



Department of
Environment &
Conservation



Underground Storage Tank

Operator Manual

October 1, 2015

Produced in cooperation with
the Tennessee Fuel & Convenience Store Association

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Chapter 1

Introduction

This manual is designed for an Underground Storage Tank (UST) operator and will provide specific information on how to correctly operate UST systems in Tennessee. This will include a discussion of some things that are typically the responsibility of a tank owner, however, it is important for you as the operator to understand the significance of registration, fee payment and insuring financial responsibility as well as completion and designation of operator training.

In addition, the manual will cover responsibilities for operational compliance including release detection and release prevention as well as repair, replacement and closure of UST systems.

Non-compliance with any of the above could interfere with the daily operation of the business.

This manual will explain and suggest best management practices and voluntary actions that you can take to improve environmental performance and reduce financial risk regarding the facility USTs.

Why This Matters

- You are helping to protect public health and the environment. Releases from USTs, spills, overfills, leaking tanks and piping can contaminate groundwater. Your local community may depend on that groundwater as a source of drinking water. In addition, leaks from USTs can result in fires or explosions, which threaten public safety.
- Preventing releases protects the business investment. It is important to maintain compliance, quickly detect and report releases, as required by the UST regulations. This helps to ensure that you may receive Fund coverage in the event of a release. Cleanup costs from a release without Fund coverage will be expensive in addition to potential penalties, business down time, and it may ultimately affect the value of the property. By responding quickly and containing a release, you may be able to reduce cleanup costs and environmental damage.

This document is not a substitute for Tennessee law and regulations, nor is it a law or regulation itself. For a comprehensive and complete understanding of the law and regulations, please refer to Tennessee Petroleum Underground Storage Tank Act T.C.A. 68-215-101 and the Rules, Chapter 0400-18-01. These documents can be accessed from the Division website: <http://www.state.tn.us/sos/rules/0400/0400-18/0400-18-01.20130121.pdf>

In addition, the Division has the following fillable forms available on the website:

Notification

Pre-Installation Notification Form CN-1288

Notification for Underground Storage Tanks [CN-1260](#)

Change of Owner Mailing Address CN-1383

Seller Reporting Change of Ownership CN-0911

Buyers Notification CN-1392

Notification of Indicia of Ownership CN-1186

Operational Compliance

Monthly Spill Bucket Inspection Log CN-1286

Quarterly Dispenser Inspection Log CN-1287

Precision Line Tightness and Leak Detector Test CN-1341

Monthly Electronic Interstitial Monitoring Report CN-1340

Annual Electronic Interstitial Monitoring Report CN-1339

Manual Tank Gauging Monthly Report CN-1367
Impressed Current Cathodic Protection Rectifier Reading Form CN-1282
Impressed Current Cathodic Protection Testing Survey CN-1309
Galvanic Cathodic Protection Testing Survey CN-1140
Spill Prevention Device Hydrostatic Test Report CN-1366

For additional help, please identify the appropriate field office for your facility in the map below:

Environmental Field Offices

tn.gov/environment/field-offices.shtml

Division of Underground Storage Tanks
312 Rosa L. Parks Blvd.
12th Floor
Nashville, TN 37243

Nashville
711 R.S. Gass Boulevard
Nashville, Tennessee 37243
Phone: (615) 687-7000

Cookeville
1221 South Willow Avenue
Cookeville, Tennessee 38506
Phone: (931) 432-4015

Johnson City
2305 Silverdale Road
Johnson City, Tennessee 37601
Phone: (423) 854-5400

Knoxville
3711 Middlebrook Pike
Knoxville, Tennessee 37921
Phone: (865) 594-6035

Chattanooga
1301 Riverfront Parkway, Suite 206
Chattanooga, Tennessee 37402
Phone: (423) 634-5745

Columbia
1421 Hampshire Pike
Columbia, Tennessee 38401
Phone: (931) 380-3371

Jackson
1625 Hollywood Drive
Jackson, Tennessee 38305
Phone: (731) 512-1300

Memphis
8383 Wolf Lake Drive
Bartlett, Tennessee 38133
Phone: (901) 371-3000

TN Department of Environment & Conservation

Chapter 2

Fees and Registration, Red Tags and Financial Responsibility

Registration informs the Division of who the tank owner is, the equipment installed, the physical address of the location, the number of tanks, contents, size, material of construction etc. Notify the Division at least fifteen (15) days prior to installation of any tank by submitting the Pre-Installation Notification for Underground Storage Tanks (CN-1288) which can be found at http://www.tn.gov/environment/underground-storage-tanks/tanks_forms.shtml#Notification

Tanks containing Ethanol-blended fuels greater than 10% must have the Ethanol Equipment Compatibility Worksheet (CN-1285) and Statement of Compatibility (CN-1283) completed and submitted to the Division. If installing a new UST system, the forms should be included with Form CN-1288.

In addition to the pre-installation form, you must submit a completed Notification for Underground Storage Tanks form CN-1260 within (15) days after installation of the new UST system(s).

All owners/facilities using a business name, must have that business name registered with the Tennessee Secretary of State.

You must also notify the Division any time changes are made to any of your USTs. The following changes must be reported to the Division within 30 days of the change:

- Any change in Class A or Class B Operators must be reported on the Division's web- based training database located at: <https://apps.tn.gov/ustop>
- Change in ownership; Change in Address of Owner and Operator; Upgrading or replacement of tanks or piping; Temporary or permanent closure of tank or tank compartment;
- Change in service or changing a tank contents from regulated to non-regulated.

You can print a notification from our website:

<http://www.tn.gov/environment/underground-storage-tanks/>

You can request a notification form or pick one up at any Environmental Field Office or at:

Tennessee Department of Environment and Conservation
Division of Underground Storage Tanks
William R. Snodgrass TN Tower
312 Rosa L. Parks Ave. 12th Floor
Nashville, Tennessee 37243 (615) 532-0945

On July 1, 2004 the Tennessee Petroleum Underground Storage Tank Act (UST Act) began providing authority to affix a notice or tag to a dispenser and/or fill port for any tank without a current certificate. The Federal Energy Policy Act of 2005 next required states receiving Federal funding to have a delivery prohibition program. Consequently, the Division of Underground Storage Tanks developed and implemented a process to comply with the laws.

