APSA REFRESHER

Presented by

Mark Howard, Janice Witul, Pete Reich & Steve Lichten

22nd Annual California CUPA Training Conference
February 3 - 6, 2020
South San Francisco

Steve

Introductions…

- US EPA:
  - Mark Howard: Office of Emergency Management – HQ
  - Janice Witul: Region IX Oil Program
  - Pete Reich: Region IX Oil Program
- ESCI EnviroServices, Inc.:
  - Steve Lichten: Consultant…Plan writer, auditor & trainer
- YOU..?
  - CUPA?
  - Industry?
  - Consulting?

This is a refresher

- Not the APSA 101 introduction class…
  - Assumption is you have a basic understanding of APSA & SPCC requirements
- We will cover five topic areas we selected (as they are often mis- or not well understood):
  1. General Plan Requirements & Technical and Administrative Amendments (Steve/Mark)
  2. Oil-Filled Equipment (Steve/Janice)
  3. Piping Requirements (Steve/Pete)

  Break 2:45 – 3:00
  1. Mobile Refuelers and Non-Transportation Tank Trucks (Steve/Pete)
  2. Inspection and Testing Requirements (Steve/Mark)
  3. Open Q&A Stump the Regulator and Plan Writer

Ask the Plan Writer and Regulator! After every topic.

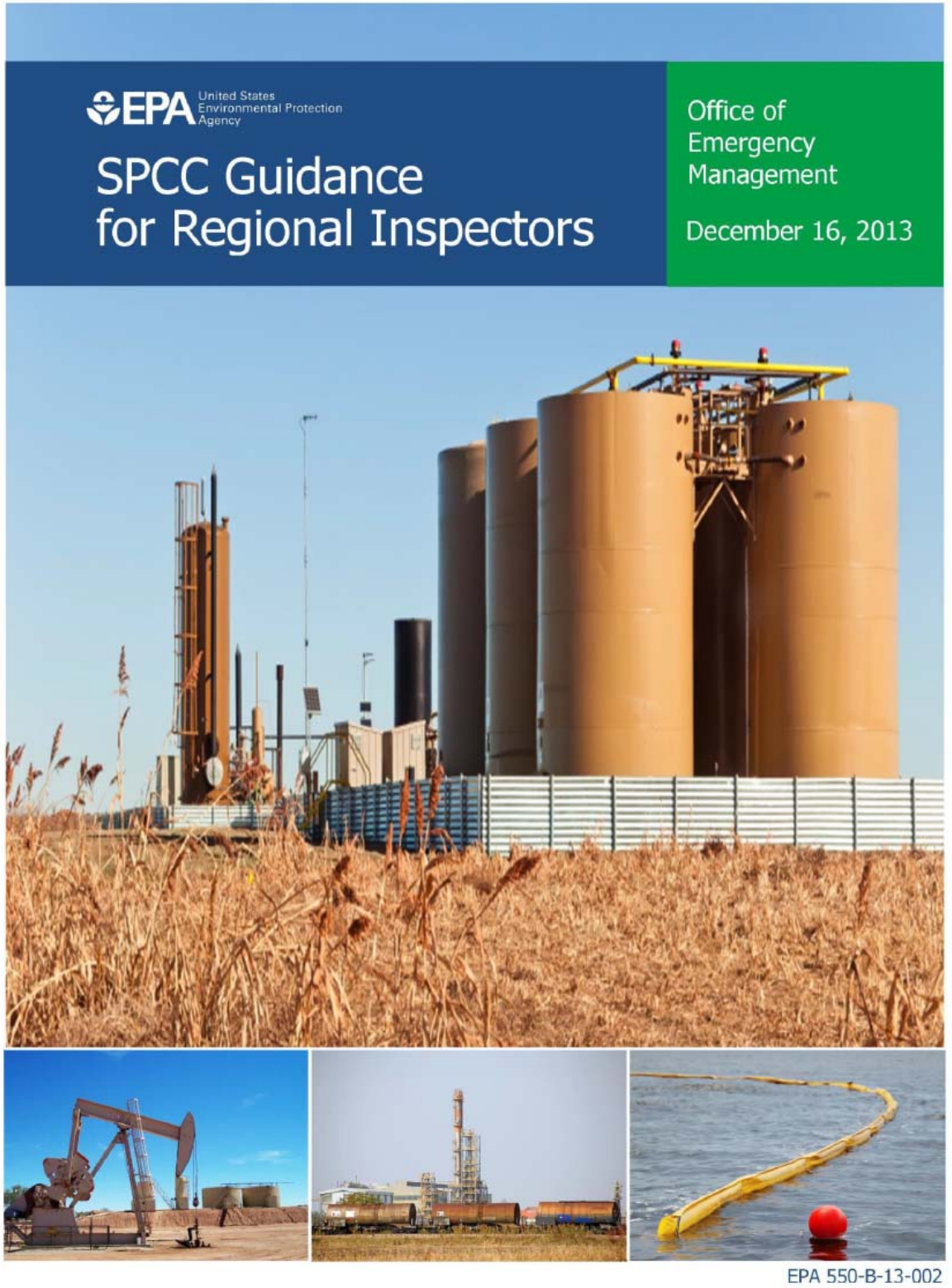
Other CUPA Class Sessions

- Don't forget… other more detailed classes:
  - The Nitty/Gritty APSA Details (Mon. am)
  - STI/SFPA Tank Inspection Workshop (Tues. pm)
  - SPCC at Airports (Tues. pm)
  - All About Petroleum Tanks (Wed. pm)
  - SP001 Inspection & APSA Compliance Issues & Case Studies (Wed. pm)
  - Oil/Water Separators & SPCC Applicability (Wed. pm)
  - Common APSA Violations Resulting in Enforcement Actions (Thurs. am)
  - TIUGAs (Thurs. am)
  - How to Prepare an SPCC Plan & What to Expect From an EPA Inspection (Thurs. pm)

Mark

Guidance

- USEPA SPCC Guidance for Inspectors
  - Updated examples/scenarios, references, tables, explanations, etc.
  - Much more comprehensive appendices and references
  - A must read!
- …and APSA Tag stuff



Legal Disclaimer

This presentation is meant to provide an overview to EPA inspectors, owners and operators of facilities of regulated, and the general public on the implementation of the Spill Prevention, Control, and Countermeasure (SPCC) rule (40 CFR Part 112). This presentation seeks to promote nationally-consistent implementation of the SPCC rule. The statutory provisions and EPA regulations described in this presentation contain legally binding requirements. This presentation does not substitute for those provisions or regulations, nor is it a regulation itself. In the event of a conflict between the discussion in this presentation and any statute or regulation, this presentation is not controlling. This presentation does not impose legally binding requirements on EPA or the regulated community, and might not apply to a particular situation based upon the circumstances. The word "should" as used in this presentation is intended solely to recommend or suggest an action, and is not intended to be viewed as controlling. Examples in this presentation are provided as suggestions and illustrations only. While this presentation indicates possible approaches to assure effective implementation of the applicable statute and regulations, EPA retains the discretion to adopt approaches on a case-by-case basis that differ from this presentation where appropriate. Any decisions regarding compliance at a particular facility will be made based on the application of the statute and regulations. References or links to information cited throughout this presentation are subject to change. Rule provisions and internet addresses provided in this guidance are current as of January 2020. This presentation may be revised periodically without public notice.

Plan Amendments

Mark

Amendment of SPCC Plan by Owners or Operators 40 CFR §112.5

- SPCC Plans are living documents
- §112.5(a) requires Plan amendments for changes in facility design, construction, operation, or maintenance that materially affect the potential for a §112.1(b) discharge…aka 'technical amendments'
  - This could be changes that increase *or decrease* the potential
- Specific time limits apply
- Technical amendments must be certified by a Professional Engineer in accordance with §112.3(d)
  - Except as provided for Qualified Facilities (§112.6)

Technical Amendment Examples

- Commissioning and decommissioning containers (or rerating a container)
- Replacement, reconstruction, or movement of containers*
- Reconstruction, replacement, or installation of piping systems
- Construction or demolition that might alter secondary containment structures
- Changes in oil product or oil service
- Revision of operating or maintenance procedures

* ***inherent flexibility for location and number of portable/mobile containers***

Technical Amendment Timing

- Plan amendment must be prepared within 6 months
  - including recertification by P.E. per 112.5(e)
- Implement ASAP, but no later than 6 months after amendment

Administrative (Non-Technical) Amendments by Owner/Operator?

- No specific rule requirement to make administrative amendments…but
- Complete review and evaluation of Plan per §112.5(b)
  - At least once every 5 years
  - Does <u>not</u> require a PE to review or re-certify
    - Unless technical changes
  - *Should* involve management, operations and maintenance
- Must amend Plan within 6 months to include more effective prevention and control technology if applicable
- Implement ASAP, but no later than 6 months of amendment

Documenting Plan Review

- Must document §112.5(b) Plan review and evaluation
- Facility owner / operator must sign statement
  - At beginning or end of Plan, or
  - In a log, or
  - In an appendix
  - "I have completed review and evaluation of the SPCC Plan for (name of facility) on (date), and will (will not) amend the Plan as a result."

Non Technical Amendments?

- Examples:
  - Phone #s
  - Emergency contacts
  - Management changes
  - New person responsible for spill prevention
  - Tank #s
  - Minor changes in procedures…etc.?
- Any required timeframe to amend the Plan?

Steve

Relocating the 1,000-gal. diesel fuel AST during the 12-month construction project?

This…

To this…?

Changing tank contents from gear lubricant to motor oil?

From hydraulic fluid to 10/W50?

From petroleum hydraulic oil to vegetable hydraulic oil?

Diesel to gasoline?

'Permanently closing' the base fuel tank & switching to a 10 gal. day tank fed by 3,000 gal. UST?

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Increasing the number of oil druns stored from 300 to 430?

Adding a couple of oil IBCs?

Relocating the IBCs to the other end of the warehouse?

General (§112.7) Requirements for All Facilities

Mark

General Plan Requirements §112.7

- Requirements that apply to all facilities
  - §112.6(a) and (b) streamlines some of these requirements for Tier 1 and Tier 2 Qualified Facilities, respectively
- Formatting requirements (§112.7 and §112.7(a)(1))
  - Plan in writing & in accordance with good engineering practices
  - Plan must have full approval of management at a level of authority to commit the necessary resources to fully implement the Plan
  - If Plan does not Plan follow the Rule must prepare an equivalent Plan and must include a cross-reference
  - Discussion & schedule for stuff not yet operational/installed
  - Discussion of facility conformance with rule requirements

Environmental Equivalence §112.7(a)(2)

- Conditional flexibility in rule-required compliance methods
  - Not applicable for Qualified Facilities unless PE certified
- Secondary containment provisions are <u>not</u> subject to environmental equivalence
  - MUST make "impracticability determinations" in compliance with 40 CFR §112.7(d)
- If equivalent environmental protection is provided by some other means of spill prevention, control, or countermeasure
- Alternative measures cannot rely <u>solely</u> on measures already required by other parts of 40 CFR §112

Descriptive Requirements §112.7(a)(3)

- Facility diagram with location & contents of each fixed container & portable container areas; exempt USTs; transfer stations
- Type of oil in each fixed container & capacity.
  - For mobile/portable containers: type of oil & capacity (or estimate of potential number of containers)
- Discharge prevention measures including procedures for routine handling of oil products
- Discharge or drainage controls
- Countermeasures for discharge discovery, response, & cleanup
- Methods of disposal of recovered materials
- Contact list and phone numbers (including NRC)

Emergency Planning-Related §112.7(a)(4), (5) and §112.7(b)

- If no Facility Response Plan per §112.20, must:
  - Provide information & procedures for detailed discharge reporting §112.7(a)(4)
  - Organize portions of the Plan describing procedures for when a discharge occurs to make them readily available during emergency §112.7(a)(5)
- Failure analysis: Where experience indicates reasonable potential for equipment failure §112.7(b)
  - Tank loading or unloading equipment; tank overflow, rupture, or leakage; and other equipt. known to be a source of a discharge
  - Predict for each type: Direction, rate of flow, & total quantity of oil which could be discharged

General Secondary Containment Requirement §112.7(c)

- Requires secondary containment for *all* areas with the potential for a discharge
- Requires appropriate containment and/or diversionary structures to prevent a discharge that may be harmful (a §112.1(b) discharge
- This is the **minimum** expectation for containment
  - General facility requirement with no sizing or freeboard requirements
- intended to address the most likely oil discharge from any part of a facility

General Secondary Containment Requirement §112.7(c)

- Examples of applicable areas/equipment:
  - Mobile refuelers
  - Oil-filled equipment
  - Transfer areas
  - Oil drums movement areas/pathways
  - Piping runs/racks, manifolds, etc.
  - Truck loading/unloading areas (not racks)
- Reminder: No specific-sized volume requirement…it's based on typical spill size not container size

