Common SPCC Rule Misconceptions at Petrochemical Facilities

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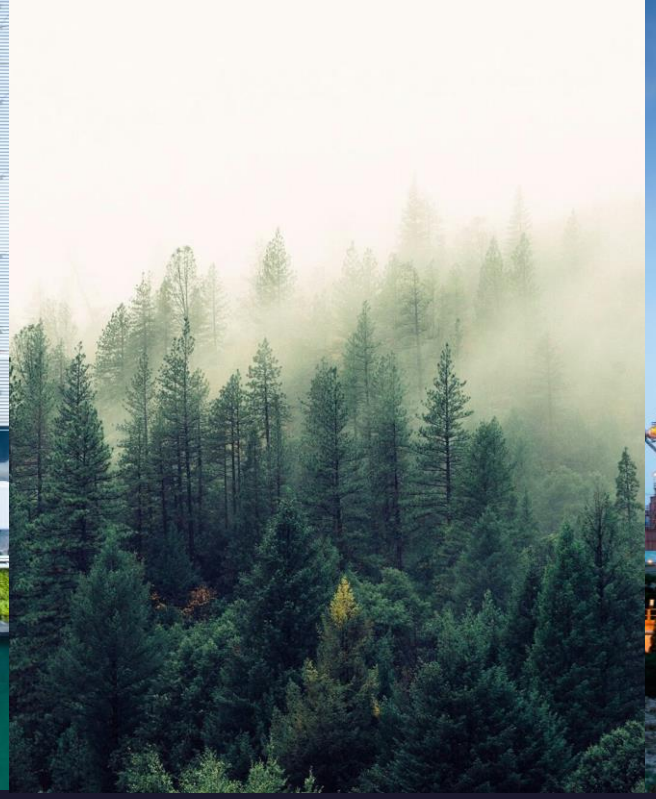


Overview

- The SPCC rule has many provisions. The objective of this presentation is to have an interactive discussion and dialog regarding the common misconceptions about rule. Please feel free to ask questions after the presentation.

Misconception #10
The SPCC rule is delegated to States by the authorities in the CWA.

While we believe that the 25-year, 24-hour storm event standard is appropriate for most facilities and protective of the environment, we are not making it a rule standard because of the difficulty and expense for some facilities of securing recent information concerning such storm events at this time.
(67 FR 47117, July 17, 2002)

Misconception #9:
The SPCC rule specifically requires containment freeboard to be designed to a 25-year, 24-hour storm event

40 CFR 112.1(d): Except as provided in paragraph (f) of this section, this part does not apply to

(2) Any facility which, although otherwise subject to the jurisdiction of EPA, meets both of the following requirements:

(i) The completely buried storage capacity of the facility is 42,000 U.S. gallons or less of oil.

(ii) The aggregate aboveground storage capacity of the facility is 1,320 U.S. gallons or less of oil.

Misconception #8:
The SPCC rule applicability provisions for capacity are a tank, not facility, specific determination

- Document retention for FRP holders is 5 years vs. 3 years for SPCC plan holders.

Misconception #7:
The SPCC and FRP record retention requirements are identical.

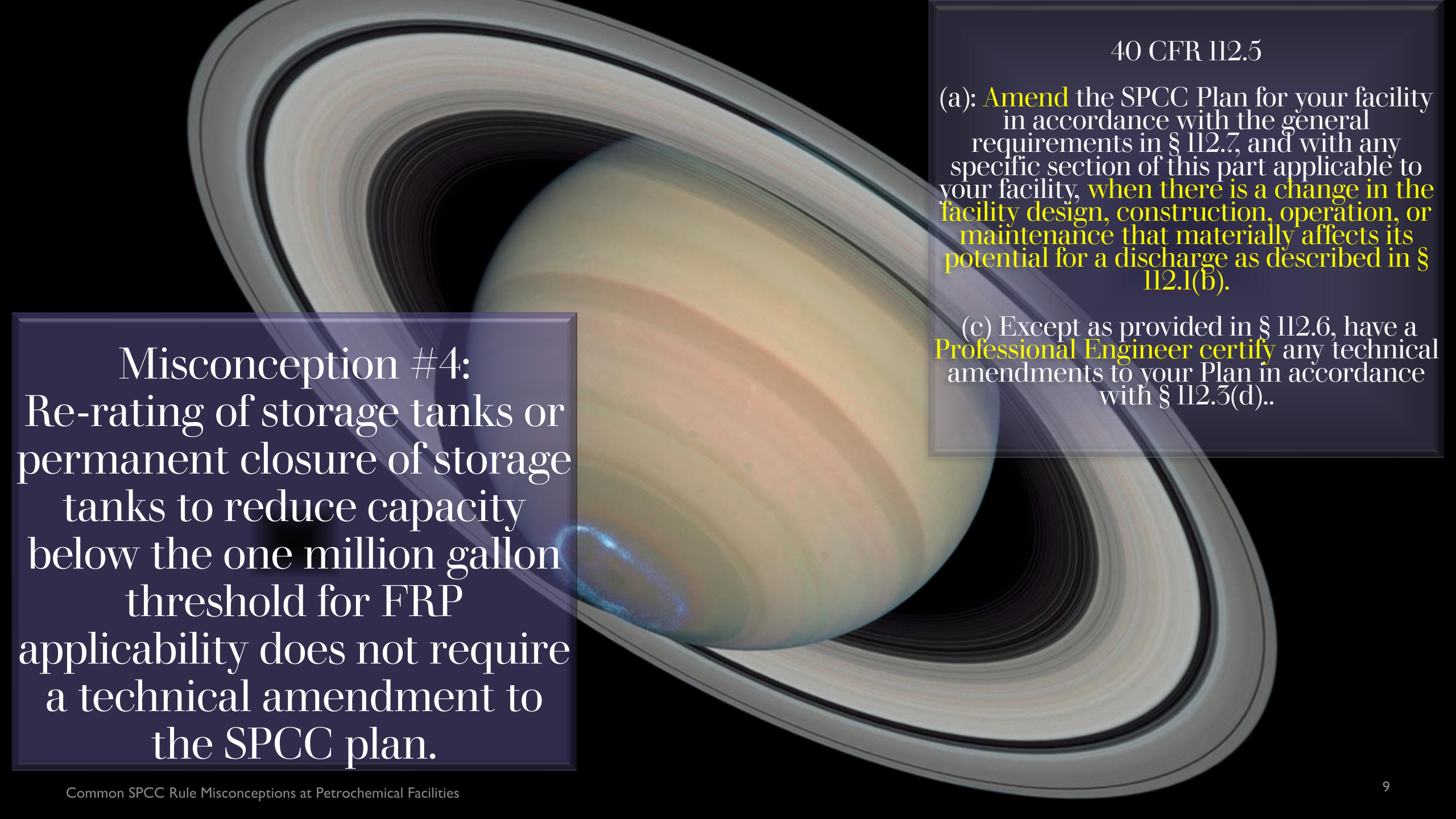
Misconception #6: SPCC inspectors can make compliance determinations in the field

No
A SPCC inspector does not have the authority to tell a facility owner and/or operator if the facility is in non-compliance or a that specific violation has been identified.