On July 1, 2008 new amendments to the UST Act simplified whether or not fuel could be placed into an UST by eliminating the annual certificate. Consequently, beginning July 1, 2008, the following changes took effect:

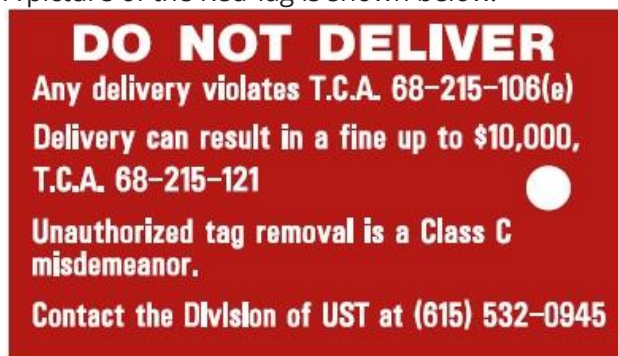
- The Division no longer issues a certificate to each facility
- The Division issues a receipt for the annual tank fees that is not tied to the ability to receive fuel
- The ability to receive fuel is tied to the presence or absence of a red tag on the fill port and listing on the Division's website

The Division will continue to red tag (affix a red tag to each fill port) all USTs at a facility for:

- Failure to pay annual tank fees and associated late penalties
- Violations that result in a Final Order and civil penalties

The Sites Under Delivery Prohibition posting on the Division's website will also be kept for distributors to review. The Red Tag Process applies to all tanks at a facility, and authorization to remove the tag(s) will not be given until all corrections are complete. As stated on the red tag, unauthorized removal of a red tag is a Class C misdemeanor in accordance with T.C.A. § 68-215-106(d).

A picture of the Red Tag is shown below.



Chapter 3

Operator Training

The Federal Energy Policy Act of 2005 requires that every facility have designated and trained Class A, Class B and Class C operators.

	Class A Operator	Class B Operator	Class C Operator
Who fits this class of operator?	The individual who generally focuses on the statutory and regulatory requirements related to operating and maintaining the UST system	The individual who is generally responsible for field implementation of applicable UST regulatory requirements and implements day-to-day aspects of operating, maintaining, and recordkeeping for USTs at one or more facilities	The individual who is generally the first line of response to events indicating emergency conditions or responding to alarms

The owner is responsible for selecting a Class A and B operator. The owner may also choose to complete operator training as Class A and/or Class B operator.

In order to meet Class C operator requirements, a sign or instruction manual (not required for unmanned facility) must be placed where it can be seen during the normal course of work. At a minimum, it must include the following:

1. Employee's role in responding to spills and overfills, and
2. Procedures for handling warnings, alarms, and response from leak detection console (if applicable), and
3. Name and number of contact person for emergencies and monitoring equipment alarms, and
4. Local emergency numbers, and
5. An instruction to maintain a safe distance from any potential hazards.

If facility is unmanned, then the designated B operator who is also trained as the designated Class C operator will cover this requirement.

There are several viable options available for meeting Operator Training requirements:

- ✓ Tennessee Tank Helper-This is free online training offered by the Division based exclusively on the information registered by the owner. If this information is not correct, the owner should update by completing an amended Notification for Underground

Storage Tanks. Operators can print a certificate once they have completed the assigned training modules;

- ✓ National UST System Operator Exam - Class A and/or Class B-This exam is administered by the International Code Council (ICC). There is a nominal charge for each exam and if the applicant successfully completes the exam, they receive a certificate good for two years;
- ✓ Tank School-This is a one day training class for owners/operators or any interested parties taught by Division staff which covers all aspects of UST operational compliance. Successful completion of this training program is evidenced by a score of 70% or greater.

Regardless of the option chosen, the owner must navigate to the Tennessee Tank Helper website at <https://apps.tn.gov/ustop/> to create accounts, login, and finish the required designations and/or training. If you need help, please feel free to contact the Division at (615) 532-0945 and ask for operator training assistance. One thing to keep in mind is that if Significant Operational Compliance (SOC) violations are found during an inspection, operator(s) must be retrained by a Division approved method.

The flowchart on the following pages is designed to help owners/operators as they move through the owner registration and Tank Helper training process:

Registered Owner or Owner's Authorized Representative

Read through information on the following webpage:

http://www.tn.gov/environment/underground-storage-tanks/tanks_operator_training.shtml

Determine who will be your facilities designated A and B Operators

This can be one or several people depending on your businesses

Create Account & Log in here

<https://apps.tn.gov/ustop/>

You will need your owner ID from your tank fee payment receipt to create your own password and user ID

(remember your user ID must not have any spaces)

