

RCRA, Superfund & EPCRA Hotline Training Module

Introduction to:

Tanks

(40 CFR Parts 264/265, Subpart J)

Updated October 1999

DISCLAIMER

This document was developed by Booz Allen & Hamilton Inc. under contract 68-W0-0039 to EPA. It is intended to be used as a training tool for Hotline specialists and does not represent a statement of EPA policy.

The information in this document is not by any means a complete representation of EPA's regulations or policies. This document is used only in the capacity of the Hotline training and is not used as a reference tool on Hotline calls. The Hotline revises and updates this document as regulatory program areas change.

The information in this document may not necessarily reflect the current position of the Agency. This

RCRA, Superfund & EPCRA Hotline Phone Numbers:

National toll-free (outside of DC area)	(800) 424-9346
Local number (within DC area)	(703) 412-9810
National toll-free for the hearing impaired (TDD)	(800) 553-7672

The Hotline is open from 9 am to 6 pm Eastern Time,
Monday through Friday, except for federal holidays.

TANKS

CONTENTS

1. Introduction	1
2. Regulatory Summary	2
2.1 Applicability	2
2.2 Design Requirements	3
2.3 Operating Standards	11
2.4 Inspections	12
2.5 Release Response	13
2.6 Closure	14
2.7 Regulations for Special Wastes	15
2.8 Waste Analysis and Trial Tests	16
3. Special Issues.....	17
3.1 Underground Storage Tank Program	17
3.2 Tanks Holding Newly Listed Wastes	17
3.3 Air Emission Standards	17

1. INTRODUCTION

Tanks are widely used for storage or accumulation of hazardous waste because they can accommodate huge volumes, sometimes in the tens of thousands of gallons. Tanks are also used for the treatment of hazardous waste because of their structural strength and versatility. Tanks, when used to contain hazardous waste at treatment, storage and disposal facilities (TSDFs), must be in compliance with the regulations set forth in 40 CFR Part 264/265, Subpart J. Generators using tanks as primary management units for accumulating hazardous wastes also must follow the interim status tank regulations in Part 265. The extensive use of tanks at TSDFs and facilities generating waste means there is a huge regulated community that must comply with the standards for hazardous waste tanks.

After completing this module, you will be able to explain why and how Subpart J regulations apply to tanks holding hazardous waste. Specifically, you will be able to:

- Identify, based on tank contents and operation, tanks that are regulated under Part 264/265, Subpart J
- Define specific terms pertaining to hazardous waste tanks, and provide accurate CFR or Federal Register citations
- Distinguish "new tanks" from "existing tanks" and identify how this status affects applicable regulations
- Discuss secondary containment requirements for liners, vaults, and double-walled tanks, as well as secondary containment for ancillary equipment
- Identify which of the hazardous waste tank requirements were promulgated under the Hazardous and Solid Waste Amendments (HSWA) and non-HSWA authority and explain how each applies in authorized and unauthorized states.

2. REGULATORY SUMMARY

In addition to the general facility operating requirements set out in Part 264/265, Subparts A through E, hazardous waste management facilities must comply with unit-specific regulations set out in Part 264/265, Subpart J. The tank regulations were promulgated under two different sets of rulemakings. The original hazardous waste tank regulations were promulgated on May 19, 1980, for interim status tank systems, and on January 12, 1981, for permitted hazardous waste tank systems. These rulemakings applied only to aboveground tank systems and underground tanks that could be entered for inspection. On July 14, 1986, new regulations were promulgated for underground hazardous waste tanks that could not be entered for inspection, broadening the regulatory scope of the program under a HSWA mandate (§3004(w)). The 1986 regulations also required that new tank systems be equipped with an approved leak detection system, addressing the HSWA requirement in §3004(o)(4).

With the new regulations, EPA significantly altered the hazardous waste tank requirements in Subpart J of Part 264/265. Currently, the key elements of the hazardous waste tank program focus on:

- Proper installation, operation, and inspection of hazardous waste tank systems
- Maintaining the integrity of the primary containment system
- Secondary containment and monitoring to detect leaks from the primary containment vessel
- Adequate response to releases of hazardous wastes
- Proper closure and post-closure care of tank systems.

Each of these elements will be discussed in further detail in this module. As each section is addressed, bear in mind that many of the relevant terms have regulatory definitions under §260.10. This module will periodically note often-used terms with regulatory definitions, but not all are cited.

2.1 APPLICABILITY

Unless exempted from regulation under §§264/265.1, owners and operators of treatment or storage facilities with hazardous waste tank systems are subject to regulation under Part 264/265, Subpart J. Generators accumulating hazardous waste in accumulation tank systems are subject to the interim status provisions in Part 265,

Subpart J (see the module entitled Generators). Tank systems consist of three parts: the tank itself, the ancillary equipment (i.e., any equipment which conveys waste to and from the tank), and any containment system.

Tanks are simply receptacles for holding hazardous waste. The distinguishing feature of tanks is that they are stationary while in use. Tanks must also be constructed of man-made materials such as metal or fiberglass, rather than dirt, distinguishing tanks from land-based units, such as surface impoundments. Sumps, which are essentially man-made reservoirs built into the ground and designed to capture waste from troughs or trenches, can qualify as tanks. Tanks or sumps are often used to capture waste from drip pads. These tanks must also comply with the standards under Part 264/265, Subpart J.

