Underground Storage Tanks: The New UST Regulations

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EPA Office of Underground Storage Tanks

This is what I will cover today

- History
- Applicability
- Overview of Requirements
  - Focus on requirements from 2015 regulation
- Common Violations

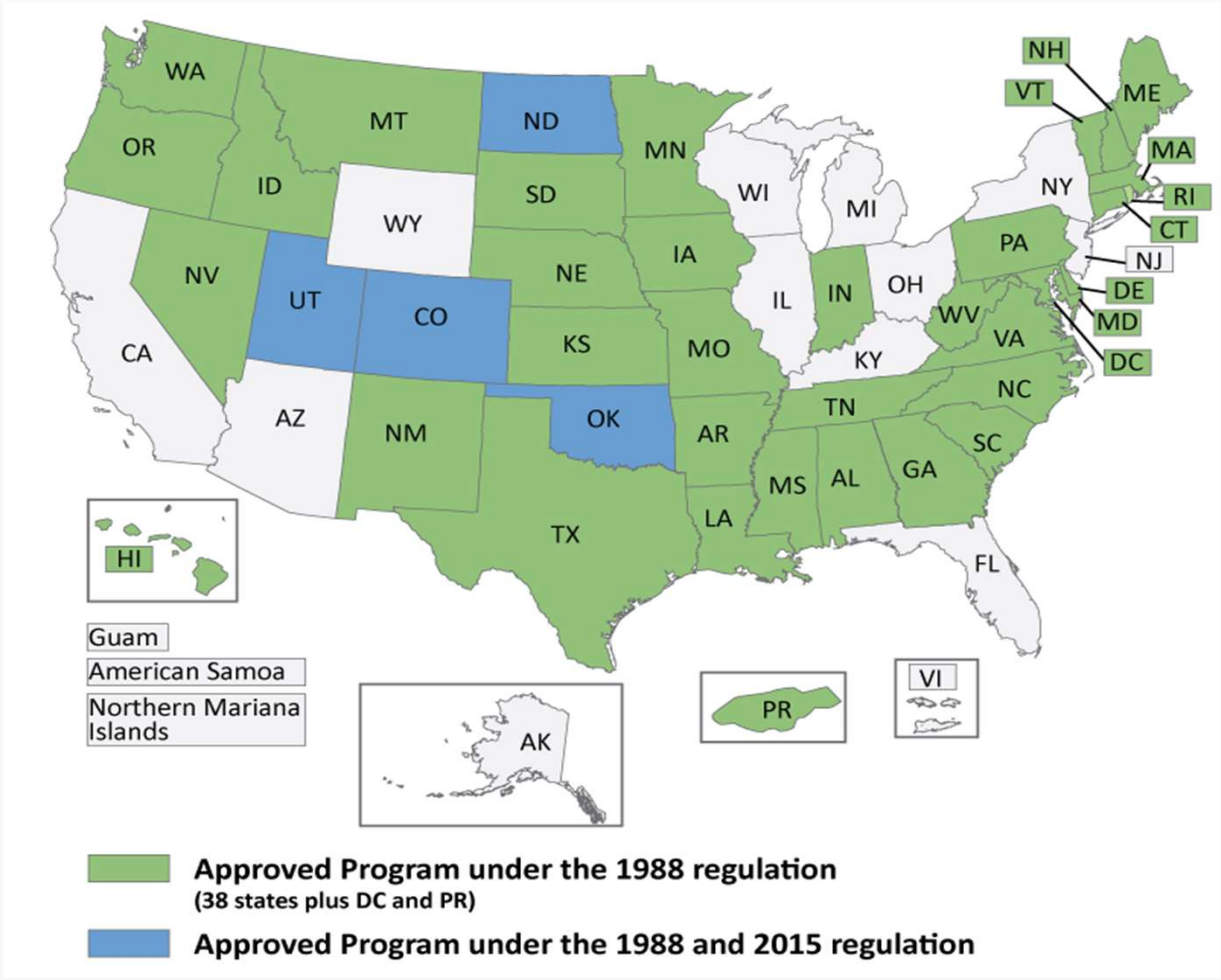
What is the history of the regulation?