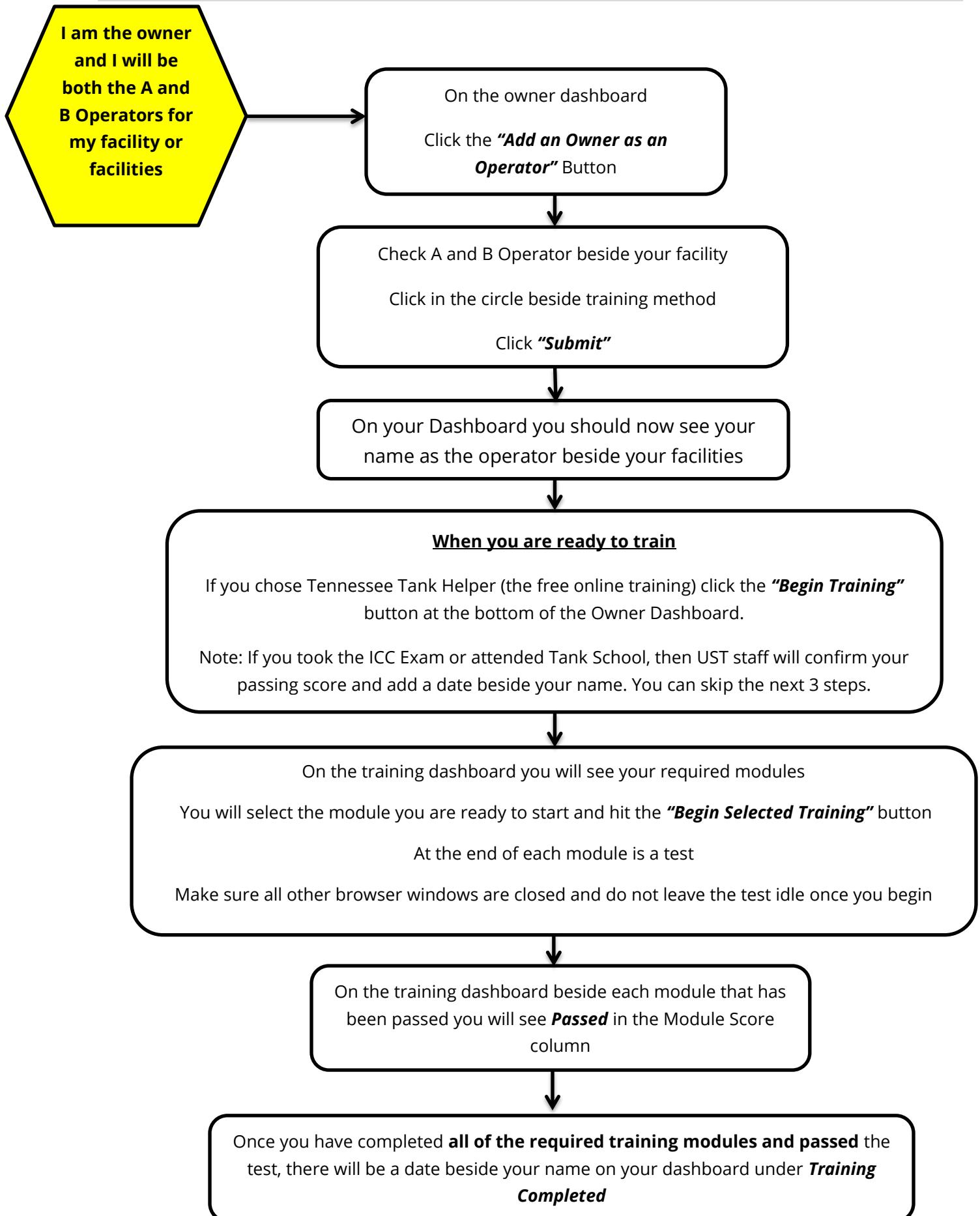
Once you have logged in you will see your owner dashboard. It will list all of your facilities and places to track your designated operators and their training

