

CHAPTER 16

STORAGE TANKS

16-1 Scope

This chapter provides information and guidance applicable to the regulation of storage tanks (STs). This includes both underground storage tanks (USTs) and aboveground storage tanks (ASTs). It includes those containing petroleum products and/or hazardous substances (HS) at Navy shore facilities within the United States, the Commonwealth of Puerto Rico, U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Marianas Islands. Chapter 18 describes responsibilities and requirements pertaining to Navy installations in foreign countries. The Spill Prevention Control and Countermeasure requirements described in Chapter 10 also give guidance on governing petroleum storage tanks.

16-1.1 References:

- a. 40 CFR 112, EPA Regulations on Oil Pollution Prevention;
- b. 40 CFR 280, EPA Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks;
- c. 40 CFR 110, EPA Regulations on Discharge of Oil;
- d. OPNAVINST 5100.23D, Navy Occupational Safety and Health (NAVOSH) Program Manual;
- e. NAVFAC Guide Specification 02115A, "Removal and Disposal of Underground Storage Tanks."

16-2 Legislation

16-2.1 Clean Water Act (CWA). The goal of the CWA is to protect the surface waters of the United States. Under the Clean Water Act, EPA published oil pollution prevention regulations in 1973. These regulations, contained in reference (a), were amended in 1974 and again in 1976. The CWA prohibits the discharge of oil into surface waters, if the discharge violates applicable State standards, causes a sheen or film or discolors the surface of the water, or deposits sludge beneath the water's surface. The Federal Oil Pollution Prevention Regulations require the preparation of Spill Prevention Control and Countermeasures Plans and contain specific guidelines for the design and operation of petroleum storage tanks (see Chapter 9). The guidelines for oil storage tanks in reference (a) include requirements for secondary containment, control of storm water drainage from containment areas, corrosion protection of buried metallic tanks and piping, inspection and testing of aboveground tanks, testing of underground tanks and pipelines, requirements for spill prevention devices such as high level alarms, security requirements for oil storage areas, and personnel training requirements. In 1991, the EPA proposed extensive revisions to reference (a), to be implemented in 2 phases. As of January 1998, the Phase I revisions were still not final. However, the Phase II revisions, which included the requirement for facility specific contingency plans, went into effect on 30 August 1994.

16-2.2 Hazardous and Solid Waste Amendments (HSWA). HSWA extended and strengthened the provisions of the Solid Waste Disposal Act (SWDA) as amended by the Resource Conservation and Recovery Act (RCRA). One major portion, Subtitle I, provides for the development and implementation of a comprehensive regulatory

program for underground storage tanks (USTs) containing "regulated substances" and releases of these substances to the environment. HSWA requires that Federal facilities comply with all Federal, State, and local requirements regarding USTs, including payment of registration fees or permit fees when such fees are not taxes. Federal regulations outline procedures by which EPA may approve State programs to operate in place of the Federal UST requirements if those State programs have standards that are no less stringent than the Federal requirements and provide for adequate enforcement of compliance with those standards. States with approved UST programs or Memoranda of Understanding (MOUs) with the EPA will have primary enforcement responsibility regarding UST program requirements in their States. Currently most States have a UST regulatory program in place. After EPA approves the State program, facilities must comply with all applicable provisions of the State UST programs.

16-3 Terms and Definitions

16-3.1 Above Ground Storage Tanks (ASTs).

All tanks and attached piping containing regulated substances in which greater than 90 percent of the tank volume (including piping) is above the surface of the ground.

16-3.2 Petroleum. Petroleum, including crude oil or any fraction thereof, that is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

16-3.3 Regulated Substance. Any hazardous substances (HS) regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), excluding any substances regulated as hazardous waste (HW) under Subtitle C of RCRA, and petroleum substances including crude oil, motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

16-3.4 Release. Any spilling, leaking, emitting, discharging, escaping, leaching, or disposing of hazardous substances or petroleum from a storage tank (ST) into ground water, surface water, or subsurface soils.

16-3.5 Storage Tanks (STs). All STs (both above and underground), containing regulated substances.

16-3.6 Tank Management Plan. An operations and management document, for installation-level use, that stresses above and underground storage tank spill prevention, planning, regulatory compliance, and record keeping.

