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PST & Stage II Team

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PST Investigation

Reasons for Investigation

- Non-Compliance indicated by PST Registration Database
 - Reasonable notification from 24 hours up to 14 days
- Complaint
 - No prior notification
- Enforcement Action
 - No prior notification
- Energy Bill (2005)
 - UTA (EPA Contractor)

Target Issues for Inspection

1. Release Detection (USTs)
2. Release Detection (Piping)
3. Spill & Overfill Prevention
4. Corrosion Protection
5. Financial Assurance
6. Delivery Certificate
7. Operator Training
8. Other Items

Release Detection Methods for USTs

Inventory Control Records (required at all retail sites regardless of method of release detection)

Monthly methods of release detection are:

Automatic Tank Gauging (ATG) & Inventory Control, Statistical Inventory Reconciliation (SIR) & Inventory Control, Vapor Monitoring, Groundwater Monitoring, Interstitial Monitoring, Secondary Containment Barrier Monitoring, Manual Tank Gauging, and Monthly Tank Gauging

Normally request last 12 months of records

Inventory Control

Must be done each operating day and must be reconciled at the end of the month

SAMPLE

MONTHLY INVENTORY RECORD

TANK IDENTIFICATION & TYPE OF FUEL: 4 MIDGRADE UNL

MONTH/YEAR: 9, 93

FACILITY NAME: LAST CHANCE #2

DATE OF WATER CHECK: 9/1 LEVEL OF WATER (INCHES): 0

DATE	START STICK INVENTORY (GALLONS)	GALLONS DELIVERED	GALLONS PUMPED	BOOK INVENTORY (GALLONS)	END STICK INVENTORY (INCHES) (GALLONS)		DAILY OVER (+) OR SHORT (-) ("In" - "Out")	INITIALS
1	4047 (+)	—	(-) 233	(=) 3714	32 3/4	3690	-24	JD
2	2690 (+)	—	(-) 44	(=) 2646	38	3658	+12	JD
3	3658 (+)	—	(-) 329	(=) 3329	35 3/8	3223	-6	JD
4	3323 (+)	—	(-) 60	(=) 3263	35	3275	+12	JD
5	3275 (+)	—	(-) 145	(=) 3130	33 3/4	3117	-13	JD
6	2117 (+)	—	(-) 228	(=) 2879	31 1/2	2790	-89	JD
7	2790 (+)	6134	(-) 117	(=) 2807	80	2844	+37	JD
8	2807 (+)	—	(-) 127	(=) 2679	78 3/8	2732	+15	JD
9	2679 (+)	—	(-) 182	(=) 2497	77 1/2	2591	+41	JD
10	2497 (+)	—	(-) 205	(=) 2292	75 1/2	2329	-7	JD
11	2292 (+)	—	(-) 204	(=) 2088	73 5/8	2192	-2	JD
12	2088 (+)	—	(-) 166	(=) 1922	72	1991	-16	JD
13	1922 (+)	—	(-) 320	(=) 1602	69 3/8	1750	-159	JD
14	1602 (+)	—	(-) 307	(=) 1295	67	1402	-21	JD
15	1295 (+)	—	(-) 76	(=) 1219	66 1/2	1342	+16	JD
16	1219 (+)	—	(-) 224	(=) 995	64 1/2	1050	-68	JD
17	995 (+)	—	(-) 390	(=) 605	61	657	-3	JD
18	605 (+)	—	(-) 296	(=) 309	58 3/8	354	-7	JD
19	309 (+)	—	(-) 38	(=) 271	58 1/2	290	+14	JD
20	271 (+)	—	(-) 424	(=) 847	54 1/8	289	+3	JD
21	847 (+)	—	(-) 205	(=) 642	53 1/8	563	-25	JD
22	642 (+)	4177	(-) 403	(=) 943	86 1/2	942	+10	JD
23	943 (+)	—	(-) 87	(=) 856	85 1/2	934	+7	JD
24	856 (+)	—	(-) 311	(=) 545	82	903	+4	JD
25	545 (+)	—	(-) 239	(=) 306	49 3/8	275	-40	JD
26	306 (+)	—	(-) 256	(=) 50	76 3/8	252	+25	JD
27	50 (+)	—	(-) 264	(=) 826	74 1/2	270	+2	JD
28	826 (+)	—	(-) 263	(=) 563	72	799	-16	JD
29	563 (+)	—	(-) 185	(=) 378	69	311	+5	JD
30	378 (+)	—	(-) 116	(=) 262	68	290	-5	JD
31	262 (+)	—	(-) 1	(=) 261				

