Ten Most Common UST Violations

The Ten Most Common Types of UST Violations Encountered by EPA's FFEO

Tank Regulations

- Resource Conservation and Recovery Act (RCRA) – Subtitle I
- Purpose :
  - Prevent Oils and hazardous substances from Impairing the environment (ground and surface water and surrounding soil)
- Common Approach:
  - Overfill and spill prevention
  - Corrosion protection
  - Leak detection
  - Record keeping

40 CFR § 280

- UST Design, Construction/Installation, & Notification
- General Operating Requirements
- Release Detection
- Release Reporting, Investigation and Confirmation
- Release Response & Corrective Action
- Out-of-Service & Closure

Energy Policy Act Provisions

In the next 2-4 years, EPA and the states will be developing rules on:

- Mandatory site inspections – all tanks on a 3-year cycle,
- Mandatory training for managers, operators and employees,
- Authority to lock out non-compliant tanks with "Red Tags",
- Groundwater protection measures, and
- Federal Facility Compliance.

Federal Facility Summary

- Federal facilities must comply with all UST laws, work with all jurisdictions as they may have more stringent rules.
- Federal facilities have to pay all fines.
- Neither the agencies nor the individuals are immune.
- Individuals can be personally immune from civil actions but not criminal actions.
- President has authority to make exceptions.
- Federal Agencies must report to Congress the status of various compliance highlights.

What Are the Most Common UST Problems (Violations) ?

- Based on a review of 61 inspections at a variety of Federal facilities across the nation from 2007 to 2008.
- Myth vs. Reality
- What you can do to ensure compliance

Ten Most Common UST Violations Found during FFEO Inspections

1. Failure to provide adequate corrosion protection of steel tanks and peripheral piping.
2. Monthly release detection records of USTs not maintained.
3. Monthly release detection records of pressurized piping not maintained.
4. Lack of or inadequate overfill protection.
5. Yearly ALLD functionality testing not conducted.

Ten Most Common UST Violations (Con't)

6. Missing or inadequate UST registration forms;
7. No release detection provided for tanks;
8. No release detection provided for piping;
9. Failure to provide adequate spill prevention;
10. Improper closure;

Most Common Causal Factor to UST Non-Compliance

- Lack of or insufficient training:
- Evidenced by:
  - Not understanding how the leak detection equipment works;
  - Not maintaining appropriate records (Record Keeping);
  - Vague understanding of regulations;

No. 1: Failure to Provide Adequate Corrosion Protection

- "My steel tank was installed 5 years ago with either galvanic protection or impressed current. I think we had it tested when the system was first put in. Anyway, my leak detection results have always indicated the system's tight– I'm covered. Test records…? What records?"

General Requirements

1. Non-metal tank/pipe material
   - Tank : Fiberglass or Fiberglass-clad steel
   - Pipe: Fiberglass, flexible plastic
2. Galvanic cathodic protection
   - STI-P3
3. Impressed current cathodic protection

Most Common Finding: No Corrosion Testing and/or Record Keeping

- Galvanic and impressed current system must have cathodic protection test done:
  - All cathodic protection systems must be tested within 6 months of installation and at least every 3 years thereafter…
  - USTs with impressed current cathodic protection are inspected every 60 days
  - Inspection records must be maintained of the last 3 inspections for systems with impressed current and of the last 2 inspections for all other types of cathodic protection

Other Potential Problem Areas- Corrosion Protection

- Failure to follow-up on all test failures- know who to call to trouble shoot.
- Insufficient current on impressed current systems – most common target is – 850 mv.
- Steel piping not protected from corrosion
  - Piping can be in contact with soil just below the dispenser;
  - Manway sump full of rainwater.
- Impressed current:
  - anode wires damaged;
  - damaged rectifier;
  - Stray current.

Tank and Pipeline Leak Detection and Recordkeeping

- “I think Mike down at the fueling station keeps a few of those ATG printouts in a box somewhere if you’d like to look at them.”
- “Monthly release detection records for piping? Oh! We have to have that too?”
- “We conduct annual line leak detection testing and so we don’t bother with a yearly ALLD functionality test.”
- “We pressure tested the tank and piping when it was first put in five ten years ago, I think we’re OK.”

Leak Detection Methods

- **Tank**
  - Internal Monitoring (ATG, Inventory Control & Tank Tightness Testing, SIR, Manual Tank Gauging – small tanks only)
  - Interstitial Monitoring (air, liquid, Vacuum or pressure monitoring)
  - External Monitoring (groundwater, soil vapor)
- **Piping**
  - Varies according to whether pressurized or suction piping.
  - A number of tank methods can also apply to piping .
  - Pressurized piping must also have automatic line leak detector (ALLD).

