U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
National Policy

ORDER 1050.15B

Effective Date:
02/01/18

SUBJ: Fuel Storage Tank Systems at FAA Facilities

1. Consistent with its mission to provide the safest, most efficient air transportation system in the world, the Federal Aviation Administration (FAA) must manage fuel storage tank systems ("tank systems") throughout their lifecycle in a manner that significantly reduces the potential for environmental contamination and adverse risks to human health and the environment.

2. This Order establishes policy, delegates authority, and assigns responsibility for ensuring FAA tank systems comply with Federal, state, and local requirements.

3. This Order applies to all tank systems owned and/or operated by FAA. All FAA personnel assigned tank system program management, budgeting, and compliance responsibilities must use this Order to manage tank systems.

4. Each Line of Business (LOB) and Staff Office (SO) with tank system responsibilities must supplement this Order with policy, guidelines, or procedures specific to its needs in a manner that is consistent with this Order.

5. Recognizing that program improvement is a vital element in the program's effectiveness and responsiveness to FAA's evolving needs, users are encouraged to offer suggestions to update and improve this Order through the use of FAA Form 1320-19, Directives Feedback Information.

Bailey Edwards
Assistant Administrator for Policy, International Affairs & Environment

Table of Contents

Chapter 1. General Information

1. Purpose of This Order. This Order establishes Federal Aviation Administration (FAA) policies, procedures, and responsibilities for new and existing underground storage tanks (USTs), aboveground storage tanks (ASTs), and pressure vessel systems; collectively known as "tank systems." This Order affirms FAA's commitment to managing tank systems in a manner that significantly reduces the potential for environmental contamination and adverse risks to human health and the environment, while ensuring tank systems comply with applicable Federal, state, and local requirements.

2. Audience. FAA employees and contractors involved with the installation, operation, maintenance, and support of tank systems.

3. Where Can I Find This Order. This Order is available on the MyFAA employee website at https://employees.faa.gov/tools_resources/orders_notices and on the public website at http://www.faa.gov/regulations_policies/orders_notices/.

4. What this Order Cancels. This Order cancels FAA Order 1050.15A, *Fuel Storage Tanks at FAA Facilities*, dated 04/30/97.

5. Explanation of Policy Changes. This Order includes updated requirements associated with the design, installation, upgrade, operation, maintenance, monitoring, closure, removal and disposal of tank systems. The Order updates the use of terminology, adds newer technologies, and removes old ones. This Order references regulations including the revised 40 CFR Part 280-281 and 40 CFR Part 112.

6. Applicability. All FAA Lines of Business (LOBs) and Staff Offices (SOs) that own and/or operate tanks systems must use this Order.

a. Covered Tank Systems. Tank systems that are owned and/or operated by FAA must meet the requirements of this Order if they meet either of the following criteria:

(1) Contain fuel or other petroleum based products, regardless of the equipment supported; or

(2) Contain regulated hazardous substances, as defined by 40 CFR Part 302.4 and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

b. Non-covered Tank Systems. This Order does not apply to the following tank systems:

(1) Potable water or stormwater collection systems;

(2) Oil/water separators discharging to sanitary sewers;

(3) Flow-through process tanks; or

(4) Transportable tanks.

c. Exceptions. Wastewater treatment tank systems at FAA facilities that are part of a wastewater treatment facility regulated under Section 402 or 307(b) of the Clean Water Act (CWA) are not covered by this Order. Wastewater collection systems at FAA facilities that are not covered under the CWA are covered by this Order.

7. Introduction to Tank Systems. Tank systems include: storage tanks (e.g., main tanks, day tanks, etc.), flow control devices (e.g., pipes, hoses, pumps, valves, nozzles, dispensers), leak detection and inventory control devices (e.g., monitoring systems), and electronic/electrical system operation devices (e.g., controller boards, technician operations stations, switched relays) used to distribute, meter, or control the flow of regulated substances. Tank systems may be above ground or underground and are used to store fuel, other petroleum products, and regulated hazardous substances at manned and unmanned FAA facilities. They often store fuel for electrical generators, lubricating oils, building heater and boiler fuels, vehicle and aviation fuels, as well as regulated hazardous substances. Accidental release of these and similar materials could cause an adverse environmental impact, and result in personal injury and/or damage to property.

8. Summary of Regulatory Requirements. In response to the risk of accidental release, Federal, state and local authorities have established minimum requirements for the design, installation, operation, maintenance, closure, removal, and disposal of tank systems. Additional requirements affecting tank system operations have been established under the jurisdiction of state and local building codes, fire protection codes, airport operating authority requirements, industry standards, and occupational safety and health acts. This Order does not supersede Federal, state and local laws, which must be followed to ensure full compliance. Whichever law or regulation (e.g., Federal, state, local, this Order) is more stringent takes precedence. As environmental laws and regulations change periodically, the most recent versions must be followed to ensure that the provisions included herein reflect current requirements. The Office of the Chief Counsel (AGC) must be consulted regarding any legal interpretive issues.

a. Underground Storage Tank (UST) Overview. FAA USTs must comply with Federal, state, and local laws and regulations. Federal regulations concerning USTs are contained in 40 Code of Federal Regulations (CFR) Part 280, 40 CFR Part 281, and 40 CFR Parts 282.50-282.105. USTs that store regulated substances (i.e., petroleum or hazardous substances), as defined in 40 CFR Part 280.12, are subject to these regulations. Hazardous wastes are regulated under Subtitle C of the Resource Conservation and Recovery Act (RCRA) and therefore are not covered by the UST regulations. A complete version of Federal law that governs USTs is presented in 42 United States Code (USC) Chapter 82 Subchapter IX. This law incorporates amendments to Subtitle I of the Solid Waste Disposal Act (SWDA) and the UST provisions of the Energy Policy Act of 2005 (EPAct).

b. Aboveground Storage Tank (AST) Overview. FAA ASTs must comply with the Spill Prevention, Control, and Countermeasure (SPCC) rule in 40 CFR Part 112. Recognizing that Federal AST requirements focus primarily on containment, the AST requirements in this Order

exceed Federal requirements by specifying monitoring, testing, and validation of structural integrity requirements.

c. Pressure Vessel Overview. Pressure vessels are not regulated by Federal statutes. FAA pressure vessels must comply with the industry standard practices cited within this Order and state and local regulations and ordinances. In addition, storage and handling of liquefied petroleum gases must be conducted in compliance with the Occupational Safety and Health Administration Standard, 29 CFR 1910.110.

d. Designation, Reportable Quantities, and Notification. In the event of a leak or spill, FAA personnel must follow reporting procedures required by Federal regulation and FAA policy. 40 CFR Part 302.4 provides a list of elements and compounds and hazardous wastes that are designated as hazardous substances and identifies the reportable quantities (RQ) for released hazardous substances. 40 CFR Part 302.6 sets forth the notification requirements for the release of RQs of hazardous substances. State and local authorities also set RQs that must be followed, which may be more stringent than Federal RQ thresholds. Refer to Chapter 6 for additional information.

9. Responsibilities.

a. Office of Environment and Energy (AEE). AEE is responsible for the overall FAA environmental policy on tank systems and coordination of that policy with FAA LOBs and SOs. AEE is responsible for the development of policies pursuant to EPA requirements, provision of advice and assistance to LOBs and SOs in development of guidelines and procedures for their program areas, interpretation of the policies established in this Order, and provision of assistance to responsible officials in the FAA concerning changes in EPA policies relative to tanks systems. AEE also reviews implementing instructions developed by FAA LOBs and SOs for consistency with FAA policy.

b. LOBs and SOs. Each LOB and SO with responsibilities to oversee operations of tank systems must:

(1) Designate one or more LOB/SO Tank Manager(s) responsible for overseeing LOB/SO tank system management and implementation of the requirements of this Order;

(2) Establish LOB or SO policy, guidelines, or procedures specific to LOB or SO needs to ensure that tank systems within their purview fully comply with this Order;

(3) Continually monitor Federal, state, and local requirements to ensure tank systems achieve and maintain regulatory compliance;

(4) Provide guidance to implementing field personnel regarding the requirements of this Order (e.g., current tank system equipment that meet installation requirements);

(5) Ensure that personnel with tank system responsibilities receive appropriate training and corresponding training records are maintained in accordance with the requirements specified within this Order;

(6) Ensure that all activities, both substantive and procedural, conducted during the design, installation, upgrade, operation, maintenance, repair, closure, removal, and disposal of tank systems are conducted in accordance with the requirements of this Order;

(7) Ensure that the notification, permitting, and registration requirements of this Order are met for all tank systems;

(8) Ensure that tank system documentation (e.g., notification, permitting, and registration) is maintained in accordance with the requirements specified within this Order;

(9) Ensure that copies of environmental notices of violations and other similar notices are maintained and submitted to AGC in accordance with the requirements specified within this Order;

(10) Allocate the resources needed to ensure full compliance with the requirements of this Order; and

(11) Work with procurement personnel to make sure that support services are provided for soliciting, selecting, negotiating, and administering contracts for services required to meet the requirements of this Order.

c. The Office of the Chief Counsel (AGC). AGC and the regional and center counsels review notices of violation, compliance orders, and consent decrees; and provide legal advice and counsel regarding interpretation of relevant Federal, state and local requirements.

10. Security and Risk Management Factors. Tank systems are important to the continued operation of FAA facilities, and they should be listed in security risk and vulnerability analyses as assets. Because of the potential hazards to personnel and property that can result from negligence or damage to tank system locations, the LOB/SO Tank Manager must incorporate appropriate security provisions and safeguards in the Facility Security Management Plan required by FAA Order 1600.69B, *Facility Security Management Program*. Security provisions must include the requirement for tank systems to be included in inspections and surveys provided by the Servicing Security Element.

Chapter 2. Design, Installation, and Upgrade

1. Introduction. This chapter specifies FAA requirements regarding the design, installation, and upgrade of tank systems. New tank system installations are required to meet the requirements of this chapter. In addition, existing tank systems undergoing upgrades must be upgraded to meet the requirements of this chapter. Existing tank systems undergoing repair do not have to be upgraded to meet the requirements of this chapter; refer to Chapter 4 for additional repair requirements. Furthermore, existing tank systems that do not meet Federal, state, and local requirements must be immediately closed, upgraded, or replaced, and in doing so, they must be upgraded or replaced to meet the requirements of this chapter. The LOB or SO conducting the design, installation, or upgrade of a tank system must ensure that all activities are conducted in accordance with this Order.