- Regulation originally adopted in September 1988 with an effective date of December 22, 1988
- **Primarily implemented by states**
- Minor revisions through the years.
- Energy Policy Act of 2005 mandated new requirements
- November 2011 – EPA published proposed changes to the regulation
- EPA adopted the revised regulation on July 15, 2015 with an effective date of October 13, 2015

What does the 2015 regulation mean for owners/operators?

- In **states with state program approval**
  - owners and operators must continue to meet the state UST requirements, which may be different from the 2015 federal UST requirements
- In **states without state program approval**
  - owners and operators must meet the state UST requirements
  - the 2015 federal requirements apply according to time frames specified in the UST regulation
- In **Indian Country**
  - the 2015 federal requirements apply according to time frames specified in the UST regulation

States with Approved UST Programs (SPA States)



Focus of this presentation is 40 CFR Part 280

State's requirements may be more stringent than federal requirements or may have different deadlines

Applicability of the UST regulations

USTs that:

- Are larger than 110 gallons (including volume in piping system)
- Have 10% or more of volume underground (beneath the surface of the ground or covered by earthen material)
- Store regulated substance
- Are not exempt or excluded

Applicability of the UST regulations

USTs that are exempt or excluded:

- USTs storing heating oil for consumptive use on the premises where stored
- Farm and residential (noncommercial) motor fuel USTs 1,100 gallons or less
- Stormwater or wastewater collection system
- Flow through process tank
- Tanks in underground area above surface of floor that are accessible for inspection
- Emergency spill and overfill containment tanks if expeditiously emptied after use

Overview of Requirements

Equipment requirements - UST system must be:

- Protected from corrosion

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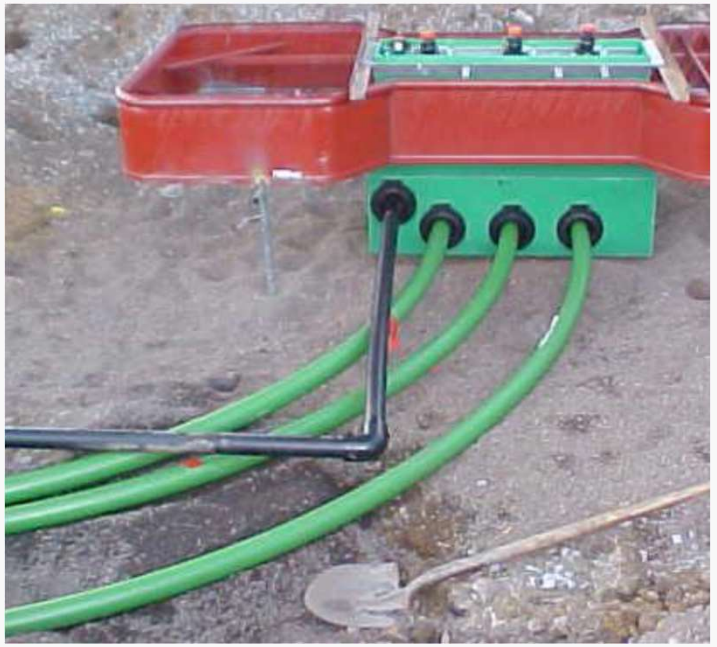
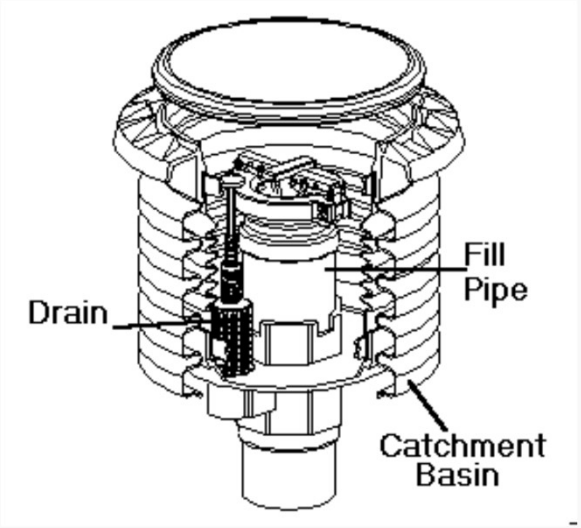
- Protected from corrosion