TOTAL GALLONS PUMPED > 6594 TOTAL GALLONS OVER OR SHORT > -24

DROP THE LAST 2 DIGITS from the PUMPED number and enter on the line below

LEAK CHECK: 65 + 130 = 195 gallons

Compare these numbers

Is "TOTAL GALLONS OVER OR SHORT" LARGER than "LEAK CHECK" result? YES NO

If answer is "YES" for 2 MONTHS IN A ROW, notify regulatory agency as soon as possible.

KEEP THIS PIECE OF PAPER ON FILE FOR AT LEAST 5 YEAR

ATG & Inventory Control

Requires at least 1 passing test every 35 days for each UST
Must be able to detect a 0.2 gallons per hour leak



ATG for Emergency Generator USTs

USTs that feed an emergency generator(s) can use ATG leak testing for its monthly method of release detection without inventory control

The ATG should be conducting continuous automatic tests to be exempted from the inventory control requirement

SIR & Inventory Control

SIR results are required to be received within 15 days of the end of the month (or alternate cycle)

SIR report must state the leak rate in gallons per hour

Failing (24 hours) or Inconclusive (72 hours if not investigated and quantified to pass) results must be reported as a suspected release

Vapor Monitoring

Should see vapor monitoring wells around tank system (usually 1 inch diameter)

Equipment must be able to detect vapors of the regulated substance stored, or a tracer substance added to the UST

Assessment required to determine backfill porosity, # of wells needed, and well locations

Existing contamination can interfere with this method!

Groundwater Monitoring

Natural groundwater level must be within 20 feet from the ground surface

Monitoring device used must be able to detect 1/8th inch of free product atop the groundwater...can use an automatic device or a bailer

Assessment required to determine subsurface conditions, # of wells needed, and well locations

Existing contamination can interfere with this method!

Interstitial Monitoring

Can use float sensors (brine-filled interstice) or liquid sensors (dry interstice)...4" risers to brine-filled tanks pictured!

Need to print a monthly report showing all sensors normal



Interstitial Monitoring (continued)

Double-walled Steel Tanks Interstitial Risers (2" diameter)



Interstitial Monitoring (continued)

Jacketed Steel Tanks Interstitial Riser (2" diameter)



Secondary Containment Barrier Monitoring

Method that monitors the backfill material between the UST and a containment barrier (typically a liner)

Barrier must be positioned above the groundwater level and outside the designated 25-year flood plain, unless the barrier & monitoring equipment are designed for use under such conditions

Can monitor for liquids or vapors

Manual Tank Gauging

Method is basically a modified method of inventory control gauged on a weekly basis

Can only be used for USTs 1,000 gallons or smaller in size (usually for waste oil tanks)

Must gauge tank, wait a minimum duration, and gauge again. No inputs or withdrawals between gauging. This is required weekly.

If allowable weekly or monthly deviations are exceeded, then a suspected release should be noted

Manual Tank Gauging (continued)

MANUAL TANK GAUGING RECORD

Month _____ Year _____

Tank Identification _____

Person Completing Form _____

Facility Name _____

Circle your tank size, test duration, and weekly/monthly standards in the table below:

Tank Size	Minimum Duration Of Test	Weekly Standard (1 test)	Monthly Standard (4-test average)
up to 550 gallons	36 hours	19 gallons	5 gallons
551-1,000 gallons (when tank diameter is 64")	44 hours	8 gallons	4 gallons
551-1,000 gallons (when tank diameter is 48")	58 hours	12 gallons	6 gallons

Compare your weekly readings and the monthly average of the 4 weekly readings with the standards shown in the table on the left.