Misconception #5: Piping does not have a containment requirement

40 CFR 112.1(c) Provide appropriate containment and/or diversionary structures or equipment to prevent a discharge as described in § 112.1(b)... The entire containment system, including walls and floor, must be capable of containing oil and must be constructed so that any discharge from a primary containment system, such as a tank, will not escape the containment system before cleanup occurs. In determining the method, design, and capacity for secondary containment, you 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. At a minimum, you must use one of the following prevention systems or its equivalent: (1) For onshore facilities: (i) Dikes, berms, or retaining walls sufficiently impervious to contain oil; (ii) Curbing or drip pans; (iii) Sumps and collection systems; (iv) Culverting, gutters, or other drainage systems; (v) Weirs, booms, or other barriers; (vi) Spill diversion ponds; (vii) Retention ponds; or (viii) Sorbent materials.:

40 CFR 112.8(b)(3): Design facility drainage systems from undiked areas with a potential for a discharge (such as where piping is located outside containment walls or where tank truck discharges may occur outside the loading area) to flow into ponds, lagoons, or catchment basins designed to retain oil or return it to the facility. You must not locate catchment basins in areas subject to periodic flooding.



Misconception #4:
Re-rating of storage tanks or permanent closure of storage tanks to reduce capacity below the one million gallon threshold for FRP applicability does not require a technical amendment to the SPCC plan.

40 CFR 112.5

(a): Amend the SPCC Plan for your facility in accordance with the general requirements in § 112.7, and with any specific section of this part applicable to your facility, when there is a change in the facility design, construction, operation, or maintenance that materially affects its potential for a discharge as described in § 112.1(b).

(c) Except as provided in § 112.6, have a Professional Engineer certify any technical amendments to your Plan in accordance with § 112.3(d)..

40 CFR 112.7(c) Provide appropriate containment and/or diversionary structures or equipment to prevent a discharge as described in § 112.1(b)...The entire containment system, including walls and floor, must be capable of containing oil and must be constructed so that any discharge from a primary containment system, such as a tank, will not escape the containment system before cleanup occurs

*****

40 CFR 112.8(c)(2) Construct all bulk storage tank installations (except mobile refuelers and other non-transportation-related tank trucks) so that you provide a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation. You must ensure that diked areas are sufficiently impervious to contain discharged oil.

Misconception #3: EPA does not have as performance standard for containment

"only containers"
NOT
"only bulk containers"
(Oil-filled electrical, operating, or manufacturing equipment is not a bulk storage container)

40 CFR 112.1(d): Except as provided in paragraph (f) of this section, this part does not apply to
(2) Any facility which, although otherwise subject to the jurisdiction of EPA, meets both of the following requirements:
(i) The completely buried storage capacity of the facility is 42,000 U.S. gallons or less of oil.
(ii) The aggregate aboveground storage capacity of the facility is 1,320 U.S. gallons or less of oil. For the purposes of this exemption, only containers with a capacity of 55 U.S. gallons or greater are counted.

Misconception #2:

Gen-Sets and their associated oil containers are always considered oil-filled electrical equipment AND oil filled equipment does not count towards a facility capacity

Not true… let me explain the process

Misconception #1: EPA SPCC inspections are always a bad experience…

Bonus Misconception

AST can't be a UST

UST can't be an AST

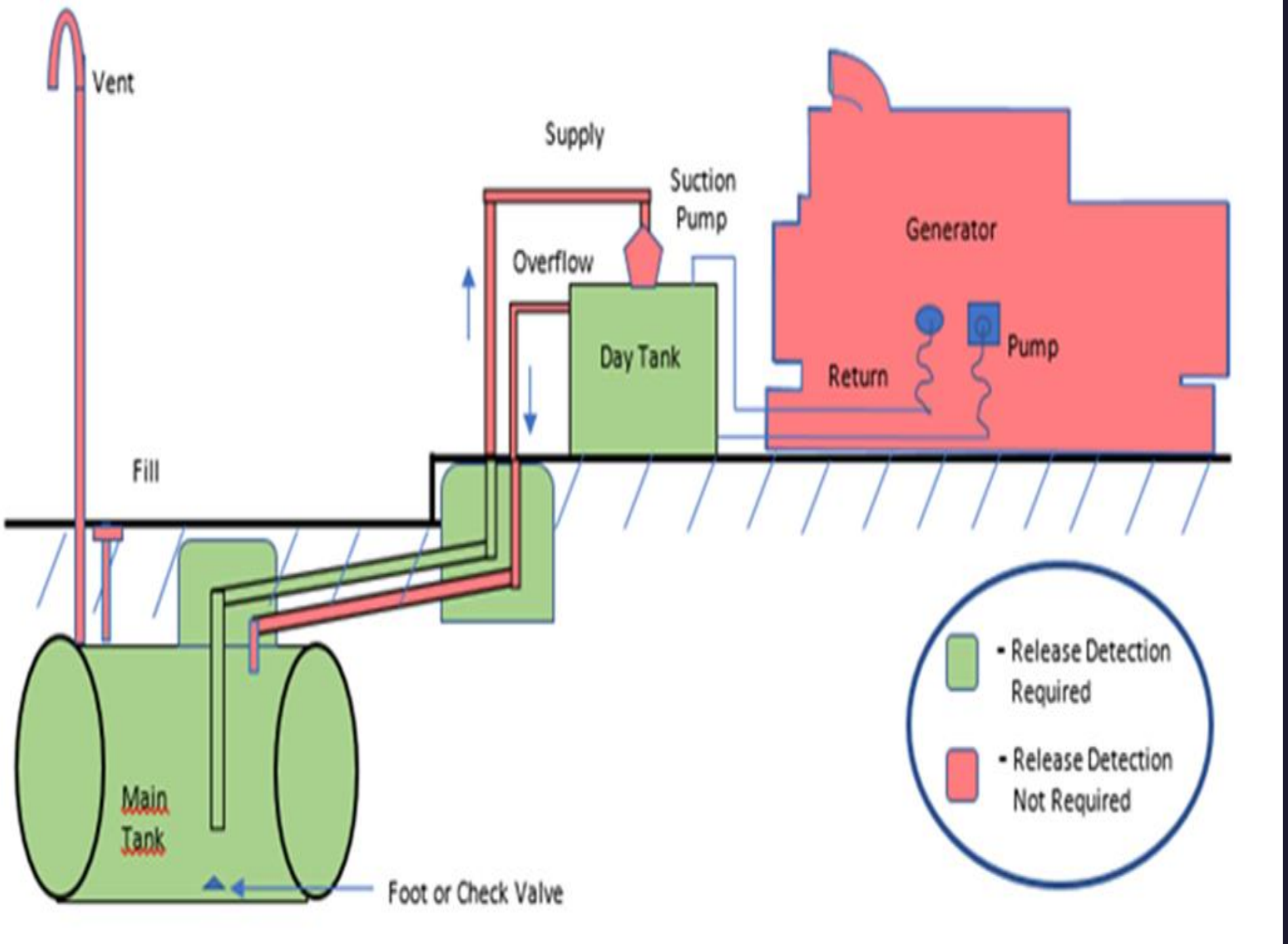
AST or UST and “The Bubble?”

