Underground Storage Tanks
(40 CFR Part 280)**

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UNDERGROUND STORAGE TANKS

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1. INTRODUCTION

Across the United States, there are approximately 1.1 million active underground storage tanks (USTs) that store petroleum or hazardous substances. These tanks are nearly ubiquitous, as many are owned by small "Mom and Pop" businesses. These underground tanks are used to store, among other things, gasoline, crude oil, hazardous chemicals, and heating oil. Placing tanks underground minimizes potential fire and explosion hazards, and provides a convenient place to store liquid materials while hiding unsightly equipment, thereby preserving aboveground aesthetics and maximizing usable aboveground space. USTs are found at a variety of locations, including convenience stores, airports, private residences, farms, service stations, small and large manufacturing facilities, and hazardous waste management facilities. Many of these tanks are made of bare, unprotected steel. Because of their underground location, these tanks pose unique problems in preventing their contents from leaking due to faulty installation, corrosion, tank or pipe rupture, or spills. With over 50 percent of the U.S. population relying on groundwater as their primary source of drinking water, Congress acted to protect this resource in 1984 by adding Subtitle I to the Resource Conservation and Recovery Act (RCRA). Pursuant to this Congressional mandate, EPA established a regulatory program in 1988 that includes technical requirements to prevent, detect, and clean up releases from USTs, as well as financial responsibility requirements to guarantee that UST owners and operators have enough money set aside to clean up releases and to compensate third parties.

This module is designed to familiarize you with the universe of regulated USTs, and the technical and financial requirements that apply to them. After reading this module, you should be able to define an UST, determine which USTs are subject to regulation, and be able to discuss such topics as deadlines for upgrading tanks and the closure and corrective action requirements. You should also be able to summarize the financial responsibility requirements for petroleum USTs.

2. REGULATORY SUMMARY

When developing RCRA Subtitle I, Congress's primary concern was to protect groundwater by establishing standards that prevent releases and enable UST owners and operators to quickly respond to releases that do occur. Since a complete visual inspection is impossible for any tank that is even partially underground, RCRA Subtitle I defines an UST as any tank that is 10 percent or more beneath the surface of the ground. Because this includes the volume of underground pipes connected to the tank, above ground tanks with extensive underground piping may fall within the purview of the federal UST regulations, as well as tanks that are partially or completely below ground.

Not all underground storage tanks are subject to the UST regulations, however. EPA regulates only certain underground tanks that hold petroleum or hazardous chemicals. For example, underground tanks holding nonhazardous substances, such as water, are not covered by these regulations. Other underground tanks are not regulated under Subtitle I because they are already covered under other federal programs (such as underground tanks holding hazardous wastes, which are regulated under Subtitle C of RCRA), or because the tank does not contain enough of a regulated substance to warrant regulation.

The UST regulations are found in 40 CFR Part 280. Since the UST program is not part of RCRA Subtitle C, Part 280 contains its own applicability and definitions sections, in addition to regulations establishing technical and administrative requirements. These requirements include notification, design and installation standards, closure, and corrective action. Because many USTs were installed prior to the development of the federal UST program, the regulations also establish a schedule for upgrading older tanks to meet current design and operating standards. Finally, Part 280 also contains regulations requiring owners and operators of petroleum USTs to demonstrate that they have the financial resources to pay for the cost of cleaning up any releases that occur.

States can apply for, and obtain, approval to implement the UST regulations in lieu of the federal government. Approval of a state's UST program is independent of a state's authorization under Part 271 to implement the Subtitle C hazardous waste program. Part 281 contains the regulations governing the application and approval process for UST state programs.

2.1 SCOPE OF THE UST PROGRAM

When addressing any issue involving underground storage tanks, it is critical that you first determine if the tank meets the regulatory definition of UST, found in §280.12. EPA defines an UST as any one or combination of tanks (including connected underground pipes) that is used to contain an accumulation of "regulated substances" and the volume of which (including the volume of underground pipes connected

thereto) is 10 percent or more beneath the surface of the ground. A "regulated substance" means (1) any substance defined under §101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act, or CERCLA (but not including any substance regulated as a hazardous waste under RCRA Subtitle C), and (2) petroleum, including crude oil or any fraction thereof that is a liquid at standard temperature and pressure.

As stated earlier, USTs, depending on their size, location, contents, and/or purpose, may be either subject to Part 280 regulation, deferred to other regulatory programs, or excluded from federal regulation altogether. Because Congress expressly excluded a number of units from the definition of UST in RCRA §9001, §280.12 also excludes these units. These units include, among others, farm and residential tanks with a volume of 1,100 gallons or less that store motor fuel for noncommercial purposes; tanks storing heating oil for use on site; septic tanks; pipeline facilities regulated under the Natural Gas Pipeline Safety Act of 1968 and the Hazardous Liquid Pipeline Safety Act of 1969; and storage tanks situated upon or above the floor in a basement, cellar, or other underground area. A complete list of these exclusions can be found in §280.12.