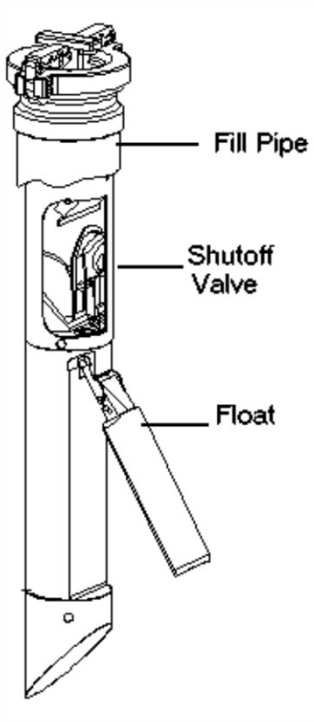


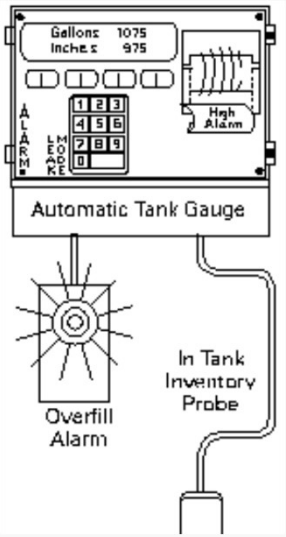
Overview of Requirements

Equipment requirements - UST system must be:

- Protected from corrosion
- Be equipped with spill and overfill prevention



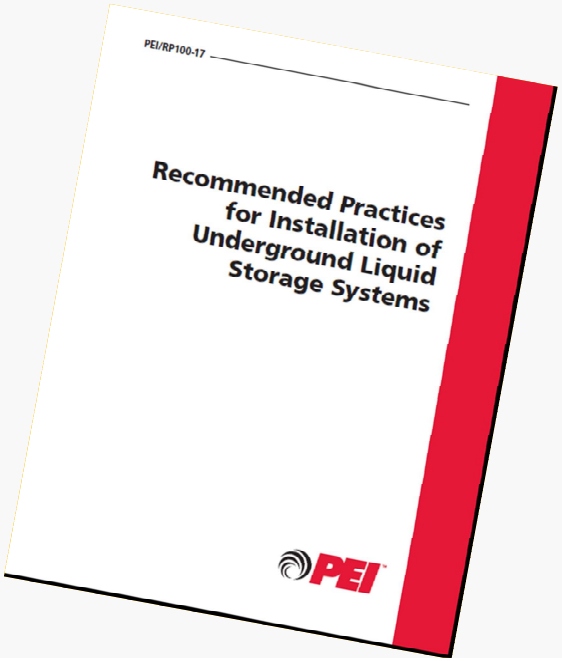




Overview of Requirements

Equipment requirements - UST system must be:

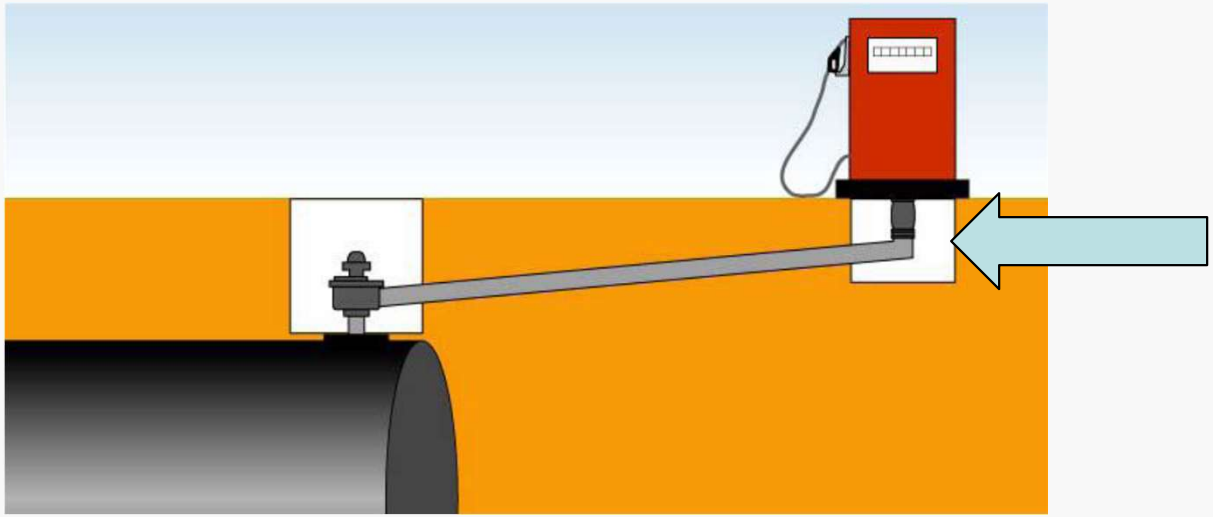
- Protected from corrosion
- Be equipped with spill and overfill prevention
- Be properly installed