If the calculated change exceeds the weekly standard, the UST may be leaking. Also, the monthly average of the 4 weekly test results must be compared to the monthly standard in the same way.

If either the weekly or monthly standards have been exceeded, the UST may be leaking. As soon as possible, call your implementing agency to report the suspected leak and get further instructions.

Start Test (month, day, and time)	First Initial Stick Reading	Second Initial Stick Reading	Average Initial Reading	Initial Gallons (convert inches to gallons) [a]	End Test (month, day, and time)	First End Stick Reading	Second End Stick Reading	Average End Reading	End Gallons (convert inches to gallons) [b]	Change in Tank Volume in Gallons + or (-) [a-b]	Tank Passes Test (circle YES or NO)
Date: Time: AM/PM					Date: Time: AM/PM						Y N
Date: Time: AM/PM					Date: Time: AM/PM						Y N
Date: Time: AM/PM					Date: Time: AM/PM						Y N
Date: Time: AM/PM					Date: Time: AM/PM						Y N
To see how close you are to the monthly standard, divide the sum of the 4 weekly readings by 4 and enter result here >											Y N

KEEP THIS PIECE OF PAPER ON FILE FOR AT LEAST 5 YEARS

Monthly Tank Gauging

Method is basically a modified method of inventory control gauged on a monthly basis

Can only be used for USTs that feed an emergency generator(s)

Must gauge tank, wait a minimum duration, and gauge again. No inputs or withdrawals between gauging. This is required monthly.

If the allowable monthly deviation is exceeded, then a suspected release should be noted

Monthly Tank Gauging (continued)

TCEQ MONTHLY TANK GAUGING RECORD

(Only for use with emergency generator tanks)

During the testing period, no substance may be added or removed from the tank. Liquid level measurements are taken at the beginning and ending of the testing period. The difference or deviation in gallons between the measurements is obtained. Compare your reading with the monthly standard in the table below. If the monthly standard has been exceeded, the UST may be leaking. Within 24 hours, notify the local TCEQ regional office to report a suspected release and get further instructions.

Circle your tank size and monthly standard on the table below:

Tank Size	Minimum Duration of Test	Monthly Standard
Up to 550 gallons	36 Hours	5 gallons
551 to 1,000 gallons	36 Hours	7 gallons
1,001 to 2,000 gallons	36 Hours	13 gallons
2,001 gallons and Up	36 Hours	1% of Tank Capacity

Facility Name: _____
 Person Completing Form: _____

TCEQ Facility ID No.: _____
 Tank ID No.: _____

Year: _____

Start Test (date & time)	Initial Stick (inches)	Initial Gallons	End Test (date & time)	End Stick (inches)	End Gallons	Change in Volume	Tank Passes Test
January: Time:			January: Time:				Y or N
February: Time:			February: Time:				Y or N
March: Time:			March: Time:				Y or N

Release Detection for Piping

Pressurized Lines:

1. Automatic Line Leak Detector with an annual performance test
2. Either an annual piping tightness test or a monthly method of release detection

Suction Lines:

1. Either a triennial piping tightness test or a monthly method of release detection
2. Exempt if only one check valve (under dispenser) and piping slopes to top of tank