Methods of Containment

Listed in 40 CFR § 112.7(c)

- Dikes, berms, or retaining walls
- Curbing or drip pans
- Culverting, gutters, or other drainage systems
- Weirs, booms or other barriers

- Spill diversion ponds
- Retention ponds
- Sorbent materials
- Sumps and collection systems

Definition of Loading/Unloading Rack

Loading/unloading rack **means a fixed structure (such as a platform, gangway) necessary for loading or unloading a tank truck or tank car, which is located at a facility subject to the requirements of this part. A loading/unloading rack includes a loading or unloading arm, and may include any combination of the following: piping assemblages, valves, pumps, shut-off devices, overfill sensors, or personnel safety devices.**

§112.2

Loading Racks §112.7(h)

Tank car or tank truck loading *racks* (not areas)

- Sized secondary containment required
  - Must be sized to volume of the single largest compartment on tanker or car
  - Can use a quick drainage system & catchment basins/ponds
- Required interlocked warning lights or physical barrier system, warning signs, wheel chocks or vehicle break interlock system
- Pre-loading and pre-departure examination of the truck/car lowermost drains, outlets

Loading Arm

- Loading/unloading arm is a key component of a loading/unloading rack.
- A loading/unloading arm is typically a movable piping assembly that may include fixed piping or a combination of fixed and flexible piping, typically with at least one swivel joint (that is, at least two articulated parts that are connected in such a way that relative movement is feasible to transfer product via top or bottom loading/unloading to a tank truck or rail car).
- Certain loading/unloading arm configurations present at loading racks may include a loading/unloading arm that is a combination of flexible piping (hoses) and rigid piping without a swivel joint. In this case, a swivel joint is not present on the loading arm because flexible piping is attached directly to the rigid piping of the loading arm and the flexible hose provides the movement needed to conduct loading or unloading operations in lieu of the swivel joint.

Steve

Sufficiently impervious…?


SPILL
KIT
TERIAL


Drain Cover

Small curbed area and 'dead' sump in front of double walled tank has ~150 gallon capacity. This is passive general containment for fuel loading and unloading activities.


DIESEL
COMBUSTIBLE
NO SMOKING
2
2
0
Double-walled tank = sized containment…
so all OK here?
Loading area…needs general containment

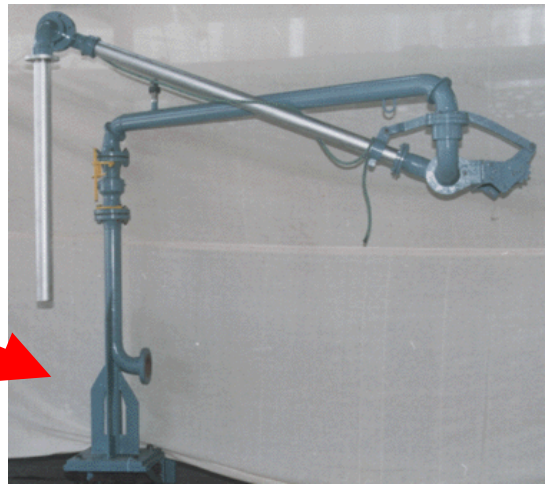
Almost got it right!

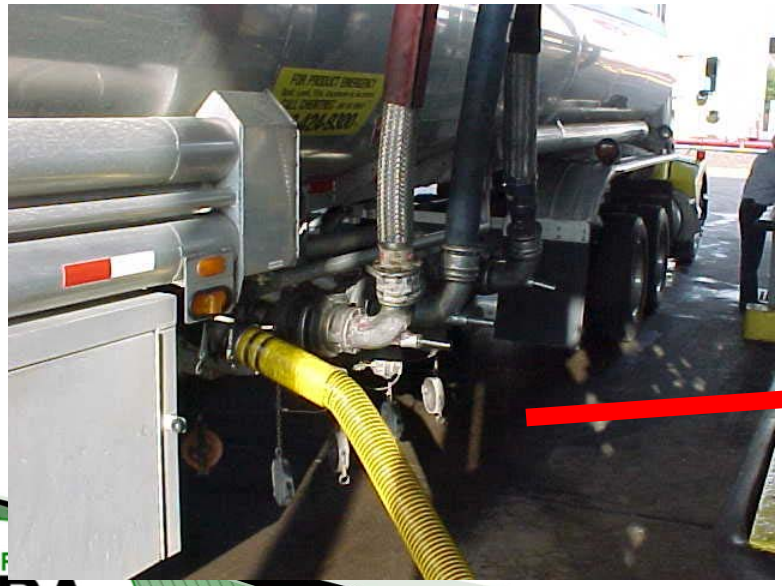

EMERGENCY
SHUT-OFF

Loading/Unloading Rack

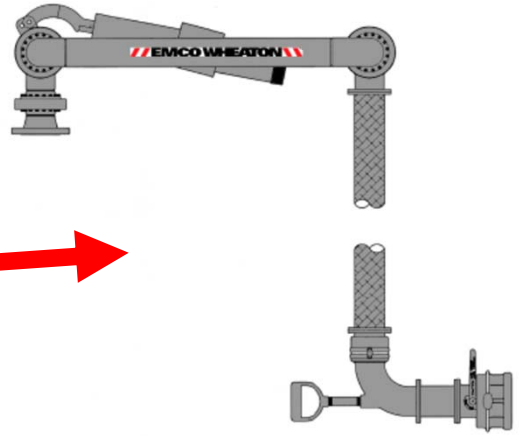

Permanent structure
piping assemblages
meters, valves, and other devices

Loading Arm

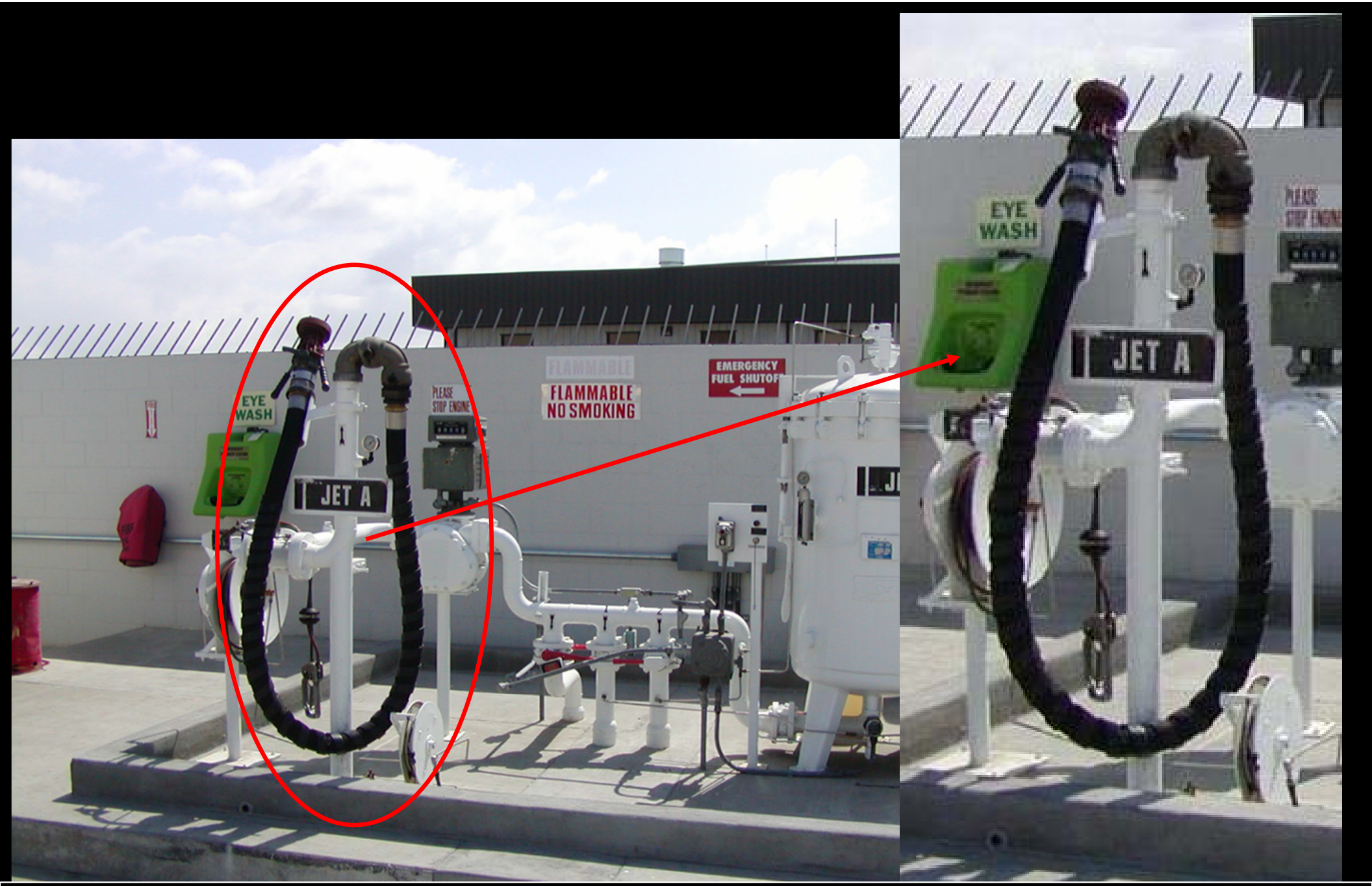




Look for the loading arm



This is a loading RACK. Although there are loading hoses and a fixed pipe… Note the key feature: the articulated movable loading arm. This one swivels & dips.



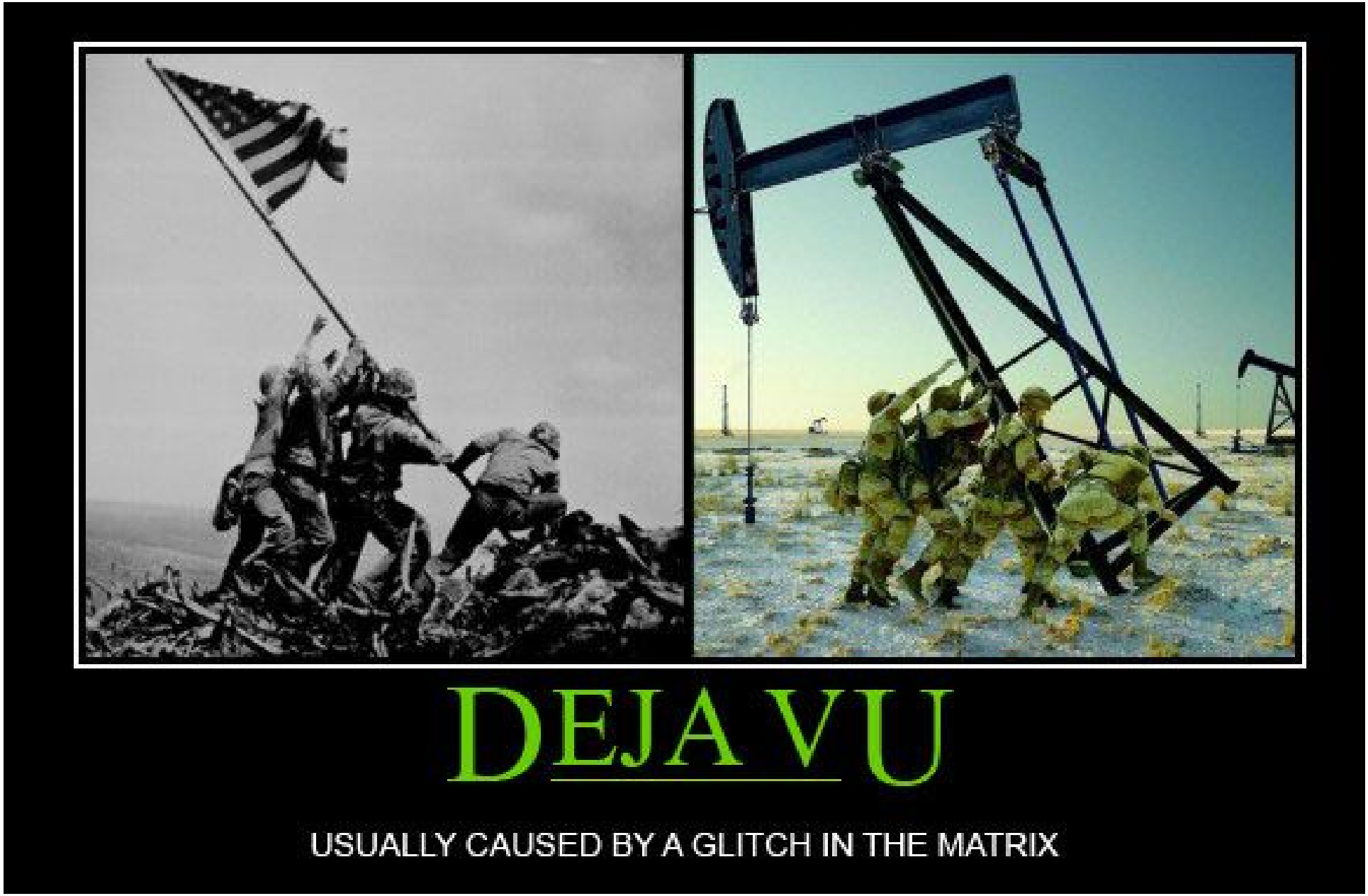
This is a loading AREA. It is not a rack. There are loading hoses and a fixed pipe – but no movable, articulated loading arm at all.