AST

UST ???

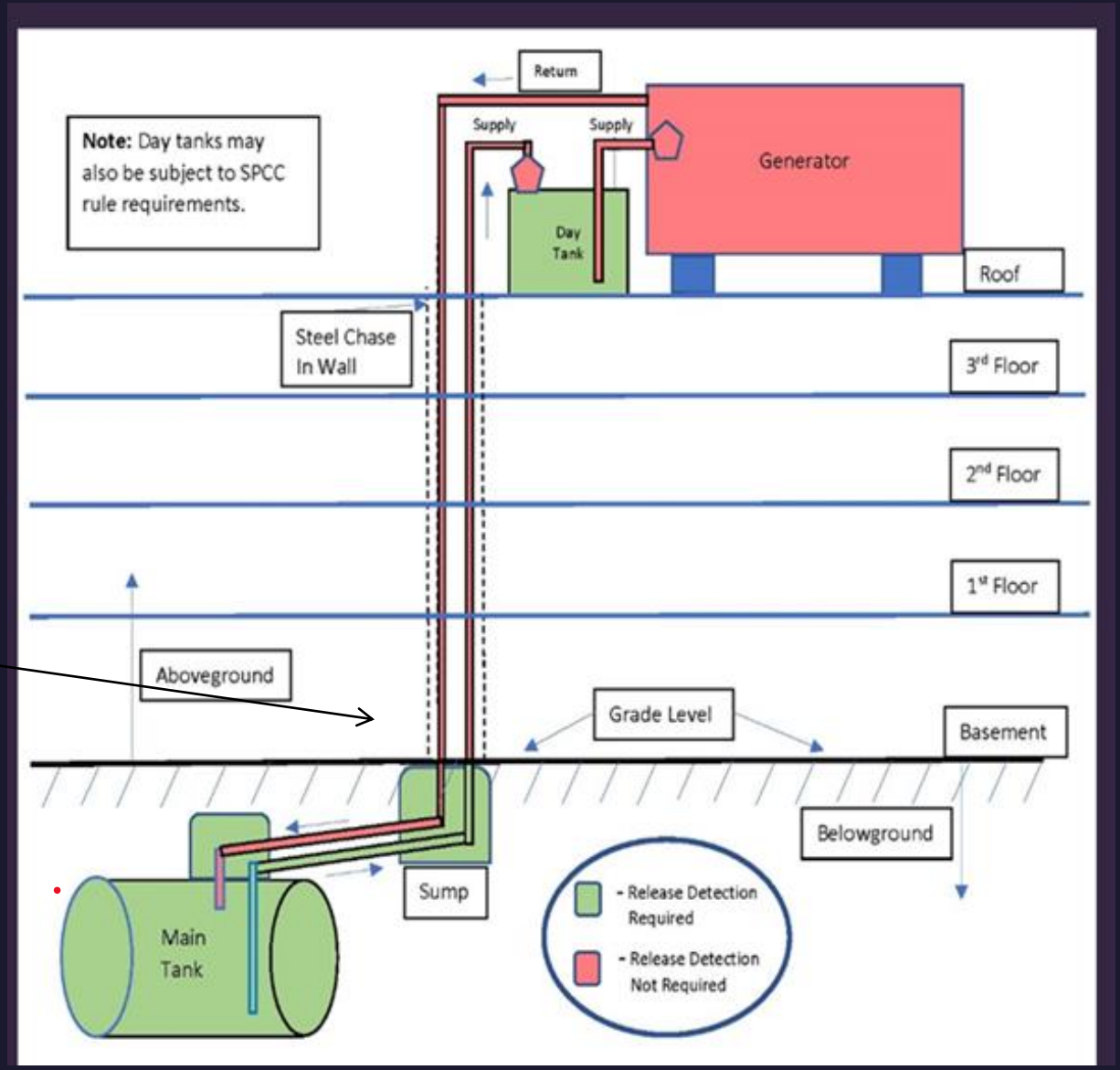
AND THE BUBBLE

Emergency Power Generator (EPG) Tanks


Vent
Supply
Suction Pump
Overflow
Generator
Day Tank
Pump
Return
Fill
Main Tank
Foot or Check Valve
- Release Detection Required
- Release Detection Not Required

EPG Systems – The Piping

- The aboveground piping shown in the steel chase is exempt from federal UST technical prevention requirements.
- Aboveground lines not covered by UST regulation but may be covered by SPCC.



https://www.epa.gov/ust/underground-storage-tank-technical-compendium-about-2015-ust-regulation#generators

Airport Hydrant Fueling Systems (AHFS) or Airport Hydrant Systems (AHS)

AHS

- Airport hydrant systems often have more than one tank and include:
  - aboveground and underground storage tanks storing aircraft fuel;
  - directly connected underground piping; and
  - other connected tanks holding aircraft fuel such as settling tanks or tanks used to relieve pressure in the system
- Airport hydrant systems do not include:
  - tanks not storing aircraft fuel, for example, additive tanks
  - tanks not directly connected to the airport hydrant system, for example, tanks used to power an emergency generator in a pump house; and
  - piping connected to those tanks
- Airport hydrant systems may include field-constructed tanks. Field-constructed tanks, which are part of an airport hydrant system are treated as part of the airport hydrant system and not as separate UST systems

