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Alternate Low Level Containment Sump Testing Procedure Commentary – National Tanks Conference 2018

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Our sole mission is to supply and support EPA/Agency compliant, effective, and lasting repair solutions for sump leak and corrosion issues, helping UST system owners and their service contractor return their containment sumps to regulatory compliance cost effectively.

§ 280.33 Repairs allowed.

Owners and operators of UST systems must ensure that repairs will prevent releases due to structural failure or corrosion as long as the UST system is used to store regulated substances. The repairs must meet the following requirements:

(a) Repairs to UST systems must be properly conducted in accordance with a **code of practice developed by a nationally recognized association or an independent testing laboratory.**

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Only 3 Types of Sump Leaks

Structural

Seam, hole, or crack damage

Fittings or Gaskets

Damaged or aged out materials, poor design or workmanship

Lids

Damaged or non-watertight lid design

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Certified for Suitability, Durability & Compatibility by Independent Testing Laboratories

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Why repair existing equipment at all?

Why not just shut the site down and require replacement? There are many manufacturers that would appreciate that!

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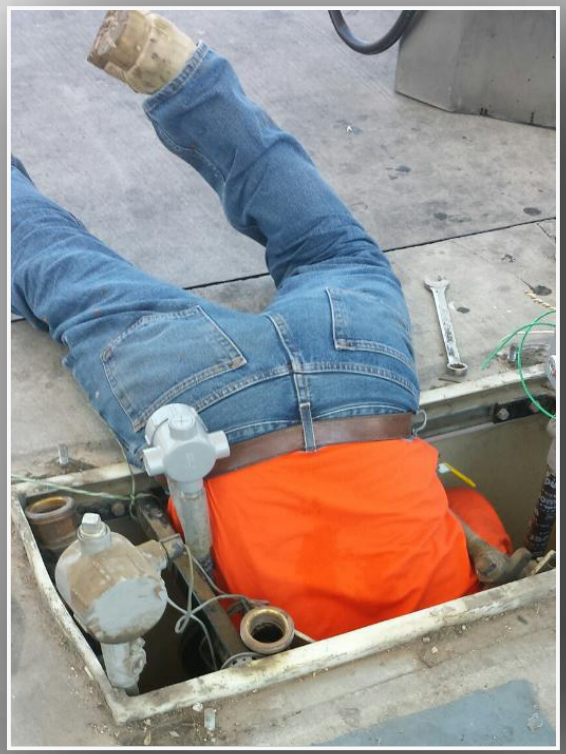
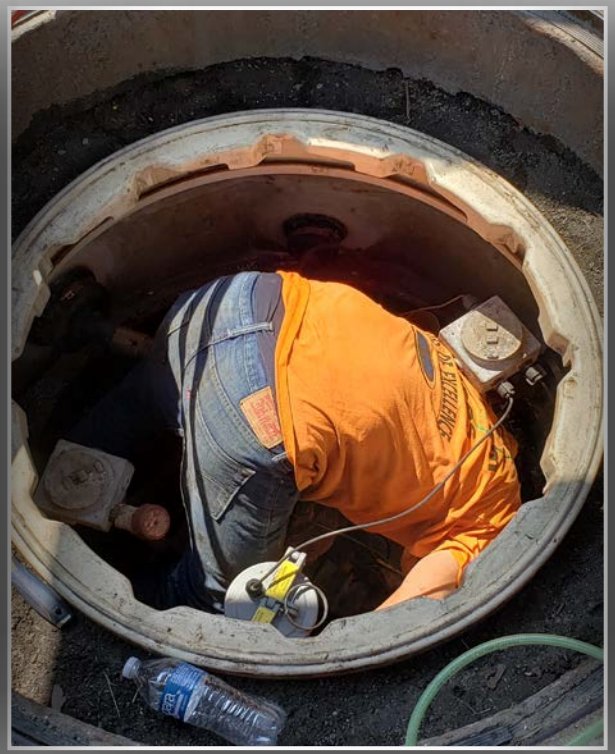
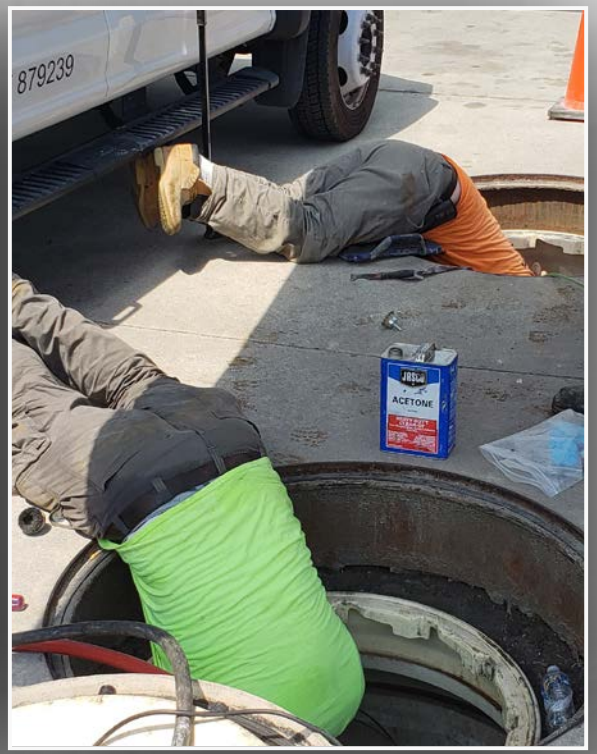
Our experience has provided a *unique* perspective on sump repair and testing!