Ask the regulators!
Ask a Plan writer!

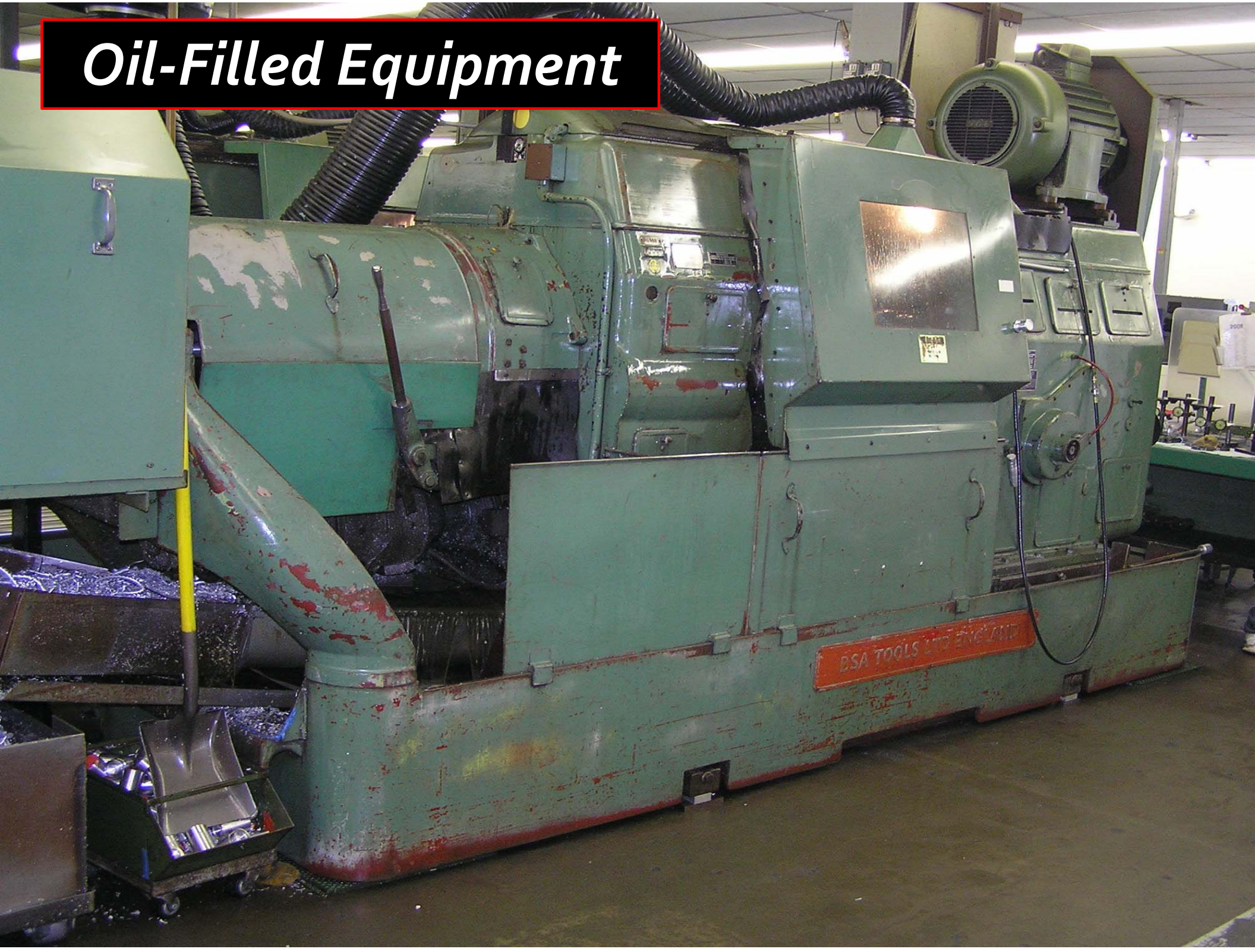
Confusion

What's that smell? Are you eating spaghetti?

Qualified Oil-Filled Operational Equipment §112.7(k)



Oil-Filled Equipment



Janice

SPCC Applicability Criterion #1

1

- The first of the SPCC rule applicability criteria in 40 CFR §112.1
  - Drills, produces, gathers, stores, processes, refines, transfers, distributes, **uses**, or consumes oil and oil products
- Therefore…need to include in the written & implemented SPCC Plan equipment that is filled with and uses oil (APSA…petroleum) – not just stores or consumes
  - And understand how oil-filled equipment is defined and regulated

40 CFR § 112.2 Definitions: Containers

Bulk storage container – any container used to store oil. These containers are used for purposes including, but not limited to, the storage of oil prior to use, while being used, or prior to further distribution in commerce. *Oil-filled electrical, operating, or manufacturing equipment is not a bulk storage container*. *(emphasis added)*

- Bulk storage container = APSA aboveground tank
  - Manage as SPCC Bulk Storage Container (§ 112.7 & § 112.8 requirements apply)
- Oil-filled Equipment = APSA aboveground tank
  - Manage as SPCC Oil-filled Equipment (§ 112.7 requirements apply)

Oil-filled Equipment

- Contains oil for lubrication, hydraulic pressure, heat dissipation, processing, or other such purposes
- Not regulated as 'bulk storage containers'
- Three categories: operational, manufacturing and electrical

Operational

- Supports operation of the apparatus or device
  - E.g. oil pumps & pumps, hydraulic systems, oil compressors, circulating oil lubrication systems, flow through systems

Manufacturing

- Flow-through process systems
  - E.g. process vessels, reactors, fermentors, oil treatment tanks, and distillation columns

Electrical

- Transformers, circuit breakers, capacitors, etc.

O-F EE is conditionally APSA-exempt

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OFE vs Bulk Storage Containers

Importance of the difference

Oil-filled equipment

- General containment &/or diversionary means (§ 112.7(c))
  - Can be active or passive

Bulk storage containers

- General containment &/or diversionary means (§ 112.7(c))
- Sized containment + precipitation freeboard (§ 112.8(c)(2) [& (c)(11) if portable])
- Regular inspections and frequent integrity testing (§ 112.8(c)(6))
- Test liquid level sensing devices (§ 112.8(c)(8)(v))
- Integrity testing after certain repairs (§ 112.7(i))

Reminder: General Containment

40 CFR § 112.7(c)

- Appropriate containment and/or diversionary structures to prevent a discharge of oil that may be harmful (a discharge to navigable waters)*
  - Need only to address the typical failure mode, and the most likely quantity of oil that would be discharged
  - Secondary containment may be either active or passive in design
- No minimum sizing or freeboard requirements: a *performance standard* only

* Except for 'qualified oil-filled operational' per § 112.7(k)

Methods of Containment

Listed in 40 CFR § 112.7(c)

- Dikes, berms, or retaining walls
- Curbing or drip pans
- Culverting, gutters, or other drainage systems
- Weirs, booms or other barriers

- Spill diversion ponds
- Retention ponds
- Sorbent materials
- Sumps and collection systems

Qualified Oil-Filled Operational Equipment

Oil-filled operational equipment means equipment that includes an oil storage container (or multiple containers) in which the oil is present solely to support the function of the apparatus or the device. Oil-filled operational equipment is not considered a bulk storage container, and does not include oil-filled manufacturing equipment (flow-through process).

Examples include, but are not limited to:

- Hydraulic systems
- Lubricating systems (e.g., those for pumps, compressors and other rotating equipment, including pumpjack lubrication systems)
- Gear boxes
- Machining coolant systems,
- Heat transfer systems
- Transformers
- Circuit breakers
- Electrical switches, and
- Other systems containing oil solely to enable the operation of the device.

§112.2 & §112.7(k)

Qualified Oil-Filled Operational Equipment

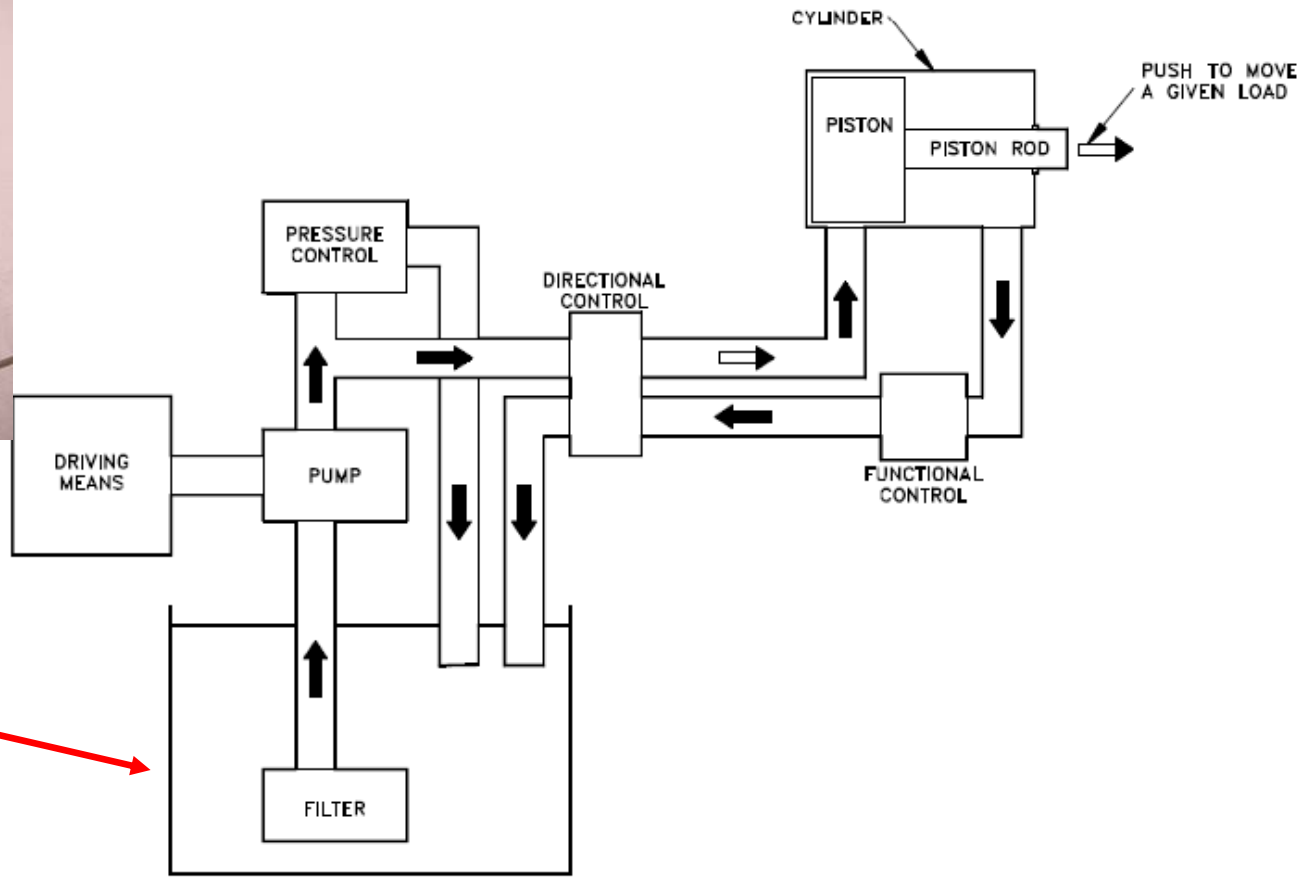
- Secondary containment is often impracticable
  - The facility can make a PE certified impracticability claim in accordance with 112.7(d), OR;
  - Use the new alternative to the general secondary containment requirements for qualified oil-filled operational equipment:
    - Prepare an oil spill contingency plan and a written commitment of manpower, equipment, and materials
    - Have an inspection or monitoring program to detect equipment failure and/or a discharge
    - Individual impracticability determination for each piece of equipment is not required
    - PE impracticability determination not required

Qualified Oil-Filled Operational Equipment Eligibility Criteria

- For the 3 years prior to Plan certification, or since becoming subject to the Rule if it has operated for less than 3 years, the facility must not have had:
  - A single discharge of oil from any oil-filled operational equipment exceeding 1,000 U.S. gallons reaching navigable waters or adjoining shorelines(a §112.1(b) discharge) ; or
  - Two discharges of oil from any oil-filled operational equipment each exceeding 42 U.S. gallons reaching navigable waters or adjoining shorelines within any 12-month period
- Not related to Qualified Facility thresholds or criteria

Steve

Simple hydraulic system



Hydraulic fluid *reservoir*
…not storage container

Example of oil filled operational equipment: hydraulic system and fluid reservoir

General containment used: ½-inch high epoxy-sealed door threshold in hydraulic room

Example of oil filled operational equipment: part of an oil pressurization and recirculating pumping system.

