UST Updates

Darryl Slade
UST Compliance and Technology Unit
UST Regulation Changes

- Federal Regulations finalized 2015
- State rule finalized May 30, 2017
  - Many rules are in state statute 319.100 RSMo
  - Federal definitions have been “incorporated by reference”
  - Definitions were put into state rule
Letters from Congress

- Congress sent letters to EPA requesting delay of UST rule implementation
- EPA has declined
- Anticipate no changes to compliance dates
We strongly suggest not to wait until the last minute to come into compliance.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot “field repair” a spill basin with epoxy, caulk or adhesive materials alone</td>
<td>New USTs must be double-walled/interstitial monitoring</td>
<td>1st Spill Bucket Test required</td>
<td>Vapor Monitoring sunsets as a release detection method (without chemical marker)</td>
</tr>
<tr>
<td>SIR reports must be returned to O/O by the 10th of the following month</td>
<td>Replaced piping must be double-walled/interstitial monitoring</td>
<td>1st Overfill Prevention Equipment Test</td>
<td>Groundwater Monitoring sunsets as a release detection method</td>
</tr>
<tr>
<td>Notify prior to change of product to biofuel</td>
<td>Dispenser replacement requires sump install</td>
<td>1st Walkthrough inspection</td>
<td></td>
</tr>
<tr>
<td>New Installation notice now 14 days (not 30 days)</td>
<td>Spill, Overfill and Containment Sump Test required at install</td>
<td>1st operability test of release detection equipment</td>
<td></td>
</tr>
</tbody>
</table>
2019 - Start Testing

- Spill buckets
- Overfill devices
- Primary release detection
  - Line leak detection
  - ATG
  - Sensors (mandatory for post 7/1/17 sites)
- Start monthly walkthroughs (spill/release detection)
Spill Bucket Testing

Spill buckets must be tested at installation and then every three years or have monthly interstitial monitoring.

• For existing sites, the first test is due in 2019
Spill Bucket Testing

- The more common method of spill bucket testing is a ‘hydrostatic test,’ which simply means the spill bucket is filled with water and monitored to ensure the water level does not change.
- An alternative method can be done by a tester sealing the bucket and putting pressure or vacuum on the bucket and then testing to see if the spill bucket is tight.
- Tests must be conducted according to a code of practice or manufacturer’s instructions.
Spill Bucket Testing

• The traditional hydrostatic (water) integrity test of a single-walled spill bucket/basin and spill bucket is filled to within 1.5 inches of the top and monitored to ensure the water level does not change.
Double-walled Spills/sumps

• EPA determination- monthly monitoring must be vacuum, pressure, brine
• Missouri can be traditional passive monitoring (sensor/gauge in dry interstice)
• Need monthly reports/logs
• No 3 year test required
Monthly Reports/logs

Example of monthly interstitial log for double-walled spills/sumps

<table>
<thead>
<tr>
<th>Date</th>
<th>Staff</th>
<th>Gauge</th>
<th>Action If Any</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>HP</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Feb</td>
<td>AO</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>March</td>
<td>CA</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>April</td>
<td>BE</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>DK</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>June</td>
<td>ET</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>July</td>
<td>HP</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>August</td>
<td>AO</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Sept</td>
<td>CA</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Oct</td>
<td>BE</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Nov</td>
<td>DK</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Dec</td>
<td>ET</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
Spill Buckets

- Unique Spill Containment Systems
- All spill buckets/basins must be tested, including unique configurations, like those below
Spill Bucket Testing

- Uncommon spill basins, like diked, concrete basins around busy diesel fueling areas like the one pictured here, must be tested
Spill Bucket Repairs

• No epoxy, paint, caulk, or field repairs, unless part of pre-manufactured insert kit
• Can use double-walled spill
  – Replace inner wall only (no concrete broken)
Spill Bucket Repairs

• Snow plow damage
Overfill Devices

- Flapper Valves
- Ball Float Valve
- Overfill Alarm
Overfill Prevention Equipment Tests

• First test fail rate- over 50% in some states
• May require removal of entire riser
• Old style- requires removal
  – Flapper/ Ball Float
  – Alarm (not just button outside)
• If BFV fails, cannot replace with BFV
• Must confirm proper height
Self-testing Flapper Valves

• Missouri has approved 3 self-testing flapper valves
• Follow manufacturer’s instructions for installation/testing
• Confirm all parts functioning and free to move
  – Confirm will shutoff as installed
  – 95% full for flapper valve
Overfill Prevention Equipment

Three overfill devices are now approved to be tested in-place, without removal from the tank

• Franklin Fueling’s Defender Series overfill device
• OPW’s 7150-T Testable overfill prevention valve
• Emco Wheaton’s A 100-T Testable overfill prevention valve

Must follow manufacture’s approved test method, including verification the device is installed at correct height. Document measurements
Overfill Prevention Equipment

• Ball float valves may not be installed in new or updated systems
• Confirm all parts functioning and free to move
• Confirm will shutoff as installed
  ➢ 90% full for ball float valve
Overfill Alarm