16-3.7 Underground Storage Tanks (USTs) (R)

a. As defined in RCRA, Subchapter IX, Section 6991, the term "underground storage tank" [UST] means any one or combination of tanks (including underground pipes connected thereto) which is used to contain an accumulation of regulated substances, and the volume of which (including the volume of the underground pipes connected thereto) is 10 percentum or more beneath the surface of the ground. Such term does not include any:

(1) Farm or residential tank of 1,100 gallons or less capacity used for storing motor fuel for non-commercial purposes;

(2) Tanks used for storing heating oil for consumptive use on the premises where stored;

(3) Septic tanks;

(4) Pipeline facility (including gathering lines) regulated under The Natural Gas Pipeline Safety Act of 1968, The Hazardous Liquid Pipeline Safety Act of 1979, or an intrastate pipeline facility regulated under State laws comparable to the provisions of law referred to in (1) or (2);

(5) Surface impoundment, pit, pond or lagoon;

(6) Storm water or waste water collection system;

(7) Flow-through process tank;

(8) Liquid trap or associated gathering lines directly related to oil or gas production and gathering operations; or

(9) Storage tank situated in an underground area (such as a basement, cellar, mine, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

The term underground storage tank shall not include any pipes connected to any tank described above in paragraphs 16-3.7a(1) through (9).

b. In addition to the RCRA exclusions, the U.S. Environmental Protection Agency excluded the following underground storage tank systems from regulation under reference (b):

(1) Any UST system holding hazardous wastes listed or identified under Subtitle C of the Solid Waste Disposal Act, or mixture of such hazardous waste and other regulated substances;

(2) Any wastewater treatment tank system that is part of a wastewater treatment facility regulated under section 402 or 307(b) of the Clean Water Act;

(3) Equipment or machinery that contains regulated substances for operation purposes such as hydraulic lift tanks and electrical equipment tanks;

(4) Any UST system whose capacity is 110 gallons or less;

(5) Any UST system that contains a de minimis concentration of regulated substances;

(6) Any emergency spill or overflow containment UST system that is expeditiously emptied after use.

c. The above UST information concerns Federal statutes and regulations. State laws and regulations occasionally define UST systems differently than the Federal laws and regulations.

16-4 Requirements

16-4.1 General Operating Requirements

16-4.1.1 Installations with STs shall monitor transfer operations to ensure that spilling or overflowing does not occur. They will maintain overflow protection equipment in order to prevent releases.

16-4.1.2 Installations will maintain and inspect corrosion protection measures, including cathodic protection.

16-4.1.3 Installations will install new ST systems and make repairs to existing ST systems according to Federal, State, and local requirements.

16-4.1.4 The installation will also maintain written records demonstrating compliance with operational requirements.

16-4.2 Aboveground Storage Tanks

16-4.2.1 General Operating Requirements. (R) ASTs are not currently subject to Federal regulation beyond the petroleum pollution prevention and discharge reporting requirements of references (a) and (c). Some States have new AST regulations, but these are not applicable to the Navy by law since there has been no waiver of sovereign immunity. Installations with ASTs shall apply best management practices to the daily operation of those ASTs.

16-4.2.2 Release Detection, Testing, and Inspection. Whenever possible, installations will install

release detection systems on AST systems per references (a) and (c).

16-4.2.3 Release Reporting, Investigation, and Confirmation. Installations should report releases of petroleum or HS from ASTs according to the guidance in Chapter 10. Installations will immediately investigate suspected releases from the underground portions of ASTs by integrity testing and/or by performing a subsurface investigation. If regulated substances are found in adjacent properties, then the EPA or State agency can require an installation to conduct a release investigation of suspect STs.

16-4.2.4 Out-of-Service ASTs and Closure. Installations will conduct permanent closure of ASTs per applicable State or local regulations. At a minimum, installations will empty and clean ASTs and associated pipelines. Installations will also cap, blank flange, and mark pipelines as to origin. Installation records will record conditions of the site, which may involve a site assessment.

16-4.3 Underground Storage Tanks

16-4.3.1 General Operating Requirements

- R) **16-4.3.1.1** Installations will protect all new UST systems from corrosion, equip them with spill/overfill prevention equipment combined with an approved method of release detection, and install per nationally recognized standards. New underground piping that conveys regulated substances must be properly designed, constructed, and protected from corrosion. Pressurized piping and some types of suction piping must also be provided with automatic leak detection and either annual tightness testing or monthly monitoring. Test repairs for tightness and maintain records of all repairs for at least 5 years.