General containment used: small curbs and facility oil-water separation & sump system

SECTION 1 **PRODUCT AND COMPANY IDENTIFICATION**

PRODUCT

Product Name: **DF-2000™ FLUID**
Product Description: Isoparaffinic Hydrocarbon

Intended Use: Dry cleaning Fluid (see also Section 11)

SECTION 3 **COMPOSITION / INFORMATION ON INGREDIENTS**

This material is defined as a complex substance.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
NAPHTHA ED HEAVY	64742-48-9	100%	H227, H304

F

DRY CLEAN ONLY
PETROLEUM SOLVENT

Example of oil filled operational equipment: petroleum solvent dry cleaning machine

Distillation box

Backside structure

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Example of oil filled operational equipment: part of an oil pressurization and recirculating pumping system.

General containment used: small curbs and facility oil-water separation & sump system

Example of oil filled operational equipment: machining mill and fluid reservoir

General containment used: 2- inch high metal tray underneath machine, spill sorbent socks (and active response measures if needed)

Example of oil filled operational equipment: machining mills and fluid reservoirs

General containment used: Active response measures (spill sorbents)

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Uncle Steve's Opinion

- Some facilities/Plans that take the qualified O-FOE option do not understand what it is or the specifics of the required compliance alternatives
  - First: How tough is it to adequately apply/use active or passive general containment measures?
    - For the most likely release/typical failure mode
  - Second:
    - A CERS Contingency Plan is NOT a 40 CFR §109 Oil Spill Contingency Plan
      - There are specific detailed content and implantation requirements
  - I rarely see the required equipment failure detection or monitoring program at these facilities…or 40 CFR § 109 OSCPs

Ask the regulators!
Ask a Plan writer!

COMMUNICATION

Nothing is so simple
that it cannot be misunderstood

Piping Requirements

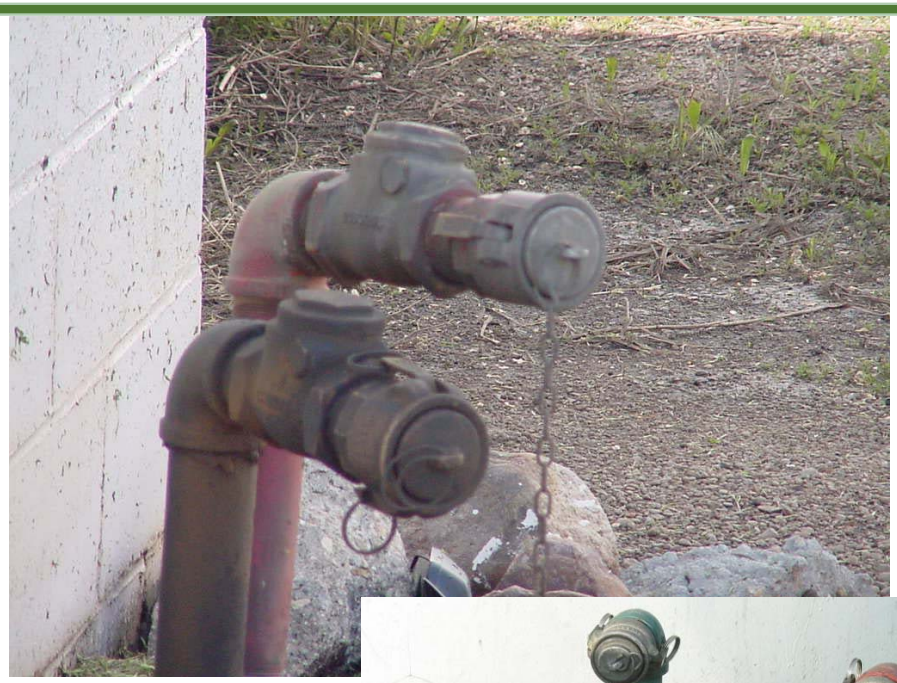
Buried Piping Installations

- Buried piping installed or replaced after August 16, 2002 must be:
  - Protectively wrapped and cathodically protected; or
  - Satisfy the corrosion protection provisions for piping in 40 CFR parts 280 or 281 (state program)

- Requirement applies to all soil conditions
- Exposed piping must be inspected for corrosion
- If corrosion is found, must undertake additional examination and corrective action as indicated by the magnitude of damage

§§112.8(d)(1) and 112.12(d)(1)

Piping Requirements



- Cap or blank-flange the terminal connection at the transfer point and mark it as its origin when piping is not in service or is in standby service for an extended time.

§§112.8(d)(2) and 112.12(d)(2)

Environmental Equivalence

Piping Requirements *(continued)*

- Properly design pipe supports to minimize abrasion and corrosion and allow for expansion and contraction.

§§112.8(d)(3) and 112.12(d)(3)

Piping Requirements

- Conduct regular inspections of aboveground valves, piping, appurtenances
- Assess general condition of items such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces
- Conduct integrity and leak testing of buried piping at time of installation, modification, construction, relocation, or replacement

Environmental Equivalence

§§112.8(d)(4) and 112.12(d)(4)

Piping Requirements

- Warnings to vehicles entering the facility may be verbal, posted on signs, or by other appropriate means.
- Plan must describe how the warnings will be communicated
  - Include locations of signs and information provided on the signs.
- When relying on verbal warnings, the Plan should describe information provided as part of the verbal warnings and the procedure for issuing those warnings.

§§112.8(d)(5) and 112.12(d)(5)

Environmental Equivalence

Piping and EE

- Examples of possible EE alternatives to corrosion protection for buried piping
  - Use of double-wall piping combined with interstitial leak detection system
  - Comprehensive monitoring, leak detection, and preventive maintenance program

Environmental Equivalence

Steve

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- Pipe/Tank Support Design

Pipe Supports (*continued*)

Pipe Supports (*continued*)

Pipe Supports (*continued*)

Pipe Supports (*continued*)

Pipe Supports (*continued*)

Trenches

Pipe Supports (continued)

Ask the regulators!
Ask a Plan writer!

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Break

Presented by

22nd Annual California CUPA Training Conference
February 3 - 6, 2020
South San Francisco

Mobile Refuelers

Pete

Streamlined Requirements for Mobile Refuelers and Non Trans Tankers trucks…not an exemption!

- Common misconception/misunderstanding
- Sized containment (§§112.8(c)(2) and (11)) not required for mobile refuelers or non-trans tanker trucks
  - General (112.7(c)) containment IS required
- ALL other relevant §112.7 and 112.8 requirements apply
  - Inspections
  - Integrity testing
  - Written procedures
  - Failure analysis
  - Discharge prevention positioning

Mobile Refuelers

- Bulk storage container onboard a vehicle or towed, that is designed or used solely to store and transport fuel for transfer into or from an aircraft, motor vehicle, locomotive, vessel, ground service equipment, or other oil storage container

- Include vehicles of various sizes equipped with a bulk storage container that is used to fuel or defuel aircraft, motor vehicles, locomotives, tanks, vessels, or other oil storage containers (e.g., farm nurse tanks)

§ 112.2

Requirements for Mobile Refuelers

- Owners and operators of mobile refuelers at a non-transportation-related facility do not need to provide sized secondary containment
- Does not apply to vehicles that are used primarily to store oil in a stationary location
- General secondary containment requirements still apply!

Impracticability

Non-Transportation-Related Tank Trucks

- Sized secondary containment exclusion for mobile refuelers also applies to non-transportation related tank trucks at a facility subject to the SPCC Rule
  - Does not include mobile/portable containers that generally operate in fixed locations at a facility
  - Does not include tanker trucks used to supplement storage and serving as a fixed tank
- General secondary containment requirements still apply!

Impracticability

Mobile Refuelers vs. Non-Transportation Related Tanker Truck

PMAA Letter

- Clarifies SPCC applicability for tank trucks
  - Transportation related not subject to EPA jurisdiction
    - Tank truck that returns to a facility empty and contains no oil, other than any residual oil
    - Tank truck used only in the transport of oil in interstate or intrastate commerce
  - Non-transportation related and may be subject to the SPCC Rule
    - Tank trucks used as storage or used to transfer oil within the confines of a facility

Vehicles as Storage Containers

- Indicators of a vehicle intended to be used as a storage container include:
  - Unlicensed for on-road use
  - No longer mobile (i.e., hard-piped or permanently parked)
  - Fueled on-site and never moves off-site


1270

Steve

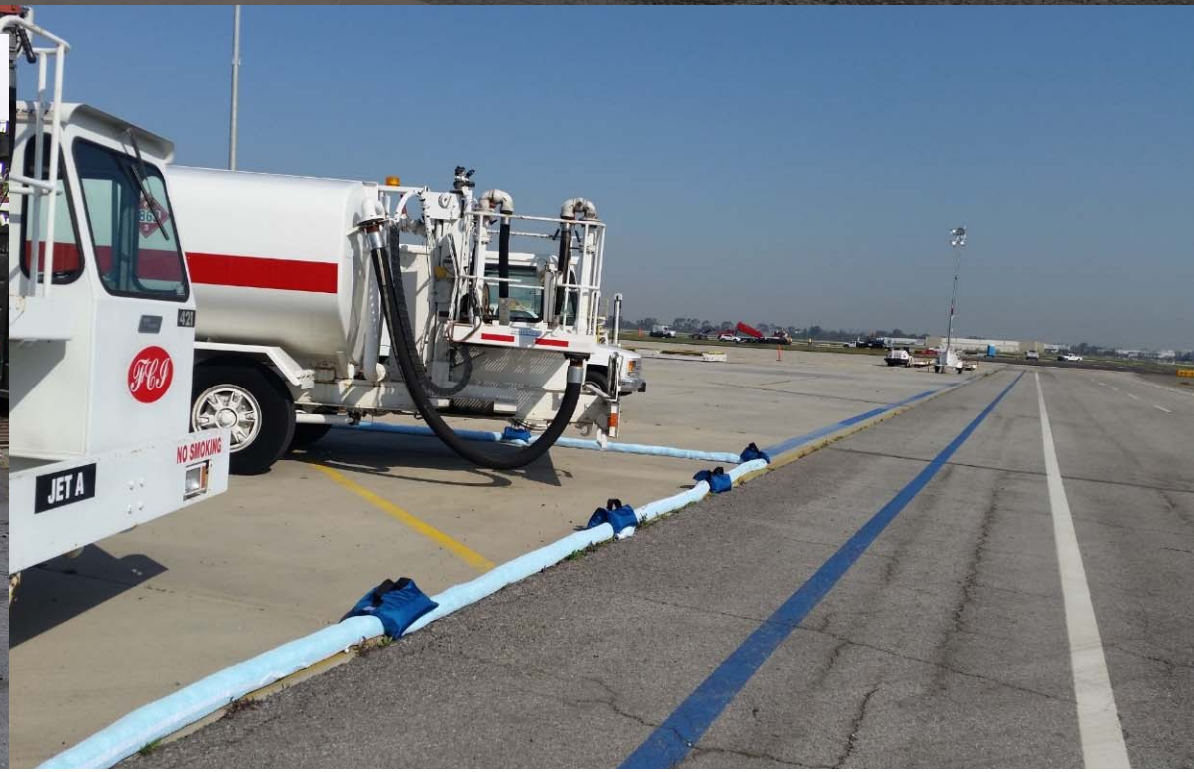

1863
JET A
FLAMMABLE


JET A


TransFueler
JET-A
NO SMOKING
1863
LONG BEACH POLICE AIR SUPPORT UNIT


1863
JP-8
07

Active measures only work… if you notice a spill… (and watch that pesky 112.8(c)(11) discharge prevention positioning requirement for portable/mobile containers



