VERMONT
ENVIRONMENTAL CONSERVATION

UST TALK

A Newsletter for Underground Storage Tank Owners/Operators
Published by Waste Management Division, UST Program

SUMMER 2006 **Volume 2006 Bulletin 13**

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Inspection Program: Preliminary Results

As a result of the 2005 Federal Energy Act, the VT Underground Storage Tank (UST) Program has to conduct approximately 660 inspections by August 2007. The facilities being inspected are those which haven't been inspected since the 1998 construction upgrade deadline. As of June 1, 2006 we have conducted 188 inspections!

So what are the results of these inspections? So far we are seeing a compliance rate of 62%. We are finding significant operational issues at about 38% percent of the facilities. Here's a list of the major problems we are finding:

1. **Manual monitoring of interstitial space**. If this is your method of tank leak detection, you are supposed to be opening the interstitial port and using a gauge stick to determine if there is water or fuel in the space, and keeping records of the findings. Many owners are not doing any monitoring of the space. Monitoring of the interstitial space is necessary to see if any problems are developing in either the inner or outer walls of the tank.
2. **Incompatible overfill protection**. Many facilities have suction dispensing systems and ball float valves installed for overfill protection. The air eliminators in the dispenser allow products to escape the system and override the operation of the float valve. We are proposing to prohibit ball float valves in our upcoming UST Regulations revision. (Continued on page 3)

When Do I Have to Call the State?

One violation we commonly find when we conduct inspections is failure to report a suspected release. Section 8-602(3) of the Vermont Underground Storage Tank Regulations states in part:

Owners or operators shall report any suspected releases, including environmental conditions present at the facility or off the site that suggest a release, to the Agency within 24 hours....

Section 8-602(3) goes on to say that owners and operators must report *"unusual operating conditions"* and *"monitoring or testing results from any release detection method in section 8-504 that indicates a release may have occurred..."*

So what does all that verbiage mean? Just when do you have to report something to the state? Let's start with some obvious examples:

You receive a few complaints from customers that one of your dispensers is running slow, or seems to be "spitting." You remove the panel from the front of the dispenser, and find gasoline steadily dripping from a gasket. This is an older system without a dispenser sump, so this leak is soaking into the ground. (Cont. on last page)

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Need to Replace Your Overfill Device?

Make sure the one you install is compatible with your system

The following is what the "Petroleum Equipment Institute Recommended Practices 100-2005" has to say on the various devices:

7.3 - Overfill Prevention. Three types of overfill prevention devices are commonly used: alarms, flow shut-off devices, and vent restriction devices. Overfill-prevention devices should operate when the tank is nearly full. Consult the authority having jurisdiction to determine the level at which the overfill device should operate.

Consult with the storage system owner to determine the delivery procedures that will be used to fill the tank. Select and install an overfill device that will be compatible with the anticipated delivery procedures.

7.3.1 - Alarms. Alarms consist of an external signaling device that is typically connected to an automatic tank-gauging system. To be effective, the alarm should:

- provide visual and audible signals to the delivery person
- be located in close proximity to where the delivery person stands during the delivery
- be clearly labeled as a "tank overfill alarm" so that delivery personnel will recognize the device as an overfill alarm

7.3.2 - Flow Shut-Off Devices. Flow shut-off devices, often called "flapper valves," are installed in the fill pipe of underground tanks and automatically stop the flow of product into the tank during a delivery. After the main valve closes, various bypass mechanisms allow the contents of the delivery hose to be drained into the tank. In order to operate properly, shut-off devices should be installed according to the manufacturer's instructions, particularly with regard to attaching the shut-off device to the drop tube and attaching the drop tube to the fill pipe.

Shut-off devices that are designed for use with underground tanks should only be used with gravity deliveries and where there are liquid-tight connections between the delivery hose and the fill pipe.

In a remote-fill installation, the gauge riser above the flow shut-off device must be properly sealed or else product will pour from the gauge opening when the shut-off device closes.

WARNING: Do not install flow shut-off devices on tanks equipped with remote-fill pipes and a gauge riser directly above the flow shut-off device unless a specially designed fitting (e.g., a "trap door") that will automatically close the gauge opening is installed in the gauge riser. If a trap door or equivalent device is not installed in the gauge riser, a properly tightened, threaded pipe cap must be installed in the riser above the flow shut-off device and a separate gauge riser installed to permit manual gauging of the tank.

7.3.3 – Vent-Restriction Devices. Vent restriction devices, often referred to as "float-vent valves" or "ball-float," are installed inside the underground tank just below the vent opening. If, after considering all of the warnings listed below, a ball-float valve is installed, it must be installed in an extractable fitting to allow access for inspection, maintenance, and tightness testing.

When a ball-float valve operates as designed, the tank becomes pressurized, creating a hazardous condition. The pressure is mot often relieved by releasing flammable vapors at grade. For this reason, ball-float valves are not recommended.