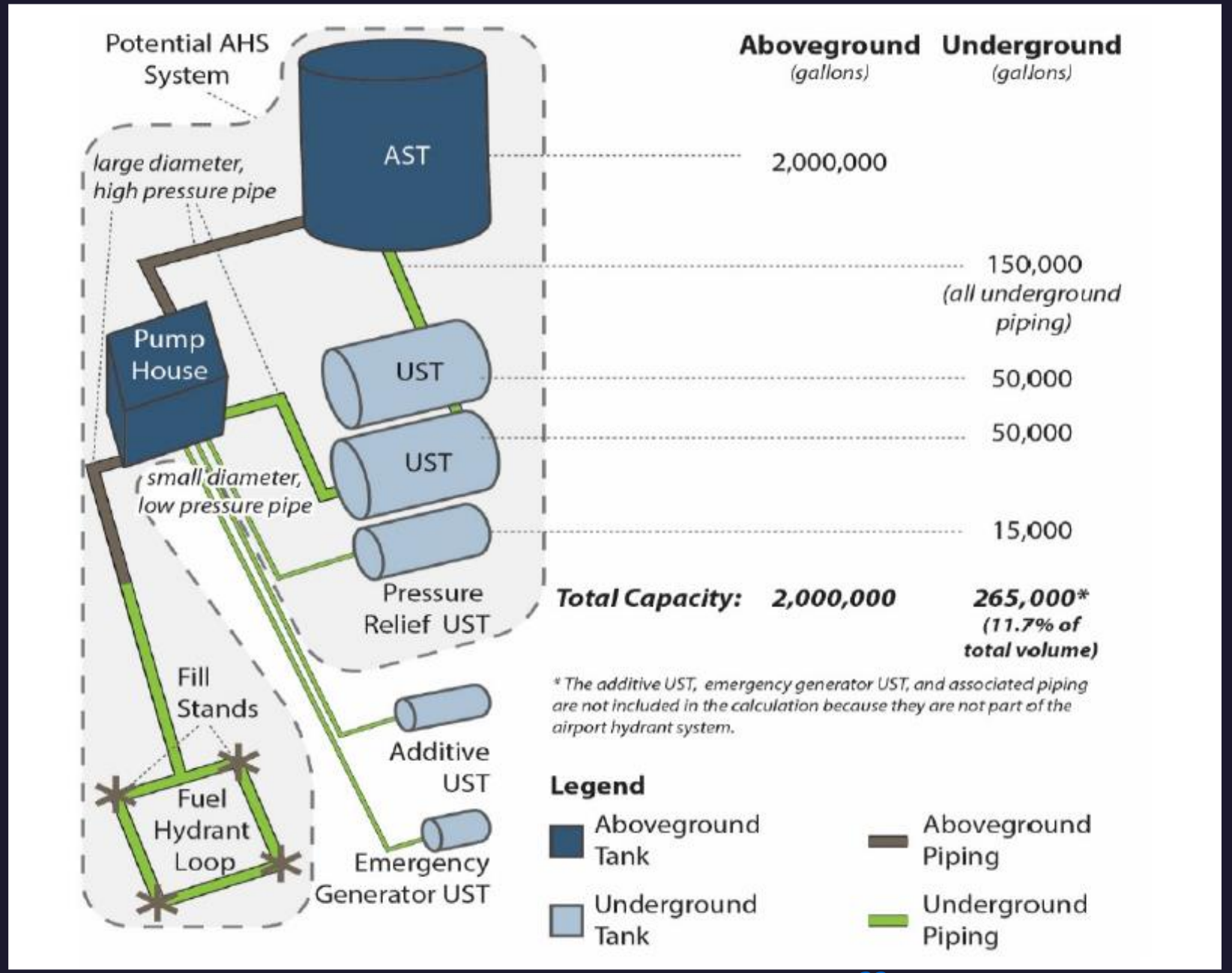
AHS

- Airport hydrant systems with aboveground storage tanks (ASTs) directly connected to underground hydrant piping are not regulated under 40 CFR part 280, unless 10 percent or more of the total system capacity, including underground piping, is beneath the surface of the ground
  - Note that if the AHS is regulated by 40 CFR part 280, the aboveground portions of the UST system are partially excluded from 40 CFR part 280, and therefore subject to 40 CFR part 112
  - See 40 CFR § 280.10(c)(2)(i) Applicability - Partial Exclusions. Subparts B, C, D, E, G, J, and K of this part do not apply to:
    - Aboveground storage tanks associated with: (i) Airport hydrant fuel distribution systems regulated under subpart K of this part
  - Additionally, aboveground piping is typically not covered by 40 CFR 280 and would be subject to the SPCC requirements
- Owners and operators of tanks that are not regulated under 40 CFR part 280 may have to follow other requirements such as those under the Spill Prevention, Control, and Countermeasure (SPCC) regulation

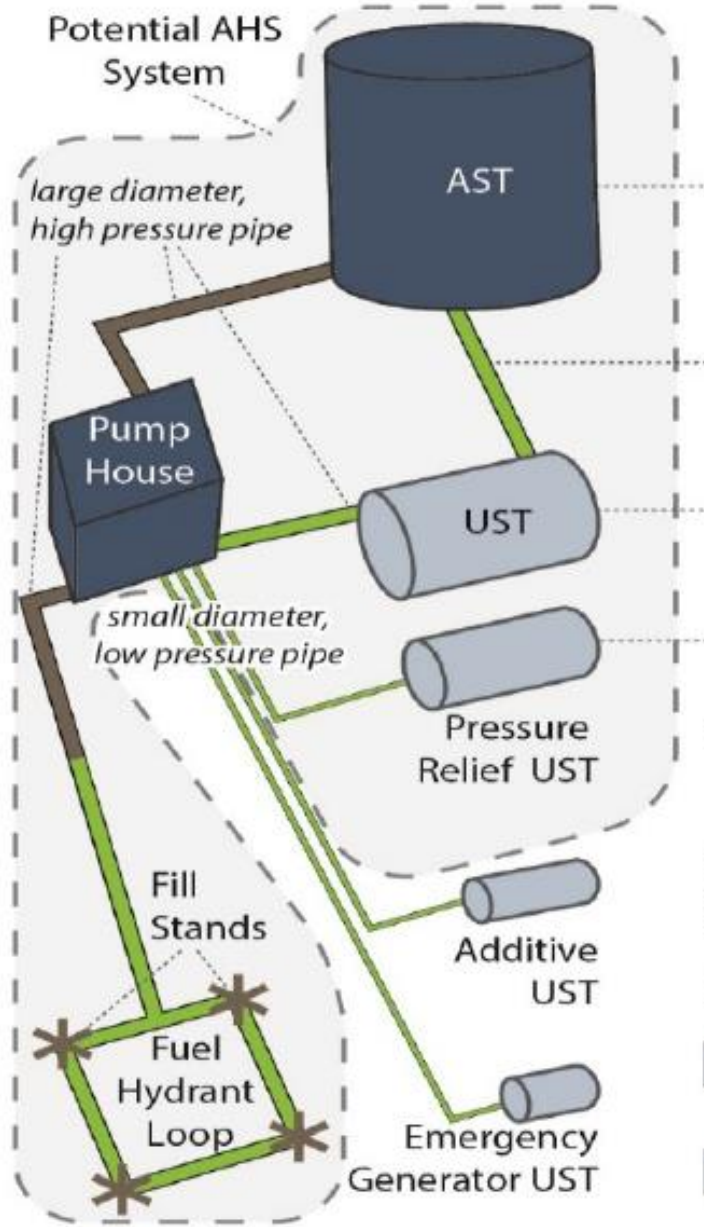
How Do You Determine Whether Your Airport Hydrant System Meets EPA's Definition Of A Regulated UST?