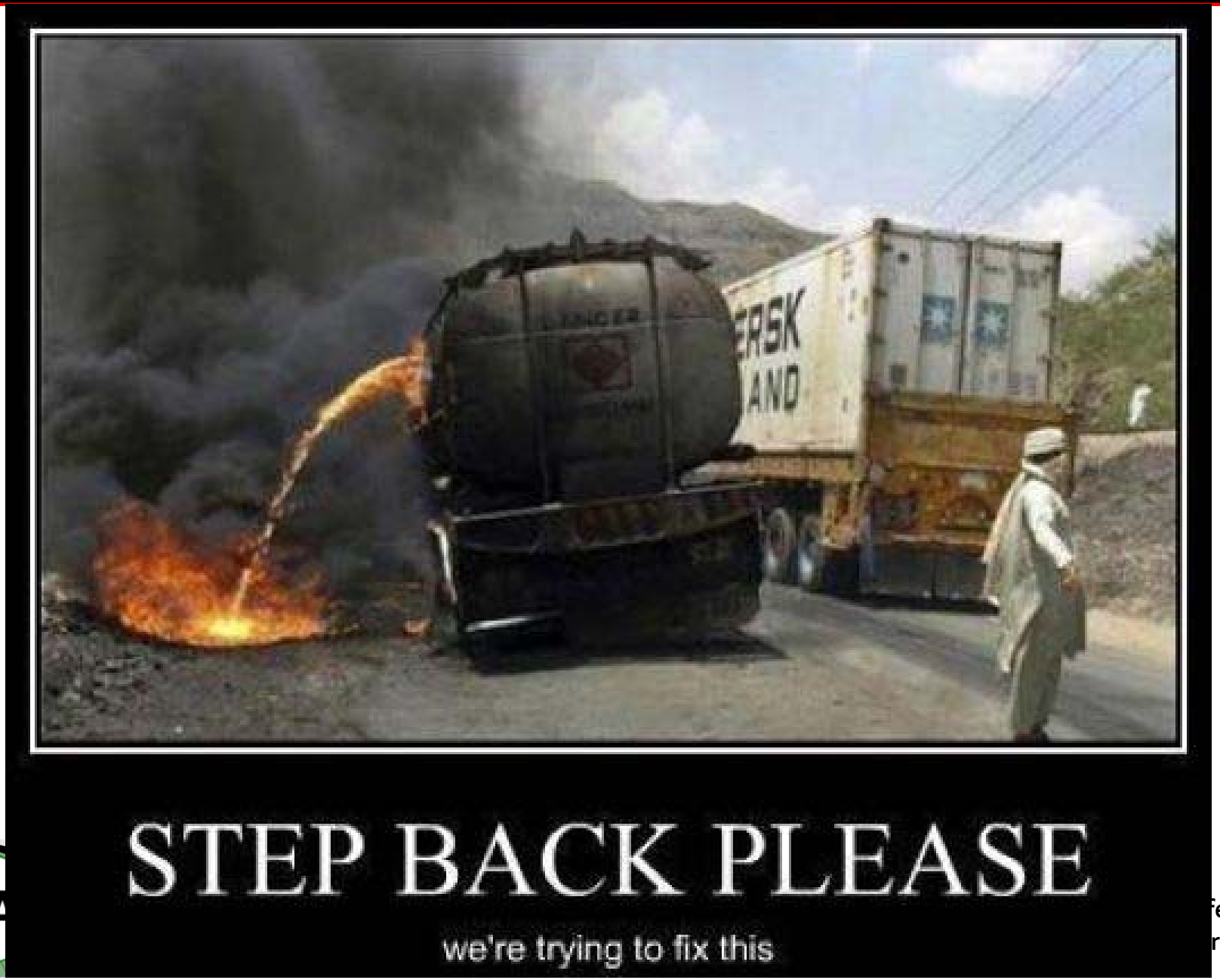
Pop Quiz:

1) Transportation-related or Non-transportation-related?

2) Mobile refueler or not? What do you look for?


1993
NATIONAL CRANE

Ask the regulators!
Ask a Plan writer!



Inspection and Integrity Testing Requirements

Inspection & Testing Procedures & Records § 112.7(e)

- Written procedures of tests and inspections required
- Inspection/test records
  - Signed by appropriate supervisor or inspector
  - Kept for 3 year min.

MONTHLY TANK INSPECTION CHECKLIST: *LBWD WD1 AST #1 (8,000-gal. Diesel)*

(developed by certifying P.E. to be equivalent to STI SP-001 checklist)

INSTRUCTIONS: See Inspection Guidance on reverse. On this side, *fill in ALL applicable data.* A copy or electronic scan of this completed form shall be kept in Water Department or Fleet Services Department files, and made available for inspection by the Long Beach Fire Dept./CUPA upon request.

TANK INFORMATION

Long Beach Water Department WD1, 2950 Redondo Ave., Long Beach, CA 90806 (operated by City of Long Beach Fleet Services Dept.)

TANK # **AST #1**	TYPE: **UL-2015 Steel**	PRODUCT STORED: **Diesel Fuel**	TANK CAPACITY: **8,000 gallons**

	Item	Status
1.0	Is tank exterior (roof, shell, heads, bottom, connections, fittings, valves, etc.) free of visible leaks?	❒ Yes ❒ No*
2.0	Open the tank fill box on the southeast side of the tank and inspect for accumulations of diesel. Is the fill box should be clean and dry.	❒ Yes ❒ No*
3.0	Is the tank exterior, and all exposed piping free of damage, distortion, corrosion?	❒ Yes ❒ No*
4.0	Are piping connections to the tank (including valves, fittings, pumps, transitions to double-wall, etc.) free of visible leaks? Note: If "No", identify location and describe leak.	❒ Yes ❒ No*
5.0	Is the tank exterior free of visible signs of coating failures/degradation?	❒ Yes ❒ No*
6.0	Are the tank mounts, brackets, mounting bolts, supports and concrete base/foundation free of damage, cracking, corrosion and in good condition?	❒ Yes ❒ No*
7.0	Is the tank liquid level gauge legible and in good working condition (check the Morrison clock gauge on the top of the tank; gauge indicates level of liquid in feet and inches)? The gauge reading should be consistent with the liquid height reading on the Veeder Root printout (see 15.0)	❒ Yes ❒ No*
8.0	Is the area around the tank and around loading and dispenser areas (concrete and asphalt surfaces, containment dike, etc.) free of visible signs of leakage? Has any used absorbent been cleaned up?	❒ Yes ❒ No*
9.0	Are all tank labels and signs intact and readable (NFPA, hazard wording, warnings, emergency instructions and contact numbers etc.)?	❒ Yes ❒ No*
10.0	Are all hoses and dispensers, and all break-away connections in good condition, undamaged and leak-free? Are nozzles up off the ground?	❒ Yes ❒ No*
11.0	Look at visible high level and interstitial leak detection sensor wiring and connections on top of tank (N side): Are they in good condition & intact?	❒ Yes ❒ No*
12.0	All tank openings properly sealed? Caps and covers have functional fittings, hardware and gaskets?	❒ Yes ❒ No*
13.0	Are the two concrete dike drain valves closed and in good working condition?	❒ Yes ❒ No*

	Item	Status
14.0	Is the containment/interstitial monitoring equipment in good working condition, and is the secondary containment free of any liquid? • On the tank Veeder-Root panel on the exterior Bldg. E wall across from the tank, open the weather box, press the '**Function**' button until display shows *'Liquid Status'*, then press '**Print**' button. If printout shows 'Fuel Alarm' or 'Sensor Out': *This indicates a) presence of liquid in the containment space and is a sign that the primary tank has leaked into the containment space, or b0 water is present, or c) if 'Sensor Out', the leak sensor is not functioning*	❒ Yes ❒ No*
15.0	Is the primary tank free of water? Press the 'Print' button. Look at the printout, the printout will show inches of water at the bottom of the tank. If any reading other than *'Water = 0.00 inches'*, check the No box. If a water check has not been conducted this month – check that box.	❒ Yes ❒ No* ☐ Water check not conducted
16.0	The Veeder Root control panel display should show a green power light and no amber warning or red alarm light. The displat should read "All Functions Normal" • Press the RED '**Alarm _ Test**' button. The yellow **and red lights should light.**	❒ Yes ❒ No*
17.0	Check the overfill/high level alarm light and horn (above and to the left of the Veeder Root box). • Press the **Test** button on the right side of the 'Acknowledged' box. Does it activate the audible horn and light to confirm operation?	❒ Yes ❒ No*
18.0	Are all Veeder Root monitoring panel and high-level alarm on Bldg. E exterior wall labels and signs intact and readable?	❒ Yes ❒ No*
19.0	Are spill supplies (absorbent, PPE, etc.) nearby, labeled and properly stocked?	❒ Yes ❒ No*
20.0	Look closely at the two black, round emergency vents on top of the tank. Are they unobstructed and free of debris (such as bird nests, etc.)?	❒ Yes ❒ No*
21.0	Is there a fire extinguisher in the immediate area, and is the inspection tag current (monthly check?)	❒ Yes ❒ No*
22.0	Are there other conditions that should be addressed for continued safe operation or that may affect the site SPCC plan?	❒ Yes ❒ No*

SEE BELOW FOR ANY (No *) STATUS
SEE REVERSE FOR INSPECTION GUIDANCE

Condition or Status Notes/Comments:

Item #	

Inspector Name & Signature: _____ Date of Inspection: _____

CALIFORNIA CUPA FORUM

Frequent Inspections & Regularly Scheduled Integrity Testing § 112.8(c)(6)

- Schedule and procedures must be in the Plan (112.7(e))
- Test or inspect each aboveground container for integrity on a regular schedule & whenever material repairs are made
  - ALL bulk storage containers (not OFE)
- Determine, in accordance with industry standards:
  - The appropriate qualifications of personnel performing tests and inspections, and
  - The frequency and type of testing and inspections

  which take into account container size, configuration, and design
- Visual inspection is a separate requirement

Frequent Inspections & Regularly Scheduled Integrity Testing § 112.8(c)(6)

- Must frequently inspect the outside of the container for signs of deterioration, discharges, or accumulation of oil inside diked areas
  - Must also inspect container supports and foundations
- Also must conduct 'regular' inspection of all aboveground valves, piping, & appurtenances (112.8(d)(4))
- These are visual inspections
- Can be integrated with integrity testing of STI SP-001 Cat 1 steel tanks ≤ 5,000-gal capacity
  - Inspection by owner's inspector
- Issue with inspecting the outside of a container if it's a double-walled tank

Regularly Scheduled Integrity Testing

- Applies to:
  - Large (field-constructed or field-erected) and small (shop-built) aboveground bulk storage containers
  - Aboveground bulk storage containers on, partially in (partially buried, bunkered, or vaulted tanks) and off the ground wherever located
  - Aboveground bulk storage containers storing any type of oil
    - Examples: mobile/portable containers, drums, totes

*What containers at a facility are **not** subject to integrity testing provisions?*

§§112.8(c)(6) and 112.12(c)(6)(i)

Regularly Scheduled Integrity Testing
(continued)

- Performed on a regular schedule, as well as when material repairs are made
- Example testing techniques identified in the rule include:
  - Hydrostatic testing
  - Radiographic testing
  - Ultrasonic testing ("UT")
  - Acoustic emissions testing

§§112.8(c)(6) and 112.12(c)(6)(i)

Regularly Scheduled Integrity Testing *(continued)*

- Test or inspect each aboveground container for integrity on a regular schedule and whenever material repairs are made
- Flexibility to determine, in accordance with industry standards:
  - Appropriate qualifications for personnel performing tests and inspections
  - Frequency and type of testing and inspections that take into account container size, configuration, and design

§§112.8(c)(6) and 112.12(c)(6)(i)

Environmental Equivalence

Bulk Storage Container Supports and Foundation

- Inspect the container's supports and foundations
- On a regular schedule and whenever you make material repairs

§§112.8(c)(6) and 112.12(c)(6)(i)

Outside of Containers and Diked Areas

- Frequently inspect for signs of deterioration, discharges, or accumulation of oil inside diked areas

§§112.8(c)(6) and 112.12(c)(6)(i)

Frequent Visual Inspection

- Requirements are distinct from, and in addition to, the requirement to regularly test each aboveground bulk storage container for integrity
- Intended to be a routine walk-around by the owner/operator
- Must occur frequently to detect signs of deterioration, discharges, or accumulations of oil inside diked areas
- Typically conducted by properly trained facility personnel
- Records for integrity tests and frequent visual inspections – usual and customary business practices will suffice

§§112.8(c)(6) and 112.12(c)(6)(i)

Environmental Equivalence

Differentiated Integrity Testing Requirement for AFVOs

- Provides the flexibility to use a visual inspection program for integrity testing that is appropriate for containers that store animal fats/vegetable oils (AFVOs) that meet certain criteria
- Facility owner or operator is required to document procedures for inspections and testing in the SPCC Plan.