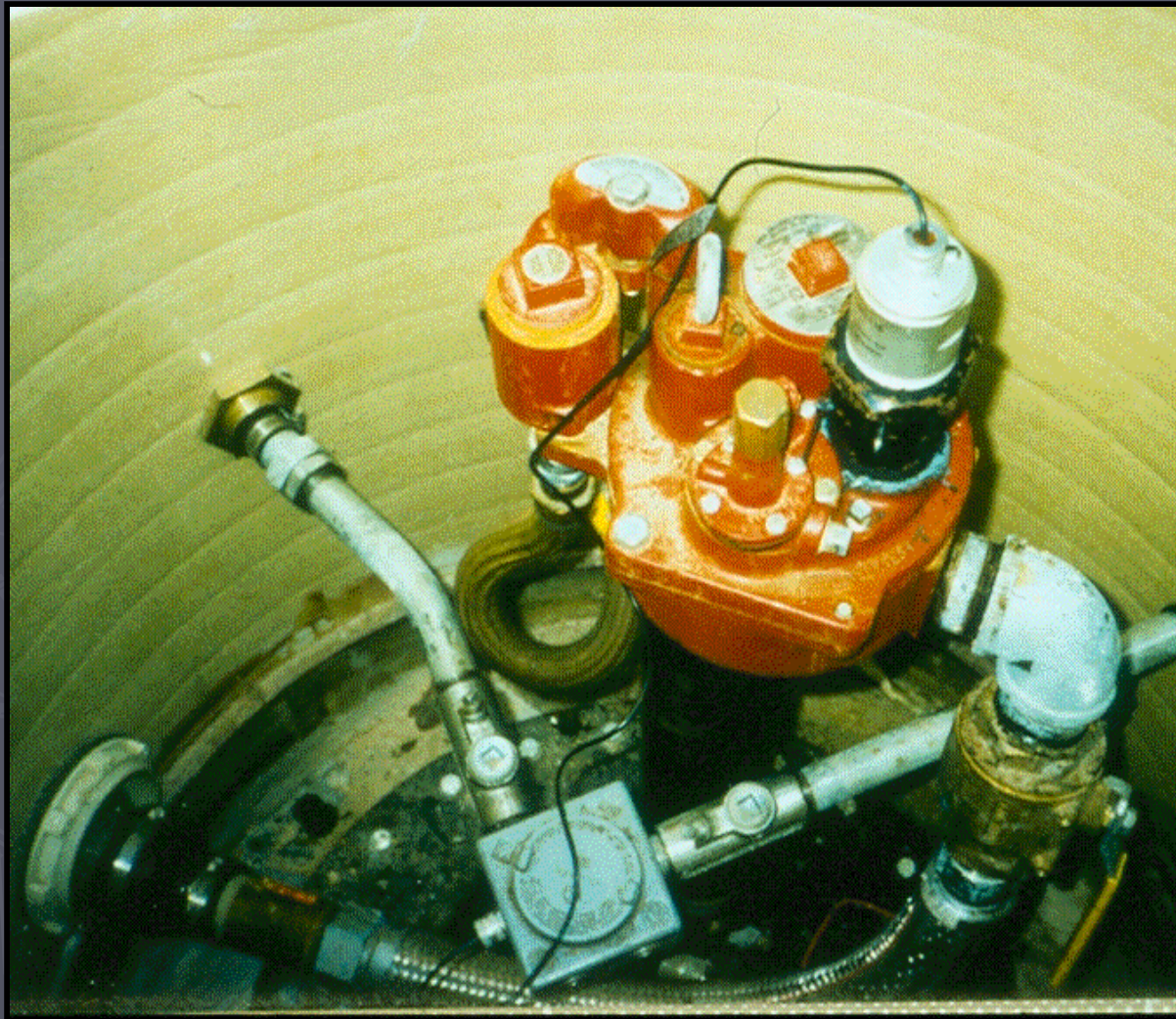
Release Detection for Piping (continued)

Mechanical Line Leak Detectors



Release Detection for Piping (continued)

Electronic Line Leak Detector



Spill & Overfill Prevention

Tight fill fittings

Spill containment devices

Overfill prevention devices

1. Shut-off valve (set at 95% of tank capacity)
2. Flow restrictor (set at 90%)
3. Audible & Visual alarm w/ ball float (set at 98%)