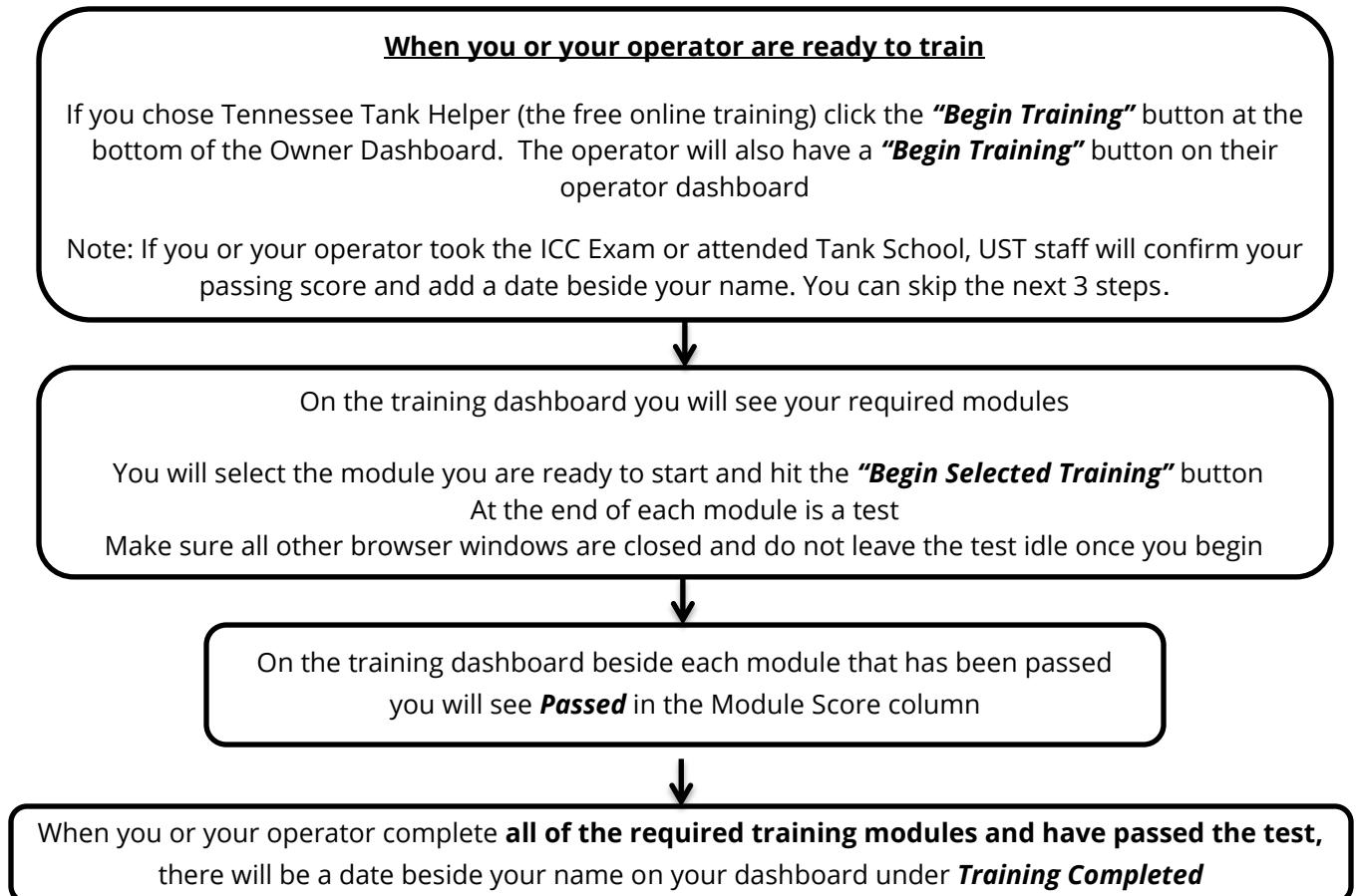
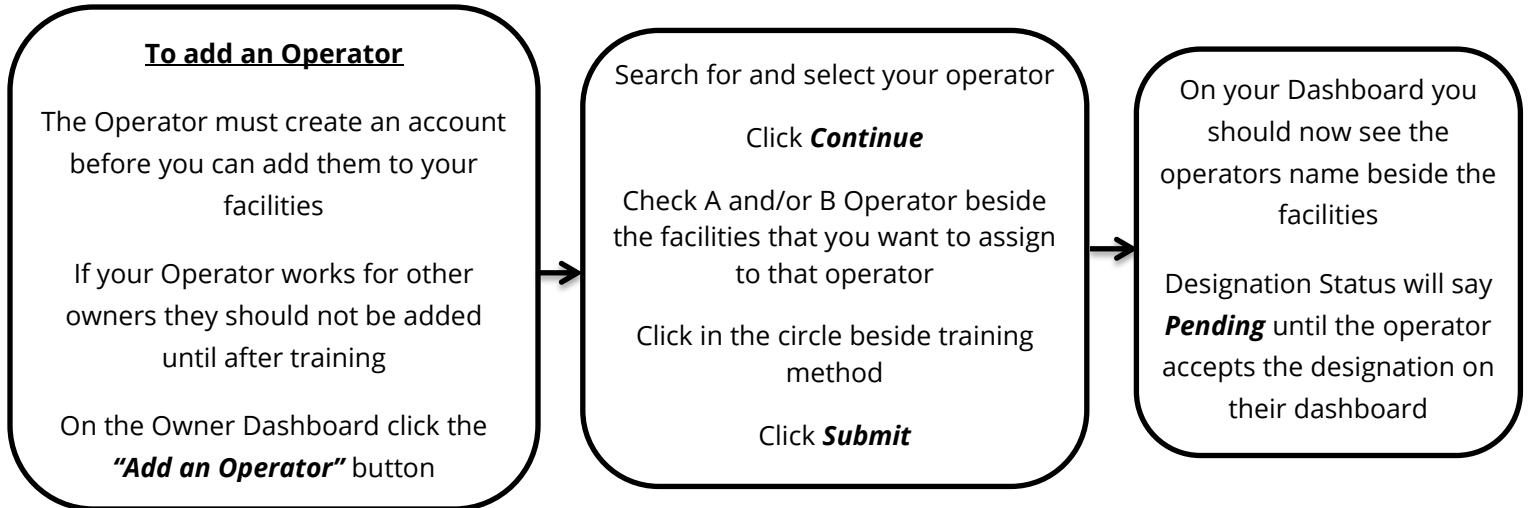
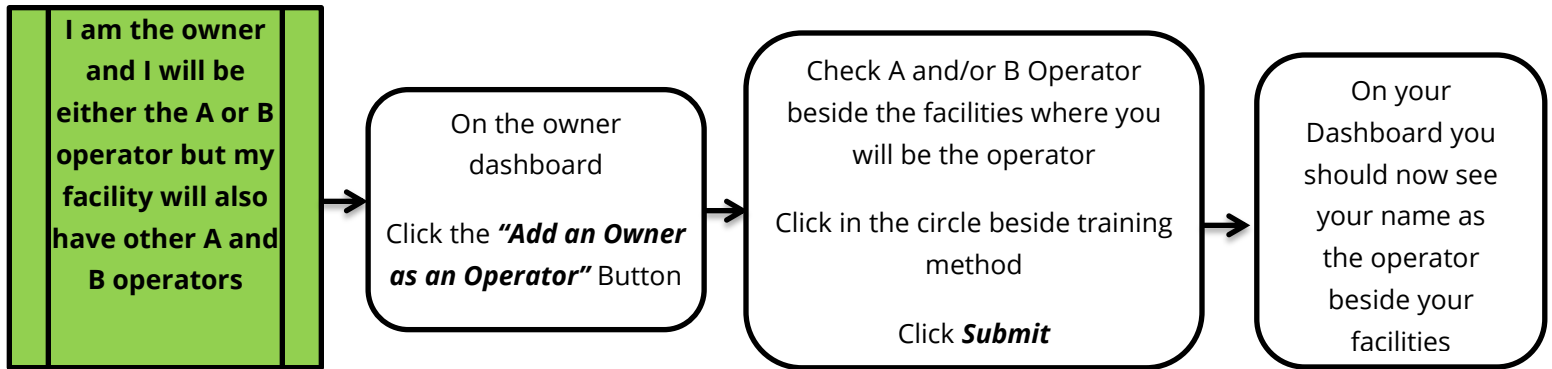
Under each facility there is a compliance plan which is a quick guide based on what