2015 Requirement

Equipment requirements - UST system must be equipped with under dispenser containment

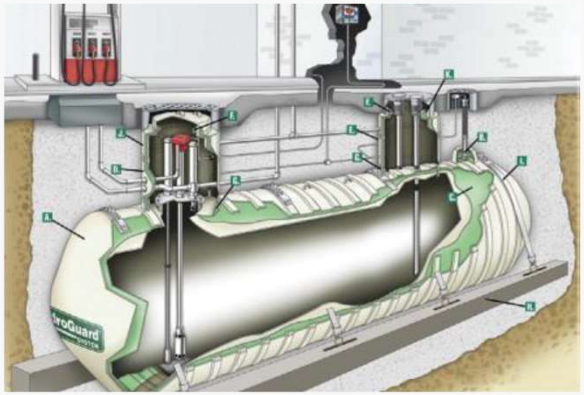
- Applies to new or replaced dispensers installed after April 11, 2016

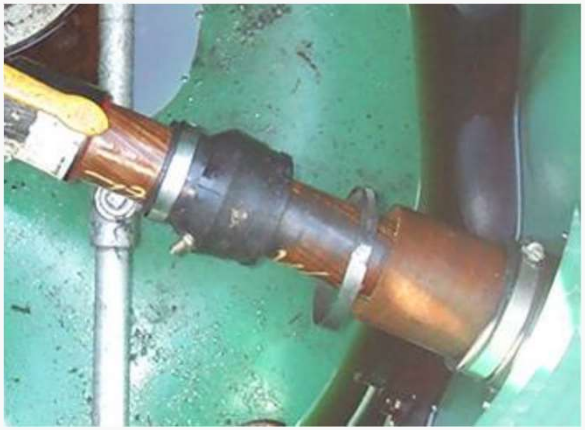


2015 Requirement
Secondary Containment

Secondary Containment

- Applies to new and replaced tanks and piping installed after April 11, 2016
- Includes interstitial monitoring and monitoring sumps if they are used for interstitial monitoring
- Includes under-dispenser containment for new dispenser systems





Overview of Requirements

Operational Requirements – owners and operators must:

- Prevent overfills using proper procedures
- Monitor cathodic protection systems
- Ensure equipment is compatible
- Conduct release detection on tanks and piping
  - Monthly release detection on tanks
  - Pressurized piping – line leak detector plus annual line test or monthly monitoring
  - Suction piping – monthly monitoring or line test every 3 years unless exempt by safe suction design

Overview of 2015 Operational Requirements

Owners and operators must:

- Ensure equipment is compatible
- Test for liquid tightness
  - spill buckets
  - containment sumps used for interstitial monitoring of piping
- Inspect overfill prevention devices
- Inspect release detection equipment
- Conduct walkthrough inspections
- Have trained operators