2.2 DESIGN REQUIREMENTS

The design requirements for hazardous waste tanks vary according to whether a tank is new or existing and whether it is in interim status or fully permitted. For most hazardous waste units, the terms "existing" and "new" normally correspond directly to the terms "interim status" and "permitted." With hazardous waste tanks, however, this is not the case. The distinction between existing and new tanks does not determine whether a tank is regulated under Part 264 or Part 265, but instead indicates when secondary containment systems should be installed. EPA uses these terms separately because two different sets of regulations significantly affected hazardous waste tanks. Each set needed to distinguish between tank systems in existence prior to the effective date and new tank systems installed subsequent to the effective date.

As discussed in the summary, the Part 264/265, Subpart J, requirements were originally promulgated in a May 19, 1980, Federal Register (45 FR 33200) for interim status tanks and January 12, 1981, (46 FR 2831) for permitted tanks. Tanks holding hazardous waste before the effective date of those regulations were designated as interim status tanks. All other tanks needed a permit to hold hazardous waste. The regulations for hazardous waste tanks were significantly amended in a July 14, 1986, Federal Register (51 FR 25422). Tanks holding hazardous waste before the effective date of the amendments were designated as existing tanks. New tanks were defined as tanks that started holding hazardous waste after the effective date of the July 14, 1986, rule. New tanks include reinstalled and replacement tank systems or components. Accordingly, separate requirements for existing and new tanks are discussed in both the permitted and interim status tank regulations.

SYSTEM INTEGRITY: ASSESSMENT OF EXISTING TANKS

Most existing tanks (i.e., tanks in existence on or before July 14, 1986) do not have to meet the technical standards for new tanks until the tank system is 15 years old. In order to ensure the tank's structural integrity in the interim, §§264/265.191 require all existing tanks without secondary containment to be assessed for leakage and overall fitness for use. All existing systems must have been assessed by January 12, 1988. Tanks that become newly regulated after July 14, 1986 (e.g., tanks holding newly listed wastes), must be assessed within 12 months from the date the tank became regulated.

Integrity assessments of existing tanks must verify that the tank was designed and maintained to contain the wastes stored or treated therein without failing, collapsing, or rupturing. Factors to be considered include original design standards, the age of the unit, corrosion protection measures in place, compatibility of the unit with the hazardous wastes involved, and results of leak tests or inspections of the tank. The written assessment results must be certified by an independent, qualified, registered, professional engineer and placed in the facility's file (§§264/265.191(a)).

NEW TANK STANDARDS

In order to ensure that a tank system can hold hazardous waste for its intended lifetime, EPA subjects all new tank systems and components to the design and installation requirements in §§264/265.192. Corrosion protection measures are also mandatory for certain new tank systems and components. Remember, the phrase "new tank system" includes reinstalled and replacement tank systems or components.

INSTALLATION

The tank system or component must be designed with an adequate foundation, structural support, and corrosion protection to prevent collapse, rupture, or failure of the unit. Seams and connections must be sealed adequately and pressure controls must be installed if necessary to prevent tank rupture or explosion. Owners and operators must submit a written design assessment attesting to the structural integrity of the tank. The design assessment must be reviewed and certified by an independent, qualified, registered, professional engineer and must be kept on site (§§264/265.192).

Because even the most flawlessly designed tanks can fail if installed improperly, new tank systems must be inspected prior to use by an independent qualified expert to ensure that no damage to the integrity of the tank occurred during installation (§§264/265.192(b)). Should damage occur during the course of installation, the owner and operator must correct the problem before the installation is complete or the system is in use. All new tanks and ancillary equipment must be tested for tightness, and any leaks discovered must be remedied before the tanks are covered, enclosed, or placed in use.

CORROSION PROTECTION

New tank systems or components made wholly or partly of metal must be designed and installed with adequate corrosion protection if the system will be in contact with soil or water (§§264/265.192(f)). Pursuant to this requirement, the written design assessment must include site-specific data on various factors that can affect the corrosion rate of the tank (e.g., soil moisture content and pH), as well as measures taken to protect the system against corrosion (§§264/265.192(a)(3)(i) and (ii)). Use of one or more of the following corrosion protection methods is required:

- Construction materials that are corrosion-resistant
- Corrosion-resistant coating in combination with cathodic protection
- Electrical isolation devices.