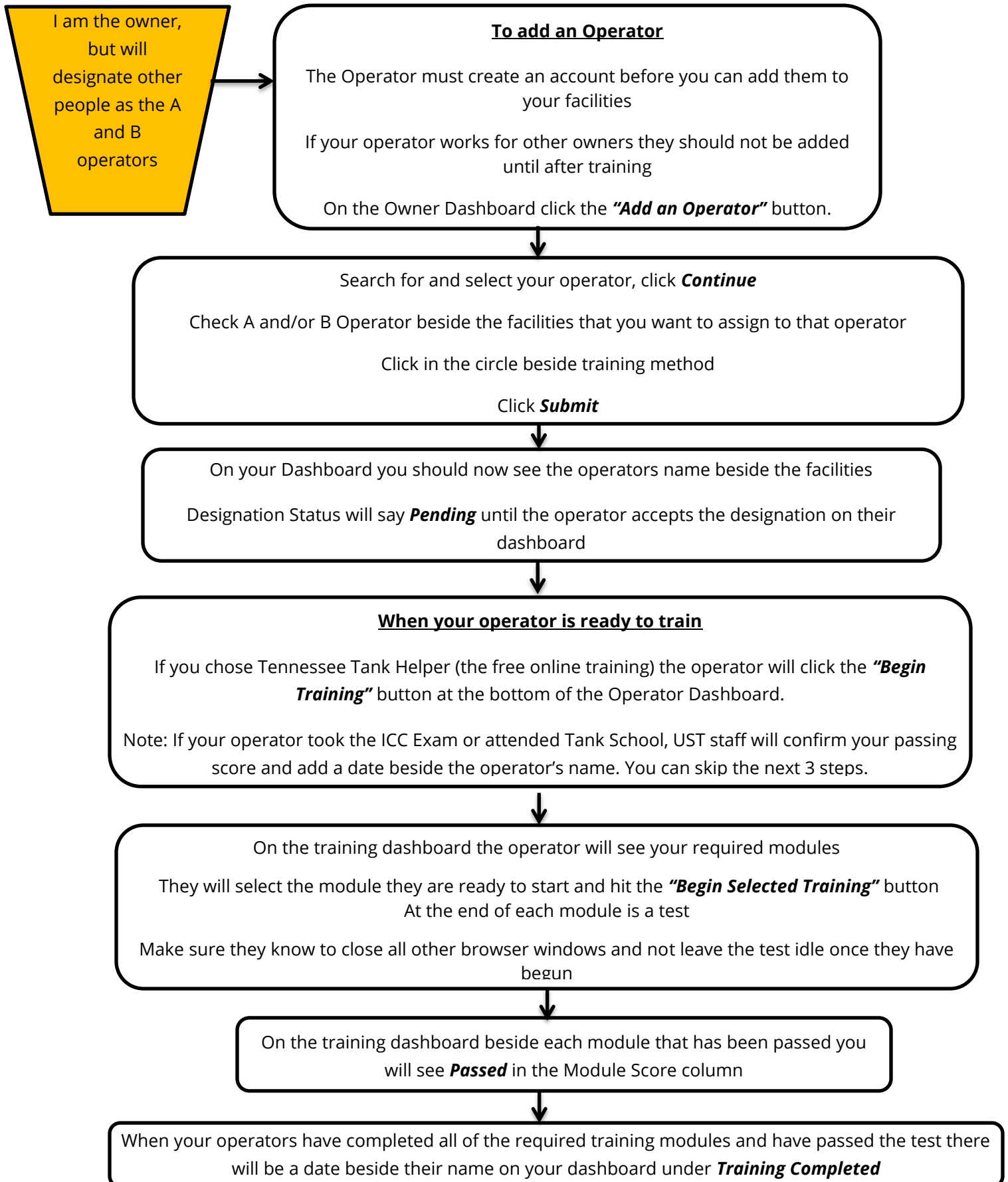
I am the owner and **I will be** both the A and B Operators for my facility or facilities
Go to Page 10

I am the owner and **I will be either** the A or B operator but my facility **will also have other** A and B operators
Go to Page 11

I am the owner but **will designate other people** as the A and B operators
Go to Page 12







Chapter 4

Release Detection

All regulated tanks and piping (except emergency generator tanks installed before July 24, 2007) must have release detection (also called leak detection) so that leaks are discovered quickly. You must provide your UST system with a method of release detection that allows you to meet five requirements:

- You can detect a leak from any portion of the tank or its piping that routinely contains petroleum;
- Your leak detection is installed, calibrated, operated, and maintained in accordance with the manufacturer's instructions;
- Your leak detection meets the performance requirements in accordance with rule 0400-18-01-.04;
- You must perform leak detection at least every 30 days (unless the specific method requires continuous); and

You must keep leak detection records for at least the last 12 consecutive months.

In order to effectively detect releases as designed, release detection equipment must not be disabled or tampered with. T.C.A 68-215-120(b) states, "Any person who knowingly tampers with or disables a release detection or prevention device associated with an underground storage tank, or who knowingly causes or allows a release of petroleum into the environment in violation of this chapter, rules, regulations or orders of the commissioner or board commits a Class E felony; provided, however, that, if such release results in an expenditure for cleanup by any other person or from the fund, the offense shall be graded for such expenditure in the same manner as theft under § 39-14-105(a)(2)-(5)."

Release Detection for Tanks

The following monthly release detection methods are allowed for tanks:

- **Automatic Tank Gauging**
- **Statistical Inventory Reconciliation**
- **Interstitial Monitoring**
- **Manual Tank Gauging & Tank Tightness Testing**

Automatic Tank Gauging (ATG)

An ATG system consists of a permanently installed probe that collects information such as product level and temperature, and a console inside the facility which calculates changes in product volume that can indicate a leak. The console should signal an alarm when there is a suspected problem. An ATG must be able to detect a 0.2 gallon per hour (gph) leak. Below is a brief outline of the general requirements for ATGs. A more detailed description of the requirements is available in the Division's Technical Chapter 3.2 Automatic Tank Gauging.

What you must know:

- Some ATGs can be programmed to automatically test every 30 days. If your ATG does not test automatically, you must take the tanks out of service and conduct a leak test. (a *static test*)
- All ATGs require a certain minimum amount of product in the tank to conduct a valid test.
- Some ATGs can be combined with computer programs that allow tanks to remain in service while conducting testing. These methods are known as Continuous Statistical Leak Detection (CSLD) or Continuous In-Tank Leak Detection System (CITLDS) which is appropriate for use at high volume locations.
- It is **not** a recommended practice to rely on the ATG memory to store leak detection records because a power surge or lightning strike may cause you to lose all your electronic records.

What you must do:

- Conduct leak test **at least once per month for each tank** if it isn't done automatically.
- Print out, review and keep at least **one** passing monthly leak test result for each tank from the ATG.
- Keep your ATG user manual handy for reference and troubleshooting.
- Perform routine maintenance required by the ATG manufacturer.
- Keep the last 12 consecutive months of leak detection results and make available for inspection.
- Pay attention to any and all alarms and respond appropriately.
- If applicable, report a suspected release within 72 hours as outlined in the Reporting Section.

Statistical Inventory Reconciliation (SIR)

- SIR uses a computer program to perform a statistical analysis of inventory, delivery, and dispensing data every 30 days. A gauging stick or ATG is used to gather inventory data.
- SIR requires the tank owner to follow specific data collection procedures. (daily 1/8 inch fuel measurements, monthly water readings, annual dispenser meter calibration, deliveries through drop tubes)
- SIR may be conducted by a SIR vendor *for* the tank owner, or *by* a tank owner using a SIR program listed as meeting the performance standards by the National Work Group on Leak Detection Evaluations (www.nwglde.org).
- SIR results must be reported as ***pass, fail, or inconclusive.***

SIR results apply only for monthly leak detection for tanks and piping (but does not cover line leak detectors). Inventory data is sent to a SIR vendor (or entered into a computer program leased to the tank owner by the SIR vendor) at least once every 30 days. Once data is analyzed, the SIR vendor must provide the results within 10 days of the end of the reporting period. You must keep complete SIR records which consist of: the monthly SIR result, plus all inventory data (stick readings, product delivered, product sold, water readings, dispenser calibration records, etc.) and provide them upon inspection.