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40CFR Part 280 Definitions

Containment Sump means a liquid-tight container that protects the environment by containing leaks and spill of regulated substances from piping, dispensers, pumps and related components in the containment area. Containment sumps may be single walled or secondarily contained and located at the top of tank (tank top or submersible turbine pump sump), underneath the dispenser (under-dispenser containment sump), or at other points in the piping run (transition or intermediate sump).

Maintenance means the normal operational upkeep to prevent an underground storage tank system from releasing product.

Repair means to restore to proper operating condition a tank, pipe, spill prevention equipment, overfill prevention equipment, corrosion protection equipment, release detection equipment or other UST system component that has caused a release of product from the UST system or has failed to function properly.

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Alternate Low Level Containment Sump Testing Procedure

Intended for facilities where EPA is the implementing agency. May also be used as appropriate in states and territories which allow low level hydrostatic testing of containment sumps, but do not already have similar instructions. Owners and operators should check with their implementing agencies. Requirements determined by the implementing agency to be *no less* protective of human health and the environment.

A liquid level sensor is mounted at the lowest point in the sump and a periodic test is performed by adding liquid to a point that will ensure activation of the sensor; and the pump automatically shuts off when liquid activates the sensor, or the dispenser automatically shuts off when liquid activates the sensor, and the facility is always staffed when the pumps are operational.

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Alternate Low Level Containment Sump Testing Procedure

- Remove any debris or liquid in the containment sump prior to testing. Visually check for cracks, holes, or compromised boots located in the portion of the sump where water will be added during the low liquid sump test.