Tank Leak Detection Requirements

- Must periodically determine whether or not tank and piping are leaking,
- Must be able to detect leak from any portion of the system routinely containing product,
- Equipment must be installed, calibrated, operated and maintained per manufacturer's specification,
- Each method must meet certain performance claims (accuracy of method, conditions during leak test, etc.),
- Prove your leak test detection history for last 12 months.
- Equipment must be third-party approved

Automatic Tank Gauging

What is it: In-tank equipment that electronically monitors product level, water level, and temperature.

- Primarily used with petroleum products.
- Can do product leak detection, interstitial sensing and electronic line leak detection.
- Three modes of operation: Inventory management, leak testing, and Diagnostics.
- Federal regulations require that it detect a leak as small as small as 0.2 gallons per hour (gph).

ATG Problems

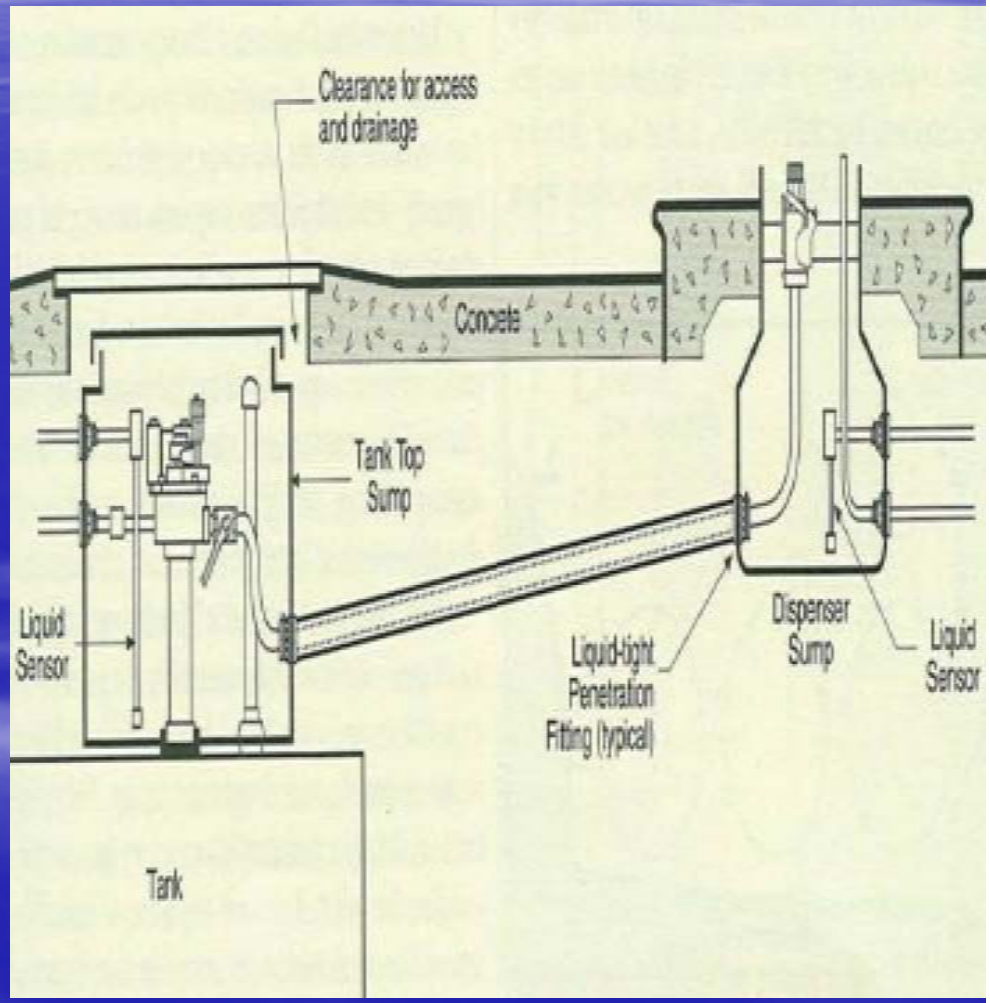
- Out of paper, no power;
- Invalid results: Tank is not full enough (>50%), Delivery too soon, Dispensing interruption;
- Silencing/ignoring or misunderstanding alarms;
- Not programmed properly;
- Float sticks;
- Console not secure from tampering.

Tank Leak Detection Record Keeping Requirements

- For any of your tank leak detection systems; keep all records and paperwork on-site or readily available about your release detection method, including:
  - Testing results (every 30 days)
  - Third party evaluations
  - Performance claims
  - Calibration, maintenance and repair.