Inconclusive SIR Results

If an inconclusive monthly result is received, you must investigate immediately and correct the problem.

The problem might be a result of poor measurements, miscalibrated meters, missed deliveries, or something else. Document results of your investigation and keep with leak detection records.

- An inconclusive result means you have not received a passing leak detection result for the month.
- If you receive inconclusive results for two consecutive months, it is a suspected release, and must be reported to the Division within 72 hours.
- Report all SIR fail results to the Division within 72 hours.

What you must have:

- A contract with a SIR provider to analyze monthly leak detection records, or a SIR program which can be operated on your computer to conduct SIR analysis.
- A means to collect product inventory data (gauging stick, or ATG) on a daily basis.
- A means to convert measurements to gallons (tank chart).

What you must do:

- Collect and record adequate inventory data every 30 days using inventory control data collection requirements [see rule 0400-18-01-.04(3)(a) 1.-9.].
- Have records analyzed every 30 days either by SIR provider or a computer program leased to the tank owner by the SIR vendor.
- Investigate, determine the reasons, and correct the causes for any inconclusive results.
- Keep the last 12 consecutive months of leak detection results.
- Report all suspected releases within 72 hours. (any fail, or any two consecutive inconclusive results)

Interstitial Monitoring Using Secondary Containment

Interstitial monitoring (IM) is a method that detects releases in the space between tank walls or piping walls, or single wall piping and a barrier separating it from the environment such as a sump or chase pipe. Please see Technical Chapter 3.4 Secondary Containment and Interstitial Monitoring for additional information.

The space between the barriers is called the interstitial space or interstice, and for tanks and piping, must be monitored continuously.

This method must be capable of detecting a release from the inner wall of a tank or piping. Three forms of interstitial monitoring are:

- Hydrostatic Methods - use liquid-filled interstice with a reservoir where the liquid level is monitored.
- Pressure/Vacuum Methods - apply pressure or vacuum to interstice and monitor changes in pressure or vacuum.
- Electronic sensors - placed in interstice to send a signal when liquid is detected.

Sensors are the most common and least expensive way to conduct interstitial monitoring.

- Monthly visual observation of pressurized piping is not acceptable. You must have an electronic or otherwise continuous means of monitoring secondarily contained pressurized piping.
- If sump sensors are used for pressurized piping, they must be installed in every sump where product can leak and accumulate. A single tank top sensor for the entire product piping run is not acceptable.

What you must know:

- Sump Sensors may sound false alarms from water in sumps.
- Disabling or tampering with a sensor is a criminal offense.
- Moving a sensor out of position to detect liquid is a violation.
- Sensors can malfunction; therefore, you must conduct testing of sensors annually to ensure proper function.
- If a sensor detects petroleum between the walls of a double wall tank, it is treated as a suspected release.
- If water can enter the outer wall of a double wall tank, the tank no longer has secondary containment. This condition must be investigated.

What You Must Do:

- Monitor release detection system to determine if a leak was detected within the last 30 days.
- If using electronic sensors, you must conduct testing of sensors annually to ensure proper function.
- If using liquid-filled or sealed pressure/vacuum system, you must refer to the user's manual to determine if the system is remaining within correct parameters.
- If the IM equipment does not produce an electronic monthly record, you must create a paper record to satisfy recordkeeping requirements.
- IM records must be maintained on the Division approved form available on the Division website.
- Keep the last 12 consecutive months of leak detection results and have available for inspection: and
- Report all suspected releases within 72 hours.

Manual Tank Gauging (MTG)

Manual Tank Gauging (MTG) is a valid method of monthly monitoring but is not commonly used. MTG alone may be used for tanks 1,000 gallons or less. To determine if your tank qualifies to use this method, please refer to Technical Chapter 3.1 Manual Tank Gauging or contact the Division.

- Manual Tank Gauging measures product level and compares readings to weekly and monthly standards to determine if the tank is tight.
- A tank gauging stick is generally used to take measurements to the nearest 1/8 inch.
- Tanks must be taken out of operation for a specified period of time each week.

MTG & Tank Tightness Testing

Tanks from 1,001 gallons to 2,000 gallons must use Tank Tightness Testing in addition to MTG. Tanks over 2,000 gallons may not use MTG.

What you must do:

- Determine how long the weekly test must be based on the chart in Technical Chapter 3.1. (T.C.)
- Remove tank from service for the test period.
- Record the average of two inventory readings at the beginning of the test period.
- Record the average of two inventory readings at the end of the test period.
- Compare the difference in the two readings just measured with the standards in the chart.
- Repeat weekly and compare with the weekly standard according to the chart in the T.C.
- Average 4 weeks and compare with the monthly standard according to the chart in the T.C.
- Keep the last 12 consecutive months of leak detection results and have available for inspection: and
- Report all suspected releases within 72 hours.

Release Detection for Piping

There are two types of piping systems:

- Pressurized
- Suction

Leak detection requirements differ depending on whether piping is pressurized or suction. You must know the difference.

Pressurized Piping

Pressurized piping must have two forms of Leak Detection that must be active when the system is in operation:

1. Catastrophic - to detect large sudden releases, such as a piping failure. Catastrophic line leak detection is done by Automatic Line Leak Detectors (LLDs or ALLDs). ALLDs may be mechanical or electronic. It is important to respond quickly to line leak detector alarms (electronic) or slow flow conditions (mechanical) since the volume of the release could be substantial (3 gallons per hour). **You should not continue to dispense fuel without effective catastrophic release detection.**
2. Periodic - to detect smaller, less noticeable releases. Periodic line leak detection must be done either monthly or annually. There are three options:
 - a. Monthly Monitoring*, or
 - b. Annual Line Tightness Testing, or
 - c. Electronic Line Leak Detectors (conducting monthly or annual testing)

*For piping monthly monitoring, you must use one of the following two methods that are described in the Release Detection for Tanks section above:

- Interstitial Monitoring (required for new and replacement piping installed after 7/24/2007), or
- SIR

You may have an annual line tightness test performed by a qualified tester (certified by the manufacturer). Line tightness testing must be able to detect a 0.1 gallon per hour leak rate at 1.5 times the operating pressure of the piping or conduct an annual 0.1 gph test using an electronic line leak detector.