Once you determine that a tank meets the definition of an UST, you must evaluate it against a number of exclusions found in the applicability section (§280.10(b)). EPA developed some of these exclusions to avoid subjecting certain types of tanks to dual regulation. For example, tank systems regulated under RCRA Subtitle C and wastewater treatment tanks regulated under the Clean Water Act (CWA) are excluded because they are already covered by other regulatory programs. Other exclusions exempt tanks that pose little or no risk, allowing implementing agencies to concentrate their resources on tanks that pose the greatest environmental threat. These include tanks that contain small concentrations of regulated substances and tanks with a capacity of 110 gallons or less. Table 1 contains a complete list of these exclusions.

Finally, if a tank meets the definition of an UST and is not excluded under §280.10(b), you must determine if it qualifies for one of the deferrals in §§280.10(c) and (d). Most of these tanks are deferred from regulation because their design or use pose unique regulatory challenges. A deferral provides EPA with additional time to evaluate these tanks to determine if they warrant full regulation under Part 280. Section 280.10(c) defers five types of UST systems from the Part 280 design and installation standards and notification, release detection, release reporting, and closure requirements. These tanks are, however, subject to release response, corrective action and financial responsibility. In addition, new tanks must meet the design standards of §280.11. See Table 1 for a list of the tanks subject to this deferral. Section 280.10(d) defers USTs storing fuel for emergency power generators from the release detection requirements only — these tanks are subject to all other Part 280 requirements.

If a tank meets the definition of an underground storage tank, and is not excluded or deferred from regulation, then it is subject to the Part 280 regulations. The remainder of this module provides an overview of the technical and financial responsibility requirements that apply to regulated USTs.

Table 1
TANKS NOT SUBJECT TO FEDERAL UST REGULATIONS UNDER PART 280

Type of Tank	Citation
1,100-gallon or less Farm or Residential Tanks ¹	§280.12
Heating Oil Tanks ¹	§280.12
Septic Tanks ¹	§280.12
Pipeline Facilities Regulated Under Other Federal or State Laws ¹	§280.12
Surface Impoundments, Pits, Ponds, Lagoons ¹	§280.12
Stormwater or Wastewater Collection Systems ¹	§280.12
Flow-Through Process Tanks ¹	§280.12
Liquid Traps Related to Oil/Gas Production ¹	§280.12
Storage Tanks in an Underground Area ¹	§280.12
Tanks Holding RCRA Subtitle C Hazardous Waste ¹	§280.10(b)(1)
Tanks that are Part of a Wastewater Treatment Facility Regulated Under the Clean Water Act ¹	§280.10(b)(2)
Equipment Containing Regulated Substances for Operational Purposes ¹	§280.10(b)(3)
USTs with capacities of 110 gallons or less ¹	§280.10(b)(4)
USTs containing <u>De Minimis</u> Concentrations of Regulated Substances ¹	§280.10(b)(5)
Wastewater Treatment Tank Systems ²	§280.10(c)(1)
Tanks Containing Radioactive Material Regulated Under the Atomic Energy Act ²	§280.10(c)(2)
Tanks that are Part of an Emergency Generator System at Nuclear Power Generation Facilities Regulated by the Nuclear Regulatory Commission ²	§280.10(c)(3)
Airport Hydrant Fuel Distribution Systems ²	§280.10(c)(4)
Field-Constructed Tanks ²	§280.10(c)(5)
Tanks Storing Fuel for Use by Emergency Power Generators ³	§280.10(d)

¹ These tanks are excluded from the definition of "UST"

² These tanks are deferred from Part 280, Subparts B, C, D, E, and G

³ These tanks are deferred from Subpart D only

2.2 NOTIFICATION REQUIREMENTS

Because of the vast number of underground storage tanks already in existence when Congress enacted RCRA Subtitle I, EPA's first action in responding to this mandate was to establish a notification system allowing EPA to track the universe of existing USTs, as well as providing a mechanism that would alert EPA when a new UST was brought into operation. Owners and operators of UST systems that were in the ground on or after May 8, 1986, were required to notify the designated state or local agency of the tank's existence, unless the tank was taken out of operation on or before January 1, 1974. Any owner or operator who brings an UST into use after May 8, 1986, must notify the designated state or local agency of the existence of the tank system within 30 days of bringing the tank into use (§280.22). As an additional safeguard, any person who sells a tank intended to be used as an UST must inform the purchaser of the owner's notification requirement under §280.22.