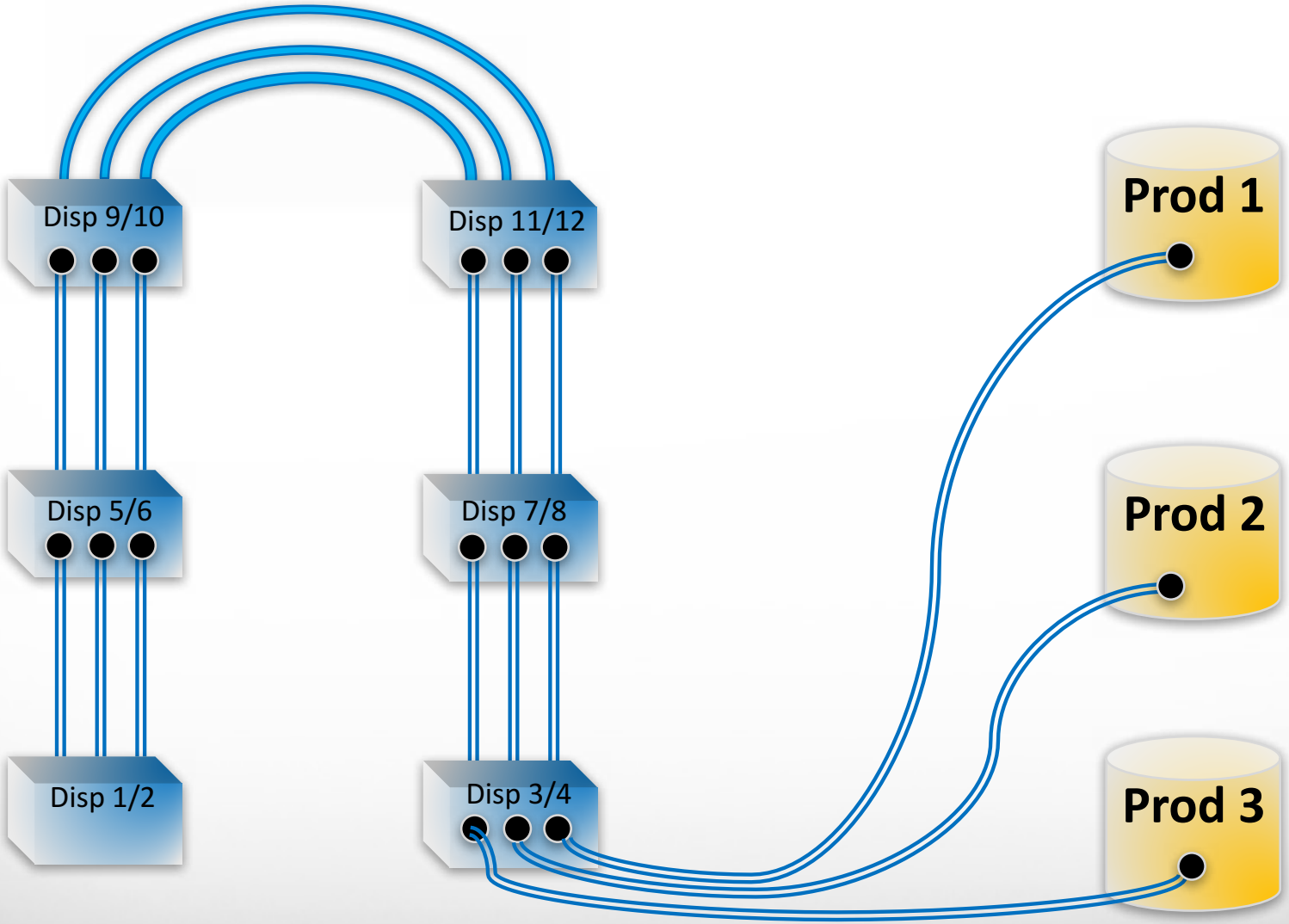
- Visually inspect sensor/electrical connections for damage or corrosion.

- Perform the sensor activation test according to the sensor manufacturer's instructions for testing. Some manufacturers may specify testing in a container other than in the sump.

- Add water into the sump until the liquid level is at least 4 inches above the height required to activate the sensor. Do not disturb the water in the sump for at least one hour. After one hour has elapsed if the level has dropped by more than 1/8 inch, then the sump failed the low liquid level hydrostatic integrity test.