Suction Piping

Suction piping pulls product from the tank using a suction pump in the dispenser. The presence of suction piping is indicated by a suction pump (pulleys and belts) inside the dispenser and there is no submersible pump in the tank.

Leak detection is NOT required for suction piping that meets both the following conditions:

- The piping is sloped so product will drain back to the tank if suction is lost;

AND

- There is only one check valve located near the suction pump beneath the dispenser (and not at the tank).

Piping that meets these criteria is called "safe suction".

If you do not have "safe suction", you must conduct suction piping leak detection which consists of:

- Either a line tightness test every three years, or
- Monthly monitoring using Interstitial Monitoring (required for new and replacement piping installed after 7/24/2007), or
- SIR

What you must have:

- A means to detect a catastrophic (large) release.
- A means to detect a periodic (small) release.

What you must do:

- Line leak detectors must be tested every 12 months.
- Pressurized piping must be tested every 12 months, or monthly monitoring must be conducted
- Keep the last 12 consecutive months of monthly monitoring results, and/or last line tightness test.
- Investigate, determine the reasons, and correct the causes for any alarms or failures and report all suspected releases within 72 hours.

Reporting

You are required to report to the Division when your release detection equipment or method indicates there may be a release. Any failed leak test, unexplained alarm or unusual operating condition must be properly investigated and reported to the Division within 72 hours of discovery. An example of an unusual operating condition is the erratic behavior of petroleum dispensing equipment, the sudden loss of petroleum from the UST system, or an unexplained presence of water in the tank. However, if the system equipment is found to be defective but not leaking, is immediately repaired or replaced and additional monitoring within thirty (30) days does not confirm the initial result, reporting would not be required.

Why this is important:

Timely reporting of releases is important to ensure that you may receive Fund coverage in the event of a release. An Application for Fund Eligibility must be submitted to the Division within ninety (90) days of a suspected release or within sixty (60) days of a confirmed release. In addition, release detection and release prevention records must be submitted to demonstrate compliance after a release is discovered. Cleanup costs from a release without Fund coverage will be expensive in addition to potential penalties, business down time, and it may ultimately affect the value of the property. By responding quickly and containing a release, you may be able to reduce cleanup costs and environmental damage.

Chapter 5

Corrosion Protection

All of your regulated tanks and piping that are underground and routinely contain product must be protected from corrosion or “rust”. This includes metal components that are in contact with standing water, as well as the ground.

Some kinds of underground tanks and piping do not need additional corrosion protection (CP). This includes tanks made of or coated with non-metallic substances such as fiberglass or epoxy. Non-metallic piping does not require additional CP.

Bare steel tanks and piping which have not been upgraded either by adding cathodic protection or lining may no longer be upgraded. They must be permanently closed in accordance with Division guidelines.

If the CP system is turned off or inoperable for 12 months or more, the tanks must be permanently closed unless directed to do otherwise by the Division.

The following corrosion protection methods are allowed for metallic components:

- Galvanic systems use buried sacrificial anodes attached to underground tanks or piping. A galvanic system cannot be seen and there is no rectifier. Anodes are installed on tanks at the factory (such as on the sti-P3® tank) and can be installed on piping and other underground metal components in the field.
- Impressed current cathodic protection systems use a rectifier to provide current to the tank, piping, or other components for corrosion protection. The rectifier is always located somewhere at the facility. It may be found inside or outside the building. Electric power to the rectifier must be on continuously. Impressed current cathodic protection systems are always added some time after tank/piping installation.
- Internal tank lining with a cathodic protection system may be either impressed current or galvanic (sacrificial) anodes. Internally lined tanks with no external corrosion protection must be permanently closed.
- Metal components that are in contact with soil/water may be excavated or sealed with boots to provide isolation.

Steel flex connectors must be protected from corrosion by one of the following:

- Isolating the flex connector from contact with soil and water by:
 - a. putting a protective boot on the flex connector, or
 - b. removing soil and/or water in contact with the flex connector, or
- Adding cathodic protection to the flex connector (periodic testing required)

What you must do:

Both Galvanic and Impressed Current cathodic protection systems must be tested periodically by a cathodic protection tester to ensure they are working properly.

A CP test must be conducted within six (6) months of installation and then at least every three (3) years and within six (6) months of repairs. If anodes are added during repair (unless added to a flex connector), a tightness test must be performed within three (3) to six (6) months. For complete information on testing, please refer to Technical Chapter 4.1 Corrosion Protection. For Impressed Current cathodic protection systems, the rectifier must be inspected at least every sixty (60) days to make sure it is on and operating properly.

What you must keep:

- Records of the last two (2) cathodic protection tests, AND
- Records of the last three sixty (60) day rectifier inspections.

Chapter 6

Spill Prevention

Any tank filled with 25 gallons or more at one time must have spill prevention. Spill prevention devices must contain spills that may occur when the delivery hose is disconnected from the fill pipe. They are often called “spill buckets” or “catchment basins”. They are not designed to hold product for long periods of time. Some have drain valves to allow product to drain into the tank. When spill bucket contents are drained into a tank, any collected water or debris may also enter the tank. Spill buckets often have a shorter “life-span” than tanks or piping.

What you must do:

1. Spill buckets must be kept free of water, dirt, debris or other substances.
2. Spill buckets must be visually inspected once per month for any debris/liquid or damage. A log must be kept showing the last 12 months of spill bucket inspections as well as actions taken if required.
3. Lids are required on all spill buckets.

If a spill bucket is damaged, you may:

- Replace spill bucket
- Repair spill bucket only in accordance with manufacturer’s recommendations
- Conduct hydrostatic testing of spill bucket
 - Follow Division guidance or PEI - RP1200
 - Test failure would require repair or replacement

If contamination is found, report as a suspected release.

Chapter 7

Overfill Prevention

Any tank that is filled with 25 gallons or more at one time must have overfill prevention. Overfill prevention is to prevent tanks from being overfilled during delivery.

Overfill prevention is designed to either:

1. stop product flow (automatic shutoff device or flapper valve), or
2. reduce product flow (ball float valve), or
3. alert the delivery person before the tank becomes full and begins releasing product (high level alarm)

In order to effectively prevent an overfill as designed, the device must not be disabled or tampered with.