2.3 PERFORMANCE AND OPERATING STANDARDS

The Part 280 UST regulations were published on September 22, 1988, and became effective on December 22, 1988 (53 FR 37082). December 22, 1988, is used as a critical cut-off point for determining the applicability of certain elements of the UST regulations. To accommodate the thousands of USTs in existence at the time the Part 280 regulations were established, EPA built a certain amount of flexibility into the UST program to ensure that tanks already in use were covered by the new program, yet not immediately subjected to cost-prohibitive design standards with which small businesses could not comply. Part 280 draws a distinction between new tanks, which are immediately subject to strict installation and design standards, and existing tanks, which are provided a grace period before they must be upgraded to meet the same standards that apply to new tanks. Tanks for which installation began after December 22, 1988, are considered to be new USTs, and are subject to stringent performance standards at the time of installation. These standards address preventative measures necessary to protect against structural failure, corrosion, leaks, and spills and overfills during product transfer to the UST system (§280.20). Tanks installed before December 22, 1988, are considered existing tanks, and are provided a series of deadlines by which they must be upgraded to meet the same (or similar) standards as new tanks or be replaced. For example, UST owners and operators must fully upgrade existing tanks by December 22, 1998, or must remove them from service. In addition to these design standards, both new and existing tank systems are subject to general operating requirements to ensure proper operation and maintenance. Each of these requirements are discussed below, noting where standards differ for new and existing tank systems.

PROPER INSTALLATION

Improper installation is a typical cause of UST failures, particularly piping failures. Proper installation is crucial to ensure the structural integrity of both the tank and its

piping. Many mistakes can be made during installation, a process which includes deciding where to locate the tank, excavation, tank system assembly, backfilling of the tank system, and surface grading. For example, mishandling of the tank during installation can cause cracks in fiberglass-reinforced plastic tanks, or damage the protective coating on steel tanks with cathodic protection, leading to corrosion. These problems usually result from careless installation practices that do not follow recognized industry codes and procedures. Therefore, owners and operators of new tank systems must certify on their UST notification form that the tank system was installed in accordance with the manufacturer's instructions and in accordance with practices developed by a nationally recognized association, such as the American Petroleum Institute (API) (§280.20(d)).

STRUCTURAL AND CORROSION PROTECTION MEASURES

When EPA surveyed the regulated universe of USTs in 1988, it discovered that over 75 percent of existing USTs were made of unprotected steel. When unprotected steel is buried in the ground, it can be eaten away by corrosion, a process that results when bare metal, soil, and moisture conditions combine to produce an underground electric current that destroys steel, returning it to its original iron ore state. This transformation causes holes to develop, and leaks to begin, eventually leading to contamination of the surrounding soil and groundwater. Because of this problem, new tanks must now be designed and constructed so that they are protected from corrosion. This can be accomplished by constructing the tank of materials that do not corrode, such as fiberglass and plastic, or outfitting a steel tank with a thick layer of noncorrodible material. A third option is to construct the tank using steel that has a corrosion-resistant coating while also providing a means of reversing the corrosion-causing electrical current (also called cathodic protection). Piping that routinely contains product and is in contact with soils must meet similar corrosion protection standards (§§280.20(a) and (b)).

Owners and operators of existing bare steel tanks have until December 22, 1998, to upgrade, replace, or close their tanks. By the December 22, 1998, deadline, these existing tanks must be protected from corrosion either by meeting the performance standards for new tanks or by following special upgrading procedures. These procedures, found in §280.21, include options for installing cathodic protection and/or adding a thick, corrosion-resistant interior lining to the tank. Existing steel piping must also have cathodic protection by this date.

Once installed, the regulations require that corrosion protection systems be properly operated and maintained to ensure that no releases occur. In addition, UST systems with cathodic protection must be periodically inspected and tested to ensure that the equipment is operating properly (§280.31). Finally, the owner or operator must keep records documenting compliance with these operation, maintenance, and inspection requirements (§280.34(b)(2)).

In addition to ensuring the structural integrity of the tank by preventing corrosion, owners and operators of USTs must ensure that any substance stored in the UST does not react in such a way that it threatens the integrity of the tank. For this reason, the tank and piping must be made of, or lined with, a material that is compatible with the substance stored in the tank (§280.32)).

SPILL AND OVERFILL PROTECTION

Even if an UST is properly designed and installed, and is equipped with corrosion protection, spills can occur during product transfer (i.e., when the tank is being filled or when liquids are being removed). These types of releases are usually due to human error, and as such, are largely preventable or controllable. The spill and overfill protection regulations consist of both general operating procedures and design standards. The general operating requirements consist of common-sense procedures, such as ensuring that there is enough room in the tank to receive a delivery of gasoline before the delivery is made, and watching the entire delivery to prevent spilling or overfilling. In addition, spills and overfills can be eliminated or minimized by installing special equipment. For example, catchment basins can contain small amounts of product that are spilled when the delivery hose is uncoupled from the fill pipe. Overfill protection devices either shut off delivery once the product has reached a certain level in the tank, or sounds an alarm that notifies the delivery driver that the tank is almost full.

All tank systems are subject to the general operating standards for spill and overfill control, found in §280.30. New tanks must have catchment basins and overfill protection devices when they are installed (§280.20(c)), while existing tanks must be upgraded to meet these design standards by December 22, 1998 (§280.21(d)). The only exception to these requirements are USTs that never receive product transfers of more than 25 gallons at a time; they do not have to meet the spill and overfill design standards.