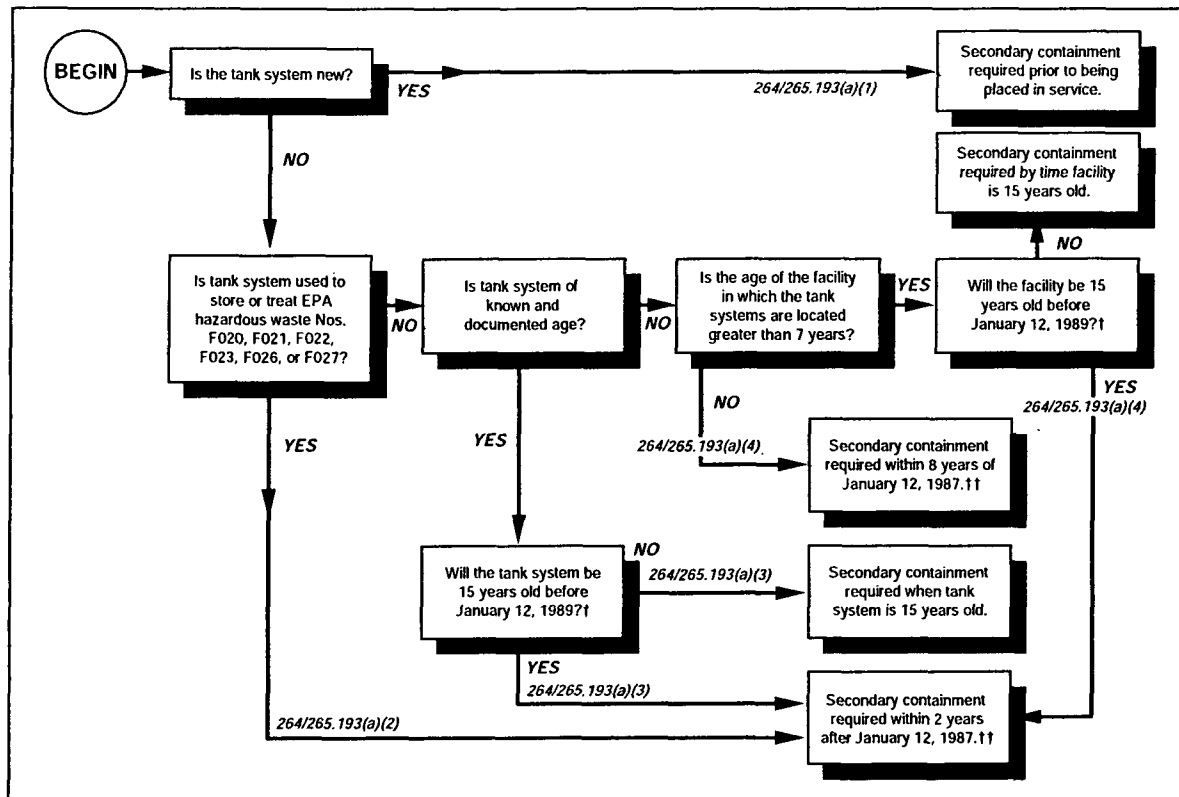
Cathodic protection prevents tanks from corroding by reversing the naturally occurring electric current in the ground that can degrade tank walls. Two examples of cathodic protection are sacrificial anodes and impressed current. Sacrificial anodes are pieces of metal that are more electrically active than the steel tank. Because they are more electrically active, the current corrodes the pieces of metal rather than the steel tank. An impressed current protection system introduces an electric current into the ground through a series of anodes that are not attached to the underground tank. Because the electric current flowing from these anodes to the tank system is greater than the corrosive current attempting to flow from the tank system, the anodes are corroded rather than the tank. Regardless of the protection method used, the installation of a corrosion protection system that is field-fabricated must be supervised by an independent corrosion expert to ensure proper installation (§§264/265.192(f)).

SECONDARY CONTAINMENT AND LEAK DETECTION

Secondary containment and leak detection requirements were added to Part 264/265, Subpart J as part of the revisions promulgated July 14, 1986 (51 FR 25422). Secondary containment is an emergency short-term storage system designed to hold releases from hazardous waste tanks. Secondary containment and leak detection systems allow for detection of leaks from the primary or inner tank while providing a secondary barrier to contain releases and prevent them from entering the environment. Such systems also provide protection from spills caused by operational errors, such as overfilling.

Under §§264/265.193(a), all new hazardous waste tank systems must have secondary containment and leak detection before being placed in service. Secondary containment and leak detection for existing tanks is to be phased in over time, according to the schedule in Figure 1, based on the age of the tank and its hazardous waste contents.

Figure 1
SCHEDULE FOR RETROFITTING EXISTING TANKS
WITH SECONDARY CONTAINMENT
 (adapted from OSWER Directive 9483.00-2)



† If a material stored becomes a hazardous waste subsequent to January 12, 1987, the date that it becomes hazardous (the effective date) plus two years should be used in place of January 12, 1989 (40 CFR §264/265.193(a)(5)).

†† If a material stored becomes a hazardous waste subsequent to January 12, 1987, the date that it becomes hazardous (the effective date) should be used in place of January 12, 1987.

SECONDARY CONTAINMENT AND LEAK DETECTION STANDARDS

Secondary containment systems must be designed, installed, and operated so that no waste is released to the surrounding soil, groundwater, or surface water. The construction material or liner must be compatible with the waste to be stored or treated in the tank and must be capable of containing accumulated material until it is promptly removed. Such accumulations should be removed within 24 hours, or when such removal cannot be accomplished in a 24-hour period, within another time frame specified by the EPA Regional Administrator. The secondary containment system, like the tank itself, must have sufficient structural strength to prevent failure, and the foundation must be designed to resist failure due to normal movement of the surrounding soils (i.e., settlement, compression, or uplift).

As part of the secondary containment system, hazardous waste tanks must be equipped with a leak detection system capable of detecting failure in either the primary or

secondary containment structures. The presence of accumulated materials in the secondary containment system must be detected by such a system within 24 hours or at the "earliest practicable time" as set by the Regional Administrator on a case-by-case basis (§§264/265.193(c)(3)). Thermal conductivity sensors, electrical resistivity sensors, and vapor detectors are commonly used as leak detection devices. Daily visual inspections may also be used where tanks and tank components are physically accessible.