2. National Environmental Policy Act Evaluation. Before installing, removing or upgrading a tank system, the LOB or SO responsible for the action must comply with all applicable requirements of the National Environmental Policy Act (NEPA) in accordance with the version of FAA Order 1050.1, *Environmental Impacts: Policies and Procedures* in effect at that time.

3. Preferred Tank Systems.

a. Priority for Aboveground Storage Tanks (ASTs). When installing tank systems, LOBs and SOs must give priority to installing aboveground storage tanks (ASTs) rather than underground storage tanks (USTs) to reduce environmental liability. Leaking USTs (LUSTs) pose a significant threat to the environment; therefore, prior to UST installation or replacement, a justification memorandum must be prepared that identifies the significant factors that prevent installation of an AST. The justification memorandum must be forwarded to the appropriate LOB/SO Tank Manager for review and approval. UST installation may not proceed until the justification memorandum is approved by the LOB/SO Tank Manager. A copy of the approved justification must be maintained in the facility's equipment records, as well as by the LOB/SO Tank Manager.

b. Priority for Propane Systems. When installing new or replacement engine generator systems and the corresponding tank system, propane will be the preferred fuel type when the following conditions are met:

(1) The engine generator's calculated electrical load is 80 kilowatts or lower;

(2) Propane is readily available in the commercial market, similar to the availability of diesel fuel;

(3) Normal expected temperature lows are not less than -30° F for 3 consecutive days; and

(4) Other facility specific conditions and requirements do not prohibit the use of propane as fuel for engine generators.

4. Tank System Requirements.

a. General AST and UST Tank System Requirements. State Fire Marshals and similar authorities having jurisdiction have adopted standards from organizations including National Fire Protection Association (NFPA) and International Code Council (ICC) as their local fire codes. The adopted standards then assume regulatory status. In addition to compliance with these state and local standards, all AST and UST tank systems must meet the following requirements, including but not limited to:

(1) Tank systems must be compatible with the product it is intended to store;

(2) Tank system installers must be trained and certified by the tank manufacturer or licensed under applicable Federal, state and local regulations;

(3) Tank systems must include spill and overfill prevention equipment in accordance with the requirements in 40 CFR Part 280.20 (c); and

(4) Tank systems must be manufactured with integral secondary containment, in which all exterior (i.e., outside) product piping is secondarily contained and meets the following requirements:

(a) Secondary containment must be continuous from the tank port opening until the product piping breaches interior building spaces (i.e., 'through the wall' containment);

(b) Secondary containment must be able to contain 110% of the volume of the primary tank;

(c) Secondary containment must be compatible with the stored product;

(d) Secondary containment must be installed to provide a collection and recovery point for leaked product (i.e., containment piping must be sloped to the collection point); and

(e) One or more leak detection sensors must be connected to the main tank monitoring system, such that complete leak detection is provided that is capable of detecting a leak from any portion of the product line. Refer to Chapter 3 for additional information regarding leak detection.

b. Aboveground Storage Tanks (AST). ASTs must meet the following requirements:

(1) ASTs must comply with all applicable Federal, state, and local requirements;

(2) ASTs must be certified to meet Underwriters Laboratory (UL) Standard 2085;

(3) The primary tank must be certified to meet UL Standard 142;

(4) ASTs must include a manufacturer provided warranty for a minimum of 20 years;

(5) AST installation and operation must comply with all applicable elements of NFPA 30, as well as other applicable industry codes or standards;

(6) The tank exterior must be a solid surface material with no exposed concrete or aggregates;

(7) ASTs must be manufactured with sufficient port openings to accommodate all service needs;

(8) ASTs must be equipped with a spill catchment basin meeting the following requirements:

(a) The basin must be located around the fill pipe so that it will catch small drips or spills that occur when the delivery hose is disconnected from the fill pipe;

(b) The basin must contain what may spill when the delivery hose is disconnected from the fill pipe, and have a minimum capacity of at least 5 gallons; and

(c) The basin must be equipped with either an integrated drain or pump to allow any spilled product from the delivery hose to be drained into the tank.

(9) ASTs must be anchored to a monolithic concrete support pad that has been designed for the particular installation site by a qualified engineer, and the pad must extend one linear foot past the length and width of the tank exterior on all sides;

(10) For ASTs less than or equal to 40” tall, all port openings must be accessible from the tank’s vertical sides without requirement that the tank top surface serve as a working platform;

(11) ASTs over 40” tall must have stand-alone stairs and a service platform positioned to access all port openings. The tank top surface must not be used as a working platform. The guardrail, stairs and service platform must be compliant with 29 CFR Part 1910 Subpart D and 29 CFR Part 1910.66.

c. Underground Storage Tanks (UST). USTs must be installed in accordance with the tank manufacturers specifications and meet the following requirements:

(1) USTs must comply with all applicable Federal, state, and local requirements;

(2) USTs must be double-walled fiberglass reinforced plastic (FRP) only, certified to meet UL Standard 1316;

(3) USTs must include a manufacturer provided warranty for a minimum of 20 years;

(4) UST installation and operation must comply with all applicable elements of NFPA 30, as well as other applicable industry codes or standards;

(5) USTs must be installed to withstand surface HS-20 axle loads (32,000 lbs/axle);

(6) Accessory equipment (e.g. pumps, drop tubes) required for tank operations must be designed and installed to be compatible with the UST and the product the tank is intended to store;

(7) Fiberglass USTs must have interstitial monitoring with an integrally mounted annular space reservoir installed on the tank for factory-installed brine or propylene glycol and continuous hydrostatic monitoring that meets the following requirements:

(a) The reservoir must be constructed of FRP materials and be included in the tank warranty; and

(b) Brine monitoring fluid must be a calcium chloride solution.

(8) All manways must be flanged and have a minimum of 22" interior diameter complete with UL-listed gaskets, bolts, and covers;

(9) UST sumps must meet the following requirements:

(a) Sump components must be constructed of FRP;

(b) The sump must have a minimum inner diameter of 42" and must mount to the secondary containment collar;

(c) The sump must consist of an octagon shaped base, round body extension, and enclosure top; and

(d) The sump top must be liquid tight.

(10) USTs must be equipped with a spill catchment basin meeting the following requirements:

(a) The basin must be located around the fill pipe so that it will catch small drips or spills that occur when the delivery hose is disconnected from the fill pipe;

(b) The basin must be large enough to contain what may spill when the delivery hose is disconnected from the fill pipe, and have a minimum capacity of at least 5 gallons of product; and

(c) The basin must be equipped with either an integrated drain or pump to allow any spilled product from the delivery hose to be drained into the tank.

(11) USTs must be anchored to concrete slabs or deadmen that have been designed for the particular installation site by a qualified engineer or licensed installer with calculated buoyancy to 1.5 times the full empty volume of the tank; and

(12) USTs must be covered by a monolithic concrete tank pad that has been designed for the particular installation site by a qualified engineer or licensed installer, and must meet the following requirements:

(a) The tank pad must encompass all tank grade level openings (e.g., manways, spill containment lids); and

(b) The tank pad must cover the full width and length of the UST.

(c) USTs must be dielectrically isolated.

d. Pressure Vessels. Pressure vessels must meet the following requirements:

(1) Pressure vessels must only be installed aboveground (i.e., underground installations are not permitted);

(2) Pressure vessels must meet the certification requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, "Rules for the Construction of Unfired Pressure Vessels" Section VIII, or the American Petroleum Institute (API)-ASME Code for Unfired Pressure Vessels for Petroleum Liquids and Gases, whichever is applicable at the date of manufacture;

(3) Pressure vessel installation and operation must comply with all applicable elements of NFPA 58, as well as other applicable industry codes or standards; and

(4) Pressure vessels must be anchored to a monolithic concrete pad that has been designed for the particular installation site by a qualified engineer. The pad must extend one linear foot past the length and width of the vessel on all sides.

5. Tank System Component Requirements. Tank system components must be certified under UL U.S. Gas and Oil Certificate Standards.

a. Day Tanks (DT). DTs must be installed in accordance with the tank manufacturers specifications and meet the following requirements:

(1) DTs must be certified to meet UL Standard 142;

(2) The DT installation and operation must comply with all applicable elements of NFPA 30/110, as well as other applicable industry codes or standards;

(3) DT components (e.g., pumps, solenoid valves, alarm annunciators) must be designed and installed to be compatible with the DT;

(4) When located inside a building, DT vents must terminate outside the building interior, and nothing that can inhibit flow will be installed in return lines; and

(5) DTs must be equipped with a manufacturer supplied reverse overflow pump system. Reverse overflow pumps must have a gallons-per-minute pumping rate that is 40 percent greater than the DT supply pump.

b. General Fuel Dispenser Requirements. Fuel dispensers are typically stand-alone dispensers (i.e., convenience store type gasoline dispensers with dispenser sumps) or dispensers mounted on top of an AST. All fuel dispensers must comply with the following requirements:

(1) Fuel dispensers must be designed to prevent leakage or accidental spillage;

(2) Fuel dispensers must be equipped with totalizers that are readable from the dispensing location;

(3) Fuel dispensers must only be attached to fire resistant tanks that meet the tank system requirements of this Order;

(4) The fuel dispenser hose length must not exceed 10 feet;

(5) The fuel dispenser hose must be equipped with a break away valve;

(6) A control must be provided that meets the following requirements:

(a) It allows the pump to operate only when the dispensing nozzle is removed from its normal position (e.g., nozzle bracket) on the dispensing unit and the switch on the dispensing unit is manually actuated; and

(b) It must stop the pump when the nozzle has been returned to the normal non-dispensing position (e.g., nozzle bracket).

(7) The dispensing unit and its piping, except those attached directly to the top of an AST, must be mounted on a concrete island and/or protected against collision damage;

(8) A clearly identified and easily accessible switch or circuit breaker must be located away from dispensing device but within view of dispensing personnel to shut off the power to the device in the event of an emergency; and

(9) Fuel dispensers must be equipped with a device (e.g., a solenoid valve) adjusted so that liquid cannot flow by gravity from the tank in case of piping or hose failure when the dispenser is not in use.

c. Stand-Alone Fuel Dispenser Requirements. In addition to the requirements in Section b, all stand-alone fuel dispensers must meet the following requirements:

(1) Stand-alone fuel dispensers must have an emergency shut-off valve properly installed in the product supply line at the base of each dispenser that is designed to automatically close in the event of a fire or physical impact;

(2) Stand-alone fuel dispensers must have under-dispenser containment that is liquid-tight and equipped with a liquid sensor connected to the tank monitoring system. The containment must allow for visual inspection and access to the components in the containment system.