- You must first calculate what percentage of volume is underground to determine whether your airport hydrant system is a regulated UST
- The calculation must **include all aboveground and underground tanks storing aircraft fuel** and all underground piping
- If 10 percent or more of the total capacity is underground, then the AHS meets the definition of a regulated UST system

Example 1 - Airport Hydrant System That Is Regulated



Example 2 - Airport Hydrant System That Is Not Regulated



	Aboveground (gallons)	Underground (gallons)
AST	2,000,000	
large diameter, high pressure pipe		100,000 (all underground piping)
UST		50,000
small diameter, low pressure pipe		10,000
Total Capacity:	**2,000,000**	**160,000* (7.5% of total volume)**

* The additive UST, emergency generator UST, and associated piping are not included in the calculation because they are not part of the airport hydrant system.

Legend

- Aboveground Tank
- Underground Tank
- Aboveground Piping
- Underground Piping

Truck Stops

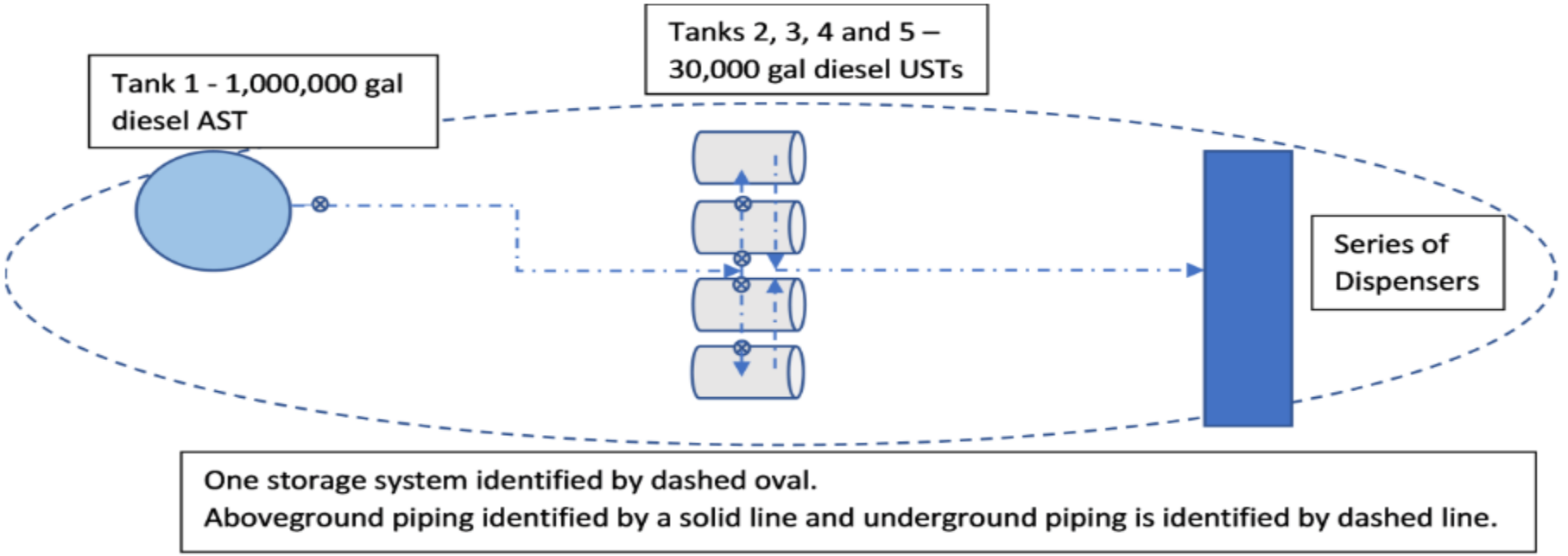
Scenario 1: If the following tanks are all storing the same product and connected by a combination of above/underground piping, is this storage system a regulated UST system?

A truck stop has the following three storage tanks connected by piping:

- Tank 1 is a 1,000,000-gallon field-constructed AST storing petroleum diesel.
- Tanks 2, 3, 4 and 5 are each 30,000-gallon USTs storing diesel.

Tank 1 is connected to tanks 2, 3, 4 and 5 by aboveground piping which transitions to underground piping at a valve. The underground piping from the valve to the tanks is 4" diameter and 853 feet long (volume is 557 gallons).

Tanks 2, 3, 4 and 5 are connected to a series of dispensers with underground piping with an estimated volume of 100 gallons.



Applicability Determination

Since these tanks are all connected and storing the same product, it is just a matter of completing the calculations to determine if there is 10% of the storage system volume underground.

% capacity underground = *volume underground / volume of storage system* = (*volume of UST + volume in UG piping) / (volume of AST + volume of UST + volume in UG piping*) =

(120,000 gallons + 557 gallons + 100 gallons) / (1,000,000 gallons + 120,000 gallons + 557 gallons + 100 gallons) = **10.7%** of the volume is located underground.

Since there is more than 10% of the volume underground, this storage system is a regulated UST system. However, the 1,000,000-gallon AST is partially excluded from the UST regulations as being a field-constructed aboveground tank associated with an UST system [40 CFR §280.10(c)(2)(ii)]. In addition, the facility [2] (including piping and tanks [3]) may be subject to SPCC/FRP requirements under 40 CFR Part 112. Any aboveground piping or transfer areas (into the AST and from the dispensers) located at the facility are potentially subject to the 40 CFR Part 112 SPCC/FRP regulations.

Summary: The five tanks in Scenario #1 form one storage system that is a regulated UST system. In addition, the facility (including all aboveground piping and aboveground tanks) and transfers of product are potentially subject to SPCC/FRP requirements under 40 CFR Part 112.