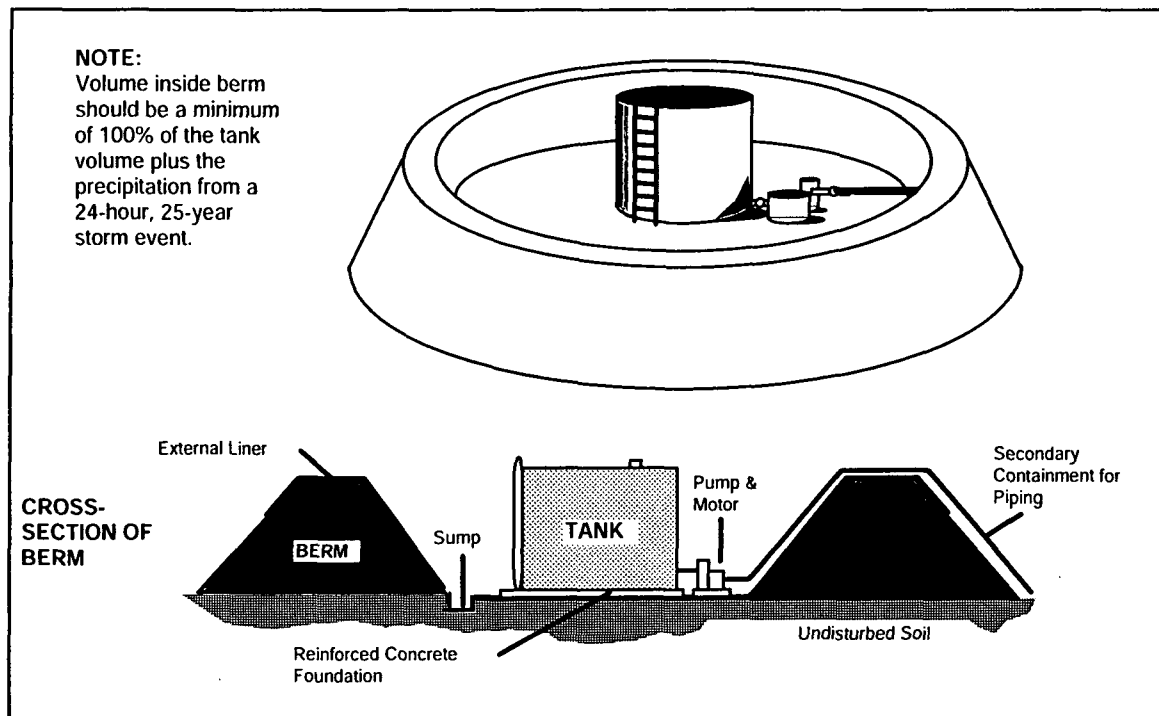
SECONDARY CONTAINMENT DEVICES

In addition to stipulating overall system standards, the hazardous waste tank regulations mandate the use of one of four specific options in meeting the secondary containment requirements discussed above. The first option is the use of an external liner which is designed to work in conjunction with a barrier. This combination should be able to contain releases in a specific area and hold those releases until the containment area is cleaned. The next option is the use of a vault, an underground area with specific design requirements to contain releases that are not visible to the operator. The use of a double-walled tank (or a "tank within a tank") is the option that is considered to be the most protective of releases of hazardous waste outside the outer containment area. The fourth option, use of an alternative equivalent device, is subject to the approval of the Regional Administrator, as provided in §§264/265.193(g). Procedures to be followed in requesting such a variance from the secondary containment requirements are discussed later in this module.

External Liner

An external tank liner (Figure 2) is designed to provide protection against lateral or vertical migration of leaking waste by completely surrounding the unit with an impermeable material. A liner can be made with many different types of materials such as synthetic membranes, concrete, clay, bentonite, soil, cement, or asphalt. The exact type of material or combination of materials used depends on site conditions, waste characteristics, and climate. The external liner system must be large enough to contain 100 percent of the capacity of the largest hazardous waste tank within its boundary. Because it can increase the rate of tank corrosion, stormwater run-on and infiltration should be minimized by using dikes and diversion ditches. If stormwater infiltration is not controlled in this manner, the system must have enough additional holding capacity to contain precipitation resulting from a 25-year, 24-hour storm event. External liner regulations are found in §§264/265.193(e)(1).