WARNING: Vent-restriction devices must not be installed in storage systems where there is any possibility of a pumped delivery into the tank. When an overfill occurs in conjunction with a pumped delivery and a tight-fill connection, the tank becomes severely over-pressurized and may rupture as a result.

WARNING: Vent-restriction devices must not be installed in storage systems that are equipped with suction pumps and air eliminators.

WARNING: Vent-restriction devices will not work when coaxial Stage I vapor recovery is used unless special fittings are installed.

WARNING: Vent-restriction devices must not be used on tanks equipped with remote-fill pipes and gauge openings. If the vent-restriction device closes during a delivery when the gauge opening is uncapped, product will pour from the gauge opening onto the ground.

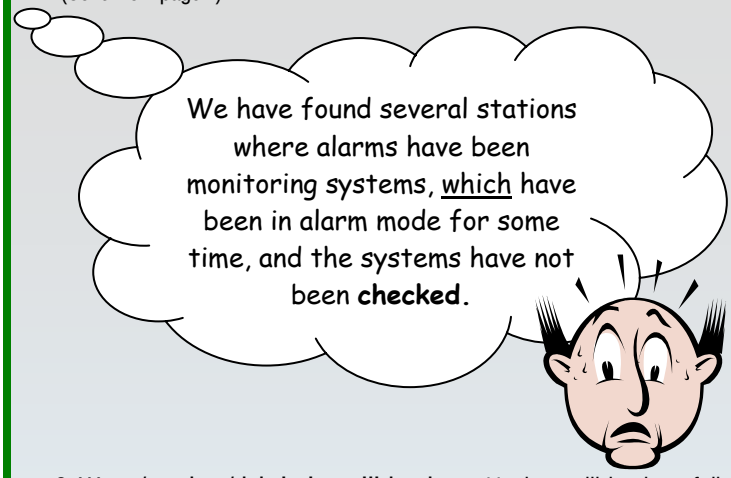
WARNING: When installing flow shut-off devices, do not install a ball-float valve unless the ball-float activates at a level higher in the tank than the flow shut-off device.

WARNING: Vent-restriction devices should not be installed on emergency-generator or heating-oil supply tanks.

7.4 - Installation of Overfill Devices. Install overfill devices according to manufacturer's instructions. When installing an overfill-prevention device, refer to the gauging chart provided by the tank manufacturer to determine the correct distance below the tank top for that device. Regulations specify that overfill devices may be installed at a percentage of tank capacity, not a percentage of tank diameter. When applicable, the thickness of double-walled tanks and the height of manway covers above the tank primary wall must be taken into consideration when determining the appropriate distance below the tank top to install an overfill device.■

INSPECTION PROGRAM: PRELIMINARY RESULTS

(Cont. from page 1)



3. Water/product/debris in spill buckets. Having spill buckets full, or partially full, eliminates their ability to contain a spill. Spill buckets should be checked and cleaned out before, and after, every delivery and contaminated material properly managed.
4. Electronic monitoring systems. Systems to detect leaks in tanks or piping need to be periodically tested to be sure they are working correctly. In addition, alarms need to be checked out and repairs made to be sure leaks are detected. We have found several stations where alarms have been monitoring systems, which have been in alarm mode for some time, and the systems have not been checked. The equipment doesn't do any good if it isn't maintained.
5. Containment sumps for pressurized piping. The sump serves as the monitoring point for pressurized piping. Many of the sumps we have inspected have water or product in them, which reduces their ability to contain a release. If the sump has electronic monitors, the sensor needs to be at the lowest point in the sump. We have found many sensors installed several inches off of the bottom, which would allow for quite a bit of leaking to occur undetected. If you are manually monitoring the sumps, then the covers must be taken off and the sumps examined weekly. Findings should be recorded and maintained.
6. Suction dispenser leaks. We have discovered many suction dispensers are leaking and the owner / operator is unaware of the ongoing situation. Some of the leaks have resulted in further investigation and cleanup. Many suction dispensers are exempted from release detection requirements based on the way the system is constructed. This has left the impression that you never have to worry about the dispenser. Not so! Although, not a regulatory requirement, the UST Program recommends periodic inspections of dispensers in an effort to identify unknown leaks.

What does all this mean to you?

1. If your facility hasn't been inspected since the end of 1998 (see http://www.anr.state.vt.us/dec/wastediv/ust/fac_inspect.htm to see if your facility is listed for inspection), you'll be inspected sometime within the next year (if we haven't already been there.)
2. You should do a self-inspection of your facility and make sure your equipment is operating correctly. Take off the fill covers, open the sump covers, open the dispenser to check for problems. In addition, you should review your permit to see what special conditions apply to your facility. Please Note: UST contractors are busier than normal, so allow plenty of time for repairs. If there are violations (such as those listed above) found during an inspection, you will be requested to make needed repairs on a very aggressive schedule (usually thirty days); better to be on your own schedule rather than ours.
3. If you are not sure if you are due for inspection, or if you are not sure how to proceed with repairs or operations, contact us at 241-3888!