16-4.3.1.2 Installations will replace or upgrade existing USTs as regulated by Federal, State, or local regulations, to meet corrosion protection and spill/overfill prevention standards by 22 December

1998 or per applicable Navy/State agreement. Installations must replace or upgrade existing USTs that are either exempt or deferred from the UST regulations if possible, particularly if those USTs are located in environmentally sensitive areas. They will upgrade existing USTs by the addition of secondary containment, spill/overfill prevention equipment, and corrosion protection as dictated by the installation's SPCC plan. Installations will upgrade or replace existing piping associated with tank systems to meet corrosion protection requirements.

16-4.3.1.3 All new and existing HS USTs and associated underground piping will have secondary containment by 22 December 1998 or per applicable Navy/State agreement.

16-4.3.2 Release Detection, Testing, and Inspections. Any UST system that stores fuel solely for emergency power generators is exempt from regulatory release detection requirements.

16-4.3.2.1 Installations will install release detection systems on petroleum and HS UST systems as required by Federal, State, or local regulations. Installations will also install release detection systems on non-regulated USTs whenever possible.

16-4.3.2.2 The installation will maintain records demonstrating compliance with release detection requirements and with testing and inspection requirements.

16-4.3.3 Release Reporting, Investigation and Confirmation

16-4.3.3.1 The installation will report releases and suspected releases from USTs to the EPA or State agency within 24 hours of discovery. The installation will report HS releases and releases of petroleum or HS into surface waters from USTs according to the guidance in Chapter 10.

16-4.3.3.2 Installations will immediately investigate suspected releases from USTs by integrity testing and/or by performing a subsurface investigation. If regulated substances are found in adjacent properties, then the EPA or State agency can require an installation to conduct a release investigation of suspect STs.

16-4.3.4 Release Response and Corrective Action for UST Systems Containing Regulated Substances

16-4.3.4.1 After reporting a confirmed release to either the EPA or State agency, the installation must stop further release of the regulated substance from the UST, and mitigate fire, explosion, and vapor hazards, by preventing any further release through the emptying of the UST system. The installation will take steps to prevent further migration of any aboveground or exposed below ground releases. If the source of an underground release is not known, conduct subsurface sampling in order to determine the source. Investigate the possible presence of free product and recover free product as soon as practicable. UST releases into surface waters require installations to take the response actions described in Chapter 10.

16-4.3.4.2 UST releases require an initial abatement report, initial site characterization report, and free product recovery report to be submitted by the installation to the EPA or State agency within the time frame specified by the agency. In addition, a release investigation report and/or corrective action plan will be submitted by the installation if requested or otherwise required by the EPA or State agency.

16-4.3.4.3 Installations will clean up soil and groundwater contamination resulting from UST releases per an approved corrective action plan or as otherwise authorized or requested by the EPA or State agency. Prior to any cleanup, the installation will notify the EPA or State agency of the installation's intent to begin cleanup.

16-4.3.4.4 Installations will remove free floating product to the maximum extent practicable.

16-4.3.5 Out-of-Service UST Systems and Closure

16-4.3.5.1 Installations will maintain corrosion protection systems during temporary closure of UST system even if the system is empty. Continue to operate release detection systems unless the system is emptied.

16-4.3.5.2 When temporarily closing USTs for 3 months or more, leave vent lines open and functioning and cap and secure all other lines, pumps, manways, and ancillary equipment.

16-4.3.5.3 Installations will permanently close USTs that do not meet the standards for new or upgraded UST systems within 12 months of temporary closure unless the EPA or State agency grants an extension.

16-4.3.5.4 Installations will notify the EPA or State agency at least 30 days in advance of UST permanent closure. For permanent closure, empty, clean, and either fill USTs with a solid inert material or remove them from the ground. The installation shall conduct a site assessment at the time of permanent closure unless an approved external release detection method was in use prior to closure. If contamination is encountered during closure, the installation will initiate corrective action.

16-4.3.5.5 Continued use of a regulated UST system to store a non-regulated substance is considered a change-in-service. A change-in-service requires that the installation empty and clean out the UST and that a site assessment be performed by the installation. Notify the EPA or State agency 30 days in advance of a change-in-service.

16-4.3.5.6 The EPA or State agency can require investigation and cleanup of USTs that were

permanently closed prior to 22 December 1988 if the UST site poses a threat to human health or the environment.

16-4.3.5.7 Installations will retain a permanent closure, site assessment, site characterization, and corrective action records for at least 50 years to protect the Navy from potential future liability.