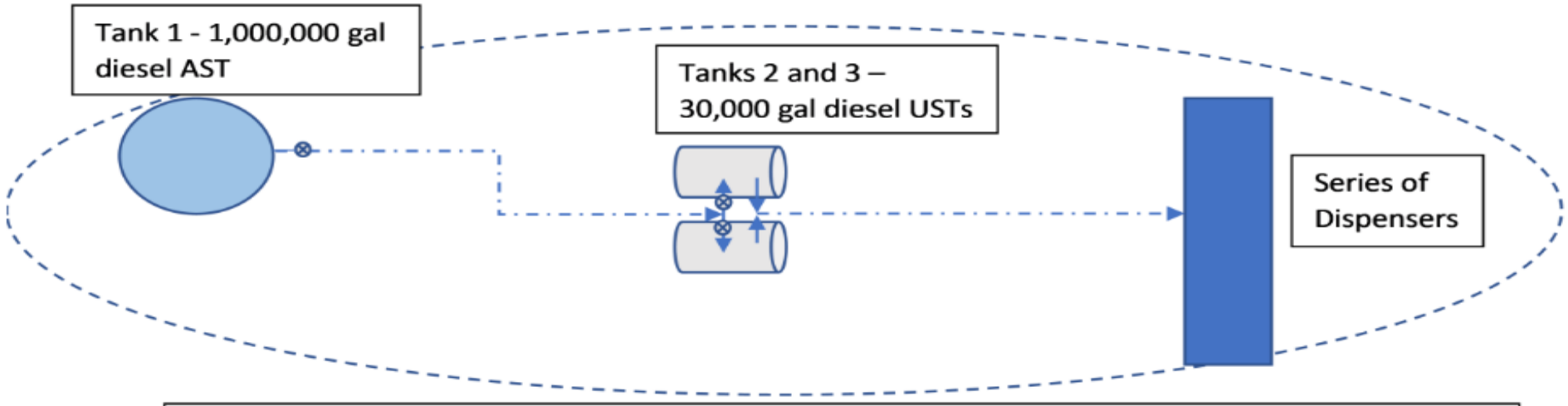
Scenario 2: If the following tanks are all storing the same product and connected by a combination of above/underground piping, is this storage system a regulated UST system?

A truck stop has the following three storage tanks connected by piping:

- Tank 1 is a 1,000,000-gallon field-constructed AST storing petroleum diesel.
- Tanks 2 and 3 are each 30,000-gallon USTs storing diesel.

Tank 1 is connected to tanks 2 and 3 by aboveground piping which transitions to underground piping at a valve. The underground piping from the valve to the tanks is 4" diameter and 853 feet long (volume is 557 gallons).

Tanks 2 and 3 are connected to a series of dispensers with underground piping with an estimated volume of 100 gallons.



One storage system identified by dashed oval.
Aboveground piping identified by a solid line and underground piping is identified by dashed line.

Applicability Determination

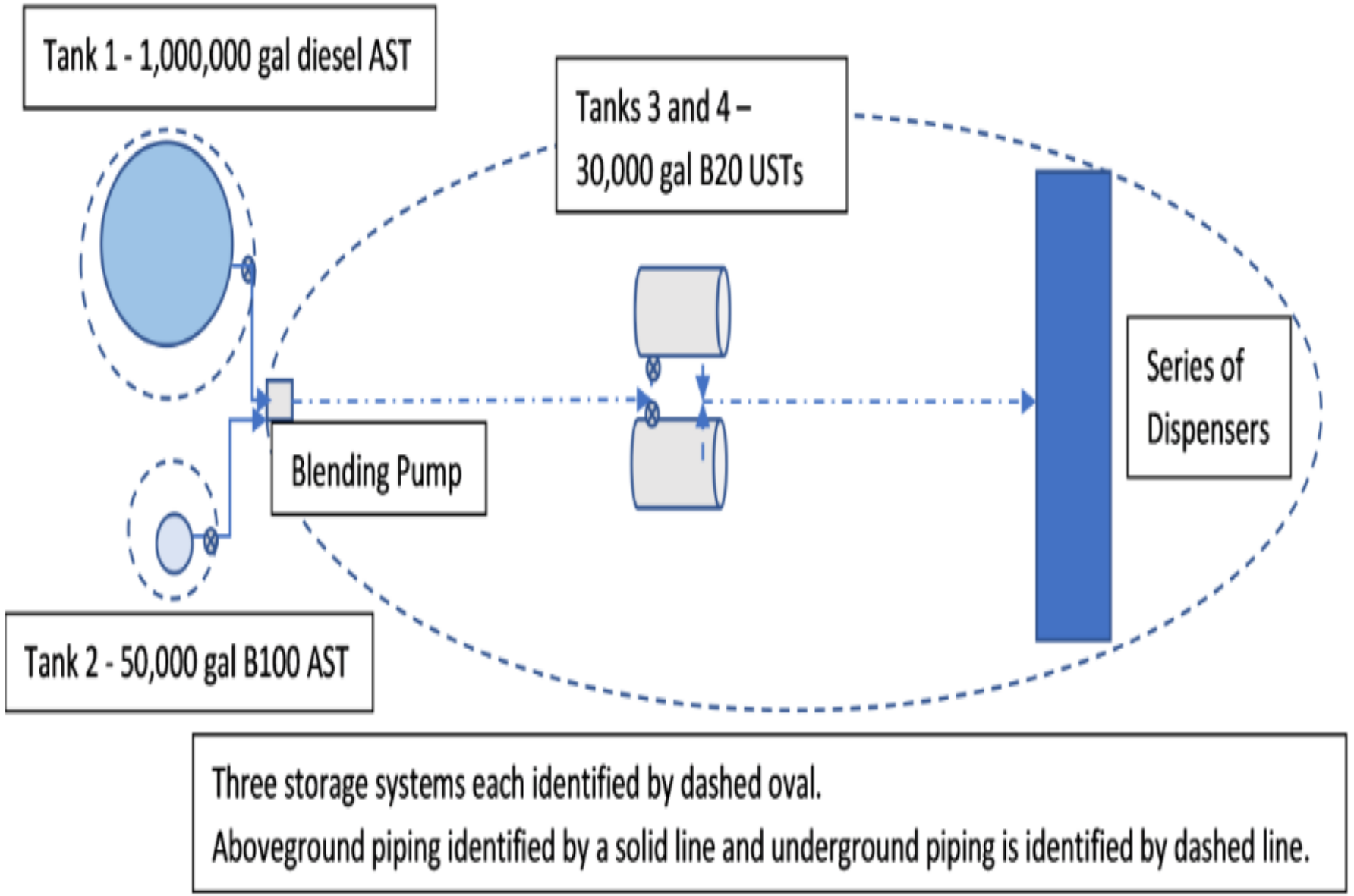
Since these tanks are all connected and storing the same product, it is just a matter of completing the calculations to determine if there is 10% of the storage system volume underground.

% capacity underground = *volume underground / volume of storage system* = (*volume of UST + volume in UG piping) / (volume of AST + volume of UST + volume in UG piping*) =

(60,000 gallons + 557 gallons + 100 gallons) / (1,000,000 gallons + 60,000 gallons + 557 gallons + 100 gallons) = **5.7%** of the volume is located underground.

Since there is less than 10% of the volume underground, this storage system is not a regulated UST system. However, the facility [4] (including all above/belowground piping and above/belowground tanks [5]) may be subject to SPCC/FRP requirements under 40 CFR Part 112. Any aboveground piping or transfer areas (into the AST and from the dispensers) located at the facility are potentially subject to the 40 CFR Part 112 SPCC/FRP regulations.

Summary: The three tanks in this scenario form one storage system which is not a regulated UST system. However, the facility (including all piping and tanks) and transfers of product are potentially subject to SPCC/FRP requirements under 40 CFR Part 112.