T.C.A 68-215-120(b) states, "Any person who knowingly tampers with or disables a release detection or prevention device associated with an underground storage tank, or who knowingly causes or allows a release of petroleum into the environment in violation of this chapter, rules, regulations or orders of the commissioner or board commits a Class E felony; provided, however, that, if such release results in an expenditure for cleanup by any other person or from the fund, the offense shall be graded for such expenditure in the same manner as theft under § 39-14-105(a)(2)-(5)."

Tank owners/operators should always know how much space (called 'ullage') which must remain empty in the tank before ordering product and ensure that the transfer operation is monitored constantly. Delivery drivers should also know the ullage before dropping product.

An automatic shutoff device slows down and stops product flow when the product has reached a certain level in the tank. Automatic shutoff devices are located in the fill pipe. These devices normally shut off flow when tank is 95% full. Look down the fill pipe to see part of this device. You will see what appears to be a line cutting through the fill pipe (or a half moon shape in your fill pipe).

A ball float valve is located inside the tank in the vent piping. As the tank fills, a ball in the valve rises and restricts the flow of vapors out of the tank. The flow rate decreases and alerts the delivery person to stop the delivery. These devices normally restrict flow when tank is about 90% full. Ball float valves are not easily seen. Ball float valves may not be used in all tank applications. Facility records may indicate whether a tank has this device, or the contractor who installed the tanks may know if they are present.

Ball float valves may not be used for overfill prevention:

- With suction piping systems
- With pressurized deliveries
- On tanks with remote fills
- On emergency generator tanks with suction systems
- On tanks with coaxial Stage I vapor recovery unless the appropriate delivery fittings are installed.

An overfill alarm uses a sensor in the tank located on the automatic tank gauge (ATG) probe.

An overfill alarm provides a warning when the tank is close to being full that can be seen or heard (or both) by the delivery person. When the alarm activates, the delivery person should stop the flow of product to the tank immediately.

Chapter 8

Motor Fuel Dispensers

Motor fuel dispensers are used to pump fuel into vehicles. The dispenser has a nozzle, a hose, a card reader, etc. Many people commonly refer to dispensers as “pumps”. The piping from the tanks enter beneath the dispenser and most dispensers have a sump or under dispenser containment. Under dispenser containment (UDC) is required for new or replacement motor fuel dispensers installed after July 24, 2007 (not required for kerosene dispensers since it is not a motor fuel). UDC helps contain leaks so it must meet the following requirements:

- be liquid tight
- be product compatible
- allow for visual inspection

Regardless of the presence of UDC, all dispensers must be inspected quarterly to ensure no leaks have occurred. These inspections are important to effectively address any releases that may be occurring in the dispenser area that are not monitored by release detection equipment. A log of these inspections must be maintained.

If replacing a dispenser and connecting equipment (below the impact/shear valve in pressurized systems or union check valve in suction systems) as well, UDC is required.

Chapter 9

Temporarily Out Of Service (TOS)

When a tank is in operation, it is registered as currently in use. However, there are times when it may be necessary to take the tanks out of service for a short or extended period of time (i.e. construction activities, change of ownership, weather related impacts, seasonal use, etc.) This is considered a change in service to TOS so the Division must be notified. If you place a tank TOS you must do the following:

- File an amended Notification Form CN-1260 within 30 days reporting a change in service,
- Cathodic protection systems must remain operational and continue to be monitored,
- Release detection must continue if the tank contains more than one inch of residue,
- Vent lines must remain open,
- If the temporary out of service period is longer than 3 months, all other lines, pumps, manways, and ancillary equipment must be closed by capping and securing them.

It is a good idea to empty the tank to no more than one inch of residue because if the tank contains less than one inch of residue, then no release detection is required.

A UST system may remain TOS for three months or more as long as CP and leak detection (if necessary) are maintained.

Treat any releases from a temporarily closed system just as you would from a system that is in use.

UST System Closure

If an owner decides or is required to permanently close their tanks or piping, an "Application for Permanent Closure of Underground Storage Tanks" CN-0982 must be completed and submitted to the appropriate Field Office for approval 30 days prior to closing the UST system. After tanks are out of the ground or properly closed in place, be sure to file an amended Notification Form CN-1260 with the Division. This stops the automatic billing procedure for annual tank registration if conducted prior to the billing cycle. For additional information on UST system closure, please refer to the Division website at http://www.state.tn.us/environment/underground-storage-tanks/tanks_forms.shtml#TankClosure

Chapter 10

Repairs and Replacement

Periodically it may be necessary to make repairs to UST systems or replace equipment. Here are some things to keep in mind:

- Repairs to UST systems must be made to prevent releases for the life of the UST system.
- Repairs to fiberglass tanks may be made by the manufacturer's representative or according to manufacturer's specifications.
- Repairs to spill buckets may only be made if allowed by the manufacturer.
- Metal piping sections and fittings that have leaked must be replaced.
- Fiberglass piping and fittings may be repaired according to manufacturer's specifications.
- Ensure qualified contractors familiar with UST systems and equipment are used.

Repaired tanks and piping must:

- Be tightness tested within 30 days of the repair, or
- The repaired portion is monitored monthly for releases, or
- Be internally inspected (tanks only).

Records of all repairs must be kept for the remaining operating life of the UST system.

The Division may authorize a limited amount of repairs without triggering replacement requirements if piping is single wall. Repairs not deemed to be replacements require written approval by the Division.

Submit a written request detailing the repair to be completed to the Division for review prior to conducting the work.

Chapter 11

Other Related Regulatory Programs

The Division of Air Pollution Control also regulates gasoline tanks and dispensers at gasoline dispensing facilities. Construction permits must be applied for at least 90 days prior to construction and the permit received prior to starting construction of new tanks/dispensers or modification of existing tanks/dispensers. Permits are not transferrable from one owner to another. An operating permit application is required within 30 days of the facility beginning operation and a Notification of Compliance Status report is required within 60 days of a facility beginning operation. Construction permit information can be found at <http://www.tn.gov/environment/permits/airconst.shtml>. Additional information is available from the TDEC Small Business Environmental Assistance Program at http://www.tn.gov/environment/small-business/small-business_gasoline.shtml. If the facility is located in Davidson, Hamilton, Knox, or Shelby Counties, please contact the local air pollution control program for that county for air permitting requirements.

The following are additional programs that may need to be contacted for specific requirements:

Tennessee Department of Agriculture, Consumer & Industry Services Division (Weight & Measures Section)

Tennessee Department of Revenue

Local Fire Department, Codes or other municipal agencies