Leak Detection Records for Piping Depends on:

- Pressurized or Suction?
- Pressurized piping must have an automatic line leak detector (ALLD) and one other method capable of detecting a leak:
  - Annual line tightness test; or
  - Monthly interstitial monitoring; or
  - Monthly vapor monitoring; or
  - Monthly groundwater monitoring; or
  - Monthly statistical inventory reconciliation; or
  - Other monthly monitoring that meets the performance standards
- Suction piping (excluding safe suction) requires:
  - Line tightness test every 3 years or interstitial monitoring, SIR, soil vapor monitoring or Groundwater monitoring.



Specific Record Keeping Requirements for PLD

- Make sure you keep the following records for at least one year:
  - Annual test that demonstrates that the ALLD is functioning properly;
  - Other release detection system tests (e.g., annual line tightness test) and those used for monthly monitoring of your piping;
  - All records of calibration, maintenance and repair of your release detection equipment;
  - All performance claims supplied by the installer, vendor or manufacturer

Failure to Provide Adequate Overfill Protection and Spill Prevention

- “Oh Wow! Hey Mike! Did you know that we don’t have a spill bucket?!”
- “Mike always keeps his stick gauge in the drop tube so we always know where it is.”
- “Yeah we know you can’t hear the overflow alarm from the fill port area but Mike can hear it in the office when he’s there”.

General Requirements for Spill Prevention and Overfill Protection

- Must have a spill bucket to prevent spills during delivery;
- Overfill protection must do one of the following:
  - Automatically shut off flow into the tank when the tank is no more than 95% full;
  - Alert the operator when the tank is no more than 90% full by restricting flow into the tank or triggering a high-level alarm;
  - Restrict flow 30 minutes prior to overfilling, alert the operator with a high-level alarm 1 minute before overfilling, or automatically shut off flow into the tank so that none of the fittings are exposed to product due to overfilling. Typically accomplished by Ball float valve.
- Overfill Exemption: Not Required on UST systems like waste oil tanks that receive less than 25 gallons at a time.

Spill Bucket Issues

- Common Spill Bucket Problems:
  - None installed (upgrade violation);
  - Cracked lids, bad seals;
  - Compatibility with product;
  - Integrity of bucket not tested;
  - Holes, cracks, wear;
  - Drain plug sticks;
  - Full of debris, water, sorbents;
  - Surface damage.

Overfill Alarm Blues

- Typical Problems include:
  - Alarm not where the driver can hear or see it;
  - Fuel is flowing over 300 gallons per minute – Alarm doesn't stop anything;
  - Driver desensitized to meaning of alarm;
  - Operator doesn't recognize alarm signal (know what it means);
  - Operator doesn't know how to respond;
  - Operator tends to ignore or silence them.

Monitoring

- Owner or Operator:
  - Measure the fuel level immediately before each delivery to make sure there is enough room in the tank;
  - Test the alarm periodically to ensure it works where it needs to be heard;
  - Have someone monitor the entire transfer;
  - Report and cleanup all overfills.

Improper Closure and Missing UST Registration Forms

- “Oh we stopped using those motor fuel tanks months ago… Sorry you inspector folks came all the way out here for nothing.”
- “What’s a Notification Form? Notify who for what?”

Federal Requirements for Temporary Closure

- Temporarily Closed means > 3 months;
  - Vents can stay open but all other access is to be locked and secured;
- Temporarily closed tanks must have continued maintenance:
  - Corrosion protection;
  - Leak detection (unless empty and Empty = 1inch;

Federal Requirements for Permanent Closure

- Temporary closures > 12 months – tank must be permanently closed;
- Notify the regulatory agency 30 days prior to closure;
- Remove all product and sludge from tank (also required for change in service of tank);
- If tank is pulled, assess the excavation zone;
- If tank closed in place after contents removed, fill with inert material;
- Conduct a site assessment.

Typical Compliance Problems Related to Closure

- Temporary closure occurs without continuing leak detection on the tank;
- Closure and Removal occurs without notification to the regulatory agency;
- No site assessment for loss of product.
- Tanks are closed temporarily without being locked down.

UST Notification Forms

- Tanks brought into service (new), closed or undergo a change of service must be notified to the regulatory agency

- Typically compliance problems occur when new tanks replace old tanks without any notification to the regulatory agency.

In Conclusion:

- Become knowledgeable of the regulations and industry standards;
- Inventory what you have;
- Perform a self-audit or gap analysis of your tanks with federal and state regulations;
- Establish contract vehicles for quick and immediate response when needed;
- Correct problems or potential problems immediately;
- Look into the benefits of Environmental Management Systems;

Resources For UST Mangers

- OUST Website: Visit http://www.epa.gov/oust/overview.htm
- FFEO's FedCenter: Visit http://www.FedCenter.gov
- State Websites: Provide guidance and on-line training for general UST management, leak detection, corrosion protection, etc.