Tank 1 - 1,000,000 gal diesel AST
Tanks 3 and 4 –
30,000 gal B20 USTs
Series of
Dispensers
Blending Pump
Tank 2 - 50,000 gal B100 AST
Three storage systems each identified by dashed oval.
Aboveground piping identified by a solid line and underground piping is identified by dashed line.

Applicability Determination

A review of the product being stored in each of the tanks is needed to determine if they are a single storage system or if there are multiple storage systems.

1. The 50,000-gallon AST storing B100 is not considered in the calculation to determine if the storage tank system is a regulated UST since B100 is not a regulated substance under 40 CFR Part 280 because it is not petroleum based, not a complex blend of hydrocarbons, and not a listed hazardous substance under CERCLA. Tanks storing B100 are not included in any UST system. However, this facility including the 50,000-gallon AST storing B100 may be subject to the 40 CFR Part 112 SPCC/FRP regulations.
2. The 1,000,000-gallon AST and the two 30,000-gallon USTs are not storing the same product so there is a need to determine if the products are substantially the same or substantially different. Reviewing the American Society for Testing and Materials specifications for the products involved can help you make this determination. ASTM has identified a specification for biodiesel blends above 5 percent. Biodiesel blends at 5 percent or below have the same specification as petroleum diesel. In the scenario described above, because the underground tanks are storing B20, the product being stored in the underground tanks is substantially different than the product being stored in the 1,000,000-gallon AST. Since the products in the underground tanks are different, the 30,000-gallon USTs form their own regulated UST system because more than 10 percent of volume is underground. The facility, including the 1,000,000-gallon AST, is potentially subject to the 40 CFR Part 112 SPCC/FRP regulations.

3. The underground piping from the blending pump to the USTs is included as part of the UST system. If the run of piping does not normally contain product (i.e., when the USTs are filled, the valve at the blending pump is closed but the valves at the USTs are left open such that the piping is left empty) then the piping functions like a remote fill pipe and is considered a non-operational component of the tank system. However, if the run of piping normally contains product (i.e., when the USTs are filled, the valves are closed at the USTs leaving product in the line) then the line is considered product piping and all UST technical requirements such as corrosion protection and release detection are applicable.
4. Any aboveground piping or transfer areas located at the facility are potentially subject to the 40 CFR Part 112 SPCC/FRP regulations.

Summary: There are three storage systems in this scenario:

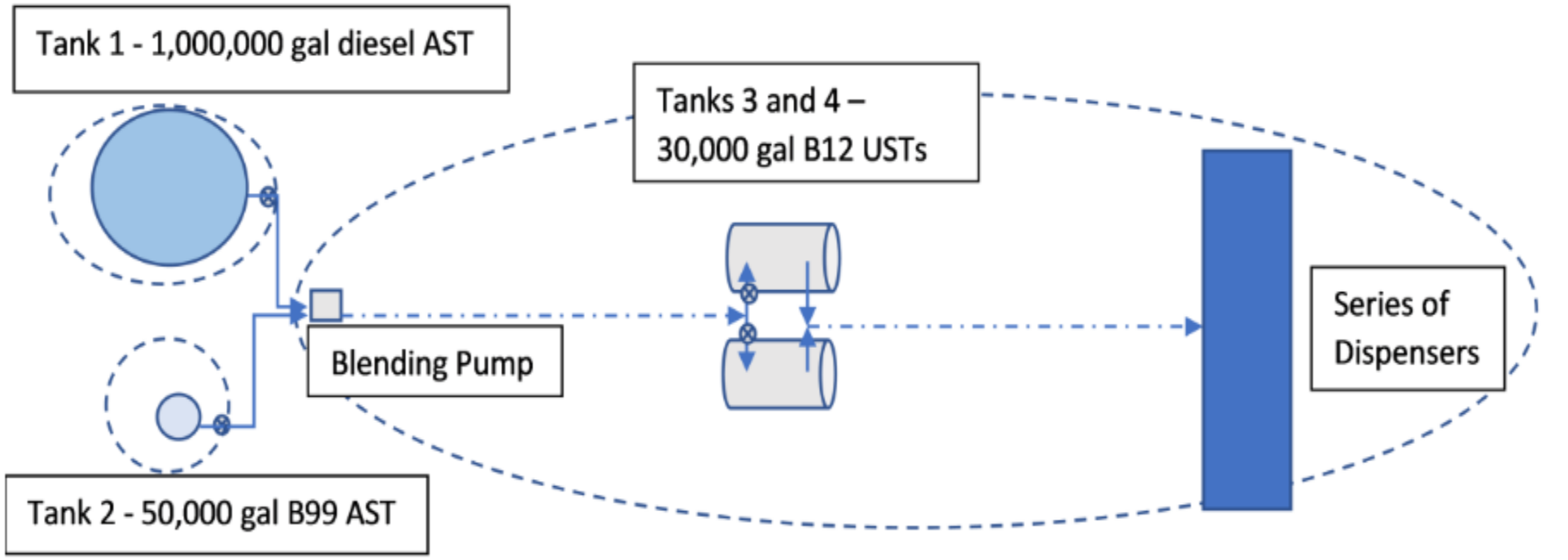
(1) 1,000,000-gallon AST storing petroleum diesel is not a regulated UST system, but the facility, including the 1,000,000-gallon AST, is potentially subject to the 40 CFR Part 112 SPCC/FRP regulations.

(2) 50,000-gallon AST storing B100 is not a regulated UST system but the facility, including the 50,000-gallon AST storing B100, is potentially subject to the 40 CFR Part 112 SPCC/FRP SPCC regulations.

(3) two 30,000-gallon USTs storing B20 (both tanks and the piping from the blending pump to the USTs, and the piping from the USTs to the dispensers) is a regulated UST system. This portion of the facility (the two 30,000-gallon USTs and buried piping) is not generally [6] subject to the requirements of 40 CFR Part 112.

Tanks 1 and 2 are connected to tanks 3 and 4 by aboveground piping to the blending pump and underground piping from the blending pump to the tanks. The underground piping from the blending pump to the tanks is 4" diameter piping that is 853 feet long (volume is 557 gallons).

Tanks 3 and 4 are connected to a series of dispensers with underground piping with an estimated volume of 100 gallons.



