UST Inspector Training 101

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NH DES, UST/AST Inspector

Inspections 101 webinar
CONTENT

Equipment in the following areas

- Release detection & Leak monitoring
- Spill protection
- Overfill protection
- Corrosion protection

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Release Detection
Single Wall (SW) Tank and Piping

Monitoring Well

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Release Detection SW Tank

Automatic Tank Gauge (ATG)

ATG Cap

Product float

Water float

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Release Detection SW Tank

ATG Requirements

- Daily tightness test
- Every 30 days
  - one passing test
- CSLD
  - Continuous statistical leak detection
Release Detection

SW Piping

Piping system:
- Suction
- Pressurized
- Remote fill (pressurized)
Release Detection

SW Suction Piping

Dispenser Pump

Piping Sumps

- Every 3 years tightness test
  - Exempt:
    - Piping continuously slopes to tank; and
    - No more than 1 check valve; and
    - Valve located at suction pump

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Release Detection

SW Pressure Piping

Piping Sump

Dispenser

No pump
Inventory Monitoring
Line Leak Detector (LLD)

All Pressurized Piping

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LLD Requirements

All pressurized piping:

- Restrict or stop flow when there is a leak
- 3 gallons/hour or greater
Leak Monitoring
Double Wall (DW)
Tank in a Tank - Piping in a Pipe/Sump

Piping Sump

Sensor
Leak Monitoring

- DW tank and/or DW piping with sensors

Dispenser Sump or Dispenser Pan

Piping Sump

DW Tank

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Leak Monitoring
Consoles for DW Tank & Piping
Leak Monitoring

Console for DW Tank & Piping

- Operate continuously
- Audible and visual indicator
- Identify location of sensors
  - L3 Regular Tank Piping Sump
Leak Monitoring Sensors

- Location:
  - Tank DW (interstitial)
  - Piping sump
  - Dispenser sump
- Be secured at low point
- Space maintained free of liquid and debris

Vertical
Spill & Overfill Devices

- Spill Containment
- 3 Overfill Device Methods
- 2 Delivery Methods
Spill Buckets

Minimum 5 gallon & free of liquid and debris

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Main Function

To prevent product from entering backfill

15 Gallon
What is wrong?

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Overfill Devices

Flapper Valve

Audible Visual Alarm

Tank

Fill Drop Tube

Ball Float

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Drop Tube Overfills

EMCO
Wheaton
Guardian
A1100

OPW
61SO / 71SO

EBW
Auto Limiter II

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Flow Stop Device = 95% max level
Flapper Valve (installed in fill drop tube)
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Remove plug to access and operate flapper valve.
Drop Tube OF

- OPW 61TNG-4000
  - Vacuum operated

Found during Peer Match

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Problems

Top Section

Bottom Section

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Why Remove

Top Section

Not NH

Top Section

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What NOT to do

Pressure delivery with flapper valve

Inside fill drop tube

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Flow Restricting Device = 90% fill level

Ball Float (installed in tank at vent locations)
Ball Float OPW

Standard Ball Float

1/8” Bleed hole

4 Prong cage with bleed holes

30 Minute 30VML

Gasket (missing)

1/16” Bleed hole

Spiral cage

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Bad Signs

Also short, not set for 90%

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Bad Signs

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Problems

Leaking Drain Valve

Pop ATG Cap

During delivery----product head pressure
Top of delivery truck to ball float = 11 vertical feet

Note: 11.5’= 5 psi
(Can over pressurize tank)

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Alert Device = 90% fill level

High Level Audible/Visual Alarm

Horn

Light

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High Level Alarm

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Gravity Delivery Method

300-400 gpm delivery
4” hose 20 feet long = 14 gallons

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**Pressure Delivery Method**

*Pumped*

(30-75 psi)

40-300 gpm

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Device-Delivery Compatibility

- Audible/Visual Alarm (AA)
  - Suitable for either delivery method

- Flapper Valve (FV)
  - Gravity only
  - Tight connection
  - Can not have ball floats
Device-Delivery Compatibility

- Ball Float (BF)
  - **Gravity only** - tight connection
  - Multiple BF per tank
    (vent, dry break, vapor recovery return pipe)
  - Can not use with:
    - Coaxial drop tube
    - Suction pump dispenser
      (air eliminator)
Corrosion Protection

2 protection methods

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Sacrificial Anode Method

- Metal anodes
- More electrically active than the steel tank
- Anode corrodes away as current exits
Factory Installed Anode

Removed tank with factory anode

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Impressed Current Method

- **Rectifier**
  - Alternating current (AC) to direct current (DC)
- **Anodes deplete vs. tank.**
- **Owner/Operator required action**
  - *(Bi-Monthly) inspection log* (every two months)
Impressed Current Rectifier

AMPS

Bi-Monthly Log

VOLTS

Min. and Max. Amp and Volt Readings

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Impressed Current Pathway

- Rectifier → anodes → soil → tank → rectifier
Normally found inside your building

Cathodic Protection Employing Impressed Current
Review

- Release Detection & Leak Monitoring
- Spill protection
- Overfill protection
- Corrosion protection

QUESTIONS??
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