(3) Dispensing must be by an off-tank pump, and the suction pump must be equipped with:

(a) Angle check valve or anti-siphon valve with pressure relief;

(b) Filter and adapter;

(c) Fuel hose;

(d) Safety breakaway valve;

(e) Auto-shutoff nozzle; and

(f) Under pump emergency shear valve.

d. Tank Top Fuel Dispensers. In addition to requirements in Section b, all tank top fuel dispensers must meet the following requirements:

(1) Dispensing must be by a tank-top pump, and the suction pump must be equipped with:

(a) Angle check valve or anti-siphon valve with pressure relief;

(b) Filter and adapter;

(c) Fuel hose;

(d) Safety breakaway valve; and

(e) Auto-shutoff nozzle.

e. Tank Piping Requirements. Piping and hose material requirements are dependent on the tank system type. Suction piping systems are preferred for UST and AST piping systems. Tank piping must meet the following requirements:

(1) Pressurized product piping for ASTs and USTs will only be installed upon receipt of written approval from the LOB/SO Tank Manager.

(2) Piping and hose material for ASTs and USTs must be industry-standardized, regulatory compliant and certified by UL U.S. Gas and Oil Certificate Standards.

(a) Underground pressure vessel product piping must be contained within a protective sleeve to protect the product piping from physical and environmental hazards; all protective sleeve material for the installation of underground piping must be non-corrosive (e.g., poly vinyl chloride [PVC] piping) and not require corrosion protection. Refer to the most recent version of NFPA 58, Liquefied Petroleum Gas Code for acceptable piping materials.

(3) All supply and return piping for ASTs and USTs must comply with the following requirements:

(a) Continuous secondary containment piping must completely enclose all outside primary piping;

(b) Primary and secondary containment piping and hoses must be made of industry-standardized and regulatory-compliant materials compatible with the product;

(c) For aboveground placement, secondary containment materials must be rigid to provide support for the primary piping and resist physical impact damage;

(d) Secondary piping materials must be rated for the conditions in which they are used (e.g., pipe coatings exposed to the elements must be Ultra-Violet [UV] rated, resistant to weather, resistant to saline conditions);

(e) All materials used for underground piping, including secondary containment piping, must be non-corrosive and not require additional cathodic protection; and

(f) Secondary containment piping must be designed and installed with a slope toward a containment sump, equipment box, or piping low point for leak sensor installation.

(4) Flow control valves must meet the following requirements;

(a) For AST systems, primary piping must be installed with a properly calibrated anti-siphon valve at the high point of the piping run to prevent the accidental siphoning of stored products from the main storage tank;

(b) Primary supply piping that carries combustible or flammable products inside a building, structure, or shelter must have fusible-link valves installed in-line with the piping to stop the flow of fuel in the event of a fire; the fusible-link valve must be installed inside the building as close to the wall penetration as practical;

(c) Product supply piping must be installed with a position-indicating ball valve near the tank system so that product flow from the tank can be turned off;

(d) All diesel tank fuel supply piping must include a coalescing in-line filtration system installed on the fuel supply line, located and protected inside a building, and situated as close as practical to the equipment being serviced.

f. Fill Limiter Requirements. Fill limiters (i.e., overfill prevention equipment installed in the tank fill port that limits the amount of product that can be added) must be installed in all ASTs and USTs that receive outsource delivery of fuel.

g. Grounding/Lightning Protection Requirements. All tank system components that are aboveground must have grounding and lightning protection in accordance with the most current version of FAA Standard FAA-STD-019. If the tank system's grounding system cannot be attached to an existing counterpoise, then a dedicated counterpoise/grounding system for the tank system must be installed.

h. Fire Extinguisher Requirement. A fire extinguisher must be available at all times. In addition to the need for fire extinguishers, tanks should be fielded with proper markings as to their contents, safety warning signs (e.g., NO SMOKING), and Safety Data Sheets (SDS) must be made available to personnel. Personnel must also be equipped with the appropriate personal protective equipment (PPE) to conduct the job safely (e.g. safety glasses, safety gloves, etc.).

i. Security and Protection Requirements. Tank systems are required to meet the following security related requirements, as appropriate per FAA Order 1600.69B:

(1) ASTs are required to have proper lighting so that inspection of the storage tank system (especially in emergency situations) can be conducted at night and for security reasons;

(2) Tank systems must be enclosed within a protected area;

(3) Tank systems within a security perimeter fence do not require additional enclosures;

(4) All lids and control fixtures must be lockable, and lockable lids and control fixtures must be secured; and

(5) Tank systems must include vehicle impact protection, such as control of traffic access or bollards.

6. Restoration of Grounds. When completing tank system installation and upgrades, the surrounding grounds affected by construction activities must be restored to their preconstruction state at a minimum. Additional restoration requirements may be required by the local regulatory authority.

Chapter 3. Leak Detection

1. Introduction. This chapter specifies tank system leak detection requirements. Leak detection is critical to rapidly identify possible fuel releases and limit environmental contamination from tank systems. FAA tank systems must have a method, or combination of methods, to quickly detect leaks that meet Federal, state, and local requirements as applicable. The leak detection system must be capable of detecting a leak from any portion of the tank or its piping that routinely contains product. It must be installed, calibrated, operated, and maintained in accordance with the manufacturer's instructions. Each LOB and SO must ensure that tank systems they operate comply with Federal, state, and local leak detection requirements, as well as the expanded leak detection requirements of this chapter. All leak detection activities must be conducted in accordance with occupational safety and health requirements, including but not limited to, 29 CFR Part 1910 and FAA Order 3900.19: *FAA OSH Program*.

2. Automatic Tank Monitoring. Tank systems must be electronically monitored by a dedicated automatic monitoring system. If a tank system's automatic monitoring is not functioning properly, an alternative leak detection methodology that complies with Federal, state and local requirements must be used until the automatic monitoring is repaired and working properly.

a. AST and UST Monitoring. All new AST and UST tank installations must include Automatic Tank Gauging Systems (ATGS) at the time of installation. ATGS must be installed at all existing UST sites without ATGS as soon as practicable. In addition, existing ASTs that meet leak detection requirements are not required to be upgraded to include ATGS; however, when these tanks are upgraded or replaced, the requirement for ATGS applies at the time of installation/upgrade.

(1) The monitoring system must be third party certified, meet EPA performance standards, and be capable of:

(a) Detecting a 0.2 gallon-per-hour leak, with a 95% probability of detection and a 5% probability of false alarm;

(b) Measuring water in the bottom of the tank to the nearest 1/8 inch;

(c) Performing volumetric tank tightness testing in accordance with EPA performance standards; and

(d) Performing pressurized line-leak detection.

(2) The monitoring system must include:

(a) An alarm acknowledgement switch;

(b) An external (i.e., outside) overfill alarm that is audible and visible from the tank fill area; and

(c) An integral printer for alarms and inventory status.

(3) The monitoring console must:

(a) Continuously monitor and display tank system contents;

(b) Provide and distinctly display the following programmable alarm points:

i. High level (e.g., 90% full);

ii. Critical high (i.e., overfill) level (e.g., 95% full);

iii. Low level;

iv. High water volume;

v. Leak detection in the main tank;

vi. Leak detection in the tank interstice;

vii. Leak detection for all sumps or equipment boxes; and

viii. Leak detection for piping.

(c) Be capable of simultaneously monitoring at least two tank systems; and

(d) Be capable of operating tank system electrical devices, such as remote visual and audible alarms, pumps, and valves.

b. Pressure Vessel Monitoring. New pressure vessels must be electronically monitored by a dedicated automatic monitoring system. Existing pressure vessels undergoing upgrades must be upgraded to have an automatic monitoring system. Existing pressure vessels undergoing repair do not have to be upgraded to have an automatic monitoring system; however, existing pressure vessels must eventually be upgraded to have an automatic monitoring system. If an existing pressure vessel does not have an automatic monitoring system, or the system is not functioning properly, LOBs and SOs must inspect the pressure vessel's manual pressure gauge at least once every 30 days to monitor product inventory.

(1) The monitoring system must be capable of detecting and indicating the level of product in the tank;

(2) The monitoring console must provide and distinctly display the following programmable alarm points:

(a) High level; and

(b) Low level.

(3) The monitoring console must continuously monitor and display tank system contents; and

(4) The monitoring console must be capable of simultaneously monitoring at least two tank systems.

c. Day Tank (DT) Monitoring. New Day Tanks (DTs) must be electronically monitored by a dedicated automatic monitoring system. Existing DTs undergoing upgrades must be upgraded to have an automatic monitoring system. Existing DTs undergoing repair do not have to be upgraded to have an automatic monitoring system; however, these existing DTs must eventually be upgraded or replaced to have an automatic monitoring system. If an existing DT does not have an automatic monitoring system, or the system is not functioning properly, LOBs and SOs must perform a visual inspection at least once every 30 days to monitor for leaks.

(1) The monitoring system must:

(a) Be provided by the DT manufacturer;

(b) Be capable of detecting and indicating level of product in the tank;

(2) The monitoring console must:

(a) Continuously monitor and display tank system contents;

(b) Provide and distinctly display the following programmable alarm points:

i. High level (e.g., 90% full);

ii. Critical high (i.e., overfill) level (e.g., 95% full);

iii. Low level; and

iv. Leak detection in the secondary containment (i.e., rupture basin).

(c) Be capable of operating tank system electric devices, such as remote visual and audible alarms, pumps, and valves.

3. Periodic Testing of Spill Prevention Equipment. This section specifies testing requirements for spill prevention equipment and containment sumps used for interstitial monitoring of piping and periodic inspection of overfill prevention equipment. Owners and operators of UST systems with spill and overfill prevention equipment and containment sumps

used for interstitial monitoring of piping must meet these requirements to ensure the equipment is operating properly and will prevent releases to the environment.

a. UST Spill Prevention Equipment and Containment Sumps. This equipment includes: catchment basins, spill buckets, and other spill containment devices, and containment sumps used for interstitial monitoring of piping. This equipment must prevent releases to the environment by meeting one of the following:

(1) The equipment is double walled and the integrity of both walls is visually inspected every 30 days; or

(2) The spill prevention equipment and containment sumps used for interstitial monitoring of piping are tested in accordance with 40 CFR Part 280 at least once every three years to ensure the equipment is liquid tight. This testing is to be conducted by a licensed and certified tank testing contractor.

b. Overfill Prevention Equipment. This equipment must be inspected at least once every three years. At a minimum, the inspection must ensure that overfill prevention equipment is set to activate at 90% of the tank volume. In addition, for USTs, inspections must be conducted and reported in accordance with state and local regulatory agencies.