LEAK DETECTION

All tanks and their associated piping are subject to the leak detection regulations of Part 280, Subpart D. For tanks, the owner or operator must choose one of a number of monthly monitoring schemes to ensure timely detection of a leak. While the regulations do not prescribe a specific method of release detection that must be used, §280.40(a)(3) establishes performance standards that any release detection method used must meet. There are two basic types of leak detection: external and internal. External leak detection involves monitoring nearby soil or groundwater for the presence of petroleum vapors or liquid. Examples of internal leak detection include interstitial monitoring, a system that involves monitoring the space between the two walls of a double-walled tank for the presence of liquids, and automatic tank gauging systems, where a gauge installed inside the tank monitors changes in product level.

Underground piping that routinely contains regulated substances is also subject to release detection standards. These requirements differ slightly from those for tanks as

they are tailored to the specific functions of piping. The release detection recordkeeping requirements, found in §280.45, include maintaining results of any sampling, testing, or monitoring, as well as maintaining documentation of all calibration, maintenance, and repair of release detection equipment.

2.4 SPECIAL REQUIREMENTS FOR CHEMICAL USTs

In addition to meeting the same requirements for installation, corrosion protection, and spill and overfill protection as petroleum USTs, new and existing USTs containing CERCLA hazardous substances, also known as chemical USTs, must meet special leak detection requirements.

NEW CHEMICAL USTs

New chemical USTs and their associated underground piping must have secondary containment and interstitial monitoring. A single-walled tank is the first, or "primary," containment. By enclosing a tank with a second wall, leaks can be contained and detected quickly before harming the environment. Acceptable methods of secondary containment include: (1) placing one tank inside of another tank or one pipe inside another pipe, (2) placing the UST system inside a concrete vault, or (3) lining the excavation zone around the UST system with a liner that cannot be penetrated by the chemical. Interstitial monitoring means having a leak detection device that can detect the presence of a leak in the confined space between the inner and outer barrier of the secondary containment system.

EXISTING CHEMICAL USTs

The secondary containment and interstitial monitoring requirements that apply to new chemical USTs do not apply to existing chemical USTs until December 22, 1998. Until then, owners and operators of existing chemical USTs can use any leak detection method found in §280.43 if the method chosen can detect the release of chemicals stored in the UST. After December 22, 1998, all existing chemical USTs must meet the leak detection requirements for new chemical USTs or close, unless they receive a variance from the regulating agency (§280.42). In addition, owners and operators of existing chemical USTs are not required to install corrosion protection and spill and overfill equipment until December 22, 1998.

2.5 RELEASE REPORTING, RESPONSE, AND CORRECTIVE ACTION

Part 280 also includes regulations that address release reporting, response, and corrective action requirements for petroleum and hazardous substance USTs. The Part 280, Subpart E, release reporting and Subpart F release response and corrective action regulations include procedures for investigating and confirming suspected releases,

reporting releases to the implementing agency, and steps for cleaning up releases to the environment. All UST owners and operators must be attentive to a variety of warning signals that indicate an UST may be leaking. These include evaluation of results of leak detection monitoring and testing, observation of any unusual operating conditions at the pump (such as erratic or overly slow product flow), and evidence of product leakage into the environment (e.g., the presence of free product in nearby surface water or soil). Upon observing such a warning signal, the owner or operator must immediately report the suspected leak to the implementing agency. The owner or operator must then determine if the suspected leak is an actual leak by conducting tightness testing of the entire UST system (the term tightness testing describes a variety of methods used to determine if a tank is leaking, most of which involve monitoring changes in product level or volume in a tank over a period of several hours). The owner or operator must also measure for the presence of contaminants in soil or groundwater and determine the source of the release if they observed any damage to the environment.

If the results of tank tightness testing and/or the site check indicate that no leak has occurred, then no further investigation is required. If, however, the results of these investigations indicate a release has occurred, the owner or operator must respond by controlling and cleaning up the release, and repairing or replacing any damaged equipment.

Response to a confirmed release is laid out in Part 280, Subpart F, and consists of a short-term and a long-term stage. The initial stage of the response consists of short-term actions to stop and contain the leak or spill, and steps to ensure that the leak or spill poses no immediate hazard to human health and safety by removing explosive vapors and fire hazards. The owner or operator must report the confirmed release to the implementing agency within 24 hours. The owner or operator must also remove as much product from the UST system as necessary to prevent any further release, begin to recover any free (released) product, and provide a report to the implementing agency that includes a description of the initial abatement actions taken, an assessment of the extent of contamination, and a plan on how they will clean up the release.

Based on this initial site characterization, the implementing agency will decide whether further action is warranted. Some leaks and spills will require additional, long-term attention to correct the problem. In these cases, the implementing agency will request a corrective action plan from the owner or operator that describes how they will respond to and clean up any contaminated soils and groundwater. The implementing agency then evaluates the plan to determine if it will adequately protect human health and the environment, taking into account such factors as the type of substance released, site-specific hydrogeology, and potential impacts on drinking water. Once the corrective action plan is approved, the owner or operator must implement the plan and report the results of the cleanup to the implementing agency.