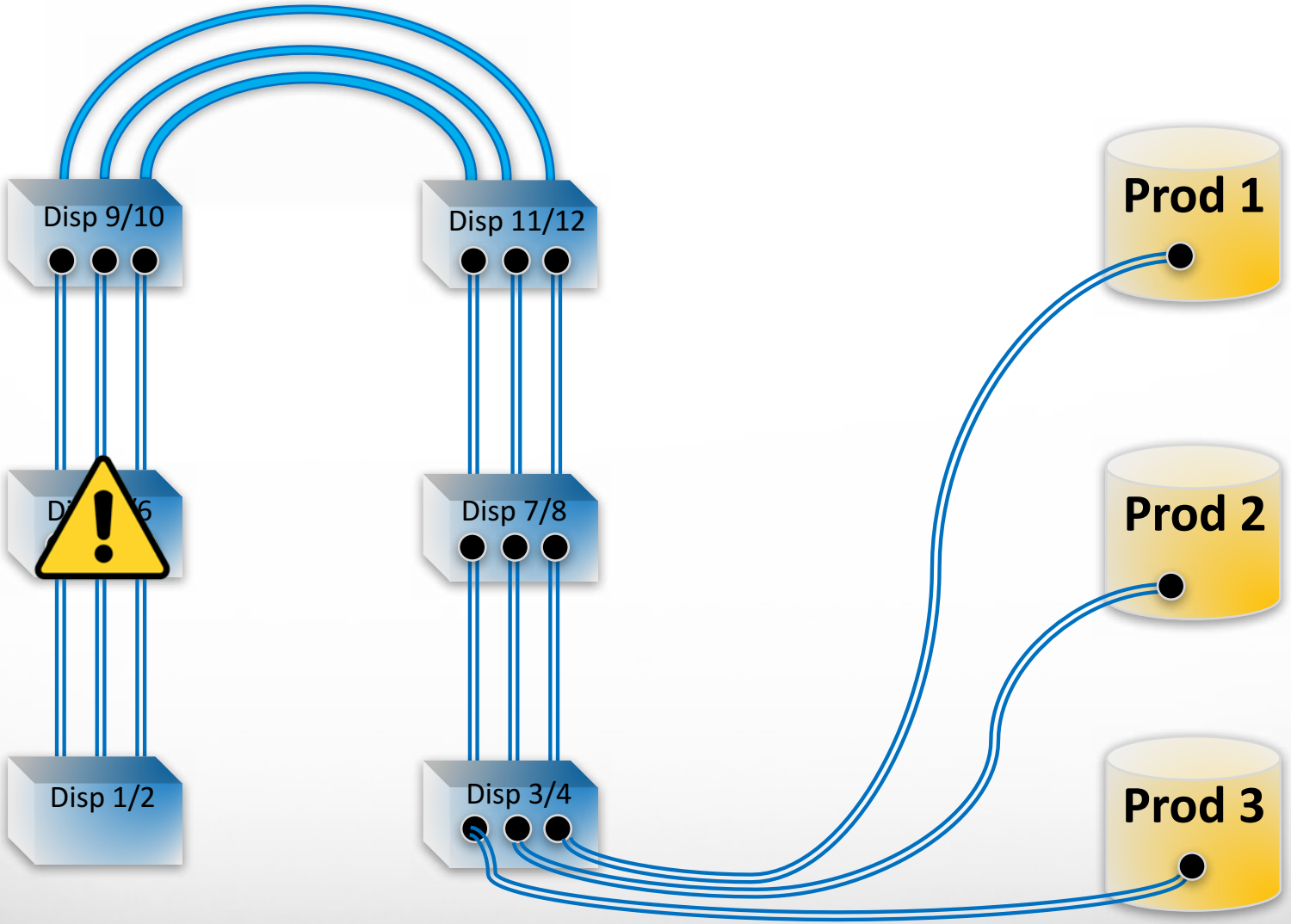
- For alternative "Low Level" Containment Sump scenarios, EPA considers repair to achieve containment sump tightness to at least the height where a liquid level sensor will activate.