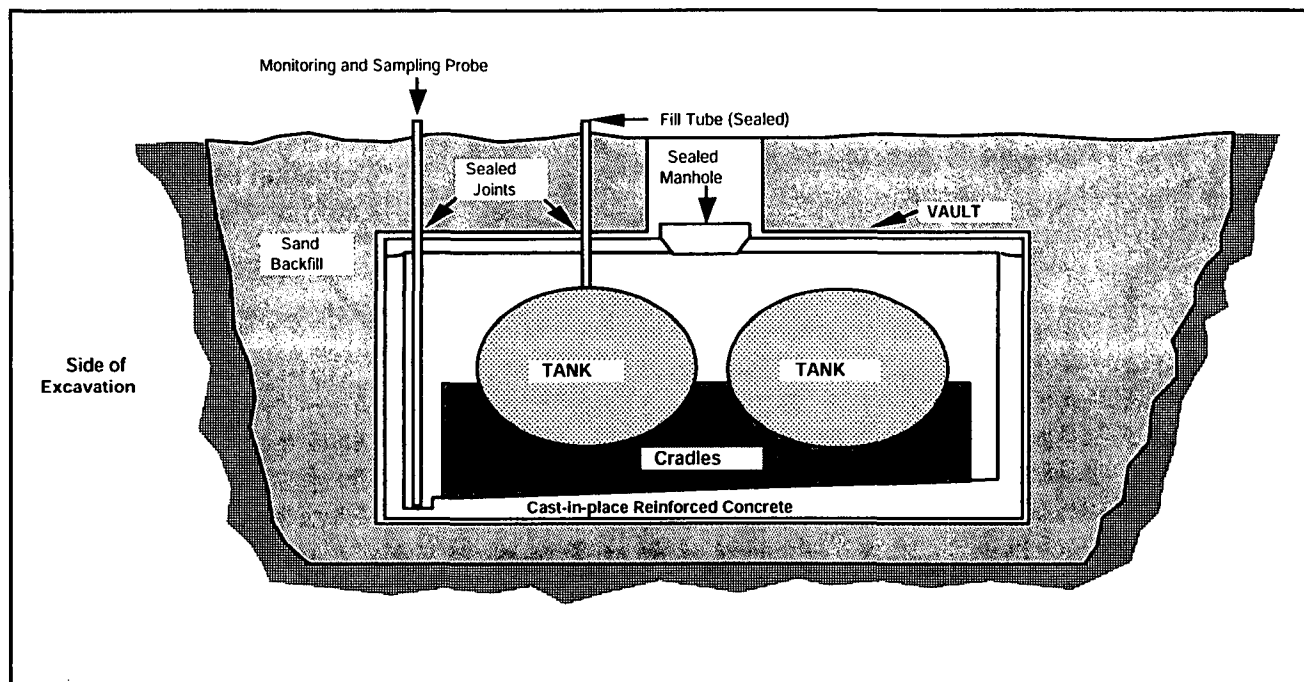
Figure 2
ABOVEGROUND TANK WITH EXTERNAL LINER
 (adapted from OSWER Directive 9483.00-1)



Vault

In a vault system (Figure 3), the hazardous waste tank rests in an underground chamber usually constructed with concrete floors and walls and an impermeable cover. A closed aboveground building that houses a hazardous waste tank also may be considered to be a vault for purposes of secondary containment. Because of the inherently porous nature of concrete, the primary building material for vaults, these units must have a waterproof exterior and be lined inside with a leak-proof sealant. To further minimize contact with moisture, tanks inside vaults should rest on cradles or saddles, rather than on the vault floor. Tanks in these units may also be surrounded with backfilled earthen materials. Although filling the vault with soil precludes visual inspection of the hazardous waste tanks, the backfill can lend structural support to the unit and tanks and prevent the explosion of any ignitable wastes that may leak from the tank. Vault requirements are found in §§264/265.193(e)(2).

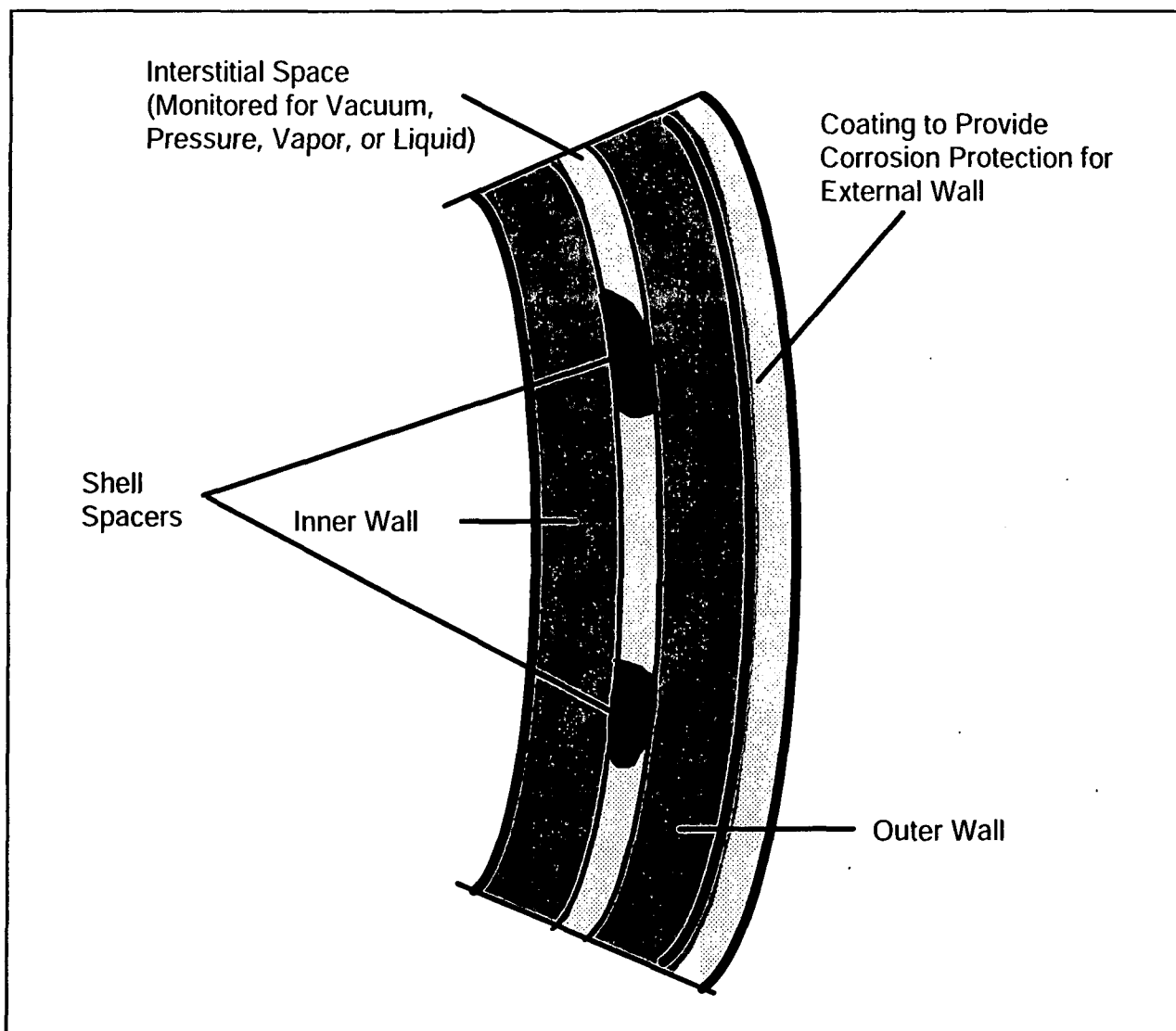
Figure 3
TANKS IN A VAULT
 (adapted from OSWER Directive 9483.00-1)