§ 112.12(c)(6)(ii)

AFVO Eligibility Criteria

- Differentiated integrity testing requirements apply to bulk storage containers that:
  - Are subject to the applicable sections of the Food and Drug Administration (FDA) regulation 21 CFR part 110, *Current Good Manufacturing Practice in Manufacturing, Packing or Holding Human Food;*
  - Are elevated;
  - Are made from austenitic stainless steel;
  - Have no external insulation; and
  - Are shop-built.
- AFVO containers that meet the eligibility criteria already have environmentally equivalent measures in place for integrity testing.
  - Owners/operators do not need to state reasons for nonconformance with the current integrity testing requirements.

§112.12(c)(6)(ii)

Environmental Equivalence

Issues Related to Integrity Testing

Expectations for Compliance

- What does an inspector look for?
  - Type of inspection requirements (i.e., visual or non-destructive testing)
  - Description of inspection program
  - Applicable standard(s)
    - What standard is the program based upon?
    - Are containers within scope of standard?
    - What are inspection procedures for containers outside scope of standard?
    - Does facility elect to deviate from standard?
  - Records
  - Implementation Schedule (as applicable)

Specific Circumstances

- An inspector may encounter at a facility:
  - Aboveground bulk storage container for which the baseline condition is known
  - Aboveground bulk storage container for which the baseline condition is not known
  - Deviation from integrity testing requirements based on environmental equivalence
  - No standard applies - develop hybrid inspection program

Assessing Baseline Conditions

- Many facilities may not have performed integrity testing of their tanks, particularly on shop-built tanks
  - Especially when no back-up tanks are available
- Developing an appropriate integrity testing program requires assessing baseline conditions for these tanks (i.e. corrosion rate and inspection intervals)
  - No need to establish baseline if inspection program is visual only
- "Baseline" will provide information on the condition of the tank shell and floor, and the rate of change in condition due to corrosion or other factors, in order to establish a regular inspection schedule

Schedules

- SPCC rule allows for the Plan to describe procedures, methods, or equipment that are not yet operational
- PE (or owner/operator, in the case of qualified facilities) will establish the schedule for inspections and testing
- Owner/operator must implement program
- Guidance document provides recommendations for how to comply with integrity testing requirements
- Facilities with multiple tanks can prioritize tank inspection order

§ 112.7 introductory paragraph

Deviation from Integrity Testing Requirements (Hybrid Program)

- Measures that may be considered environmentally equivalent to integrity testing for bulk storage containers:
  - Effectively minimize the risk of container failure
  - Allow detection of leaks before they become significant
- Alternative measures to integrity testing may:
  - Prevent container failure by minimizing the container's exposure to conditions that promote corrosion
  - Enable facility personnel to detect leaks and other container integrity problems early so they can be addressed before more severe integrity failure occurs

Environmental Equivalence

§112.7(a)(2)

Industry Standards & SPCC Revisions

- Litigation Settlement and PMAA letter in March 2004
- Steel Tank Institute SP001 standard issued in 2005
  - Outlines "good engineering practice" for integrity testing of shop-built containers
  - This may affect a PE's decision whether to certify an environmentally equivalent approach as described in the PMAA letter, or to follow the industry standard as provided by the amendment finalized in this rule. (73 FR 74265)
- Integrity Testing rule language modified in 2008
  - Remove requirement for visual inspection and another integrity testing technique
  - Defers to inspection standards for determining scope of inspection, frequency and personnel qualifications

Bottom Line: If integrity testing program in Plan deviates from industry standards, then environmental equivalence discussion must address reason for deviation and how it is equivalent

Hybrid Inspection Program - Instead Applicable Industry Standard

- An environmentally equivalent approach to following an applicable industry standard verbatim:
  - **Hybrid inspection program** based on elements designed to minimize the risk of container failure and allow detection of leaks before they impact navigable waters or adjoining shorelines.
- Elements may be based on a combination of various industry standards and good engineering practice
  - Should include the recommended minimal elements described in Section 7.5.3 for a PE-developed site-specific integrity testing program.
- Ability to use an environmentally equivalent alternative is influenced by the tank configuration and adequacy of secondary containment.
  - Program based on site-specific conditions.

If a Tier II qualified facility owner or operator chooses to develop an alternative inspection program, then he must have a PE certify the environmentally equivalent measures

A Tier I qualified facility owner or operator cannot deviate from applicable industry standards when following the requirements for Tier I qualified facilities.

§112.7(a)(2)

Hybrid Inspection Program - Deviates from a Portion of an Industry Standard

- It may be appropriate to deviate from portions of an industry standard under certain circumstances
  - When another approach would be more appropriate or cost effective, based on site-specific factors.
- The PE should document in the Plan:
  - what industry standard applies,
  - how the hybrid inspection program deviates from the applicable industry standard, and
  - how the inspection program meets the minimal recommended elements described in Section 7.5.3.

If a Tier II qualified facility owner or operator chooses to deviate from a portion of an applicable industry standard, then he must have a PE certify the environmentally equivalent measures.

A Tier I qualified facility owner or operator cannot deviate from applicable industry standards when following the requirements for Tier I qualified facilities.

§112.7(a)(2)

Hybrid Inspection Program - No Applicable Industry Standard

- If no industry standard applies to a particular container, the Plan preparer may consider the manufacturer's specifications and instructions for proper use and maintenance
- If no manufacturer's instructions apply, the Plan preparer may develop site-specific inspection and testing requirements in accordance with good engineering practice.
- A customized, site-specific inspection program should be based on relevant industry standards and other good engineering principles.
  - Designed to measure the structural soundness of a container shell, bottom, and/or floor to contain oil
  - May include leak testing to determine whether the container will discharge oil.
  - Follow recommended elements in Section 7.5.3
- A PE does <u>not need to provide and certify an environmental equivalence</u> justification for implementing a hybrid inspection program when industry standards do not apply to a container.

§§112.8(c)(6), 112.12(c)(6)

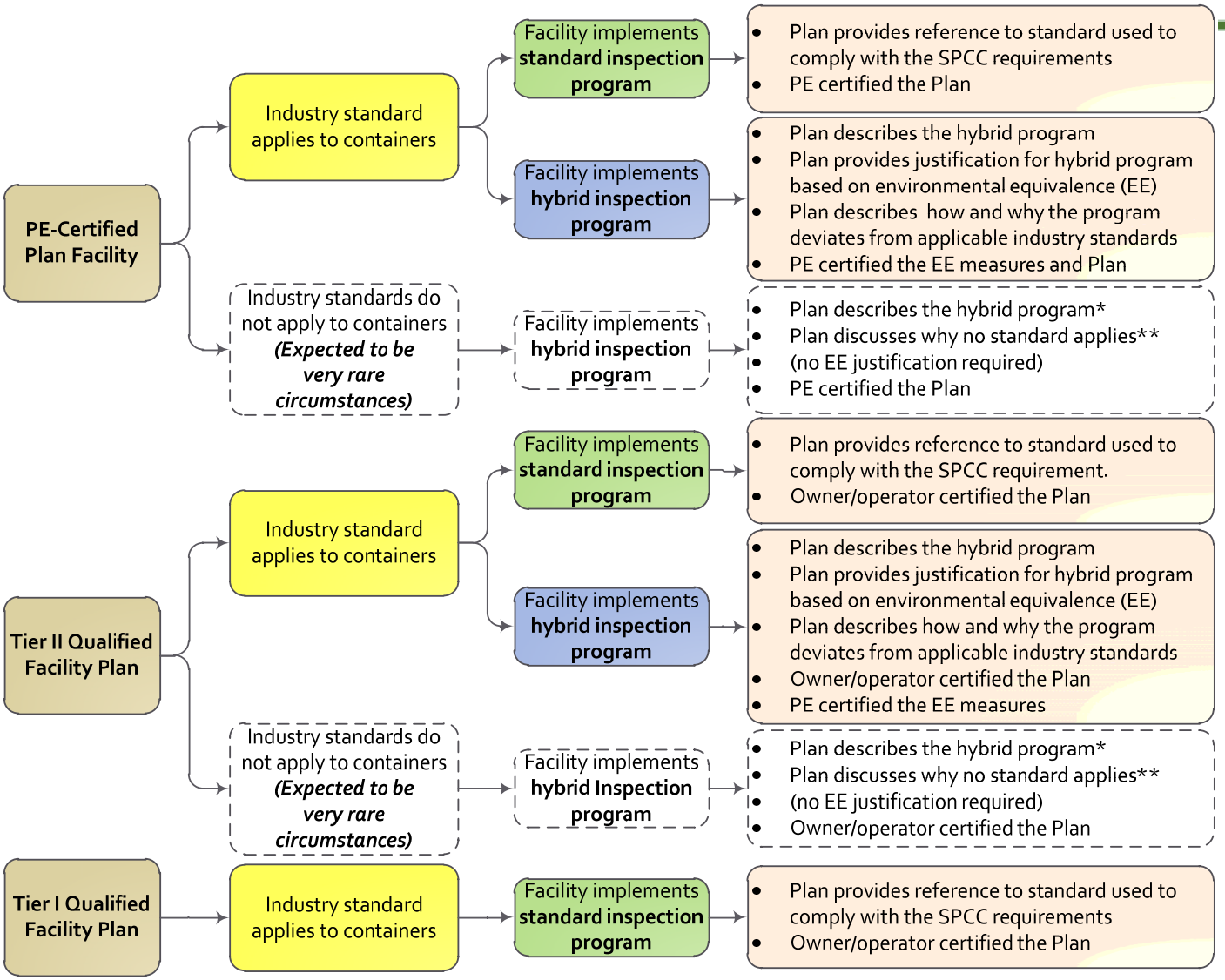
Documentation Requirements

- Plan must describe the scope and schedule of examinations to be performed on bulk storage containers
- Plan should reference an applicable industry inspection standard or describe an equivalent program developed by a PE
- The facility must maintain records of all visual inspections and integrity testing
  - Required to retain all records for three years
  - EPA recommends keeping them for lifetime

Role of the EPA Inspector

- **Review** records of frequent visual inspections and regular integrity testing
- For hybrid inspection and testing programs, **verify** that the testing program covers minimum elements for what is being inspected, the frequency of inspections, and their scope
- Where a regularly scheduled inspection and testing program has not been identified, **request information** on the anticipated schedule
- **Review** records of regular and periodic inspections and tests of buried and aboveground piping, valves, and appurtenances

Evaluating Inspection, Evaluation and Testing Programs



** Plan describes how the hybrid inspection program meets the minimal recommended elements described in Section 7.5.3.*

*** EPA Inspector should review carefully to confirm that industry standards do not apply*

Steve

Visual Inspection of Double Walled Tanks for Leaks

- How *would* a facility inspect the outside of the tank for leaks & deterioration as required?
  - Or inspect the containment for accumulation of oil
  - The outside you see here is the *outside* of the secondary containment
    - **Not the outside of the primary tank**