4. Alternative Methods of Tank Monitoring. Alternative methods of tank monitoring must only be used as the primary means of tank monitoring in instances when tank systems do not have automatic tank monitoring, or when the tank system's automatic tank monitoring is not functioning properly. Operators must notify their LOB/SO Tank Manager when alternative methods of tank monitoring are being utilized. Additionally, both manual tank gauging and monthly inventory control with tank tightness testing can only be performed for ten years after installation.

a. Manual Tank Gauging. This method consists of product level measurements using a calibrated gauge stick that is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth of an inch. In addition to the tank gauging, fuel oil must be checked for evidence of water using a water-finding-paste applied to the calibrated gauge stick. Two measurements are taken at the beginning and two taken at the end of at least a 36-hour period during which nothing is added or removed from the tank. The average of the two consecutive ending measurements is subtracted from the average of the two beginning measurements to determine the change in product volume. If the variation between beginning and ending measurements exceeds the weekly or monthly standards in Table 3-1, a release is suspected. If a release is suspected, immediately contact the LOB/SO Tank Manager. Additionally, tank and piping tightness testing must be conducted immediately to confirm the suspected release. Manual tank gauging must not be used for tanks over 2,000 gallons. For tanks over 2,000 gallons, contact the LOB/SO Tank Manager for information on alternative methods for tank monitoring for these tanks.

Table 3-1. Manual Tank Gauging Standards

Nominal Tank Capacity	Minimum Duration Of Test	Weekly Standard (One Test)	Monthly Standard (Four Test Average)
550 gallons or less	36 hours	10 gallons	5 gallons
551-1,000 gallons (when tank diameter is 64 inches)	44 hours	9 gallons	4 gallons
551-1,000 gallons (when tank diameter is 48 inches)	58 hours	12 gallons	6 gallons
551-1,000 gallons (also requires periodic tank tightness testing)	36 hours	13 gallons	7 gallons
1,001-2,000 gallons (also requires periodic tank tightness testing)	36 hours	26 gallons	13 gallons

*New USTs must be tightness tested every five years for ten years following installation. Existing USTs must be tightness tested every five years for ten years.

(1) On a monthly basis, UST and AST manual tank gauging measurements must be conducted, recorded, and compared to the monthly standards in Table 3-1 for USTs and ASTs that are used for backup emergency power generators; and

(2) On a weekly basis, UST and AST manual tank gauging measurements must be conducted, recorded, and compared to the weekly and monthly standards in Table 3-1 for USTs and ASTs that are not used for backup emergency power generators.

b. Monthly Inventory Control combined with Tank Tightness Testing. Inventory control must be used in conjunction with periodic tank tightness tests.

(1) Inventory Control. Inventory control is similar to balancing a checking account. UST and AST inventory volume measurements (inputs, withdrawals/consumption, and the amount still remaining in the tank) are recorded (usually on a ledger form) using a calibrated gauge stick. The gauge stick data, the fuel expenditure and delivery data are reconciled and the month's overage or shortage is determined. If the overage or shortage is greater than or equal to 1.0 percent of the tank's flow-through volume, the UST or AST may be leaking. If an overage or shortage continues to exceed this range for two consecutive months, tank and piping tightness testing must be conducted immediately to confirm the suspected release. The procedures

described in API Publication Recommended Practices for Bulk Liquid Stock Control at Retail Outlets (RP 1621) may be used as guidance for compliance with this leak detection method.

(a) Inventory control volume measurements must be recorded and reconciled on a monthly basis for USTs and ASTs that are used for backup emergency power generators.

(b) Inventory control volume measurements must be recorded daily and reconciled on a monthly basis for USTs and ASTs that are not used for backup emergency power generators.

(2) Tank Tightness Testing. Volumetric tank testing (also known as "precision," "tank tightness," or "tank integrity" testing) is a leak detection method that operates on the principle that any changes in the volume of fluid within a tank can be interpreted as a leak. Detection of these leaks is difficult because there are many physical parameters which produce volume changes during the test that may be mistaken for leaks. Tank tightness testing should be performed upon installation, and at the frequency required by state and local regulatory agencies. At a minimum, new USTs must be tightness tested every five years for ten years following installation. Existing USTs must be tightness tested every five years for ten years following upgrade.

(a) The following sources have been found to contribute to non-leak related volume changes:

i. Thermal expansion and contraction of the product;

ii. Expansion and contraction of vapor pockets within the tank;

iii. Structural deformation of the tank;

iv. Evaporation and condensation within the tank; and

v. Waves produced by mechanical vibrations and other disturbances.

(b) Caution must be taken to consider these factors when conducting a "tightness" test procedure (i.e., these factors can be mistaken for leaks or these effects can mask an actual leak). In general, even a tightness test on a non-leaking tank will produce volume changes other than zero. All tank and piping tightness testing methods must be capable of detecting a 0.1 gallon per hour leak rate with a probability of detection of at least 95 percent and a probability of false alarm of no more than 5 percent. Manufacturers of leak detection methods have tested their equipment using a wide variety of approaches. The local tank manager must select a method that meets the approval of their LOB or SO Tank Manager.

c. Statistical inventory reconciliation. Release detection methods based on the application of statistical principles to inventory data similar to those described in 40 CFR Part 280.43(a) must meet the following requirements:

(1) Report a quantitative result with a calculated leak rate;

(2) Be capable of detecting a leak rate of 0.2 gallon per hour or a release of 150 gallons within 30 days; and

(3) Use a threshold that does not exceed one-half the minimum detectible leak rate.

4. Alternative Methods of Leak Detection for Piping. This section specifies alternative methods of monitoring tank piping for leaks. These methods must only be used as the primary means of piping monitoring in instances when tank piping does not have automatic monitoring, or when automatic piping monitoring is not functioning properly.

a. Pressurized Piping. An annual tightness test of the UST piping must be conducted. This method must also be performed for AST piping.

b. Suction Piping. Suction piping for USTs and ASTs must be tightness tested every three years unless all of the following conditions are met:

(1) Piping is below-grade and operates at less than atmospheric pressure;

(2) Piping is sloped so that the piping's contents will drain back into the storage tank if the suction is released; and

(3) Piping only has one check valve included in each suction line and it is located directly below the suction pump.

5. Notification of Release. Upon confirmation of a release, on-site personnel must immediately notify their LOB/SO Tank Manager, immediately empty tank system contents, and immediately initiate cleanup measures. Additional notifications may be required to comply with local (e.g. airport and/or municipality) as well as state and federal requirements. Refer to Chapters 4 and 6 for additional information regarding release reporting requirements.

Chapter 4. Operations and Maintenance

1. Introduction. Regular operations and maintenance is essential to proper management of tank systems. This includes, but is not limited to, conducting tank system inspections, performing repairs, detecting leaks, preparing and implementing Spill Prevention, Control, and Countermeasures (SPCC) Plans, preventing spills and overflow, performing cleanup immediately, and reporting releases. These activities must be performed in accordance with Federal, state, and local requirements. Each LOB and SO with tank systems must meet the requirements of this Chapter for every tank system for which they have the responsibility to oversee operations. All operation and maintenance activities must be conducted in accordance with occupational safety and health requirements, including but not limited to, 29 CFR Part 1910 and FAA Order 3900.19: *FAA OSH Program*.

2. Inspection Requirements. UST and AST tank systems must be periodically inspected to verify their operational status and environmental compliance in accordance with Federal, state, and local requirements. The frequency of inspections may be dictated by applicable Federal, state, and local requirements. USTs pose unique environmental risks, and federal requirements mandate inspections at least once every 30 days. For ASTs and Pressure Vessels, it is recommended that all tank system conditions be monitored at least once every 30 days; however, LOBs and SOs may use a Reliability Centered Maintenance approach to determine if less frequent inspections can still meet state and local environmental compliance and operation requirements. The date and result of all inspections must be recorded. Records of the inspection and the results must be maintained so that they are readily available to regulatory officials. Refer to Chapter 6 for additional information regarding recordkeeping. The following additional requirements are only required for USTs:

a. Periodic operation and maintenance walkthrough inspections for USTs. LOBs and SOs must decide which method of inspection will be used in their operations. The following options are provided in CFR Part 280.36; state and local regulatory agencies may also have requirements for operation and walkthrough inspections.

(1) Conduct operation and maintenance walkthrough inspections according to a standard code of practice developed by a nationally recognized association or independent testing laboratory (e.g. PEI and API).

(2) Conduct operation and maintenance walkthrough inspections developed by the implementing agency.

(3) Perform walkthrough inspection at least once every 30 days (see below). During the inspection check the following equipment as specified below:

(a) At least once every 30 days perform a visual inspection of spill prevention equipment to check for damage; remove liquid or debris; check for and remove obstructions in the fill pipe; check the fill cap to make sure it is securely on the fill pipe; and, for double walled spill prevention equipment with interstitial monitoring, and check for a leak in the interstitial area; and

(b) At least once every 30 days perform a visual inspection of release detection equipment to make sure the release detection equipment is operating with no alarms or other unusual operating conditions present; and ensure records of release detection testing are reviewed and current;

(c) In addition, once annually during a 30 day inspection perform a visual inspection of containment sumps to check for damage, leaks to the containment area, or releases to the environment; remove liquid (in contained sumps) or debris; and, for double walled sumps with interstitial monitoring, check for a leak in the interstitial area; and

(d) In addition, once annually during a 30 day inspection perform an inspection of hand held release detection equipment, and check devices such as tank gauge sticks or groundwater bailers for operability and serviceability.

3. Repair Requirements. Tank system repairs must be performed in accordance with Federal, state, and local requirements, as well as applicable industry standards. In addition, repairs must be performed in accordance with tank manufacturer maintenance and repair guidance (e.g., tank manuals), and they must not void the manufacturer provided warranty. Tank system repairs do not trigger the requirement to upgrade or replace the tank system so that it meets the expanded requirements of Chapter 2; however, these tank systems must eventually be upgraded or replaced to meet the requirements in Chapter 2. Repairs must be performed by qualified technicians or contractors, certified to work on the equipment in question, who must ensure that all necessary permits are obtained. All repair records must be maintained at the tank facility or the nearest LOB or SO field office for the life of the tank system. If a tank system is closed and transported to a new facility for reuse, the tank system's repair and upgrade records must be transferred to the new facility.

a. Tightness Testing Requirements for UST System Repairs. Repairs to UST secondary containment, piping, and containment sumps must have the secondary containment tested for tightness by a licensed and certified contractor within 30 days following completion of the repair. Secondary containment testing shall be conducted in accordance with the manufacturer's instructions, a code of practice developed by a nationally recognized association or independent testing laboratory, or according to requirements established by the implementing agency.

b. Inspections Requirements for UST System Repairs. Within 30 days following any repair to UST spill or overfill prevention equipment, the repaired spill or overfill prevention equipment must be tested or inspected, as appropriate, in accordance with 40 CFR Part 280.35 to ensure it is operating properly.