Double-walled Tank

A double-walled tank (Figure 4) is best described as one tank completely enclosed inside another with a leak detection monitoring system installed between the two (in the interstitial space). The most common construction materials for this secondary containment option include corrosion-protected metal, epoxy, fiberglass, or metal with a synthetic membrane "wrap." Such a containment system must be designed and constructed so that any release from the inner tank is completely contained by the outer shell until the accumulated materials are removed (§§264/265.193(e)(3)). As discussed previously, the leak detection system must be capable of detecting leak activity between the tanks within 24 hours, or at the "earliest practicable time" as determined by the Regional Administrator. Double-walled tank specifications are found in §§264/265.193(e)(3).

Figure 4
CROSS-SECTION: DOUBLE-WALLED TANK
(adapted from OSWER Directive 9483.00-1)



ANCILLARY EQUIPMENT

All ancillary equipment must have full secondary containment in addition to the tank itself (§§264/265.193(f)). Examples of secondary containment for ancillary equipment are a trench, jacketing, or double-walled piping. When inspected daily, however, the following equipment is exempt from this requirement:

- Aboveground piping (not including flanges, joints, valves, and connections)
- Welded flanges, welded joints, and welded connections (including piping that is fused together with solvent cement or heat fusion)

- Seal-less or magnetic coupling pumps
- Aboveground pressurized piping systems with automatic shut-off devices.

VARIANCES AND EXCEPTIONS

A variance from the secondary containment regulations can be obtained for certain tank systems. There are two types of variances: technology-based and risk-based. A technology-based variance must demonstrate that the release of hazardous waste or constituents will be prevented by alternative designs, operating practices, and location characteristics equally as well as by the secondary containment options provided (§§264/265.193(g)(1)). A risk-based variance must demonstrate that there would be no potential hazard to human health or the environment if a release were to reach groundwater or surface water. This variance is not available to new underground tank systems (§§264/265.193(g)(2)). Administrative procedures for requesting a variance are found in §§264/265.193(h).

Alternatively, some tanks may automatically qualify for an exemption from secondary containment and leak detection requirements. These exemptions would apply to:

- Tanks containing no free liquids that are situated inside a building with an impermeable floor (§§264/265.190(a))
- Tanks, including sumps, that serve as part of a secondary containment system (§§264/265.190(b)).

2.3 OPERATING STANDARDS

Hazardous waste tanks must be operated so that releases will be minimized or eliminated. Hazardous wastes or treatment reagents must not be placed in a tank system if they can cause any part of the system to fail (§§264/265.194). Spills or overflows from the tank or secondary containment system must be prevented by using, at a minimum:

- Spill prevention controls such as check valves
- Overfill prevention controls such as high level alarms and automatic feed cutoffs
- Sufficient freeboard in uncovered tanks to prevent overflow due to wave or wind action or precipitation. Freeboard is the vertical distance between the top of a tank and the surface of the waste in the tank.