Typical C-Store UST “Open System” Configuration



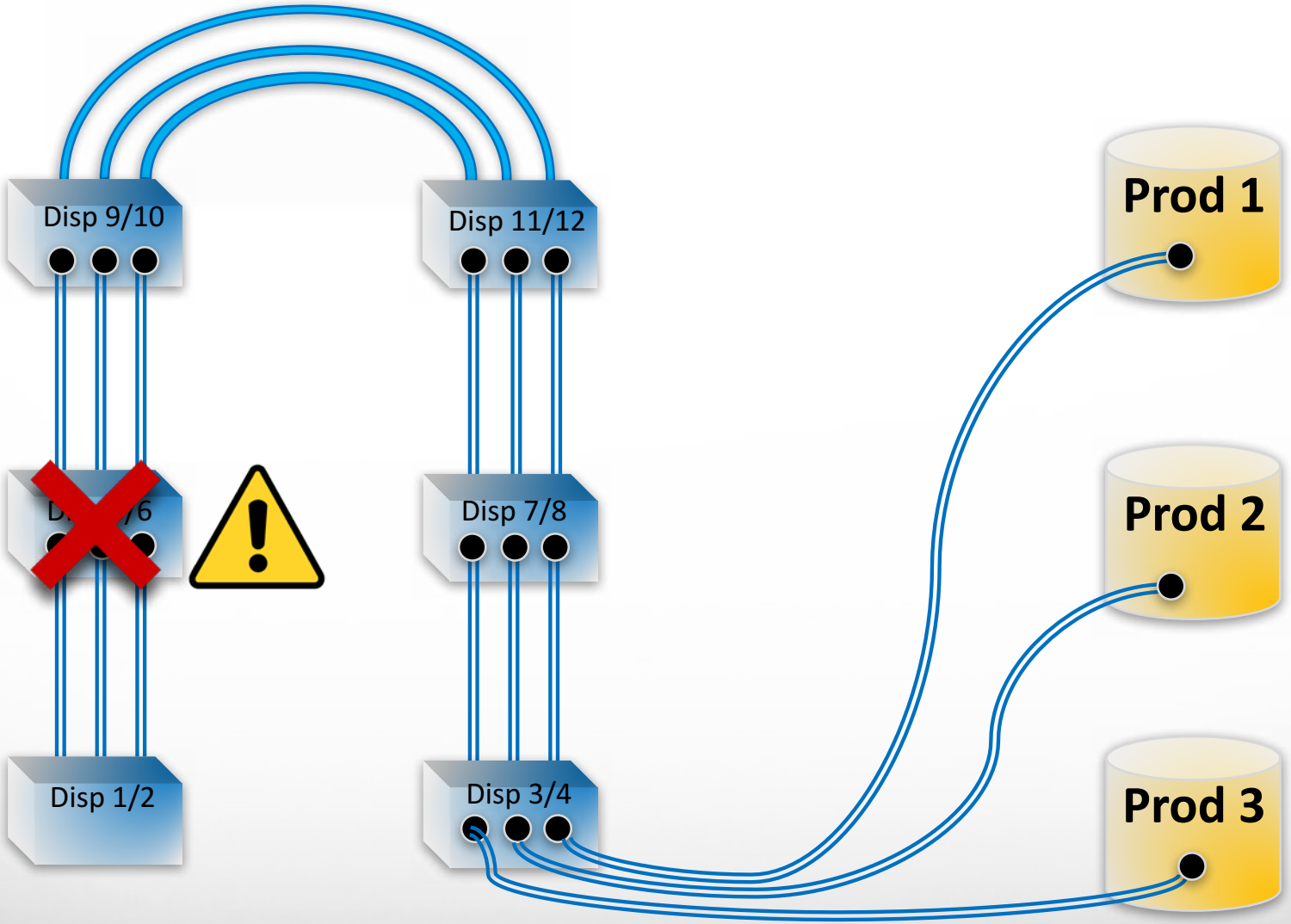
Just one of several possible scenarios.