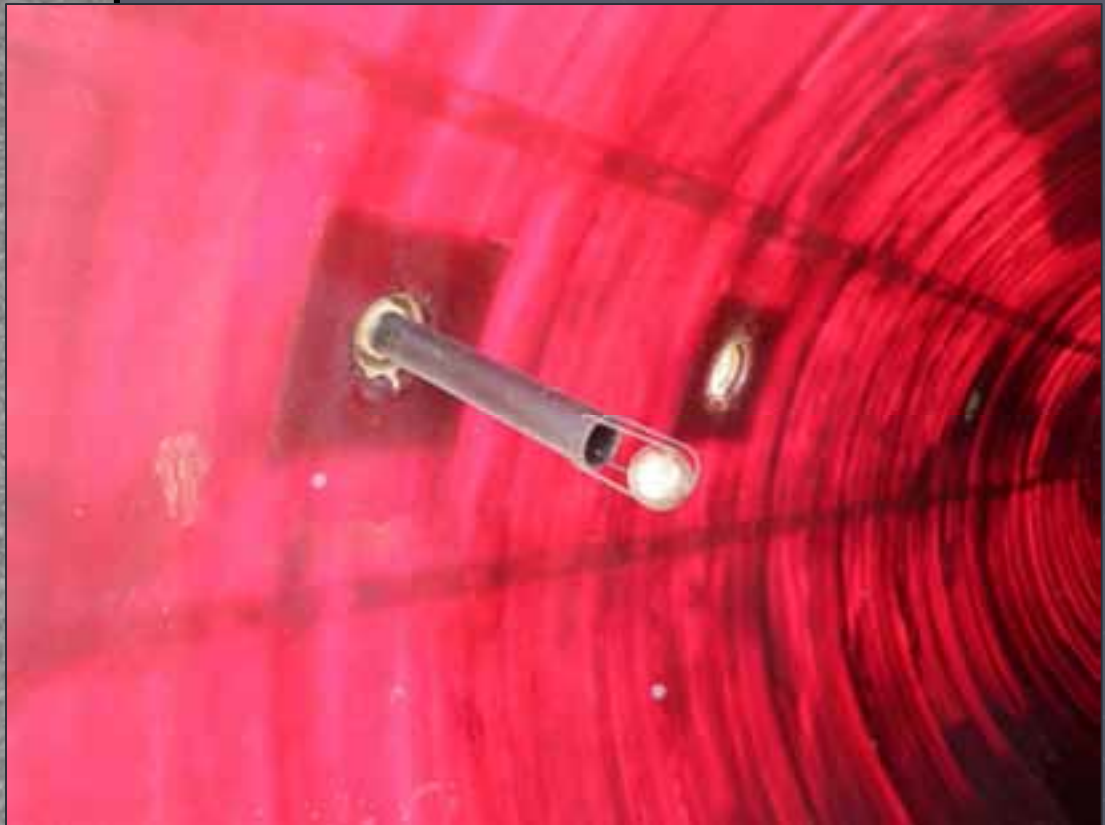
Spill & Overfill Prevention (continued)

Overfill Devices – Shut-off Valves (flapper)



Spill & Overfill Prevention (continued)

Overfill Devices – Flow Restrictor (Ball Floats)



Spill & Overfill Prevention (continued)

Audible/Visual Alarms



Spill & Overfill Prevention – Exceptions!

A tank is not required to have spill and overfill prevention equipment if any one of the following applies:

- 1) Transfers of regulated substances into the tank do not exceed 25 gallons (example: used oil USTs)
- 2) The UST system has alternative equipment approved by TCEQ
- 3) Its installation has been deemed impracticable due to the UST system design & approved by TCEQ

Corrosion Protection

Cathodic protection system records for field installed systems – Galvanic & Impressed Current

1. Design documentation
2. CP operability test (3 to 6 months after installation & every 3 years thereafter)
3. 60 day operational check of rectifier (impressed current systems only)

Corrosion Protection (continued)

Rectifier Box for Impressed Current System (amps/volts)



Corrosion Protection (continued)

Other CP options:

1. Tanks and piping can be constructed of non-corrodible materials (examples: composite tanks ACT-100, fiberglass tanks & piping, poly flexible piping)
2. Metal components can be electrically isolated (examples: jacketed tanks, sumps, boots)
3. Dielectric tape is not acceptable for metal parts that routinely contain product.