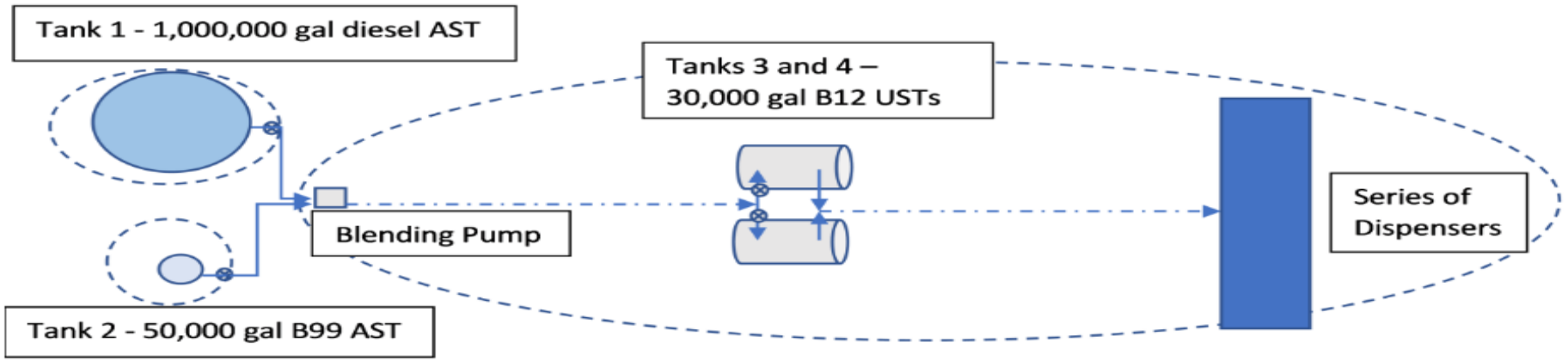
Scenario 4: Does the determination in Scenario 3 above change if the additional AST is storing B99, a regulated substance, that is blending with the petroleum diesel such that the USTs are storing B12?

In this scenario, the truck stop has the following four storage tanks connected by piping:

- Tank 1 is a 1,000,000 gallon field constructed AST storing petroleum diesel.
- Tank 2 is a 50,000 gallon AST storing 99% biodiesel and 1% petroleum diesel (B99).
- Tanks 3 and 4 are each 30,000 gallon USTs storing B12 (12% biodiesel and 88% petroleum diesel).

Tanks 1 and 2 are connected to tanks 3 and 4 by aboveground piping to the blending pump and underground piping from the blending pump to the tanks. The underground piping from the blending pump to the tanks is 4" diameter piping that is 853 feet long (volume is 557 gallons).

Tanks 3 and 4 are connected to a series of dispensers with underground piping with an estimated volume of 100 gallons.



Applicability Determination

A review of the product being stored in each of the tanks is needed to determine if they are a single storage system or if there are multiple storage systems.

1. The 50,000 gallon AST storing B99 can be considered in the calculation to determine if the storage tank system is a regulated UST since B99 has 1% petroleum diesel and therefore is a regulated substance under the federal UST regulations. However, it is still a different product than what is stored in the other tanks (#3 and #4) and hence would be its own storage system. Since the B99 is being stored in an AST with no underground piping to the blending pump, less than 10% of the volume of this storage system is underground so it is not a regulated UST. The facility, including the 50,000 gallon AST storing B99 is potentially subject to the 40 CFR Part 112 SPCC/FRP regulations.
2. The 1,000,000 gallon AST and the two 30,000 gallon USTs are not storing the same product with the two 30,000 gallon USTs storing a biodiesel blend of B5 or greater. Since the underground tanks are storing B12, the product being stored in the underground tanks is substantially different than the product being stored in the 1,000,000 gallon AST. Thus, the 30,000 gallon USTs form their own UST system and are regulated by the UST program. The facility, including the 1,000,000 gallon AST is potentially subject to the 40 CFR Part 112 SPCC/FRP regulations.

3. The underground piping from the blending pump to the USTs is included as part of the UST system. If the run of piping does not normally contain product (i.e., when the USTs are filled, valve at the blending pump is closed but the valves at the USTs are left open such that the piping is left empty) then the piping functions like a remote fill pipe and is considered a nonoperational component of the tank system. However, if the run of piping normally contains product (i.e., when the USTs are filled, the valves are closed at the USTs leaving product in the line) then the line is considered product piping and all UST technical requirements such as corrosion protection and release detection are applicable.
4. Any aboveground piping or transfer areas located at the facility are potentially subject to the 40 CFR Part 112 SPCC/FRP regulations.

Summary: There are three storage systems in this scenario:

(1) 1,000,000 gallon AST storing petroleum diesel and any aboveground piping associated with the AST are not a regulated UST system, but the facility, including the 1,000,000 gallon AST, is potentially subject to the 40 CFR Part 112 SPCC/FRP regulations.

(2) 50,000 gallon AST storing B99 is not a regulated UST system, but the facility, including the 50,000 gallon AST storing B99 and any aboveground piping associated with the AST, is potentially subject to the 40 CFR Part 112 SPCC/FRP regulations.

(3) two 30,000 gallon USTs storing B12 (both tanks and the piping from the blending pump to the USTs and the piping from the USTs to the dispensers) is a regulated UST system. This portion of the facility (the two 30,000 gallon USTs and buried piping) is not generally [7] subject to the requirements of 40 CFR Part 112.

[1]Spill Prevention Control and Countermeasure Rule Facility Response Plan rules, 40 CFR Part 112

[2]The SPCC program regulates facilities (to include tanks and piping) whereas the UST program regulates tank systems.

[3]For the purposes of this paper the term “tank” is being used to refer to “containers” regulated under the 40 CFR Part 112 SPCC/FRP requirements. While the field-constructed tanks and any aboveground piping can be subject to 40 CFR part 112, typically the tanks and underground piping associated with UST regulated system are exempt from the 40 CFR part 112.

[4]The SPCC program regulates facilities (to include tanks and piping) whereas the UST program regulates tank systems.

[5]For the purposes of this paper the term “tank” is being used to refer to “containers” regulated under the 40 CFR Part 112 SPCC/FRP requirements. While the field-constructed tanks and any aboveground piping can be subject to 40 CFR part 112, any underground tanks and underground piping not part of an UST regulated system, may be regulated under 40 CFR part 112.

[6]However, SPCC-exempt USTs subject to all the technical requirements of 40 CFR part 280/281 must be displayed on the SPCC facility diagram if the facility is required to develop and maintain a SPCC plan.

[7]SPCC-exempt USTs must be displayed on the SPCC facility diagram.

Partially Buried UST is an AST?

Partially Buried Tanks

- Partially buried tank with more than 10% underground
- May be a UST under the UST program
- Remains an AST under the SPCC program
- For field constructed partially buried UST systems with more than 10% underground they are now dually regulated by the SPCC and UST programs
- Yes an UST can be an AST

Summary

While the SPCC rule has many provisions, some that may require assistance relative to their determining their intent, EPA provides many resources to assist with compliance.

If you are any stake holder with a question call EPA or the EPA hotline.

There is no such thing as a bad question. It's just bad not to ask the question.

Thank You

Questions?

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202-564-1964

U.S. EPA Office of Emergency Management

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