UST owners and operators must also respond immediately to all spills and overfills by containing and cleaning up the released product. If more than 25 gallons of petroleum are released, or if the petroleum release causes an oily sheen on nearby surface water,

the owner or operator must immediately notify the implementing agency and begin corrective action in accordance with Part 280, Subpart F. Likewise, if a spill or overfill of a hazardous substance results in the release of a CERCLA reportable quantity, the owner or operator must report the release and commence corrective action. Any release below these quantities that cannot be cleaned up within 24 hours must also be reported to the implementing agency.

EPA encourages states to incorporate risk-based decision-making when implementing their corrective action programs. Also known as risk-based corrective action (RBCA), risk-based decision-making is a process that uses risk and exposure assessment methodology to help UST implementing agencies establish enforcement priorities. Because of the vast number of leaking USTs and the limited financial and human resources available to implement corrective action at these sites, risk-based decision-making is an important element in expediting assessments and cleanups at contaminated sites. It is also used to tailor the response to the level of risk posed by a particular site. For example, implementing agencies may use risk-based decision-making to categorize or classify sites, to aid in establishing cleanup goals, and to decide on levels of oversight of UST owners and operators.

UST SYSTEM REPAIR

In certain cases leaking tanks and piping can be repaired and put back in operation. If an owner or operator chooses to repair rather than replace a damaged pipe or tank, EPA requires the repair person to follow standard industry codes (such as codes established by API) for correct repair practices. Within 30 days of completion of the repair, the owner or operator must demonstrate that the tank or piping has been successfully repaired. This can be accomplished using a variety of methods, including internal inspection for tanks, and tightness testing for tanks and piping. Note that damaged metal piping cannot be repaired and must be replaced. Cathodically protected UST systems that are repaired must be tested within six months to ensure that the cathodic protection is working properly. The owner or operator must keep records of each repair as long as the UST is in service (§280.33).

2.6 OUT-OF-SERVICE USTs AND UST CLOSURE

If an UST is taken out of service for any period of time, the owner or operator must temporarily or permanently close the UST system, following the procedures laid out in Part 280, Subpart G. If the owner or operator plans to bring the tank system back into service at a later date, they may close the tank temporarily provided they continue to operate and maintain the corrosion protection system, and maintain the leak detection system if any product remains in the tank. The tank also continues to be subject to the release response and corrective action requirements discussed above. If the owner or operator takes the UST out of service for longer than three months, they must also leave the vent lines open and functioning, and cap and secure all other lines attached to the tank.

More stringent regulations apply if an UST system is temporarily closed for longer than 12 months. Tanks cannot be temporarily closed for this long unless they meet the requirements for new or upgraded tanks. If the tank does not meet these requirements, or if the owner or operator decides to discontinue using the tank altogether, they must permanently close the tank. Permanent closure involves a number of steps designed to ensure that the tank will pose no threats to human health or the environment after it is closed. These steps include notifying the implementing agency of the intent to close so that it can oversee the closure process, assessing the tank and surrounding area to determine if any releases have occurred, initiating corrective action to clean up any such releases, removing all liquids and accumulated sludges from the tank, and either removing the tank from the ground or filling it with an inert material such as concrete or sand.

In some cases, an owner or operator may decide to use a formerly regulated UST system to store a nonregulated substance. This is considered a change-in-service. Before making this change, the owner or operator must notify the implementing agency, empty and clean the tank, conduct a site assessment to determine if a release has occurred, and initiate corrective action if appropriate. For both tank closures and changes-in-service, the owner or operator must maintain results of the site assessment for at least three years, or mail the results to the implementing agency.

2.7 FINANCIAL RESPONSIBILITY

Environmental cleanups can be both costly and time consuming. In 1986, Congress directed EPA to develop regulations requiring petroleum UST owners and operators to demonstrate that they have the financial resources available to pay for the cleanup of any releases from their USTs and to compensate third parties for bodily injury and property damage caused by their leaking USTs. In essence, the financial responsibility regulations require UST owners and operators to certify that they have sufficient financial resources to pay for corrective action costs and lawsuits from injured third parties. Part 280, Subpart H, lays out the minimum financial coverage required and provides a number of different mechanisms by which an UST owner or operator can demonstrate compliance with these requirements.

APPLICABILITY

Currently, the financial responsibility regulations apply only to owners and operators of regulated petroleum USTs. EPA plans to develop financial responsibility requirements for chemical USTs in the future (53 FR 3818; February 9, 1988). Either the owner or the operator of the UST (if they are different individuals or firms) must demonstrate compliance with the financial responsibility requirements. It is the responsibility of the owner and operator to decide who will meet the requirements. If neither the owner or operator demonstrates financial responsibility, both can be held liable for costs incurred as a result of a release from the UST (§280.90(e)).