Corrosion Protection (continued)

CP using non-corrodible materials (Fiberglass Tanks & Piping)



Corrosion Protection (continued)

CP using electrical isolation (sumps)



Financial Assurance

Mechanisms and Coverages Needed

Financial Assurance mechanisms are: Insurance, Surety Bond, Letter of Credit, Financial Test, Guarantee, and Trust (Local governments may use a Test or Guarantee)

Corrective Action Coverage - covers the cost of taking corrective action caused by accidental releases arising from the operation of the UST system

Third Party Liability - compensates third parties for bodily injury & property damage

Delivery Certificate

Delivery certificate must be current to legally receive fuel

Required to be renewed annually or within 30 days of a change of ownership

Required to submit proof of financial assurance with a UST Registration & Self-Certification Form

Operator Training

A/B operator training required for all regulated UST systems – at least one A/B trained representative for the facility

A person can be the A/B trained representative for up to 50 facilities

A/B representative can be with a third party as long as they have a current TCEQ installer's license and contractor's license

Documentation of C representatives trained must be maintained

Shear Valves

Shear valves properly anchored?



Other Items

UST systems installed after January 1, 2009 are required to have interstitial sensors in all tanks and liquid sensors in all sumps (e.g. Beaudreau or Veeder Root sensors)

Sumps must be installed at all STPs and under all dispensers and the sensors must be within 2 inches of the bottom of the sumps

Sumps must be inspected annually and tested every 3 years for tightness (hydrostatic test)