Visual Inspection of Double Walled Tanks for Leaks

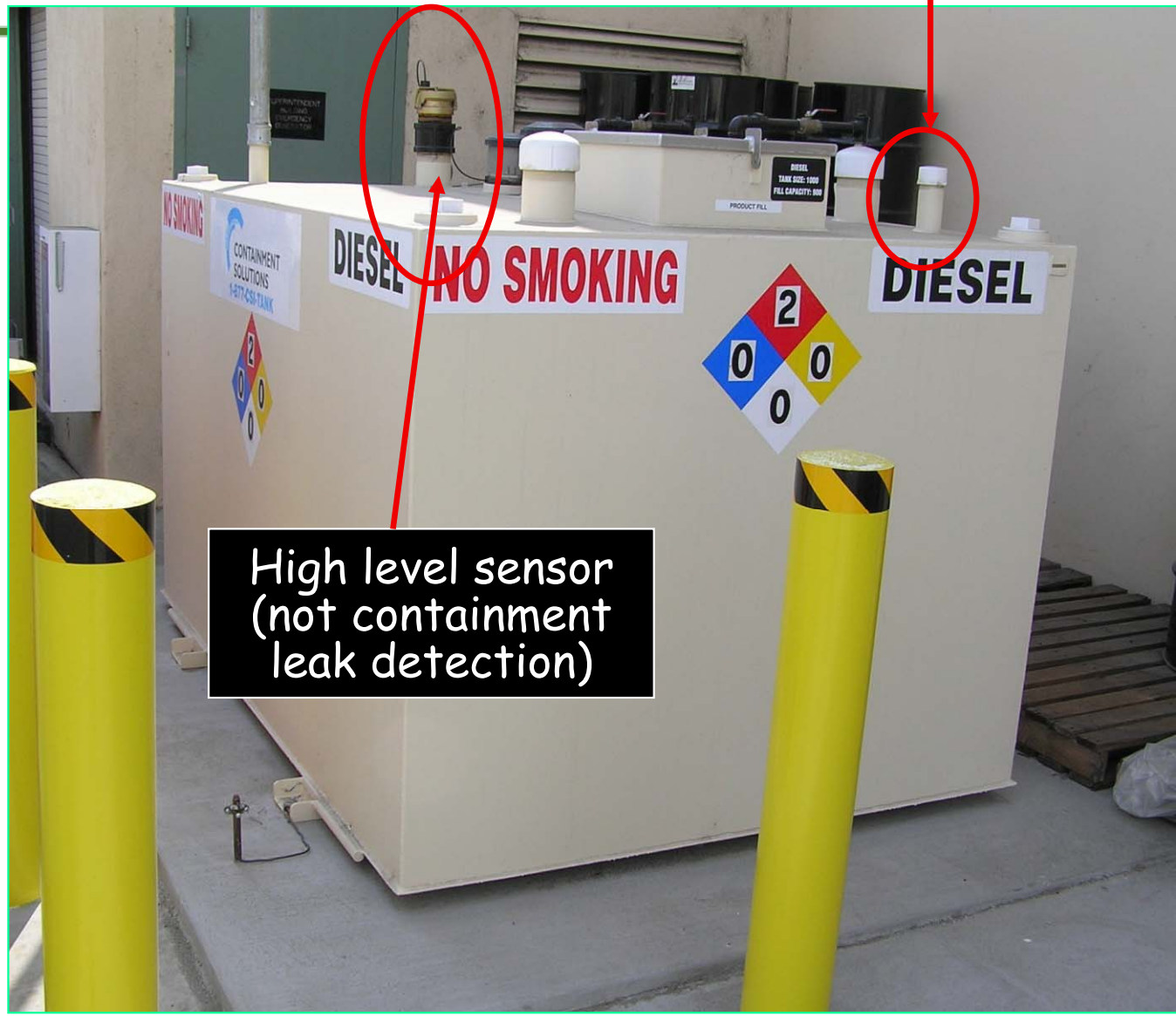
- Integral double walled tanks
  - And double wall generator base/belly tanks, generator day tanks, dike tanks, etc.
- Most (but not all) have provisions for the use of interstitial space leak detection or monitoring
    - Generator base tanks can be a problem as can some old tanks
  - Many tanks are equipped with leak detectors
    - Mechanical or electronic systems
      - Locally or remotely reported
  - Many tanks are not so equipped
    - Facilities may assume that visually inspecting the outside of the tank (the outside surface) is sufficient
      - A likely potential compliance issue
      - 2002 US EPA memo raises the issue – and RG discusses and updates

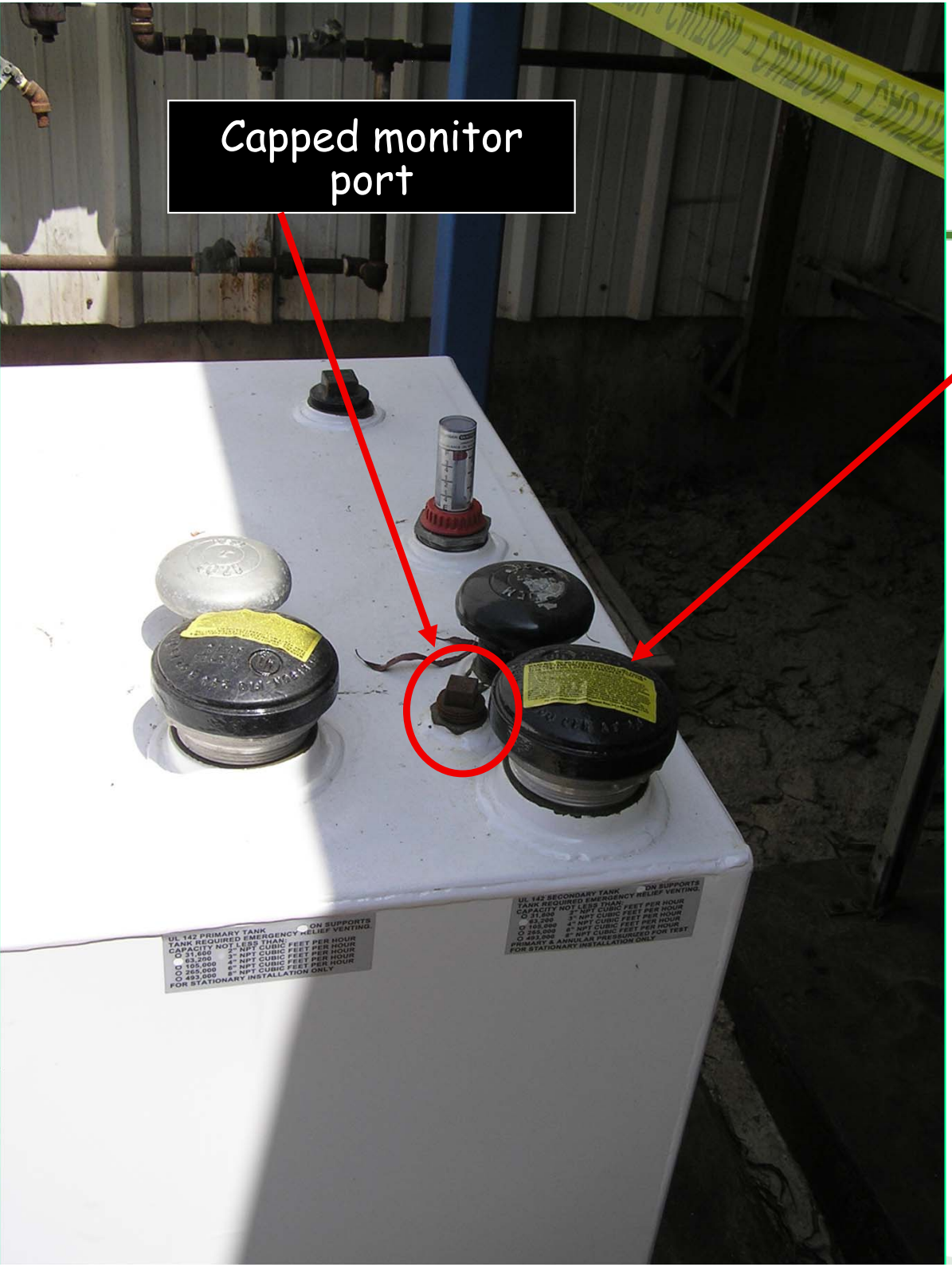

DANGER
THIS EQUIPMENT
STARTS AUTOMATICALLY
GENERAC

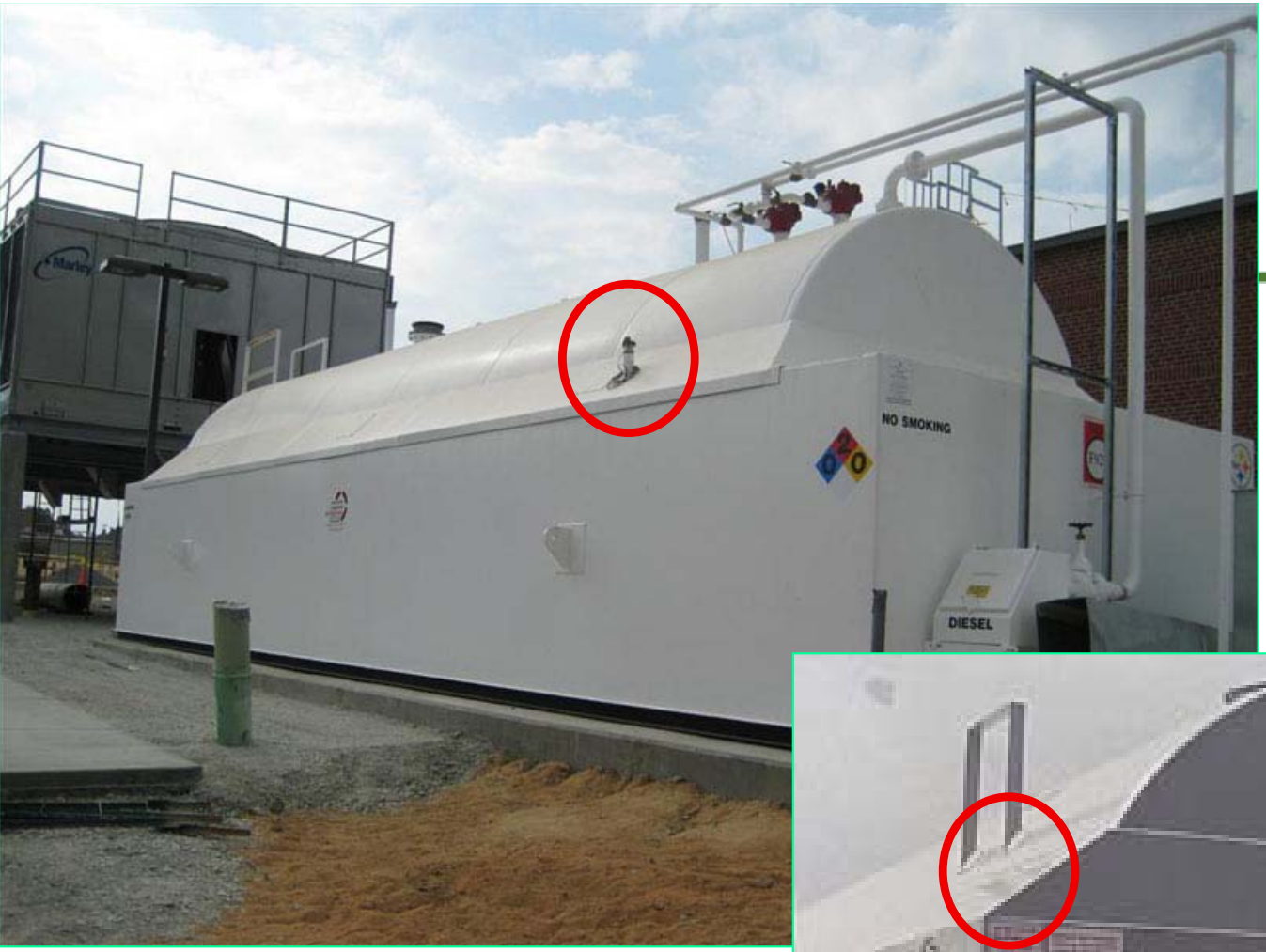

INNER TANK
FUEL LEAK
ALARM
NORMAL
SILENCE

Verification

- In SPCC Plan
  - Plan should describe if interstitial space is monitored
- In field
  - Look at tank top for 'monitor port' or other sensor/ detector port
    - Is it just capped… or is there a sensor or monitor?