EPA Inspections: Federal Environmental Protection Agency inspectors also have jurisdiction over UST facilities in VT. EPA inspectors from Region I will be visiting facilities in VT this year and next as part of this inspection effort. The big difference between EPA inspections and VT UST program inspections is EPA inspectors can issue FIELD CITATIONS. These are essentially tickets for compliance violations that come with fines.

TANKS TEMPORARILY OUT OF SERVICE –

Requirements and Maintenance of Financial Responsibility

Tanks out of service for more than 90 days shall comply with the following:

(i) All product is removed from the tank to the lowest draw-off point;
(ii) The vent line(s) is left open and functioning; and
(iii) All other lines, gauge openings, manways, pumps and ancillary equipment are Capped, or otherwise secured to prevent unauthorized use or tampering.

The permit to operate the tank may be canceled but the permittee must maintain financial responsibility until **the tank has been closed in accordance with the rules, or, if corrective action is required, after corrective action has been completed and the tank properly closed.**
If the permittee is using the Vermont Petroleum Cleanup Fund to satisfy the financial responsibility requirement of the permit, then the tank assessment must continue to be paid on October 1 of each year until the tank is properly closed

CATHODIC PROTECTION MONITORING TEST

Most of the cathodically protected steel tanks in Vermont are on the same three year cycle for testing, and 2006 just happens to be a testing year. The UST Program sent notices reminding permittees that their cathodic protection is due this year, and that has caused a busy time for contractors.

"Courtesy of Tinker & Rasor"

Not all tanks are passing. On May 25, for example, we received 24 cathodic protection monitoring test results, of which 8 failed. That's a 33% failure rate! When a tank fails its CP test, the permittee is sent a letter outlining the requirements. If the corrosion protection is not restored within 90 days of the date of the letter the tank must be emptied of product and taken out of service until the corrosion protection is restored.

To repair or replace a cathodic protection is no easy task. Some contractors are under the mistaken impression that they can simply "slap on a few more anodes," and all will be well. Not so! Before a tank can be fitted with additional anodes, the cause of the failure must be identified and corrected. Often, some bare steel object is in contact with the tank, causing a "CP short-circuit." The problem must be investigated, and the design of the new system must be done by a qualified experienced person in accordance with at least one of the following practices:

- American Petroleum Institute (API) Publication 1632 *Cathodic Protection of Underground Petroleum Storage Tanks and Piping systems,*
- Addition of supplemental anodes in accordance with the Steel Tank Institute R-972-01; or
- National Association of Corrosion Engineers (NACE) Standards RP-02-85 *Control of External Corrosion on Metallic Buried, Partially Buried or Submerged Liquid Storage Systems.*

If one or more of your tanks has failed a CP test, contact a corrosion engineer or other expert quickly: the 90-day clock has started ticking, and it often takes that long to identify and correct the problem. For tanks that were installed in the late 1980s or early 90s, it may be worth considering replacing the tanks, as retrofitting an older tank can sometimes lead to more problems.■

(Cont. from page 1)

When Do I have to call the State?

Clearly, a slowly running dispenser and "spitting" (which suggests that air is mixing with the gasoline) would constitute an unusual operating condition, and the drip into the ground under the dispenser island is not even a suspected release – that's a confirmed release! This situation must be reported.

Another scenario which has occurred in Vermont, but which (thankfully) is rare: Your station overlooks the lovely Lollapalooza River, fifty feet below your dooryard. Since the snow melted, you've sent an employee out a few times to clear the brush growing on slope leading to the river. The first time, your employee mentioned that there was a patch of dead grass, but since the growing season had just started you didn't think much about it. Two weeks later when the employee cleared the area again, he mentioned that the dead patch was bigger than last time. Is this proof positive that your tank system is leaking? No. But could it be caused by a gasoline, diesel or kerosene leak? Yes indeed. This clearly represents an "environmental condition at the facility or off the site that suggests a release may have occurred," and therefore it must be reported. This does not mean that it is certain that there is a leak somewhere in the tanks or piping, but it warrants closer examination, and therefore must be reported.

What are some of the less obvious conditions that must be reported? They include, but are not limited to the following: inventory measurements that do not balance, leaky or rusty spill buckets; drips from dispensers, water intruding into the secondary containment system (containment sumps and/or the tank's interstitial space), suction systems that lose prime, line leak detectors that drip constantly in pressurized systems, etc.

It would be impossible to list all conditions that need to be reported as a suspected release. The most important thing is to constantly monitor your release detection system, and remain alert for circumstances that appear unusual. If your release detection system suggests a problem, (e.g. failed weekly test with an automatic tank gauge, or product in the secondary containment system) that situation must be reported. But when you encounter some sort of unusual situation that might be caused by a leak: that has to be reported, as well.

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