2.4 INSPECTIONS

In order to verify that hazardous waste tanks and components are operated and maintained in satisfactory condition, tank systems must be routinely inspected. Properly conducted inspections should minimize the probability of accidental releases into the environment and contribute to safe working conditions in and around the storage area. To meet these objectives, inspections must thoroughly identify leaks, deterioration, corrosion, or structural fatigue in any portion of the tank or system components. Secondary containment systems and cathodic protection devices also require regular inspection. In addition to visual assessment of the tank system, required inspections must incorporate analysis of any data received from leak detection monitors and tightness or assessment tests. Documentation of all hazardous waste tank inspections should be kept in the facility operating record (§§264.195(d)/265.195(c)). Owners and operators must inspect tank systems at different levels of frequency depending on whether the system has secondary containment and the portion of the tank system of concern. Table 1 outlines the inspection requirements for tank systems with full secondary containment systems (§§264/265.195). Table 2 outlines the inspection requirements for tank systems without secondary containment (§§264/265.193(i)).

Table 1
INSPECTION REQUIREMENTS WITH FULL SECONDARY CONTAINMENT
 (adapted from OSWER Directive 9483.00-1)

Regulation	Inspection Requirement	Time Frame
§264.195(a) §265.195(a)(1)	Overfill controls	Develop schedule and procedures for permitted tanks Each operating day* for interim status
§§264.195(b)(1) & (2) §§265.195(a)(2) & (3)	Visual inspection of aboveground portion of the tank to detect corrosion or releases Analysis of monitoring and leak detection data (pressure or temperature gauges, monitoring wells, and leak detection devices)	Each operating day*
§264.195(b)(3) §265.195(a)(4)	Construction materials and externally accessible portions of tank and secondary containment system to detect erosion or signs of releases (e.g., wet spots, dead vegetation)	Each operating day*
§264.195(c)(1) §265.195(b)(1)	Proper operation of cathodic protection system	Within six months of initial installation and annually thereafter
§264.195(c)(2) §265.195(b)(2)	Sources of impressed current	Bimonthly

*In a verbal clarification from the Agency, "each operating day" has been defined as "every day the tank is in operation (i.e., storing or treating hazardous waste) and not necessarily just on days the facility is open for business."

Table 2
INSPECTION REQUIREMENTS WITHOUT FULL SECONDARY CONTAINMENT
(adapted from OSWER Directive 9483.00-1)

Regulation	Inspection Requirements	Time Frame
§264.193(i)(1) §265.193(i)(1)	For unenterable underground tanks: A leak test that meets the requirements of §264.191(b)(5), or another method as approved by the EPA Regional Administrator	Annually
§264.193(i)(2) §265.193(i)(2)	For enterable underground tanks: A procedure to conduct a leak test that meets requirements in §264.191(b)(5), or have the overall condition of the tank system assessed by an independent, qualified, registered, professional engineer	On a schedule to be approved by the Regional EPA Administrator for permitted tanks Annual for interim status tanks
§264.193(i)(3) §265.193(i)(2)	For ancillary equipment: A leak test or other integrity assessment as approved by the Regional Administrator	Annually
§264.193(i)(4) §265.193(i)(3)	A record of the results of all the above assessments must be maintained on file at the facility	
§264.193(i)(5) §265.193(i)(4)	Tank systems found to be leaking or unfit for use must comply with the §§264/265.196 requirements: "Response to leaks or spills and disposition of leaking or unfit-for-use tank system"	Immediately

2.5 RELEASE RESPONSE

A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, must be taken out of operation immediately, and the owner and operator must follow some straightforward requirements. First, the owner and operator must stop the flow of waste into the tank and inspect the system to determine the cause of the release (§§264/265.196(a)). Next, any waste remaining in the tank must be removed from the tank or secondary containment system within 24 hours or at the "earliest practicable time" (§§264/265.196(b)). To prevent further migration of any releases to the environment, the owner and operator must also remove and properly dispose of any contaminated media (§§264/265.196(c)).

Unless the release is exempted under §§264/265.196(d)(2), the owner and operator must notify the Regional Administrator or National Response Center and submit a follow-up written report to the Regional Administrator within 30 days (§§264/265.196(d)(3)). The

tank must then be repaired or equipped with secondary containment in accordance with the regulations summarized in Table 3, or close the tank system so that it can no longer be used (§§264/265.197). If any of the repairs are major, they must be certified by an independent, qualified, registered, professional engineer and this certification must be submitted to the Regional Administrator (§§264/265.196(f)).

Except for the notification and reporting requirements of §§264/265.196(d), these procedures apply even if a release has been contained by a tank system's secondary containment.

Table 3
REQUIRED RESPONSES TO TANK SYSTEM RELEASES
(adapted from OSWER Directive 9483.00-1)

Type of Release	Required Actions	Citation
Spill with no damage to secondary containment	Remove released waste and repair, if necessary	§§264/265.196(e)(2)
Leak from tank system to secondary containment	Repair tank system	§§264/265.196(e)(3)
Aboveground leak from tank system with no secondary containment	Repair tank system and implement visual inspection. Note: Replaced components qualify as new tank system components regulated under §§264/265.192 and .193	§§264/265.196(e)(4)
Underground or inaccessible leak from tank system with no secondary containment	Repair tank system and install secondary containment for the entire component, per §§264.192 and 264.193 requirements	§§264/265.196(e)(4)
Leak from secondary containment	Repair or replace secondary containment. New components must meet §§264.192 and 264.193 requirements	51 <u>FR</u> 25456; July 14, 1986
Leak from tank system secondary containment requiring major repair	Repair tank system or secondary containment, obtain certification as appropriate and adequacy from an independent, qualified, registered, professional engineer	51 <u>FR</u> 25456; July 14, 1986

2.6 CLOSURE

Whenever possible, a storage or treatment tank system must be "clean closed" by removing or decontaminating all waste residues, contaminated containment system

components, contaminated soils, and contaminated structures and equipment. A clean-closed system has no post-closure responsibilities, but the general closure and financial responsibility requirements in Part 264/265, Subparts G and H, must still be met.