Compatibility

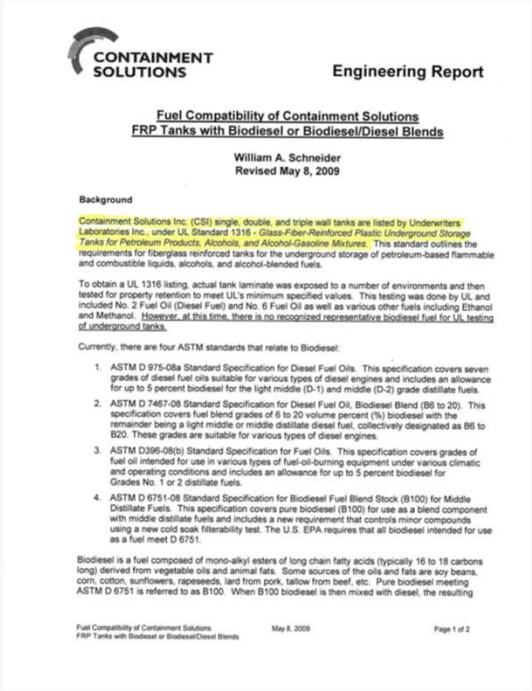
- **Notification** - Owners and operators must notify the implementing agency at least 30 days before switching to a regulated substance containing greater than 10 percent ethanol, 20 percent biodiesel, or any other regulated substance identified by the implementing agency

- **Demonstration of compatibility** – Owners and operators must demonstrate compatibility of the UST system through a nationally recognized testing lab listing or manufacturer approval of UST equipment or components, or use an alternative option identified by the implementing agency that is no less protective than demonstrating compatibility of the UST system

- **Recordkeeping** - Owners and operators must maintain records to demonstrate compliance for as long as the biofuel blend is stored

Examples for Demonstrating Compatibility

Independent Laboratory Certification or Listing for Use with the Substance



CONTAINMENT SOLUTIONS

Engineering Report

Fuel Compatibility of Containment Solutions FRP Tanks with Biodiesel or Biodiesel/Diesel Blends

William A. Schneider
Revised May 8, 2009

Background

Containment Solutions Inc. (CSI) single, double, and triple wall tanks are listed by Underwriters Laboratories Inc., under UL Standard 1316 - *Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures*. This standard outlines the requirements for fiberglass reinforced tanks for the underground storage of petroleum-based flammable and combustible liquids, alcohols, and alcohol-blended fuels.

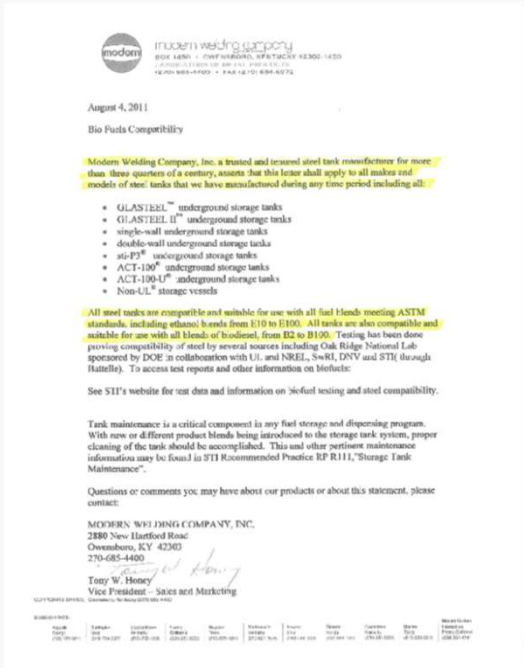
To obtain a UL 1316 listing, actual tank laminate was exposed to a number of environments and then tested for property retention to meet UL's minimum specified values. This testing was done by UL and included No. 2 Fuel Oil (Diesel Fuel) and No. 6 Fuel Oil as well as various other fuels including Ethanol and Methanol. However, at this time, there is no recognized representative biodiesel fuel for UL testing of underground tanks.

Currently, there are four ASTM standards that relate to Biodiesel:

1. ASTM D 975-08a Standard Specification for Diesel Fuel Oils. This specification covers seven grades of diesel fuel oils suitable for various types of diesel engines and includes an allowance for up to 5 percent biodiesel for the light middle (D-1) and middle (D-2) grade distillate fuels.
2. ASTM D 7467-08 Standard Specification for Diesel Fuel Oil, Biodiesel Blend (B6 to 20). This specification covers fuel blend grades of 6 to 20 volume percent (%) biodiesel with the remainder being a light middle or middle distillate diesel fuel, collectively designated as B6 to B20. These grades are suitable for various types of diesel engines.
3. ASTM D396-08(b) Standard Specification for Fuel Oils. This specification covers grades of fuel oil intended for use in various types of fuel-oil-burning equipment under various climatic and operating conditions and includes an allowance for up to 5 percent biodiesel for Grades No. 1 or 2 distillate fuels.
4. ASTM D 6751-08 Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels. This specification covers pure biodiesel (B100) for use as a blend component with middle distillate fuels and includes a new requirement that controls minor compounds using a new cold soak filterability test. The U.S. EPA requires that all biodiesel intended for use as a fuel meet D 6751.