- Test every three years
  - Check at ATG and outside
- Can combine with ATG operability test
Leak Detection Operability

- Still testing LLD
- ATG test – must remove floats/probes
- Interstitial/sump sensors
  - Flip or Dip test, depending on manufacturer
- Must be trained/certified by manufacturer
- Must follow manufacturer requirements
Leak Detection Operability

• Tests must be conducted in accordance with the regulations and the manufacturer’s procedures by a trained or certified technician.
Leak Detection Operability

• Leak detector tests must simulate a leak to test the LLD as is installed in the system
• The test equipment should be at the highest or furthest dispenser or piping termination
• All operability tests should include a check of the complete tank and/or piping system to ensure that nothing impedes the equipment from detecting leaks from any portion of the tank and/or piping system
Leak Detection Operability

If you are using an automatic tank gauge (ATG), the technician must:

- Inspect probe/float for residue (must remove float/probes)
- Ensure floats move freely
- Check cables
- Check batteries (unless data is stored remotely)
- Verify system configuration
- Test alarm (if testing outside alarm, this may satisfy the overfill equipment check as well)
Leak Detection Operability

If a site has line leak detectors (LLDs) from more than one manufacture, the tester must be certified for each detector to test it.
Leak Detection Operability

• New UST systems (tank and piping) must use interstitial monitoring as the primary, precision monitoring method. As such, the sensors must be checked to ensure they are functioning properly and installed at the lowest point in the system.

• Follow the manufacturer’s testing procedures; for example, the sensor may be removed and submerged in water to ensure it alarms.
# Leak Detection Operability

## Record Keeping Requirements

<table>
<thead>
<tr>
<th>Equipment Check</th>
<th>Testing or Monitoring</th>
<th>Record Retention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overfill Prevention</td>
<td>Equipment Test/Inspection</td>
<td>Three years</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spill Prevention</td>
<td>Tightness Test</td>
<td>Three years</td>
</tr>
<tr>
<td></td>
<td>Interstitial Monitoring</td>
<td>12 months</td>
</tr>
<tr>
<td>Containment Sump</td>
<td>Tightness Test</td>
<td>Until next test (three years)</td>
</tr>
<tr>
<td></td>
<td>Interstitial Monitoring</td>
<td>12 months</td>
</tr>
<tr>
<td>Release Detection</td>
<td>Operability Check</td>
<td>One year or next test</td>
</tr>
</tbody>
</table>
Double-walled Tanks and Piping

- Tanks and piping installed or replaced on or after July 1, 2017, must be double-walled with containment sumps and use interstitial monitoring.
- You must test for a release at least once every 30 days. Double-walled piping open to leak-tight containment sumps with interstitial monitoring can also be used to detect leaks from piping.
- For new systems installed on or after July 1, 2017, the interstitial monitoring system for petroleum tanks must be electronic and generate a report.
Containment Sump Testing

- Petroleum Equipment Institute RP 1200 Annual Interstitial Monitoring
- NWGLDE listed test
- Other pre-approved test

<table>
<thead>
<tr>
<th>Monitor or Test Containment Sumps</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interstitially monitor</td>
<td>Annually</td>
</tr>
<tr>
<td>Tightness Test</td>
<td>Every three years</td>
</tr>
</tbody>
</table>

First test at installation of *required* sump
Low Liquid Level Containment Sump Testing

• Low level testing is an alternative method that only requires filling the sump with test water to at least 4 inches above the sensor height to activate the sensor.

• This test method is only approved for routine testing; it may not be used as the post-install or post-repair test.

• Actual test time is 1-hour in length.

• Record keeping requirements.
50% Piping System Replacement

- Within 12 month period
- For a piping system
  - Single tank’s piping (single product)
  - Not of the total site piping
  - Do not combine same products unless piping is manifolded

Entire piping system must be double walled with containment sumps and monitoring
- Based on individual tank systems

- Does not matter how many different systems/products are beneath the dispenser

- May have to install containment sumps under dispensers with other piping runs entering
• Manifold piping (all connected) counts as a system

• Even if only affects one “half” of the manifold, all of the connected piping must comply

• Includes sumps at each end and transition
What is Piping Replacement?

• If more than 50% of the finished product line is new, it’s a replacement
  – Entire double-wall piping run, sumps, sensors, with sump testing
• Only count that single run of piping
  – STP through all connected dispensers is 1 run
  – Do not count all products
  – Do not count lines that aren’t connected on same product (2 STPs- to different dispensers)
Release Detection Changes

• Statistical Inventory Reconciliation (SIR) report every month
  – By the 10th of the following month
  – Leak rate calculated
  – Must retain supporting data (stick readings, deliveries)

• ATG reports must have details
  – Test type and time
  – Water and product levels
  – Test data, leak rate, etc
Walkthrough Inspections

• You must conduct your first monthly and annual walkthrough inspection by January 1, 2020

• Keep walkthrough inspection records for one year
Walkthrough Inspections

Monthly:

- Visually check for damage
- Remove liquid or debris in sumps/spill buckets
- Check spill buckets
- Check release detection
- Every other month check rectifier for cathodic protection, if present
- Interstitial skip three year test

Start Jan. 1, 2020, or upon installation for new systems
Walkthrough Inspections

Annual testing - Existing Site
(Start Jan. 1, 2020)

• Line Tightness Test
• Line Leak Detector Test
• ATG Check (release detection)
• Walkthrough Inspection
Walkthrough Inspections

Annual testing - New Sites **
- Line Leak Detector Test
- Containment Sump Sensors Checked
- Tank Interstitial Sensors Checked
- Walkthrough Inspection
- Containment Sump Interstitial Sensors Checked (skip three year test)

(**Recommended for all sites)**
Walkthrough Inspections

Annually:

- *Required* sumps
  - Dispensers
  - Tank top
  - Transition sumps
- Hand-held release detection equipment
Walkthrough Inspections

Hand held non-electronic equipment, such as tank gauge sticks

- By Jan. 1, 2020, for hand held non-electronic equipment, such as tank gauge sticks you must check annually for operability and serviceability
Triennial Testing (Three Years)

Existing Site (Start Jan. 1, 2020)
• Spill Bucket Test –(unless monthly interstice)
• Overfill Prevention Test
• Cathodic Protection System Test (if present)

New Sites
• Containment Sump Test –(unless annual interstice)
• Spill Bucket Test –(unless monthly interstice)
• Overfill Prevention Test
UL1856 - The New Lining Standard

- Pre-1981 fiberglass tanks likely not compatible with regular gasoline (10 percent ethanol)
- New linings must be UL1856 ‘listed’
- 01/01/2020 deadline to come into compliance
Ballasting Underground Storage Tanks

• If fuel is used as ballast, spill and overfill prevention must be installed prior to fuel being added to a tank.

• An automatic shutoff device, also known as a flapper valve, is the most common way to ensure a tank is not overfilled.
Ballasting Underground Storage Tanks

- Once fuel is in the tank, release detection as described in 10 CSR 26-2.019(11) must be performed daily and recorded to ensure no product is released.
- The release detection records must be available on site for review or a copy of the records will need to be submitted following the final inspection.
- Contractors and installers need to follow all manufacturers’ directions when installing underground fuel tank systems.
Installation Documentation

• The Department certifies installations upon completion to satisfy the state and federal "Certification of Installation" requirements.

• Installation inspections are designed to see as many of the new requirements as possible, thereby minimizing the amount of documentation needed.

• For example, if an inspector is present for the sump or sensor test, the paperwork might not be required.
Installation Documentation

Many of these items may be part of the inspection, but here is a list of the items needed to certify a typical installation:

- Financial Responsibility on file with Missouri Department of Agriculture
- Manufacturers’ Training/Technician certificates
- Tank Manufacturer’s Installation Checklist
  - Damage or Repair Documentation or Certification
- Piping Manufacturer’s Installation Checklist
- Automatic Tank Gauge/ Electronic Console setup report (including sensors)
- Sensor Operability Tests (performed in accordance with manufacturer’s procedures)
  - All sensors, labeled/identifiable locations, functioning (sensor status), tested

Continued to next slide (Slide 1 of 2)
Installation Documentation

Many of these items may be part of the inspection, but here is a list of the items needed to certify a typical installation

- Line Leak Detector Operability Tests
- Post-Installation Precision Tank Tightness Test
- Post-Installation Precision Line Tightness Test
- Overfill Prevention Device Operability Test (including 95% height confirmation)
- Sump Integrity Installation Test (hydrostatic, pressure/vacuum interstitial test)
- Spill Bucket Integrity Installation Test (hydrostatic, pressure/vacuum interstitial test)
- Other special site or equipment requested testing or documentation

Continued from previous slide (Slide 2 of 2)
Certification of Installation

- DNR needs to certify the install prior to a UST selling petroleum products at a site.
Stay Up To Date

Questions on Tanks Regulations?
Sign up for the Missouri Department of Natural Resources’ Operational Tanks Assistance E-mail Listserv!

To help improve communication with the regulated community, the Tanks Compliance and Enforcement Unit will soon begin using routine emails to provide up-to-date technical information, operation and maintenance assistance, new determinations, and regulatory updates. By using an e-mail listserv service, our goal is to raise awareness of common problems found during inspections, answer frequently asked questions, and to update you on new or upcoming requirements for underground storage tanks.

To take advantage of this free service, you can subscribe online at: https://public.govdelivery.com/accounts/MODNR/subscriber/new?topic_id=MODNR_128.
Stay Up To Date

https://dnr.mo.gov/env/hwp/ustchanges.htm
Question, Comments or Concerns?

• You may email questions to: tanks-compliance@dnr.mo.gov

• Missouri Department of Natural Resources
  Tanks Compliance and Technology Unit
  573-522-5665
Thank You

Darryl Slade
(573) 751-7877
Darryl.slade@dnr.mo.gov