4. Release Detection Requirements. Upon installation, all new tank systems must be electronically monitored by a dedicated automatic monitoring system in accordance with Chapter 3. The tank monitoring system must be installed, calibrated, operated, and maintained (including routine maintenance and service checks for operability and running condition) according to the manufacturer's instructions and 40 CFR Part 280.40(a)(3). The tank monitoring system must meet Federal (e.g., 40 CFR Part 280.43 and 40 CFR Part 280.44), state, and local requirements.

5. Spill and Overflow Protection.

a. Spill Response Plans. Facilities that meet the SPCC Plan applicability described in Section 7 of this Chapter must have a SPCC Plan. Facilities that meet the Facility Response Plan applicability described in Section 8 of this Chapter must have a Facility Response Plan. All other facilities with tank systems should have a site specific spill response plan.

b. Spill Containment Kits. All facilities with USTs and ASTs must have an onsite emergency spill containment kit. The spill containment kit must be sized to effectively contain the volume of product that could be discharged. At a minimum, the spill containment kit must be rated to contain at least 25 gallons of spilled product. During product delivery and bulk product removals, the vendor performing this work must have the capability of containing a spill.

c. Filling Requirements. An overflow from filling is considered an unauthorized or accidental release and may be a reportable incident under Federal, state, and local requirements. All reasonable steps and precautions to prevent this occurrence must be taken. To help prevent spills and overfills during tank filling, the following requirements must be adhered to:

(1) Transfer of product to the tank system must be continuously and visually tracked by an adequately trained FAA employee, or authorized contract employee; and

(2) The volume available in the tank system must be validated as greater than the expected volume of product to be transferred to the tank system before the transfer is initiated.

d. Containment Procedures. In the event of an accidental spill, site personnel must initiate containment procedures immediately. Actions include stopping or reducing the source of the spill to the extent feasible, containing the extent of spill dispersion, stabilizing spilled product with absorbent material, and removing visibly contaminated material. All contaminated material, as well as soil removed as part of spill cleanup, must be disposed of in accordance with Federal, state, and local requirements. Handling of all contaminated materials must be conducted by trained FAA personnel or by a licensed contractor.

6. Spill Reporting.
All spills, unauthorized or accidental releases, and leaks must be reported in accordance with Federal, state, and local (e.g. airport, municipal) requirements. Site personnel must immediately report any suspected and/or confirmed spills, releases or leaks to the local facility manager. The local facility manager must immediately report the release to the LOB/SO Tank Manager and the FAA Environmental Clean-Up Program Manager. The local facility manager must consult with the LOB/SO Tank Manager and the FAA Environmental Clean-Up Program Manager to determine federal, state, and local reporting requirements for any incident. Any FAA employee that has knowledge of a spill, leak, or any other release and does not take appropriate corrective action may face criminal prosecution; refer to FAA Order 1050.10C, *Prevention, Control, and Abatement of FAA Environmental Pollution*, for additional information.

7. Spill Prevention Control and Countermeasures Plan. A facility must develop a Spill, Prevention, Control, and Countermeasures (SPCC) Plan depending on the amount of petroleum

product stored at the facility and its potential to discharge oil to navigable waters of the United States (see 40 CFR Part 112 and EPA's *SPCC Guidance for Regional Inspectors*). The SPCC Plan establishes procedures, methods, and equipment requirements to prevent the discharge of oil to navigable waters. All facilities requiring SPCC Plans must have the plan certified and implemented before beginning tank system operations.

a. SPCC Plan Applicability. Facilities must have a SPCC Plan if they have an aggregate aboveground oil storage capacity greater than 1,320 gallons or an aggregate underground oil storage capacity greater than 42,000 gallons; and due to their location, they can reasonably be expected to discharge oil to navigable waters of the United States. All FAA facilities that meet the aggregate storage capacity are considered sites regulated pursuant to 40 CFR Part 112. No FAA facilities meeting these criteria are exempt from this regulation based on a perceived lack of potential affect to navigable waters.

b. SPCC Facility Type. SPCC requirements place facilities into three different categories based on the aggregate quantity of aboveground fuel storage capacity and other criteria.

c. SPCC Plan Preparation. SPCC Plans must be prepared in accordance with 40 CFR Part 112, state and local requirements, and good engineering practices. State and local implementing agencies must be consulted prior to SPCC Plan preparation. In most cases, an SPCC plan for FAA facilities can be self-certified pursuant to Appendix G of 40 CFR Part 112. For certain SPCC facilities, SPCC plans must be certified by a registered Professional Engineer (PE) familiar with the facility. The local FAA facility manager determines the certification requirements for the facility in coordination with the LOB/SO Tank Manager.

d. SPCC Plan Implementation and Maintenance. SPCC Plans must be maintained at the facility for which they were written if the facility is attended more than 4 hours per day. For facilities attended 4 hours or less per day, the SPCC Plan must be readily available at the nearest field office.

(1) A facility's SPCC Plan must be reviewed and evaluated at least once every five years;

(2) A facility's SPCC Plan must be updated whenever there is a change in design, construction, operation, or maintenance affecting oil discharge potential; potential changes that may require a SPCC Plan to be amended, include, but are not limited to, the following:

(a) Commissioning and decommissioning tanks;

(b) Replacement, reconstruction, or movement of tanks;

(c) Reconstruction, replacement, or installation of piping systems;

(d) Construction or demolition that might alter secondary containment structures;

(e) Changes in product or service; or

(f) Revision of operating or maintenance procedures.

(3) The SPCC Plan must be amended within 6 months of the review to include more effective prevention and control technology if:

(a) Such technology will significantly reduce the likelihood of a discharge from the facility; and

(b) Such technology has been field-proven at the time of the review.

(4) Amendments must be implemented within 6 months after the SPCC Plan is amended.

(a) The local facility manager must document completion of the review and evaluation, and must sign a statement as to whether the SPCC Plan will be amended. The required signature may be provided at the beginning or end of the SPCC Plan, or in a log or an appendix to the SPCC Plan; and

(b) The following statement will suffice, ‘‘I have completed review and evaluation of the SPCC Plan for [insert name of facility] on [insert date], and [insert “will” or “will not”] amend the Plan as a result.”

(5) Any technical amendments to an SPCC Plan must be certified by a Professional Engineer (PE), unless the facility can self-certify their SPCC Plan. PE certification is not required for non-technical amendments (e.g., changes to phone numbers, names);

(6) Field-constructed ASTs undergoing repair, alteration, reconstruction, or change in service that might affect the risk of a discharge or failure due to fracture or other catastrophe must be evaluated to see if changes to the SPCC Plan are required;

(7) SPCC Plan evaluation must occur when there has been a discharge or failure due to brittle fracture or other catastrophe;

(8) ASTs must be tested for integrity on a regular schedule, and when material repairs are done. In doing so, the following must be adhered to:

(a) The frequency and type of testing must take into account tank size and design;

(b) The owner or operator must combine visual inspection with another testing technique such as hydrostatic testing, radiographic testing, ultrasonic testing, magnetic flux/particle testing, acoustic emissions testing, or other system of nondestructive shell testing;

(c) The owner or operator must keep comparison records and must include tank supports and foundations in these inspections;

(d) Operating personnel must frequently inspect the outside of the tank for signs of deterioration, leaks, or accumulation of oil inside diked areas; and

(e) Records of inspections and tests must be signed by the appropriate supervisor or inspector and maintained with the SPCC Plan for a minimum of three years.

e. SPCC Training. Refer to Chapter 7 for SPCC training requirements.

8. Facility Response Plan. In accordance with the Oil Pollution Prevention regulation, 40 CFR Part 112 (amended July 1, 1994), FAA facilities that could reasonably be expected to cause "substantial harm" to the environment by discharging oil into or on navigable waters must prepare and submit a Facility Response Plan to the EPA Regional Administrator. A facility may be identified as posing "substantial harm" through a self-selection process or by a determination of the EPA Regional Administrator.

a. Self-Selection of "Substantial Harm". In accordance with 40 CFR Part 112.20, a facility must complete and submit a Facility Response Plan if it meets the following criteria:

(1) It has a total oil storage capacity greater than or equal to 42,000 gallons and it transfers oil over water to or from vessels; or

(2) It has a total oil storage capacity greater than or equal to one million gallons and meets one of the following conditions:

(a) It does not have sufficient secondary containment for each aboveground storage area;

(b) It is located at a distance such that a discharge from the facility could cause "injury" to fish, wildlife, and sensitive environments;

(c) It is located at a distance such that a discharge from the facility would shut down a public drinking water intake; or

(d) It has had, within the past five years, a reportable discharge greater than or equal to 10,000 gallons.

b. Determination of "Substantial Harm" by the EPA Regional Administrator. An EPA Regional Administrator will review Facility Response Plans and determine if a facility could cause "significant and substantial harm." This determination is made by examining factors similar to the substantial harm criteria and:

(1) The age of tanks;
(2) Type of transfer operations;
(3) Oil storage capacity;
(4) Lack of secondary containment;
(5) Proximity to fish, wildlife, and sensitive environments or drinking-water intakes;

(6) Spill history and frequency of past discharges; or
(7) Other information, including local impacts on public health.

If the Regional Administrator determines that the facility could cause significant and substantial harm, the Facility Response Plan will need to be reviewed and approved by the Regional Administrator.

Chapter 5. Closure and Disposition

1. Introduction. Tank systems must be properly closed and disposed of in accordance with Federal, state, and local requirements. Tank system closures and disposals must be performed by properly trained personnel. Each LOB and SO with tank systems must meet the requirements of this Chapter for every tank system for which they have the responsibility to oversee operations. All closure and disposal activities must be conducted in accordance with occupational safety and health requirements, including but not limited to, 29 CFR Part 1910 and FAA Order 3900.19: *FAA OSH Program*.

2. National Environmental Policy Act Evaluation. Before closure, removal, or disposal of a tank system, the LOB or SO responsible for the action must comply with all applicable requirements of the National Environmental Policy Act (NEPA) in accordance with the version of FAA Order 1050.1, *Environmental Impacts: Policies and Procedures* in effect at that time.