Biodiesel is a fuel composed of mono-alkyl esters of long chain fatty acids (typically 16 to 18 carbons long) derived from vegetable oils and animal fats. Some sources of the oils and fats are soy beans, corn, cotton, sunflowers, rapeseeds, lard from pork, tallow from beef, etc. Pure biodiesel meeting ASTM D 6751 is referred to as B100. When B100 biodiesel is then mixed with diesel, the resulting

Affirmative Statement of Compatibility from Manufacturer



modern welding company

August 4, 2011

Bio Fuels Compatibility

Modern Welding Company, Inc. a trusted and tenured steel tank manufacturer for more than three quarters of a century, asserts that this letter shall apply to all makes and models of steel tanks that we have manufactured during any time period including all:

- GLASTEEL™ underground storage tanks
- GLASTEEL II™ underground storage tanks
- single-wall underground storage tanks
- double-wall underground storage tanks
- ni-Pi® underground storage tanks
- ACT-100® underground storage tanks
- ACT-100-U® underground storage tanks
- Non-UL® storage vessels

All steel tanks are compatible and suitable for use with all fuel blends meeting ASTM standards, including ethanol blends from E10 to E100. All tanks are also compatible and suitable for use with all blends of biodiesel, from B2 to B100. Testing has been done proving compatibility of steel by several sources including Oak Ridge National Lab sponsored by DOE in collaboration with UL and NREL, SwRI, DNV and STI(through Battelle). To access test reports and other information on biofuels:

See STI's website for test data and information on biofuel testing and steel compatibility.

Tank maintenance is a critical component in any fuel storage and dispensing program. With new or different product blends being introduced to the storage tank system, proper cleaning of the tank should be accomplished. This and other pertinent maintenance information may be found in STI Recommended Practice RP R111,"Storage Tank Maintenance".

Questions or comments you may have about our products or about this statement, please contact:

MODERN WELDING COMPANY, INC.
2880 New Hartford Road
Owensboro, KY 42303
270-685-4400

Tony W. Honey
Vice President – Sales and Marketing

Demonstrating Compatibility

Sample Checklist for Determining and Documenting UST System Compatibility

Instructions: Complete all sections. This will help ensure you have the required information to demonstrate compatibility of an UST system with biofuels containing more than 10 percent ethanol or more than 20 percent biodiesel.

Facility Owner: **Facility Name:** **Facility Number:**	**Facility's Street Address, City, State, Zip Code:**

UST System Identifier:	**Type and Blend Of Regulated Substance:**	**UST Capacity In Gallons:**

Complete the checklist below, listing compatibility determination, method*, and description. All answers must be Yes and supported with a sufficient description and documentation for your system to be demonstrated compatible with the biofuel.

UST System Components	**Documentation Demonstrating Compatibility With The Substance Listed Above?**		**Method A Or B***	**Description Of Component Type, Model Number, And National Laboratory Certification, Listing Or Manufacturer Approval**
Tank	No	Yes		
Piping	No	Yes		
Containment Sumps	No	Yes		
Pumping Equipment	No	Yes		

1. Determine component
   - manufacturer
   - model number

2. Find certification, listing, or manufacturer statement of approval for use with the fuel being stored

2015 Operational Requirements

Three year spill prevention equipment testing

- Ensures the spill bucket will hold drips and small spills when the delivery hose is disconnected from the fill pipe
- Double-walled spill buckets that monitor integrity of both walls are not required to be tested
- Complete at installation for UST systems installed after Oct. 13, 2015
- Completed by Oct. 13, 2018 for UST systems installed on or before Oct. 13, 2015
- Keep records for 3 years

2015 Operational Requirements

Three year containment sump testing for sumps used for piping interstitial monitoring