16-5 Navy Policy

R) **16-5.1** The Navy's ST Program policy is to comply with all applicable Federal, State, and local regulations pertaining to the management of USTs, and all Federal regulations pertaining to management of ASTs.

16-5.2 Whenever possible, the Navy shall replace older, unprotected steel tanks with state-of-the-art ASTs or state-of-the-art double-walled USTs with continuous interstitial monitoring.

The Navy's preferred method of UST system closure is by removal. Installations shall leave a UST system in the ground and fill it with an inert material only when extenuating circumstances preclude the removal of a UST system.

16-5.3 Navy installations with STs shall have a tank management plan containing the following information:

- a. Listing of all STs at the installation.
- b. For USTs, the regulatory requirements for each.
- c. A plan of action for achieving and maintaining compliance through monitoring, removal, repair, retrofit, replacement, and remediation of regulated ST systems.

Installations should include in the ST management plan all STs that have the potential to cause environmental damages and/or health hazards regardless of whether the ST is included in existing

regulations. For example, include a currently exempt UST, such as a UST that stores heating oil, in the UST management plan if a release from the UST has the potential to cause environmental problems such as groundwater contamination. Installations should also include in the plan non-regulated ASTs that are likely to be included in future Federal, State, or local regulations.

16-5.4 Training. Shore installations shall train environmental engineers, environmental planners, installations, resident officers in charge of construction (ROICC), public works department (PWD) engineers, major claimant staff, and all other personnel involved in the design, construction, installation, management, and operation of storage tanks on storage tank systems. They shall include the following topics in this training as applicable: corrosion protection measures, compliance records, release detection, reporting investigation and confirmation, corrective action plans, closure, site assessment, Federal, State, and local regulations pertaining to STs, monitoring, removal, repair, retrofit, replacement, remediation, leak detection and product inventory requirements, record keeping, and operation of monitoring systems.

16-6 Responsibilities

16-6.1 COMNAVFACENGCOM shall:

- a. Assist Navy installations in the preparation of ST Management Plans and A-106 Reports.
- b. Provide technical advice and assistance to Navy installations for leak detection services.
- c. Revise technical directives and design manuals to reflect regulatory requirements for new construction of STs, including underground piping and leak detection devices.

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d. Provide assistance to major commands and their installations for estimation of resource requirements.

e. Provide funding and execution of ST corrective actions that qualify for Environmental Restoration, Navy ER,N funding, and are within current priorities.

f. Ensure funding is available to train engineering field division (EFD) environmental engineers, environmental planners, and other personnel involved with STs.

16-6.2 COMNAVSUPSYSCOM shall provide technical input and assistance to COMNAVFAC-ENGCOM concerning leak detection, construction of new STs, and the disposition of petroleum recovered during site restoration.

16-6.3 Major claimants and subordinate commands shall include requests for resources to meet ST compliance requirements in Program Objective Memorandum (POM)/budget submittals.

16-6.4 Commanding officers of shore installations shall:

a. Assemble and collate ST data including storage tank volume, type, installation date, and tank contents for achieving and maintaining compliance with all applicable Federal, State, and local laws and regulations.

b. Ensure that notification forms are completed for regulated STs and forward the notification to the appropriate State agency. Provide copies to Naval Facilities Engineering Service Center (NFESC), cognizant NAVFACENGCOM EFDs, and the chain of command.

c. Prepare and maintain ST Management Plans, with assistance from COMNAVFACENGCOM, to document a plan of action for achieving and maintaining compliance with all applicable Federal, State, and local laws and regulations. The

plan shall include or reference compliance records demonstrating storage tank inspection/testing of corrosion protection system, release detection system, secondary containment systems, spill and overflow controls, repair documentation, site investigation results, and closure.

d. Accomplish leak detection and product inventory requirements, record keeping and operation of monitoring systems required by Federal, State, and local ST laws and regulations.

e. Fund the installation of tank leak detection and monitoring systems required by local, State, and Federal regulatory agencies.

f. Budget sufficient resources to replace or repair STs as required by applicable Federal, State, and local laws and regulations or by best management practices.

g. Comply with applicable Federal, State, and local laws and regulations concerning the construction of new ST systems.

h. Prepare A-106 and required POM exhibits for all compliance mandated ST projects.

i. Ensure that actions involving tank removals comply with health and safety requirements per references (d) and (e). Whether government personnel or contractors remove the tanks, they shall plan and conduct associated activities to preclude injury to personnel and accidental damage to the environment.

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