3. Tank Closure. The LOB or SO conducting the closure of a tank system must ensure that all activities are conducted in accordance with Federal, state and local requirements. All tank system closure related sampling activities must be documented and maintained at the tank facility or the nearest LOB or SO field office. These records must document any impacts the tank system may have had on the surrounding area. Records must be maintained for the life of the FAA facility, and for a minimum of three years after the facility is decommissioned. State and local authorities may have more stringent requirements, and it is the responsibility of each LOB and SO to ensure these requirements are met for their tank systems.

a. USTs Installed Before December 22, 1998. USTs that were installed before December 22, 1998 must immediately be properly closed or upgraded to have spill, overfill, and corrosion protection. Replacement of these tanks with new USTs will not be permitted unless a justification memorandum is prepared and approved by the LOB/SO Tank Manager, as described in Chapter 2.

b. Temporary UST Closure. USTs may be temporarily closed for up to 12 months. During this time, Federal, state, and local requirements must be followed, including the following:

(1) Unless the UST has been emptied:

(a) Continue to monitor and maintain any corrosion protection systems;

(b) Continue to monitor for leaks by maintaining the tank system's leak detection; and

(c) If a release is discovered, respond as you would for a release from an active UST.

(2) Tank systems not used for 3 to 12 months, but intended for further use:

(a) Leave vent lines open and functioning; and

(b) Cap and secure all other lines, pumps, manways, and ancillary equipment.

c. Permanent UST Closure. USTs that have been out-of-service for longer than 12 months must be removed or permanently closed. UST closure in place should be only be enacted if removal activities would create major operational or environmental risk. UST Closure must be conducted in accordance with Federal, state, and local requirements, including the following:

(1) Notify the appropriate regulatory authority, in accordance with their specific requirements, and obtain all applicable permits;

(2) Determine if contamination from the UST is present in the surrounding environment by conducting sampling in accordance with 40 CFR Part 280.72, and if there is contamination, immediately initiate the containment and spill reporting procedures specified in Chapter 4 and Chapter 6 of this Order;

(3) Maintain records of site assessment results (e.g., sampling), for the life of the FAA facility, and for a minimum of three years after the facility is decommissioned;

(4) Records of site assessments must be signed by a professional engineer or professional geologist, or equivalent licensed professional with experience in environmental engineering, hydrogeology, or other relevant technical discipline acceptable to the implementing agency;

(5) Empty and clean the tank system by removing all liquids, dangerous vapor levels, and accumulated sludge; these potentially very hazardous actions must be carried out carefully by following standard safety practices such as those published by API and Petroleum Equipment Institute (PEI);

(6) If the tank system will remain in the ground, it must be filled with a harmless, chemically inactive solid, such as lightweight concrete slurry; and

(7) If the tank system will be removed, it must be removed in accordance with the tank removal requirements of this Chapter.

d. AST Closure. AST closures must be conducted in accordance with state and local requirements, as well as industry best practices such as those published by the American Petroleum Institute (API) and the Petroleum Engineering Institute (PEI).

e. Pressure Vessel Closure. Pressure vessel closures must be conducted in accordance with state and local requirements and with industry best practices such as those published by API and PEI.

4. Tank Disposal. The LOB or SO disposing of a tank system must ensure that all removal and disposal activities are conducted in accordance with Federal, state, and local requirements and FAA property management requirements. Tank disposal manifests that show tank chain of custody and disposal method must be retained for all tank removals. Some states may consider tank residuals (including the tank shell and equipment) as hazardous materials, and in these instances hazardous waste manifests must be prepared, maintained, and retained with the disposal manifests. All tank system removal and disposal related testing activities must be documented and maintained at the tank facility or the nearest LOB or SO field office. These records must document the impact the tank system had on the surrounding area. Records must be maintained for the life of the FAA facility, and for a minimum of three years after the facility is decommissioned. State and local authorities may have more stringent requirements, and it is the responsibility of each LOB and SO to ensure these requirements are met for their tank systems.

a. UST Disposition. Due to the significant potential of environmental liability associated with USTs, reuse of USTs (i.e., removal and reinstallation) or transfer to another entity will not be permitted under any circumstances. All UST tank system components must be properly removed and disposed. In addition, soil samples must be taken and tested for contamination. If contamination is detected, the LOB or SO must immediately initiate the containment and spill reporting procedures specified in Chapter 4 of this Order.

b. AST Disposition. All AST tank system components must be properly removed and disposed except where redeployment of the AST within the agency or transfer/sale to another entity for use is approved by the LOB/SO Tank Manager. Redeployment or transfer/sale are allowed only when the tank passes a tank tightness test, and if the tank is physically removed and relocated, when all tank system components and ancillary equipment (e.g., piping, monitoring system, external alarms, placarding, etc.) are removed in accordance with regulatory requirements. If contamination is detected during AST removal or disposal, the LOB or SO must immediately initiate the containment and spill reporting procedures specified in Chapter 4 of this Order.

c. Pressure Vessel Disposition. Pressure vessel removals and disposals must be conducted in accordance with industry best practices, such as those published by API and PEI.

5. Restoration of Grounds. When completing tank system removal and disposal, the surrounding grounds affected by these activities must be restored to their pre-construction state using clean fill. This is the minimum requirement; additional local requirements may apply.

6. Environmental Due Diligence Process. When disposing of a facility that has had tank systems, all available tank system documentation (e.g., tank operations, leak detection, closure, removal, and disposal reports) must be provided to the LOB or SO managing the disposition effort for inclusion in the facility's environmental due diligence audit report, in support of the requirements of the version of FAA Order 1050.19, *Environmental Due Diligence in the Conduct of FAA Real Property Transactions* in effect at that time.

Chapter 6. Recordkeeping

1. Introduction. Federal, state, and local authorities require tank system owners and operators to maintain a variety of operational and environmental records. Reporting and recordkeeping requirements vary based on tank system specific factors such as tank type (e.g., AST, UST), product stored, tank system capacity, tank construction and tank location. Tank records may include certificates of tank and component (e.g., cathodic protection system, monitoring system) installation, notification, registration, test results, and certification. FAA tank systems must comply with Federal, state, and local requirements, and it is the responsibility of each LOB and SO with tank systems to meet the requirements of this Chapter for every tank system for which they have the responsibility to oversee operations.

2. Notification, Permitting, and Registration. Notification, permitting, and registration of tank systems is typically managed by each state's environmental or approved implementing agency, fire department, or a combination of both organizations, and varies based on state specific requirements. It is the responsibility of each LOB and SO with tank systems to ensure all Federal, state, and local notification, permitting, and registration requirements are met for every tank system for which they have the responsibility to oversee operations. All permits, registrations, notifications, and associated documentation must be maintained for the life of the tank system at the tank facility or the nearest LOB or SO field office. Issued permits should be displayed at the facility for which they were issued.

a. Underground Storage Tank (UST) Notification, Permitting, and Registration.

(1) When installing a UST, a permit or notification form must be properly completed and filed with the state. Many states have their own permit or notification form. For states that do not have their own notification form, EPA Form 7530-1, Notification for Underground Storage Tanks, may be used. An inspection certification indicating proper installation must also be filed with the state.

(2) Within 30 days of an acquisition where ownership of a UST is assumed, the LOB/SO must submit a notice of ownership change to the implementing agency using the appropriate state form or EPA Form 6200-10.

(3) All in-service, temporarily out-of-service, and permanently out-of-service USTs must meet Federal, state, and local registration requirements. These requirements may include periodically updating tank registrations. Registration of new USTs, or a change in the status (e.g., permanently out-of-service) of an existing UST, must be processed within 30 days of the date of the action, per 40 CFR Part 280. If state or local regulatory timeframes differ from Federal regulations, the more stringent requirement must be followed.

(4) Notification to the regulating authority of permanent closure of USTs, or a change in the status (e.g., change from temporary out-of-service to permanently out-of-service) of an existing UST, must be processed within 30 days of the date of the action. If state or local regulatory timeframes differ from Federal regulations, the more stringent requirement must be followed. Refer to Chapter 5 for Federal requirements for sampling during UST closure.

(5) The implementing agency must be notified at least 30 days prior to switching to a regulated substance containing greater than 10 percent ethanol, greater than 20 percent biodiesel, or any other regulated substance identified by the implementing agency. In addition, LOBs and SOs maintaining UST systems storing these regulated substances must meet one of the following:

(a) Demonstrate compatibility of the fuel with the UST system components (including the tank, piping, containment sumps, pumping equipment, release detection equipment, spill equipment, and overfill equipment). This may be demonstrated using one of the following options:

i. Certification or listing of UST system equipment or components by a nationally recognized, independent testing laboratory for use with the regulated substance stored; or

ii. Equipment or component manufacturer's approval in writing, specifying the range of biofuel blends the equipment or component is compatible with; or

(b) Use options determined by the implementing agency.

b. Aboveground Storage Tank (AST) Permitting and Registration. State and local authorities may have notification, registration, and permitting requirements for AST installation, operation, closure, and removal. State and local regulations may also require maintaining registration for all in-service, temporarily out-of-service, and permanently out-of-service ASTs. Refer to Chapter 5 for more information on AST closure, removal and disposal requirements.

c. Pressure Vessels Installation / Removal Permitting and Registration. State and local authorities typically do not require notification or permitting for pressure vessel installations or removals, but may require pressure vessels to be registered. LOBs and SOs with pressure vessels must be aware of state and local requirements for pressure vessels, and they must ensure that their pressure vessels comply with these requirements.