Capped monitor port
These are vents



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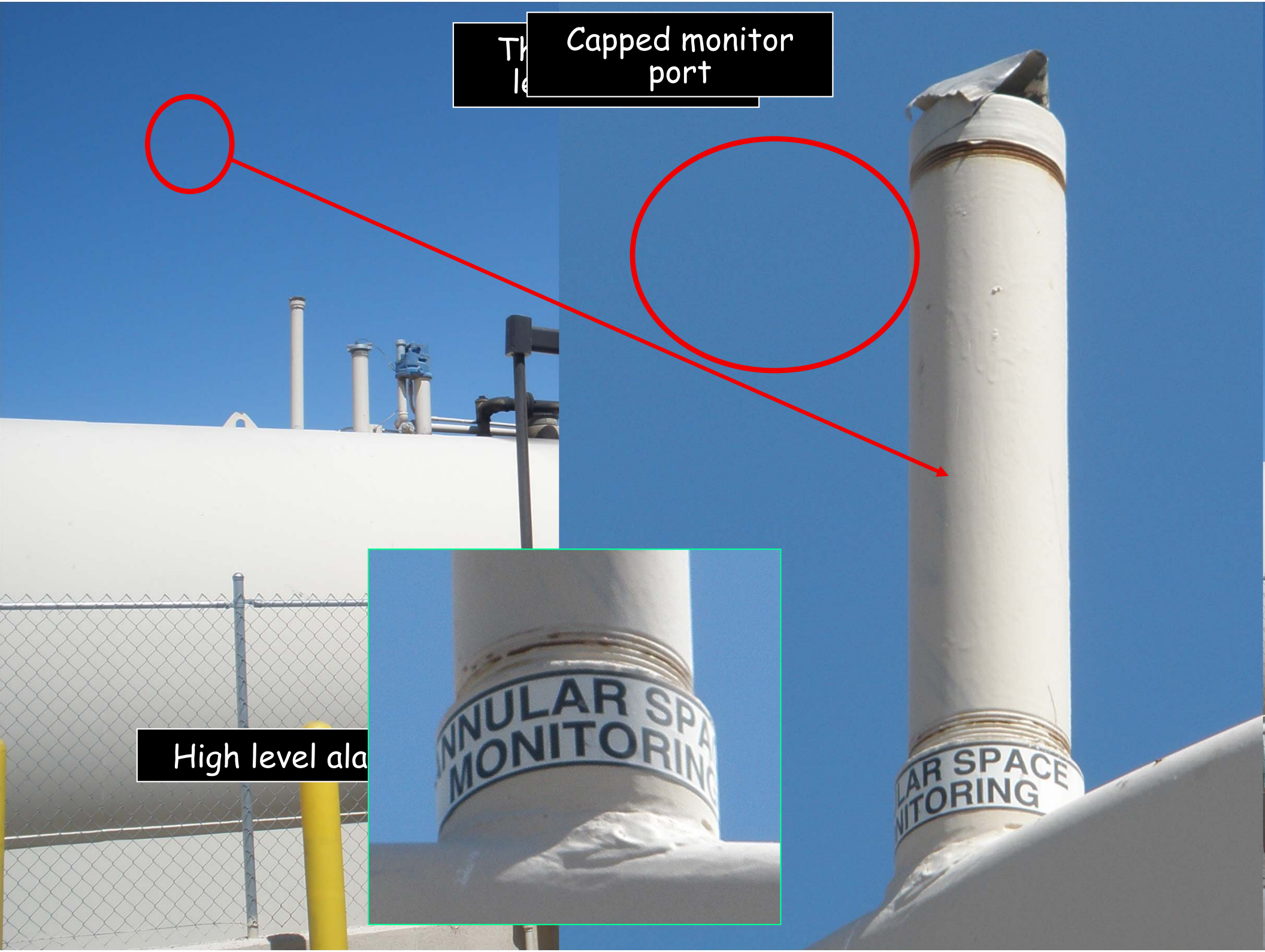
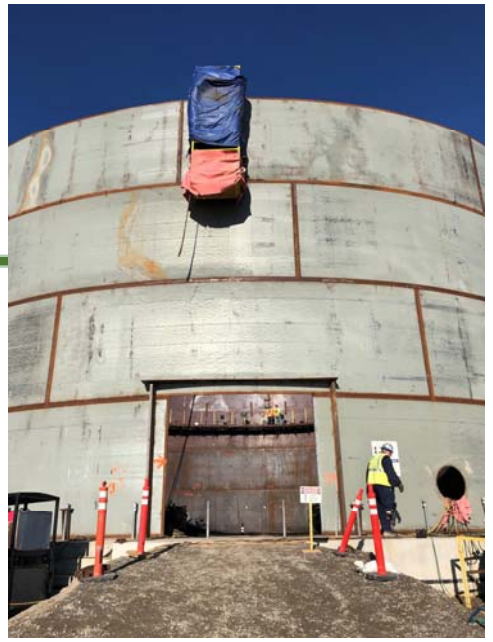

Capped monitor port
High level ala
ANNULAR SPA
MONITORIN
LAR SPACE
NITORING

CALIFORNIA CUPA FORUM


CONTAINMENT SOLUTIONS
HAZARDOUS WASTE
Waste Oil
NO
OKING
1000
GAL
WASTE OIL
LUBE CUBE
1-877-CSI-TANK
WARNING
WHEN ORANGE INDICATOR APPEARS INSPECT TANK
LEAK GUA
BJ ENTERPRISES

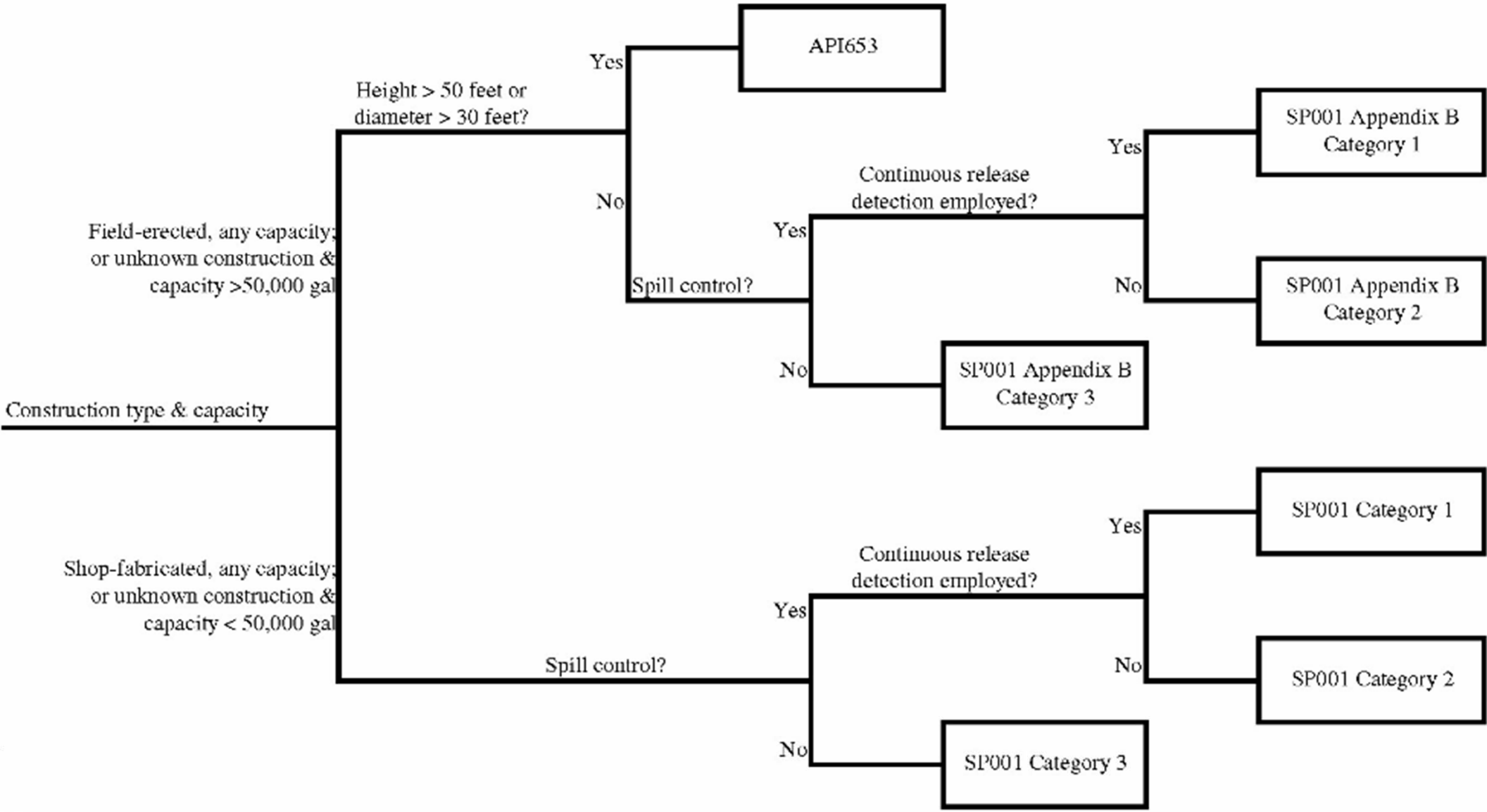
Regularly Scheduled Integrity Testing



- Requires owner/operator to:
  - Test/inspect each aboveground container for integrity on a regular schedule and whenever material repairs are made
  - Determine, in accordance with industry standards, the appropriate qualifications of personnel performing tests and inspections and the frequency and type of testing and inspections, which take into account container size, configuration, and design
- Establishing a baseline (this is important!)
- SP001, API 653, FTPI 2007-1, US DOT 49CFR180.404(c)

RESOLVE
Environmental Engineering

Categorization Logic Chart for Aboveground Storage Tank Inspection & Integrity Test Standards



Notes:

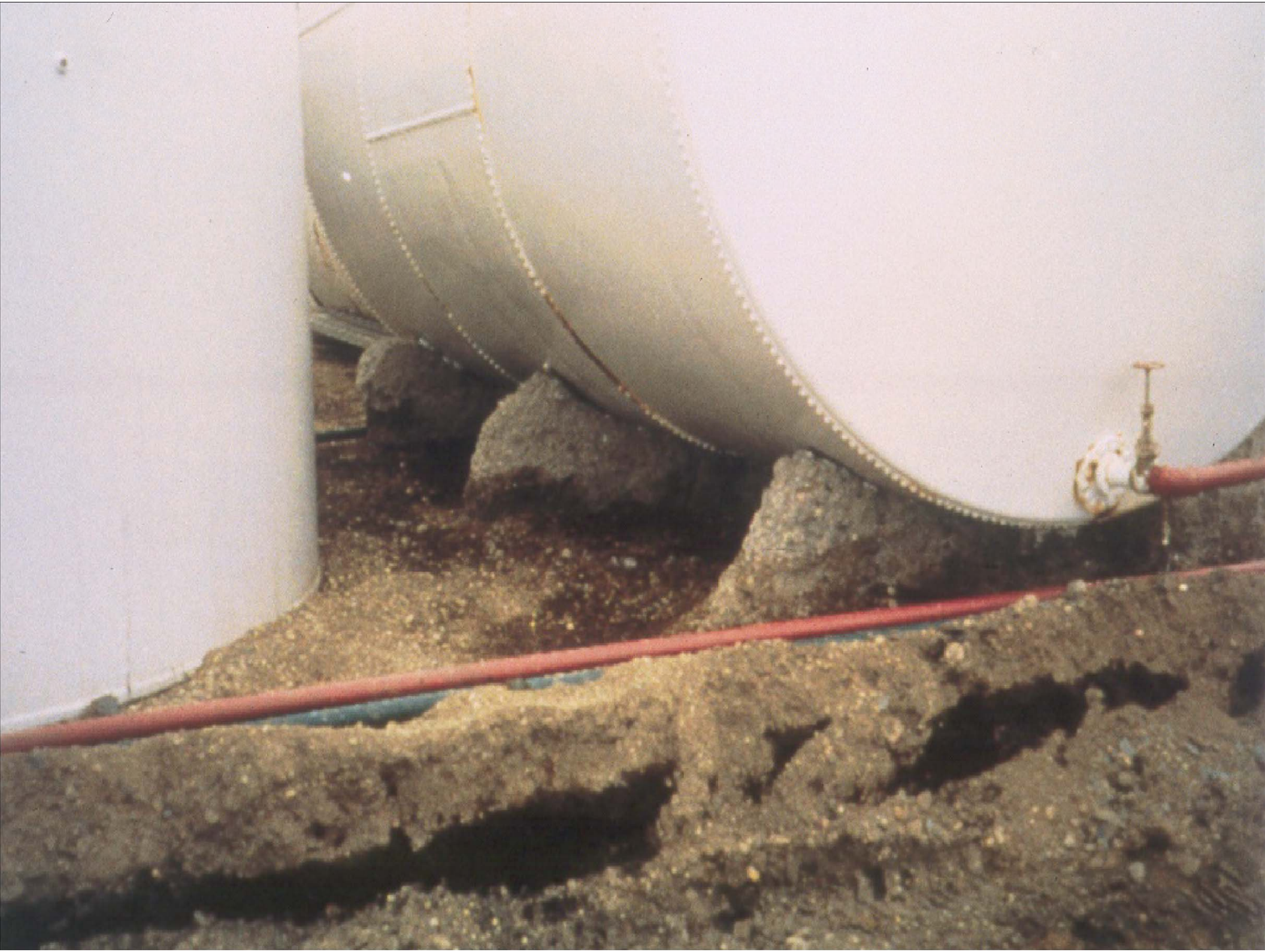
API653 refers to American Petroleum Institute (API) Standard 653: Tank Inspection, Repair, Alteration and Reconstruction (Fifth Edition, 9-2011)

SP001 refers to Steel Tank Institute (STI) SP001: Standard for Inspection of Aboveground Storage Tanks (Fourth Edition, July 2006)


HORTON° TANK
API STANDARD 12C
AUTHORITY NO. 6254
8-293-3
CONTRACT NO.
1961
YEAR
NOM CAPACITY, BBL
12'-6"
NOM DIAMETER, FT
16'-0"
NOM HEIGHT, FT
BUILT BY
CHICAGO BRIDGE & IRON COMPANY
1305 WEST 105th STREET
CHICAGO 43 ILLINOIS
S 161

CALIFORNIA CUPA FORUM


You fix The aST...



Ask the regulators!
Ask a Plan writer!

CALIFORNIA CUPA FORUM

Open Q&A on any provision

- Ask any question
- HQ response
- R9 response
- Plan Writer Response