Typical C-Store UST “Open System” Configuration



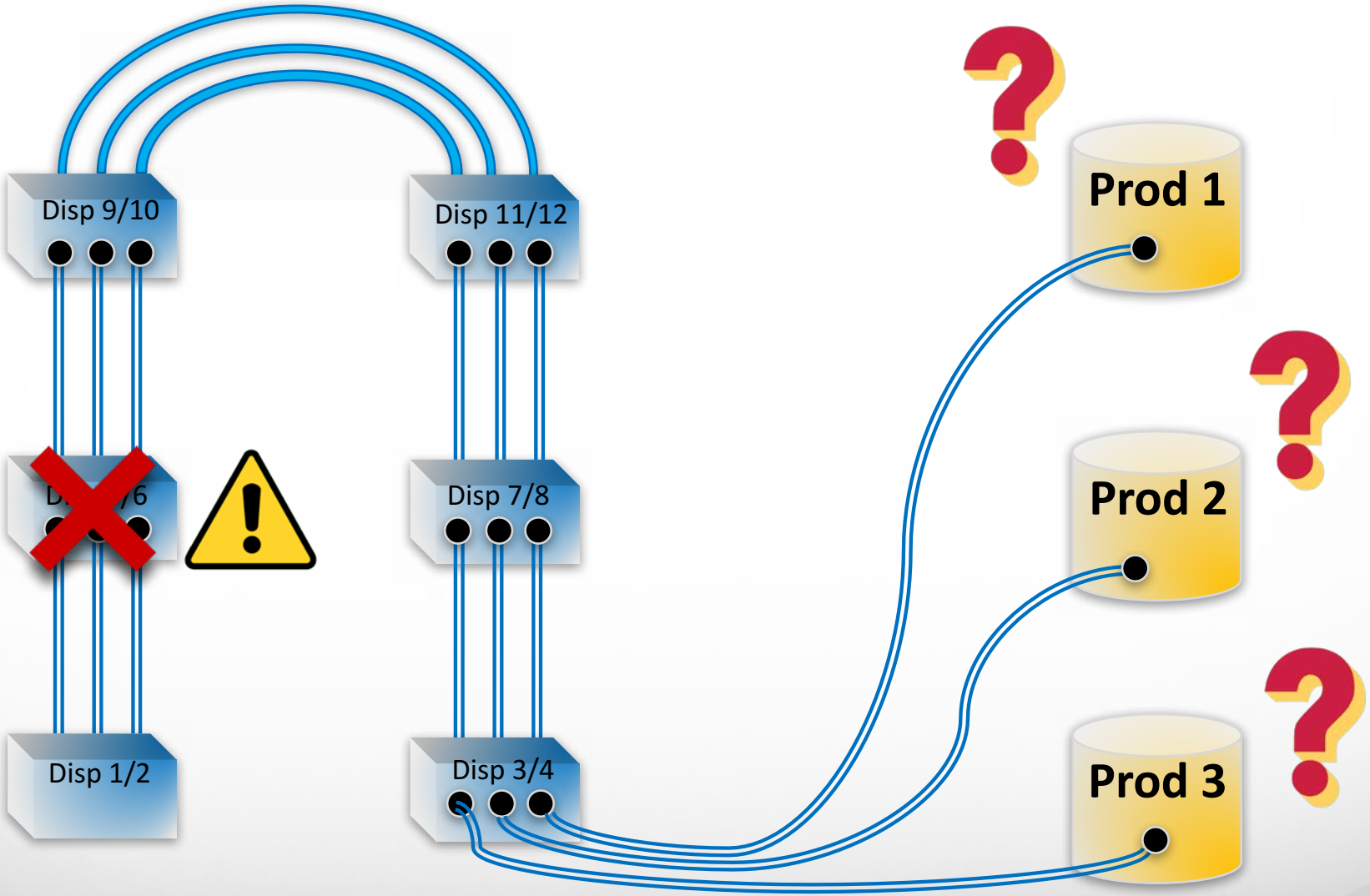
Leak detected by sensor at dispenser 5/6… Oh no!!!

Typical C-Store UST “Open System” Configuration



Dispenser is Shut Off per requirement… now what?