3. Operations, Maintenance, and Closure Recordkeeping.

a. Manufacturer Provided Documentation. Tank manufacturer provided documentation (e.g., equipment manuals, brochures, and warranties) must be maintained for the life of the tank system at the tank facility or the nearest LOB or SO field office.

b. Tank Inspection Records. All tank system inspection records must be maintained at the tank facility or the nearest LOB or SO field office for a minimum of three years.

c. Walkthrough inspections. Inspections must include a list of each area checked, whether each area checked was acceptable or needed action taken, a description of actions taken to correct an issue, and delivery records.

d. Leak Detection Records. The following leak detection records must be maintained for each tank system at the tank facility or the nearest LOB or SO field office:

(1) Monitoring results for the past year;

(2) The most recent tank tightness and line leak detection test results;

(3) Copies of performance claims provided by leak detection manufacturers; and

(4) Records of recent maintenance, repair, and calibration of on-site leak detection equipment.

e. Cathodic Protection Records for USTs. USTs and piping with cathodic protection must be tested by a qualified cathodic protection tester within six months of installation and at least every three years thereafter. In addition, tanks and piping with cathodic protection must be tested within six months of any repair to any cathodically protected UST system. Records of the last 2 cathodic protection tests must be maintained at the tank facility or the nearest LOB or SO field office to document that cathodic protection is operating properly. Impressed current systems must be inspected every 60 days to verify that the system is operating properly. Records of the last three 60-day inspections must be maintained at the tank facility or the nearest LOB or SO field office to document that the impressed current system is on and operating properly.

f. Spill Response Plans. All facilities with tank systems should have a site specific spill response plan. These plans should describe countermeasures to contain, cleanup, and mitigate the effects of an oil spill. If applicable, the site specific SPCC meets this requirement. The spill response plan should be maintained for the life of the tank system, and they should be readily available at the facility for which they were written.

g. Spill Response Records. Spill response records must be maintained for the life of the FAA facility at the facility or the nearest LOB or SO field office. Additionally, these records must be maintained for a minimum of three years after the facility is decommissioned. These records include all reports that were submitted to the LOB/SO Tank Manager, the FAA Environmental Clean-Up Program Manager, and Federal, state, and local authorities. They also include planned or completed corrective actions (e.g., initial abatement measures, initial site characterization, free product removal, investigation of soil and groundwater cleanup, and the corrective action plan).

h. Spill Control and Countermeasure (SPCC) Plans. SPCC Plans must be maintained at the facility for which they were written if the facility is attended more than 4 hours per day. For facilities attended 4 hours or less per day, the SPCC Plan must be readily available at the nearest field office. A facility's SPCC Plan must be reviewed and evaluated at least once every five years, and a facility's SPCC Plan must be updated whenever there is a change in design, construction, operation, or maintenance affecting oil discharge potential. In addition, under certain circumstances, the SPCC Plan must be amended within 6 months of the review to include more effective prevention and control technology. Refer to Chapter 4 for more information regarding these and other SPCC Plan requirements.

i. Repair and Upgrade Records. Records demonstrating that tank system repairs and upgrades were properly completed must be maintained for each repair and upgrade at the tank facility or the nearest LOB or SO field office for the life of the tank system. If an AST tank system is closed and transported to a new facility for reuse, the tank system's repair and upgrade records must be transferred to the new facility. All repairs must be conducted in accordance the repair requirements of Chapter 4. All upgrades must be conducted in accordance with the requirements of Chapter 2.

j. Closure and Disposition Records. Records of closure and disposal activities must be maintained at the tank facility or the nearest LOB or SO field office. If a tank system is closed and transported to a new facility for reuse, the tank system's repair and upgrade records must be transferred to the new facility (Note: this is not applicable to USTs, since USTs are not allowed to be reused in accordance with Section 5.4.a. of this order). These records must document the impact the tank system had on the surrounding area. Records must be maintained for the life of the FAA facility, and for a minimum of three years after the facility is decommissioned. State and local authorities may have more stringent requirements, and it is the responsibility of each LOB and SO to ensure these requirements are met for their tank systems. At a minimum, UST documentation must include the following:

(1) Date the tank was removed from service;

(2) Date and disposal/recycling location of any surplus tanks;

(3) Site assessment results (e.g., soil or groundwater sampling, testing, and analysis);

(4) Disposition of contaminated soil; and

(5) Remedial action taken for cleanup of a contaminated site.

k. Regulatory Agency Correspondence Records. State and local regulatory agencies must be consulted regarding use of approved tank installers, tank removers, tank repairers, hazardous waste transporters, incineration plants, and recycling and disposal companies. These and all other correspondence with regulatory agencies must be maintained at the tank facility or the nearest LOB or SO field office for the life of the FAA facility, and for a minimum of three years after the facility is decommissioned.

l. Regulatory Inspections and Notices of Violation. Regulatory agencies may conduct inspections to confirm tank system compliance, and if they identify deficiencies, they may issue a remedial or directive order and/or a notice of violation, notice of infraction, ticket, or similar charging document. Records of regulatory inspections must be maintained at the tank facility or the nearest LOB or SO field office, and findings (including fully compliant) must be reported to the LOB/SO Tank Manager. If a document asserting a violation is received from a regulatory authority, the local facility manager must immediately forward a copy of the notice and all related correspondence to the LOB/SO Tank Manager. The LOB/SO Tank Manager must then

coordinate with the Office of the Chief Counsel and take action as necessary to address the violation.

m. Other Compliance Records. There may be other state and local requirements for additional documentation and testing records, these requirements must be known and followed. These records must be maintained at the tank facility or the nearest LOB or SO field office for the time period identified by the regulating agency.

Chapter 7. Training

1. Introduction. Training is a critical aspect of safe tank system management. Each LOB and SO with the responsibility to oversee tank system operations must ensure that their personnel assigned tank system responsibilities receive the appropriate level of training for their tank system responsibilities. In doing so, LOBs and SOs must ensure that the training their tank system personnel receive satisfies Federal, state, and local requirements, and they must maintain records of training completion. All training activities must be conducted in accordance with occupational safety and health requirements, including but not limited to, 29 CFR Part 1910 and FAA Order 3900.19: *FAA OSH Program*.

2. General Tank System Training. All personnel with tank system responsibilities must receive the appropriate level of training for their tank system duties. At a minimum, all tank system personnel must receive training that covers typical tank system configurations, applicable Federal tank system requirements, leak detection, spill prevention and control, and reporting and recordkeeping requirements. If personnel responsibilities or Federal, state, and local regulations necessitate additional training, each LOB and SO must ensure that their tank system personnel receive the necessary additional training.

3. Spill Prevention Control and Countermeasures Training. FAA personnel whose responsibilities involve operations and maintenance of tank systems at facilities subject to the Spill Prevention Control and Countermeasures (SPCC) Plan requirements of Chapter 4 are designated as "oil handlers" under the SPCC Plan. Once a facility's SPCC Plan is approved, but prior to SPCC Plan implementation, oil handlers must receive SPCC Plan training for their facility. Subsequently, oil handlers must receive annual SPCC Plan training for their facility to ensure adequate understanding of their SPCC Plan. As part of this training, oil handlers must conduct a walk-through of the facility with the SPCC Plan.

a. Facility Specific SPCC Training. Facility specific SPCC training must meet the requirements of 40 CFR Part 112 and cover the following topics:

(1) Equipment operation and maintenance procedures to prevent discharges;

(2) Discharge procedure protocols;

(3) Applicable pollution control laws, rules, and regulations;

(4) General facility operations;

(5) Known discharges, failures, or malfunctioning components at the facility;

(6) Recently developed precautionary measures; and

(7) The contents of the facility's SPCC plan.

4. Facility Response Plan Training. FAA facilities that must have a Facility Response Plan, as described in Chapter 4 of this Order, must have a Facility Response Plan training program for those personnel involved in oil spill response activities.

5. UST Operator Training Operator training requirements found in 40 CFR Part 280 Subpart J, Operator Training, ensures properly trained individuals operate all regulated UST systems. All FAA LOBs and SOs with USTs must have designated Tank Managers who have completed the appropriate Operator Training. These training programs are implemented at the state level, each LOB and SO must ensure that Tank Managers are trained in accordance with state and local requirements.

Chapter 8. Administrative Information

1. Distribution. This Order is distributed to all LOBs and SOs, regional offices, service areas, support centers, field offices, and facilities.

2. Background. There are several statutory and policy drivers for this Order.

a. National Environmental Policy Act of 1969 (NEPA). NEPA (Public Law 91–190) was passed by Congress in 1969 and signed into law on January 1, 1970. The NEPA (42 U.S.C. 4371 et seq.) requires federal agencies to integrate environmental values into their decision making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions. The regulations require federal agencies to prepare detailed statements known as Environmental Impact Statements (EIS) for a proposed major Federal action significantly affecting the quality of the human environment. NEPA also established the Council on Environmental Quality to compile information on environmental conditions and trends, and advise the President and federal agencies.

b. Clean Water Act of 1972 (CWA). CWA (Public Law 92-500) was passed by Congress on October 18, 1972. The CWA (33 USC §1251 et seq.) established the Oil Pollution Prevention regulations to prevent, prepare, and respond to oil discharges at specific non-transportation-related facilities that could reasonably be expected to discharge oil into navigable waters of the United States. The regulations require these facilities to develop and implement Spill Prevention, Control, and Countermeasure (SPCC) Plans and establish procedures, methods, and equipment requirements.

c. Hazardous and Solid Waste Amendments of 1984 (HSWA 1984). HSWA (Public Law 98-616) were passed by Congress on November, 8 1984. By amending the Solid Waste Disposal Act of 1965 (42 USC § 6901–6992k) to add Subtitle I, Congress passed HSWA to protect the Nation's drinking water supply, reduce quantities of potentially hazardous waste generated, and mitigate other risks associated with leaking USTs. The UST requirements of HSWA Section 9004 are codified in 40 CFR Part 280. EPA substantially revised 40 CFR Part 280 with the adoption of the 2015 underground storage tank regulation and the 2015 state program approval regulation. These revisions strengthen the 1988 federal underground storage tank (UST) regulations by increasing emphasis on properly operating and maintaining UST equipment. The revisions help prevent and detect UST releases, and ensure all USTs in the United States, including those in Indian country, meet the same minimum standards. Note: The Solid Waste Disposal Act is popularly referred to as the Resource Conservation and Recovery Act (RCRA), after the short title of the law that amended the Solid Waste Disposal Act in its entirety in 1976 (P.L. 94–580).

d. Superfund Amendments and Reauthorization Act of 1986 (SARA). SARA (amended through Public Law 107–377, December 31, 2002) was passed by Congress on October 17, 1986. By amending CERCLA (42 U.S. Code Chapter 103), Congress authorized EPA to respond to petroleum spills and leaks, directed EPA to establish financial responsibility requirements for UST owners and operators, and created a Leaking Underground Storage Tank (LUST) Trust Fund. These provisions amend Subtitle I.

e. Oil Pollution Act of 1990 (OPA). OPA (Public Law 101-380) was passed by Congress on August 18, 1990. This amendment to the Clean Water Act (Public Law 92-500) improved the nation's ability to prevent and respond to oil spills by establishing provisions that expand the Federal government's ability, and provide the money and resources necessary, to respond to oil spills. The OPA also created the national Oil Spill Liability Trust Fund, increased penalties for regulatory noncompliance, broadened the response and enforcement authorities of the Federal government, and preserved State authority to establish law governing oil spill prevention and response. Lastly, OPA required some oil storage facilities to prepare Facility Response Plans.

f. Energy Policy Act of 2005 (EPAct). EPAct 2005 (Public Law 109-58) was passed by Congress and signed into law on August 8, 2005. EPAct further amends Subtitle I of the SWDA of 1965 (42 USC § 6901–6992k) by adding new leak detection, inspection, and enforcement provisions to the Federal UST program and expanding the use of the LUST Trust Fund. EPAct also required EPA to develop grant guidelines regarding operator training, tank operation requirements, and financial and record keeping responsibilities for government USTs. EPA incorporated these training requirements into the 2015 UST Revised UST Regulations. Lastly, EPAct required EPA to develop a strategy and publish a report regarding USTs in Indian Country.