Federal and state governments and their agencies that own USTs are not required to demonstrate financial responsibility, since EPA considers them "permanent and stable institutions that have the requisite financial strength to cover the costs of taking corrective action and compensating third parties" (52 FR 12796; April 17, 1987). Local governments and Indian tribes, however, must, comply with the financial responsibility requirements. On the other hand, USTs that are in compliance with the applicable technical requirements and located on Indian lands are not required to demonstrate financial responsibility until December 22, 1998.

AMOUNT OF COVERAGE

There are two categories of financial responsibility coverage: "per occurrence" and "annual aggregate." Per occurrence means the amount of money that must be available to pay the costs from one leak. Annual aggregate is the total amount of financial responsibility coverage required to cover all leaks that occur in one year. For example, an owner or operator may be required to have per occurrence coverage of \$1 million and annual aggregate coverage of \$2 million. An UST owner or operator with this amount of coverage will have sufficient funds available to spend up to \$1 million twice a year to respond to any leaks. Alternatively, the owner or operator would be able to spend \$100,000 per leak 20 times in the year, or any other combination within the prescribed annual aggregate limits.

The minimum amount of coverage required depends on the type of business operated (petroleum marketers v. nonmarketers), the average amount of petroleum handled at the facility per month, and the number of tanks at the facility. A petroleum marketer is a facility at which petroleum is produced, refined, or sold (such as service stations and truck stops). All petroleum marketers must have per occurrence coverage of \$1 million. Nonmarketing facilities (examples include car dealerships and farms) must have per occurrence coverage of either \$500,000 or \$1 million, depending on the amount of petroleum handled by the facility per month, based on annual throughput. This figure is calculated by counting the total amount of product removed or dispensed from USTs at a facility over the course of the previous calendar year, and dividing by 12. For example, a facility with an annual throughput of 110,000 gallons handles 9,167 gallons per month. Nonmarketing facilities that handle 10,000 gallons or less per month must have per occurrence coverage of \$500,000. Nonmarketing facilities that handle more than 10,000 gallons per month must have per occurrence coverage of \$1 million.

The required amount of annual aggregate coverage depends on the number of tanks that are covered by a single financial assurance mechanism or combination of mechanisms. Mechanisms that cover more than 100 tanks must provide annual aggregate coverage of at least \$2 million, while mechanisms that cover 100 tanks or less must provide at least \$1 million in annual aggregate coverage. For example, if an insurance policy covers more than 100 tanks, the owner or operator must have annual aggregate coverage of at least \$2 million for this group of tanks. If the policy covers 100

or fewer tanks, the owner or operator must have annual aggregate coverage of at least \$1 million.

ALLOWABLE MECHANISMS

There are a variety of methods that petroleum UST owners and operators can use to demonstrate compliance with the financial responsibility requirements. These can be used singly or in combination, as long as the total amount of coverage equals or exceeds the minimum required.

Financial Test of Self-Insurance

Many large corporations, based on their financial strength, may be able to demonstrate that they have the assets or funds available to pay for costs incurred due to releases from their USTs. These firms may satisfy the financial responsibility requirements by passing the financial test of self-insurance. The test's conditions include a demonstration that the firm has a tangible net worth 10 times the required annual aggregate coverage. For example, a petroleum marketer with 450 tanks must have annual aggregate coverage of \$2 million, and so must have a tangible net worth of at least \$20 million in order to qualify for the financial test (§280.95).

Corporate Guarantee

The corporate guarantee allows a firm that is related to or has a substantial business relationship with the owner or operator of the UST to "guarantee" coverage for any costs incurred due to releases from the UST for which the owner or operator is unable to pay (§280.96). For example, a company that has a controlling interest in the owner or operator (i.e., a parent firm) can guarantee coverage for the daughter company. In order to qualify as a guarantor, the firm must demonstrate that it meets the financial test criteria of §280.95. An owner or operator that uses the corporate guarantee to meet the financial responsibility requirements must supplement it with a standby trust fund (see below).

Insurance Coverage

An owner or operator may demonstrate financial assurance by obtaining coverage through a private insurer, a process similar to obtaining car or health insurance, or by joining a risk retention group. A risk retention group (RRG) is an insurance company formed by businesses or individuals with similar risks to provide insurance coverage for those risks. To join an RRG, an owner or operator may be asked to make a one-time payment, called a capital contribution, and pay annual premiums thereafter (§280.97).

Surety Bond

A surety bond is a guarantee from a surety company that it will meet the obligations of the owner or operator in the event of failure to perform the necessary cleanup

activities or failure to pay someone else to perform them. Unlike an insurance policy, however, the use of a surety bond does not transfer the ultimate obligation to pay for the cleanup from the owner or operator to the surety company. Instead, the owners or operators using a surety bond must repay any amounts advanced under the surety. Any owner or operator that uses a surety bond to meet the financial responsibility requirements must also establish a standby trust fund in conjunction with it to ensure that the funds will be accessible and available (§280.98).