Typical C-Store UST “Open System” Configuration



Sensor not discriminitory… which product is leaking???

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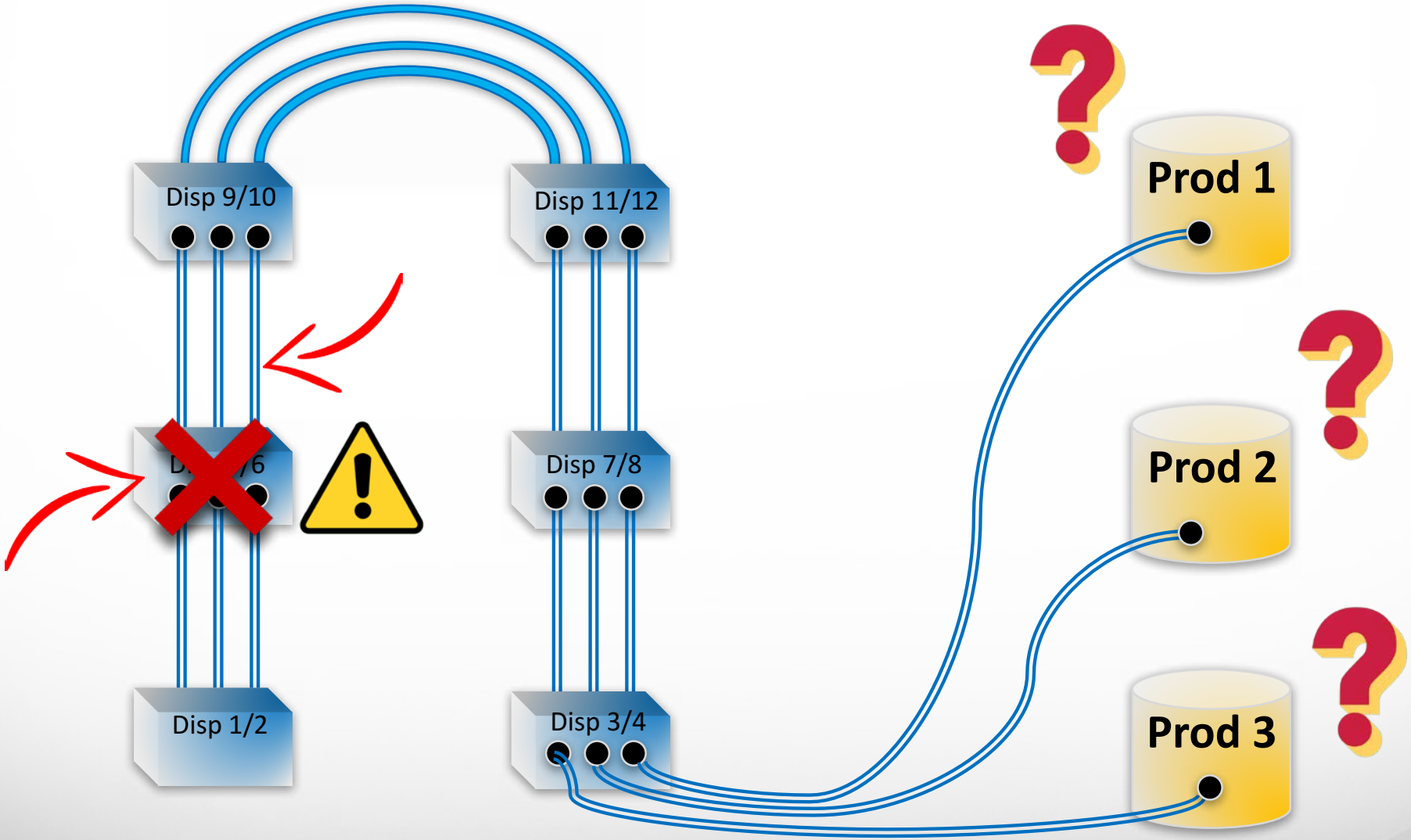

Leak could be in the line or at the sump directly.