3. Authority to Change This Order.

a. FAA Administrator. The Administrator reserves the authority to establish or change policy, delegate authority, or assign responsibility as necessary.

b. Executive Director of the Office of Environment and Energy (AEE-1). AEE-1 has the authority to add new chapters or appendices, or change existing chapters or appendices that are proposed by organizational elements of FAA, after appropriate coordination with internal stakeholder organizations. Federal, state, and local regulatory changes in UST, AST, pressure vessel, and day tank regulations that take affect after issuance of this Order take precedence over any part of this Order with which it conflicts.

c. Organizational Elements. Changes proposed by an organizational element within FAA must be submitted to AEE-1, who will evaluate, or assign a designee to evaluate the changes for incorporation.

4. Acronyms. Acronyms are provided in the Appendix A.

5. Definitions. Definitions are provided in Appendix B.

Appendix A. Acronyms

AEE	Office of Environment and Energy
AEE-1	Executive Director of the Office of Environment and Energy
AGC	Office of the Chief Counsel
API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
AST	Aboveground Storage Tank
ATGS	Automatic Tank Gauge System
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulation
CWA	Clean Water Act of 1972
DT	Day Tank
EPA	Environmental Protection Agency
EPAct	Energy Policy Act of 2005
EPCRA	Emergency Planning and Community Right-to-Know Act of 1986
FAA	Federal Aviation Administration
FRP	Fiberglass Reinforced Plastic
HSWA	Hazardous and Solid Waste Amendments of 1984
LEPC	Local Emergency Planning Committee
LOB	Line of Business
LUST	Leaking Underground Storage Tank
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NRC	National Response Center
OPA	Oil Pollution Act of 1990
PE	Professional Engineer
PEI	Petroleum Equipment Institute
RCRA	Resource Conservation and Recovery Act
RQ	Reportable Quantity
SARA	Superfund Amendments and Reauthorization Act of 1986
SERC	State Emergency Response Commission
SO	Staff Office
SPCC	Spill Prevention, Control, and Countermeasure
SWDA	Solid Waste Disposal Act
USC	United States Code
UST	Underground Storage Tank

Appendix B. Definitions

1. Aboveground Storage Tank (AST). A tank system that has less than 10% of its combined volume underground [any tank that is not an underground storage tank (UST) is an AST].

2. Catchment Basin. Catchment basin is containment around the fill pipe that catches small drips or spills that occur when the delivery hose is disconnected from the fill pipe.

3. Cathodic Protection. A technique to prevent corrosion of a metal surface. For example, a tank system is cathodically protected through the application of galvanic (i.e. zinc) anodes or impressed current.

4. Containment Sump. A liquid-tight container that protects the environment by containing leaks and spills of regulated substances from piping, dispensers, pumps and related components in the containment area. Containment sumps may be single walled or secondarily contained and located at the top of tank (tank top or submersible turbine pump sump), underneath the dispenser (under-dispenser containment sump), or at other points in the piping run (transition or intermediate sump).

5. Day Tank. Day tanks collect fuel from the main facility storage tank and serve as a reservoir from which engine generators are supplied.

6. Decommission. The process of taking a facility out of service. The physical demolition of a facility can be included in this process, but at times a facility is decommissioned and then demolished at a later date. When a facility is fully decommissioned, it is no longer in service and the property is often released from government ownership, unless the facility was located on a larger government installation.

7. Disposal. To remove equipment and other items from use and properly discard or recycle.

8. Double-walled Tank. A container with two complete shells which provide both primary and secondary containment. The outer shell must provide structural support and must be constructed primarily of non-earthen materials including, but not limited to, steel and Fiberglass Reinforced Plastic (FRP).

9. Fill Limiters. Device which controls the amount of liquid that can be transferred from a refueling vehicle into an AST/UST.

10. Flow-Through Process Tank. Flow-through process tank is a tank that forms an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of materials during the operation of the process. Flow-through process tanks do not include tanks used for the storage of materials prior to their introduction into the production process or for the storage of finished products or by-products from the production process.

11. Free Product. A stored liquid substance that has been released from a tank system and is present as a non-aqueous phase liquid (e.g., liquid not dissolved in water or absorbed into soils).

12. Fuel Dispenser. A fuel dispenser is a machine at a filling station that is used to pump gasoline, diesel, CNG, CGH2, HCNG, LPG, LH2, ethanol fuel, biofuels like biodiesel, kerosene, or other types of fuel into vehicles.

13. Groundwater. The water beneath the surface of the ground, consisting largely of surface or atmospheric water that has seeped down, and subsurface water which may migrate into a well, spring, or body of surface water.

14. Hazardous Substance. In accordance with CERCLA, these are substances that are considered severely harmful to human health and the environment.

15. Implementing Agency. Means EPA, or in the case of a state with a program approved under section 9004 of RCRA (or pursuant to a memorandum of agreement with EPA), the designated state or local agency responsible for carrying out an approved tank program.

16. Interstitial Monitoring. Monitoring that checks the area between the tank and the barrier for leaks and alerts the operator if a leak is suspected.

17. Life of the Facility. This refers to the timeframe when a facility is in active use, prior to decommissioning. For tank systems, it is important that all records are maintained until a property is no longer in possession of the government, therefore records must be maintained until property ownership is transferred (unless the facility is part of a larger government installation). Any environmental liability associated with tanks can be better managed by having access to the history of tank usage at a facility.

18. Oil or Petroleum Liquid. Oil of any kind or in any form including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged soil.

19. Product. The bulk liquid content of a tank system.

20. Pressure Vessel. A tank system in which liquids are stored at greater than atmospheric pressures. Generally, pressure vessel tank systems will contain propane and similar materials that are normally gaseous but are storable as liquids if maintained under pressure. Pressure systems may include a vaporizer mechanism that converts the liquids back to a gas for usage as fuel in NAS systems (heaters, boilers, generators, etc.).

21. Operator. Any person in control of, or having the responsibility for, the daily operation of the storage tank system.

22. Reliability Centered Maintenance.
Reliability-centered maintenance (RCM) is a process and methodology for determining the most effective and efficient maintenance management plan. Safe minimum levels of maintenance are first established, then economic and technical considerations are considered. RCM has a focus on cost effective maintenance, which also preserves the intended functions of equipment and

systems. Decisions are based on safety and maintenance requirements supported by sound technical and economic justification.

23. Repair. To restore to proper operating condition a tank or, pipe, spill prevention equipment, overfill prevention equipment, corrosion protection equipment, release detection equipment or other UST system component that has caused a release of product from the UST system or has failed to function properly.

24. Replaced. For a tank it means to remove a tank and install another tank. For piping it means to remove 50 percent or more of piping and install other piping, excluding connectors, connected to a single tank. For tanks with multiple piping runs, this definition applies independently to each piping run.

25. Reportable Incident. Any unauthorized release which triggers a reporting obligation under Federal, state, or local law (see reportable quantity).

26. Reportable Quantity. A reportable release in an amount that is large enough to require the reporting of the event to Federal, state, or local authorities. These "reportable quantity" amounts are set forth under CERCLA; state and local authorities may also establish reportable quantities that are more stringent than those required under CERCLA. These state and local reporting requirements must also be known and followed.

27. Secondary Piping. A pipe within a pipe design that allows a release to be detected and captured in order to prevent pollution of soil and water.

28. Secondary Containment or Secondarily Contained. A release prevention and release detection system for a tank or piping. This system has an inner and outer barrier with an interstitial space that is monitored for leaks. This term includes containment sumps when used for interstitial monitoring of piping.

29. Solid Waste Disposal Act. Consists of title II of Public Law 89– 272 and the amendments made by subsequent enactments. This Act is popularly referred to as the Resource Conservation and Recovery Act (RCRA), after the short title of the law that amended the Solid Waste Disposal Act in its entirety in 1976 (P.L. 94–580).

30. Tank System. Refers to all underground storage tank (UST), aboveground storage tank (AST), and pressure vessel systems. Tank systems include: storage tanks (e.g., primary tanks, day tanks, etc), flow control devices (e.g., pipes, hoses, pumps, valves, nozzles, dispensers), leak detection and inventory control devices (e.g., monitoring systems), and electronic/electrical system operation devices (e.g., controller boards, technician operations stations, switched relays). Tank systems are used to store bulk liquids (petroleum, oils and lubricants) at manned and unmanned FAA facilities. Often they store fuel for electrical generators, lubricating oils, building heater and boiler fuels, vehicle and aviation fuels, and regulated liquid wastes.

31. Transportable Tank. Any container manufactured in compliance with 49 CFR Part 173, 174, 175, or 176 or DOT Specifications 51, 56, 57, or 60 and designed for and capable of being taken from one place to another by public carrier.

32. Training Program. Any program that provides information to and evaluates the knowledge of a Class A, Class B, or Class C operator through testing, practical demonstration, or another approach acceptable to the implementing agency regarding requirements for UST systems that meet the requirements of Subpart J.

33. Totalizers. A device (such as a meter) that records a remaining total (as of fuel).

34. Unauthorized Release. Any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from a tank system into groundwater, surface water, surface soils, or subsurface soils.

35. Underground Storage Tank (UST). A storage tank and any piping connected to the tank that has at least 10 percent of its total system volume (maximum tank volume plus volume that can be contained inside the piping) underground (below grade contacting soils). A UST can be readily visible above grade and proper classification cannot be based on physical location of the tank alone. For example, a 500-gallon storage tank is sitting above grade on a concrete pad outside an FAA facility and readily visible. Piping runs from the tank underground to supply fuel for a facility emergency engine generator. The piping can contain a total volume of 100 gallons of fuel. The total tank system volume is 600 gallons with 100 gallons underground. Although the storage tank is readily visible above grade, the system is a UST since greater than 10% of the total volume (10% of 600 gallons = 60 gallons) is underground (100 gallons).

36. Upgrade. Means the modification of a tank system. Modifications include, but are not limited to, modifying piping to add cathodic protection, replacing tank lining or spill and overfill protection, and replacing other tank system components to bring the tank system into compliance.