Letter of Credit

A letter of credit is a contract between three parties: the issuer (usually a bank), the owner or operator, and the implementing agency. By issuing a letter of credit, the issuer promises to pay a certain amount, as directed by the implementing agency, in the event that the owner or operator fails to meet an obligation to pay for a cleanup or compensate third parties for damages. Owners and operators must establish a standby trust fund in conjunction with a letter of credit (§280.99).

State-Required Mechanism

Some states that have not received approval for the federal UST program (see Section 2.10 of this module) have their own UST regulatory programs, including financial assurance requirements. Recognizing the potential for UST owners and operators in these states to be subject to both federal and state financial responsibility regulations, EPA included a provision in §280.100 that allows UST owners and operators to use a state mechanism in lieu of one of the Part 280, Subpart H, mechanisms. In order to be eligible for use on the federal level, these state-required mechanisms must provide a level of financial assurance equal to or greater than that provided by one of the federal mechanisms, and the Regional Administrator must approve their use.

State Financial Assurance Fund

Some states have established financial assurance funds that can be used by owners and operators of petroleum USTs located in their state (§280.101). Owners and operators can access these funds to help pay for the cleanup costs resulting from a release. Owners or operators may be required to pay an annual fee per tank in order to qualify for coverage by the state fund. Also, some state funds pay only for a portion of cleanup costs, require the payment of a deductible amount, have eligibility requirements such as proof of compliance with leak detection and recordkeeping requirements, and do not cover third-party liability costs.

Trust Fund

Under a trust fund, monies for corrective action and third-party liability costs are held and administered by an impartial third-party. In order to demonstrate compliance with the financial responsibility requirements using only this mechanism, the owner or operator must place the entire annual aggregate amount required into the fund. By

placing the money in an independent fund, the monies will not be commingled with the owner or operator's other assets, and so will always be available in the event a release occurs and a claim is made (§280.102).

USE OF FINANCIAL RESPONSIBILITY MECHANISMS

The UST regulations contain specific provisions about how the financial responsibility mechanisms are implemented. For example, the regulations address the use of standby trust funds in conjunction with the other mechanisms, the availability of alternative mechanisms to local governments, and the combination of mechanisms when demonstrating financial responsibility.

Standby Trust Fund

A standby trust fund cannot be used as a financial responsibility mechanism; rather, it is a depository instrument that an owner or operator must put in place when using a letter of credit, a surety bond, or a corporate guarantee. In the event that an owner or operator cannot pay for corrective action or liability claims, the implementing agency will direct that the UST financial responsibility money that has been set aside in a letter of credit, surety bond, or corporate guarantee be deposited into a standby trust fund. These funds are then held and administered by an impartial third party, such as a bank or other financial institution, ensuring that funds provided by the issuer of the letter of credit, surety bond, or corporate guarantee will be immediately available for use in an UST cleanup or third-party compensation. This is necessary because funds paid directly to EPA are deposited into the U.S. Treasury and require Congressional action to make them available for corrective action and liability costs. For example, if a release occurs at a facility where the owner has a letter of credit, and that owner or operator does not have the funding to pay for necessary cleanup, the issuer of the letter of credit will transfer funds into the standby trust fund rather than directly to the agency overseeing the cleanup. Consequently, monies necessary for the UST cleanup will be dispersed directly from the standby trust fund by an impartial third party, such as the bank administering the standby trust fund.

Local Governments

In the past, local government entities that own or operate USTs, such as municipalities, townships, and school districts, have had difficulty demonstrating compliance with the Part 280, Subpart H, financial responsibility requirements, since many of the financial assurance mechanisms were developed to meet the needs of the private sector. In response, EPA promulgated four additional options that local governments may choose from when demonstrating financial responsibility (58 FR 9026; February 18, 1993). They include a bond rating test (§280.104), a financial test (§280.105), and a guarantee (§280.106), as well as a dedicated fund (§280.107). These mechanisms are similar in intent to the corporate guarantee (§280.96) and the financial test of self-insurance (§280.95), but are tailored to meet the special needs of local governments rather than

private corporations. In essence, they allow financially capable entities the opportunity to self-insure, rather than obtaining insurance coverage from a private carrier.

Combinations of Mechanisms

Owners or operators can combine mechanisms to demonstrate UST financial responsibility. It is important to note, however, that if an owner or operator uses different mechanisms to demonstrate financial responsibility for different groups of tanks, then they must meet the annual aggregate coverage requirement for each group. For example, an owner of 300 tanks that uses an insurance policy for 140 tanks located in Massachusetts and a state fund for 160 tanks in Florida must have \$2 million annual aggregate coverage for each of the two mechanisms, for a sum of \$4 million. Conversely, if the same owner or operator were to use a single mechanism to cover all 300 tanks, they would need only \$2 million in annual aggregate coverage.