- Ensures containment sump will hold leaked product so that it can be detected
- Complete at installation for UST systems installed after Oct. 13, 2015
- Completed by Oct. 13, 2018 for UST systems installed on or before Oct. 13, 2015
- Double-walled sumps that monitor integrity of both walls are not required to be tested
- Keep records for 3 years

2015 Operational Requirements

Three year inspection of overfill prevention equipment

- Ensure overfill prevention equipment operates as intended
- Complete at installation for UST systems installed after Oct. 13, 2015
- Completed by Oct. 13, 2018 for UST systems installed on or before Oct. 13, 2015
- Keep records for 3 years

2015 Operational Requirements

Annual release detection equipment testing

- Ensure release detection equipment is operating properly
- Completed by October 13, 2018
- Keep records for 3 years

2015 Operational Requirements

Periodic walkthrough inspections (first inspection completed by October 13, 2018)

- Every 30 Days
  - Check spill prevention equipment
  - Check release detection equipment and records
- Annually
  - Check containment sumps
  - Check hand held release detection equipment
- Keep records for 1 year

2015 Operator Training Requirement

Operator Training
(completed by October 13, 2018)

- Owners must designate and ensure Class A, B and C operators are trained
- Recordkeeping is required for as long as the operator is designated at the facility
- Retraining is required for Class A and B operators at facilities determined to be out of compliance

Overview of Requirements

Operational Requirements – owners and operators must:

- Respond to suspected releases and actual releases
- Properly close tank systems in order to no longer be required to comply with requirements

Addressing Deferrals –
Emergency Generator USTs

Removes the 1988 deferral and requires release detection for all emergency generator tanks

- Required at installation for UST systems installed after October 13, 2015
- By October 13, 2018 required for systems installed on or before October 13, 2015

Addressing Deferrals –
Field-Constructed USTs and Airport Hydrant Fuel Distribution Systems

Removes the1988 deferral and requires Airport Hydrant System (AHS) and Field Constructed Tanks (FCT) to meet release prevention and release detection requirements

Addressing Deferrals –
Field-Constructed USTs and Airport Hydrant Fuel Distribution Systems

EPA created specific and appropriate requirements for these unique systems

- Provides exceptions for piping secondary containment requirement for AHS and some FCTs
- Provides options for meeting release detection requirements
- Required one-time notification by October 13, 2018 for existing systems

Addressing Deferrals –
Field-Constructed USTs and Airport Hydrant Fuel Distribution Systems

Partially excludes aboveground tanks associated with these systems

- 40 CFR 280 Subpart A (Installation Requirements) and 40 CFR 280 Subpart F (Release Response and Corrective Action) are still applicable

Implementation date depended on requirement

- October 13, 2015: release reporting, response, and investigation; financial responsibility; closure; notification for new installs
- October 13, 2018: Spill and overfill prevention, corrosion protection, general operating requirements (including compatibility and repairs), release detection, and operator training

Addressing Deferrals –
Wastewater Treatment Tank Systems, USTs Containing Radioactive Materials, and Emergency Generator USTs at NRC facilities

These systems are reclassified as partially excluded from the 2015 UST regulation. As with 1988 regulation, EPA continues to regulate installation of these USTs under 40 CFR 280 subpart A and corrective action for releases under 40 CFR 280 subpart F.

COMMON VIOLATIONS OBSERVED

Common Violations Observed

- Release Detection – Piping
  - Missing line tests
  - Missing line leak detector functionality test
- Release Detection – Tank
  - Failure to conduct monthly monitoring

Common Violations Observed

- Operator Training
  - Failure to get all applicable staff trained
- Walkthrough Inspections
  - Failure to complete

Common Violations Observed

- Spill Prevention (Spill Bucket)
  - Failure to maintain and keep clean

Resources

- www.epa.gov/ust
- https://www.epa.gov/ust/publications-related-underground-storage-tanks
- Musts for USTs: A Summary of the Federal Regulations for Underground Storage Tank Systems
- Implementation Time Frames for 2015 Underground Storage Tank Requirements
- Operating and Maintaining Underground Storage Tank Systems: Practical Help and Checklists
- Requirements for Field-Constructed Tanks and Airport Hydrant Systems

QUESTIONS?

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