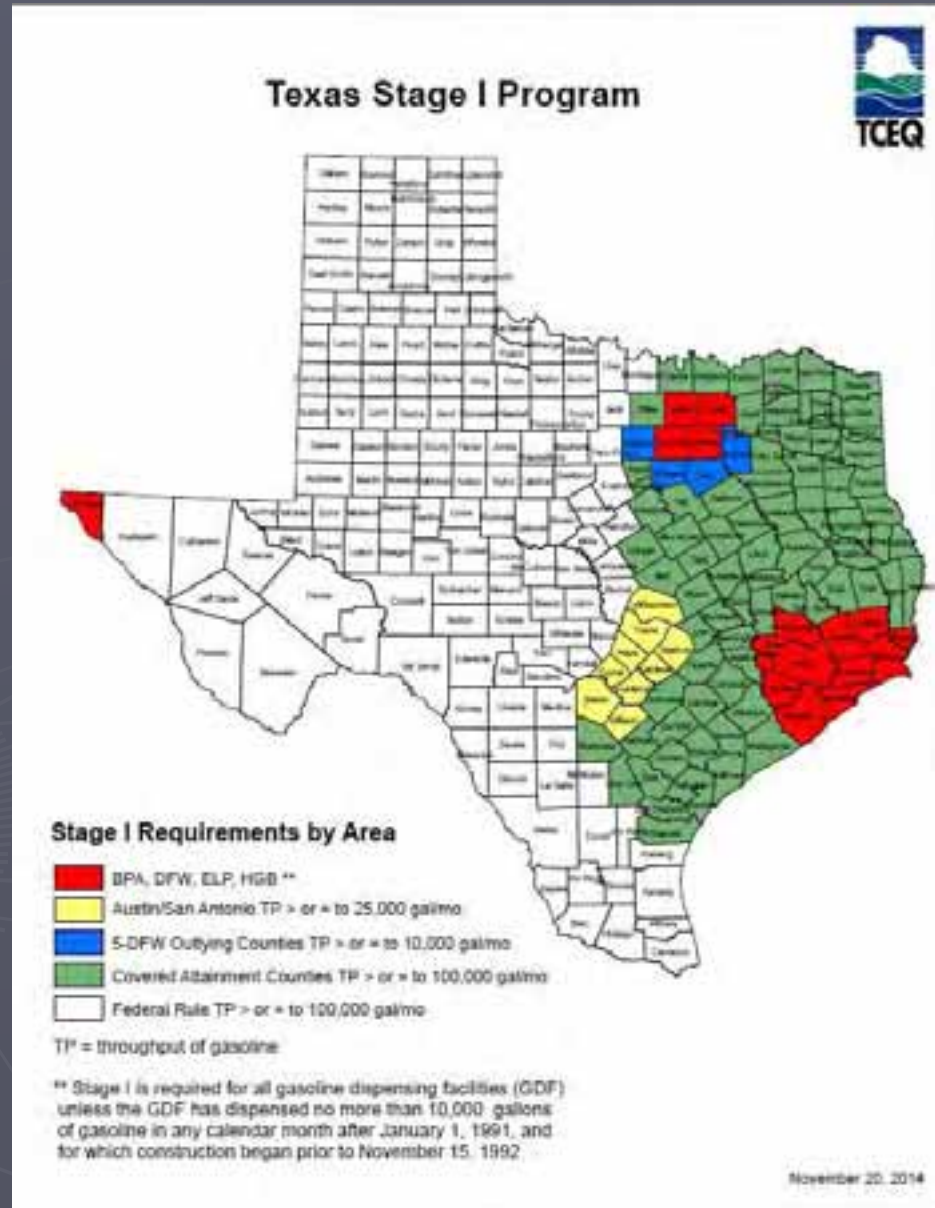
PST Investigation

Common Violations

- **Failure to complete or renew self-certification form (delivery certificate)**
- **Accepting fuel without current delivery certificate**
- **Failure to conduct inventory control**
- **Failure to conduct release detection for USTs**
- **Failure to have Financial Assurance**
- **Failure to conduct leak detector and line tightness test**

- **Failure to Test:**
 - 1. Cathodic Protection (every 3 years)**
 - 2. Line Leak Detector (annually)**
- **Failure to maintain inspection log for Impressed Current Rectifier (every 60 days)**
- **Failure to ensure that shear valves are properly anchored**
- **Failure to remove USTs without cathodic protection**
- **Failure to perform monthly reconciliation**

Stage I Revisions



Stage I Revisions: Inspection Requirements

- ▶ 115.224:
- ▶ (1) Inspections for liquid leaks, visible vapors, or significant odors resulting from gasoline transfer shall be conducted at gasoline dispensing facilities. Gasoline transfer shall be discontinued immediately when any liquid leaks, visible vapors, or significant odors are observed and shall not be resumed until the observed issue is repaired.
- ▶ (2) The gasoline tank-truck tank must have been inspected for leaks within one year in accordance with the requirements of §§115.234 - 115.237 of this title (relating to Inspection Requirements; Approved Test Methods; Recordkeeping Requirements; and Exemptions, respectively), as evidenced by a prominently displayed certification affixed near the United States Department of Transportation certification plate.

Stage I Revisions: Testing Requirements

- ▶ (1) California Air Resources Board Vapor Recovery Test Procedure TP 201.1E - Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves.
- ▶ (2) California Air Resources Board Vapor Recovery Test Procedure TP-201.3 - Determination of 2-Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities.

Stage II Decommissioning Deadline

- DEADLINE TO DECOMMISSION: **August 31, 2018.**
- Please note that if you decide to replace the hanging hardware through attrition, all Stage II hanging hardware must also be replaced by **August 31, 2018.**



Who can conduct the work?

- ▶ **Stage II decommissioning must be conducted by a TCEQ licensed UST Contractor and tested by a TCEQ registered Stage II tester.**
- ▶ **You can obtain a copy of the TCEQ licensed UST Contractors and TCEQ registered Stage II testers from the TCEQ website or contact your local TCEQ office for a list.**



Testing

- Prior to placing the fuel system back into service, appropriate testing is required to be conducted and “pass”.
- If the testing cannot be conducted on the same day as the decommissioning; the fuel system must remain out of service until the testing is successfully conducted.
 - ▶ Required Testing:
 - Pressure Decay (TX-102) and Dynamic Back-Pressure (TX-103) tests are required to be conducted and “pass” for all fuel systems prior to placing back into service.
 - If a central vacuum motor was removed, a product line tightness test must be conducted and “pass” before placing the fuel system back into operation



After Decommissioning is Completed

- **The Pressure Decay test is part of the Stage I system and will be required to be tested on a regulatory basis.**
- **All affected gasoline dispensing facilities are required to test annually for Stage I.**
- **Annual/monthly piping release detection testing and annual Line Leak Detector testing will continue to be required per the PST regulations.**
- **You are still required to conduct these test even if you decommission your Stage II equipment.**

TCEQ PST CEI Investigations



Thank You.....Questions?