2.8 LENDER LIABILITY

Many UST owners and operators must secure loans from financial and other institutions to comply with environmental regulations, such as UST upgrading and maintenance requirements. These owners and operators often use the property on which the UST is located as collateral in order to secure the loan. Financial institutions historically have been reluctant to extend loans to UST owners and operators for fear of later incurring UST cleanup liability. For example, if a bank held property as collateral for a service station that later became bankrupt, the lender would take possession of the property, becoming the "owner" of the property and the tanks on it. Financial institutions feared that they would then be subject to the Part 280 regulations, including financial responsibility for corrective action and third-party liability. Until recently, this potential for lending institutions to be held liable for releases from USTs, known as "lender liability," greatly hampered the ability of UST owners and operators to secure the capital necessary to make tank improvements, upgrade, or comply with other requirements. The Part 280, Subpart I, lender liability regulations provide lenders with an exemption from all federal UST regulatory requirements provided that the lender, or secured creditor, does not participate in the management of the UST system. This means that the lender is exempt from corrective action requirements and liability for cleanup costs of contaminated property, both prior to and after foreclosure, as long as the lender does not engage in petroleum production, refining, or marketing; does not manage or operate the UST; and does not store petroleum in the UST after foreclosure.

2.9 LEAKING UNDERGROUND STORAGE TANK TRUST FUND

Congress created the Leaking Underground Storage Tank (LUST) Trust Fund in 1986 to provide state agencies with additional funds to oversee UST cleanups, and to provide money to clean up abandoned leaking USTs. Financed by an excise tax on motor fuels,

the LUST Trust Fund may be used if the financial resources of an owner or operator are not sufficient to pay for corrective action costs, if the owner or operator is unwilling or incapable of carrying out corrective action properly, or if the owner or operator cannot be identified. Most of the collected money is dispersed to states, where state officials use the funds for administration, oversight, and cleanup work. Congress last reauthorized the LUST Trust Fund in December 1990 for five years. While the tax authority has now expired, EPA anticipates that there are sufficient funds to last for 10 to 12 years (as of April 1995, \$1.44 billion had been collected).

2.10 STATE PROGRAMS

States play an important role in the administration of the UST program. Because of the size and diversity of the UST regulated community, states and local governments are in the best position to oversee USTs. Because Congress intended for states to take over the day-to-day administration of the UST program from the federal government, RCRA Subtitle I allows EPA to approve state UST programs to operate in lieu of the federal UST program if they are at least as stringent as the federal program and provide adequate enforcement. The regulations establishing the application and approval processes are found at 40 CFR Part 281.

In order to be approved, a state program must meet three requirements. First, the state program must set standards for eight performance criteria that are no less stringent than federal standards. These include the technical standards for UST system design, release detection, and upgrading, as well as release reporting and corrective action. Second, the program must contain provisions that ensure adequate enforcement of the UST regulations. This means that the state must have adequate legal authority to implement and enforce the regulations, including the authority to inspect records and sites, require monitoring and testing, and assess penalties. In some cases states will have to enact additional laws in order to have adequate authority. The program must also include opportunities for public participation in the state enforcement process. Finally, the state program must regulate at least the same universe of USTs as is covered by the federal program, although states may implement programs that are broader in scope than the federal program. For example, a state may choose to regulate all heating oil tanks, even though the federal UST program excludes tanks used for storing heating oil for consumptive use on the premises where stored. In such cases, EPA does not review or approve the portion of the program that is broader in scope than the federal program. EPA can, however, approve requirements that are more stringent than the federal program. For example, a state may be authorized by EPA to implement release detection requirements that are more stringent than those contained in Part 280.

Because state programs operate in lieu of the federal program, owners and operators in states that have an approved UST program do not have to deal with two sets of statutes and regulations that may be conflicting. Once their programs are approved, states have the lead role in UST program enforcement. On the other hand, states without formal

EPA approval can have agreements with the Agency that gives the state a lead role in implementing certain aspects of the UST program.

Currently 22 states have approved UST programs. For states without approved programs, EPA works in conjunction with state officials to enforce the federal UST regulations. These states may have Memoranda of Agreement with their EPA Regional Office which allow them to implement specific parts of the UST regulations on behalf of EPA. The following table lists which states and U.S. territories have final approval for their UST programs.

Table 2
STATE UST PROGRAM APPROVAL STATUS

Region	States With Final Approval for UST Program	States Without Final Approval for UST Program
I	CT, RI, MA, ME, NH, VT	
II		NJ, NY, Puerto Rico, Virgin Islands
III	MD	DC, DE, PA, VA, WV
IV	GA, MS	AL, FL, KY, NC, SC, TN,
V		IL, IN, MI, MN, OH, WI,
VI	AR, LA, NM, OK, TX	
VII	IA, KS	NE, MO
VIII	MT, ND, SD, UT	CO, WY
IX	NV	American Samoa, AZ, CA, Guam, HI, Northern Mariana Islands
X	WA	AK, ID, OR