If clean closing is not an option, an owner and operator can use the option of leaving contamination in place. If this occurs, there must be a plan for taking care of the remaining waste for a number of years after closure (known as "post-closure"). Because this concept of leaving the waste in place is already covered in the regulations for landfills (i.e., units that always leave waste in place), EPA defers post-closure regulation for tanks to the landfill regulations (§§264/265.197(b)). All requirements for landfills in Subparts G and H would apply, as well as the specific requirements for closure of landfills in Subpart N. (For more information about closure and post-closure, see the module entitled Closure and Post-Closure.)

If a tank system does not have secondary containment and has not been granted a variance, it is considered to be less protective against a release to the environment. EPA therefore requires the facility to develop a plan for clean closing the tank system, as well as a plan for closing the unit as if it were a landfill. In addition, the facility must show that it has sufficient funds to close the tank in either instance. Such closure plans and financial assurance requirements are discussed in more detail in other training modules.

2.7 REGULATIONS FOR SPECIAL WASTES

Owners and operators storing ignitable or reactive wastes are subject to special management practices designed to prevent accidental combustion or explosion of these wastes. Owners and operators of facilities handling ignitable or reactive wastes must comply with the following requirements:

- The owner and operator comply with general requirements for handling these special wastes (§§264/265.17(b))

or

- The waste is protected from any material or condition that could cause it to ignite or react

or

- The tank is used only in emergencies.

When ignitable or reactive wastes are stored in tank systems, an adequate buffer zone must be maintained between any such tank system and any public ways, streets, alleys, or adjoining property. The buffer zone must comply with all

applicable sections of the National Fire Protection Association's Flammable and Combustible Liquids Code (1977 or 1981 editions only).

Wastes or materials that are incompatible with one another cannot be combined in the same tank, nor can an incompatible waste be placed in a tank that has not been decontaminated after prior use, unless the special precautions in §§264/265.17(b) have been taken (§§264/265.199). Examples of potentially incompatible wastes are provided in Appendix V of Part 264/265.

2.8 WASTE ANALYSIS AND TRIAL TESTS

Owners and operators of interim status hazardous waste tanks must perform additional waste analysis and trial tests beyond what is required for all treatment, storage, and disposal facilities (§265.200). Specifically, when there is a substantial change in the waste stored or treatment process conducted in an interim status tank system, the owner and operator must:

- Conduct waste analyses and trial treatment or storage tests

or

- Have documentation on similar waste stored or treated under similar conditions to those proposed, indicating that the proposed conditions will not cause any part of the system to rupture, leak, corrode, or otherwise fail.

3. SPECIAL ISSUES

3.1 UNDERGROUND STORAGE TANK PROGRAM

Separate from the hazardous waste tank program and regulations, 40 CFR Part 280 sets forth requirements pursuant to Subtitle I of HSWA for underground storage tanks (USTs). Tanks regulated under Part 280 contain "regulated substances," which are defined in §280.12 to include petroleum products and CERCLA hazardous substances. The primary distinction between the two regulatory sections is based on tank content (hazardous wastes vs. regulated substances). Program requirements for tanks vary significantly between Part 264/265 and Part 280. Although both sets of regulations govern tank systems, always keep in mind that tanks holding hazardous wastes will be subject to the provisions of RCRA Subtitle C (Part 264/265) rather than Subtitle I (Part 280). Beginning your analysis of every issue or question concerning tanks with this step will enable you to distinguish tanks that are regulated under Subpart J of Part 264/265 from those that fall under the purview of the Part 280 regulations. See the module entitled Underground Storage Tanks for a detailed discussion of the UST program.

3.2 TANKS HOLDING NEWLY LISTED WASTES

As new hazardous wastes are identified, tanks holding those wastes will become newly subject to the Part 264/265, Subpart J, regulations and must be retrofitted to meet the current design and operating standards for tanks and secondary containment. These tanks, regardless of the installation date, would be classified as new tanks, but would fall into interim status. Until the facility receives a final RCRA hazardous waste tank permit, the tanks would be regulated under Part 265, Subpart J, and would be subject to the secondary containment retrofitting timeframes specified in the regulations and in Figure 1. Nevertheless, tanks containing newly regulated hazardous wastes will always have a minimum of two years from the date the waste became hazardous (the effective date) to install secondary containment for the tank (§§264/265.193(a)(5)).

3.3 AIR EMISSION STANDARDS

On December 6, 1994, (59 FR 62896), EPA published a final rule which promulgated air emission standards for containers, tanks, and surface impoundments at TSDFs and large quantity generator sites. This rule, as amended by the November 25, 1996, Federal Register (61 FR 59932), requires hazardous waste tanks to comply with Part 264/265, Subparts AA, BB, and CC (§§264.200 and 265.202). EPA also amended this rule in a December 8, 1997 Federal Register (62 FR 64636). (See the module entitled Air Emission Standards for more details about the Subpart AA, BB, and CC requirements.)