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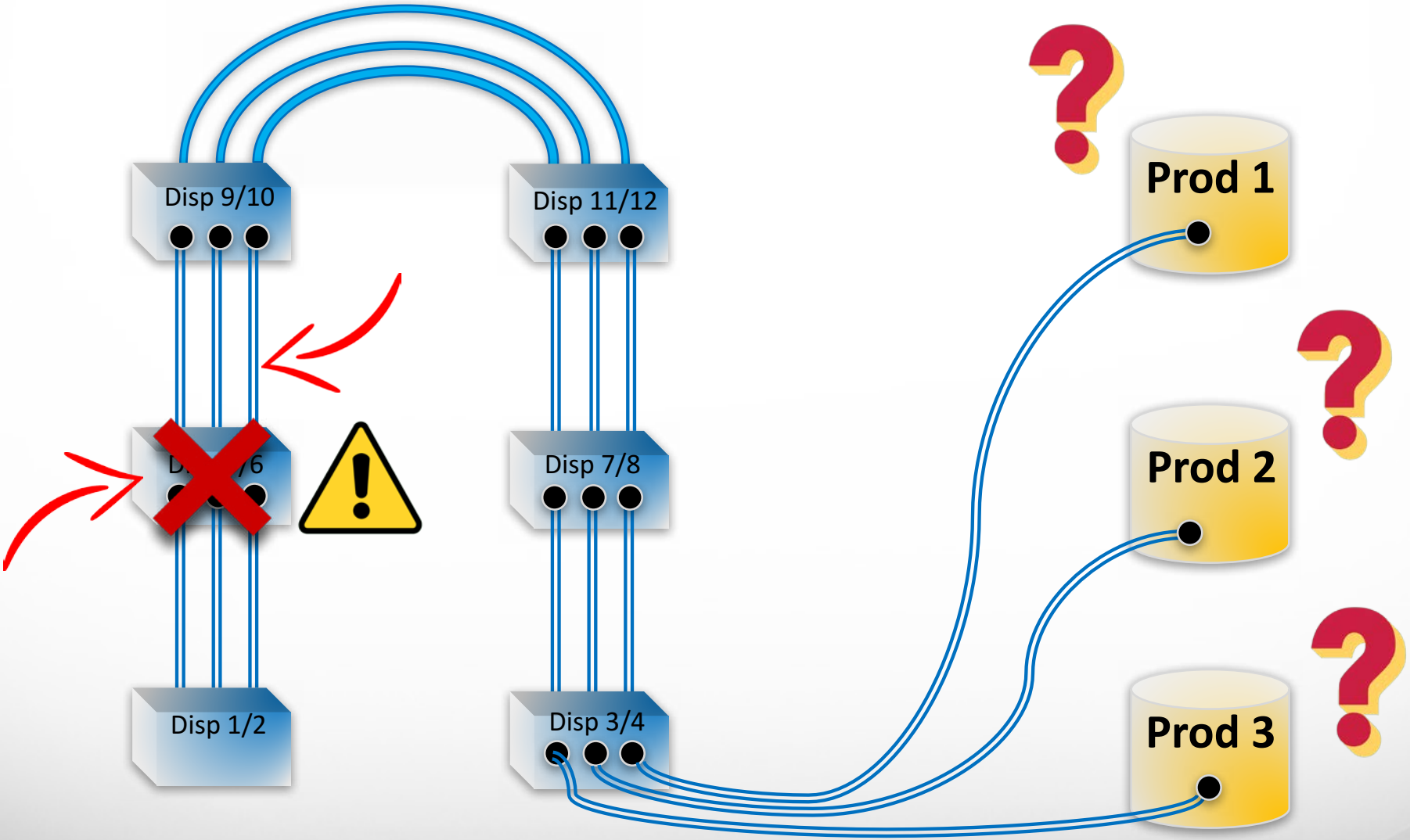
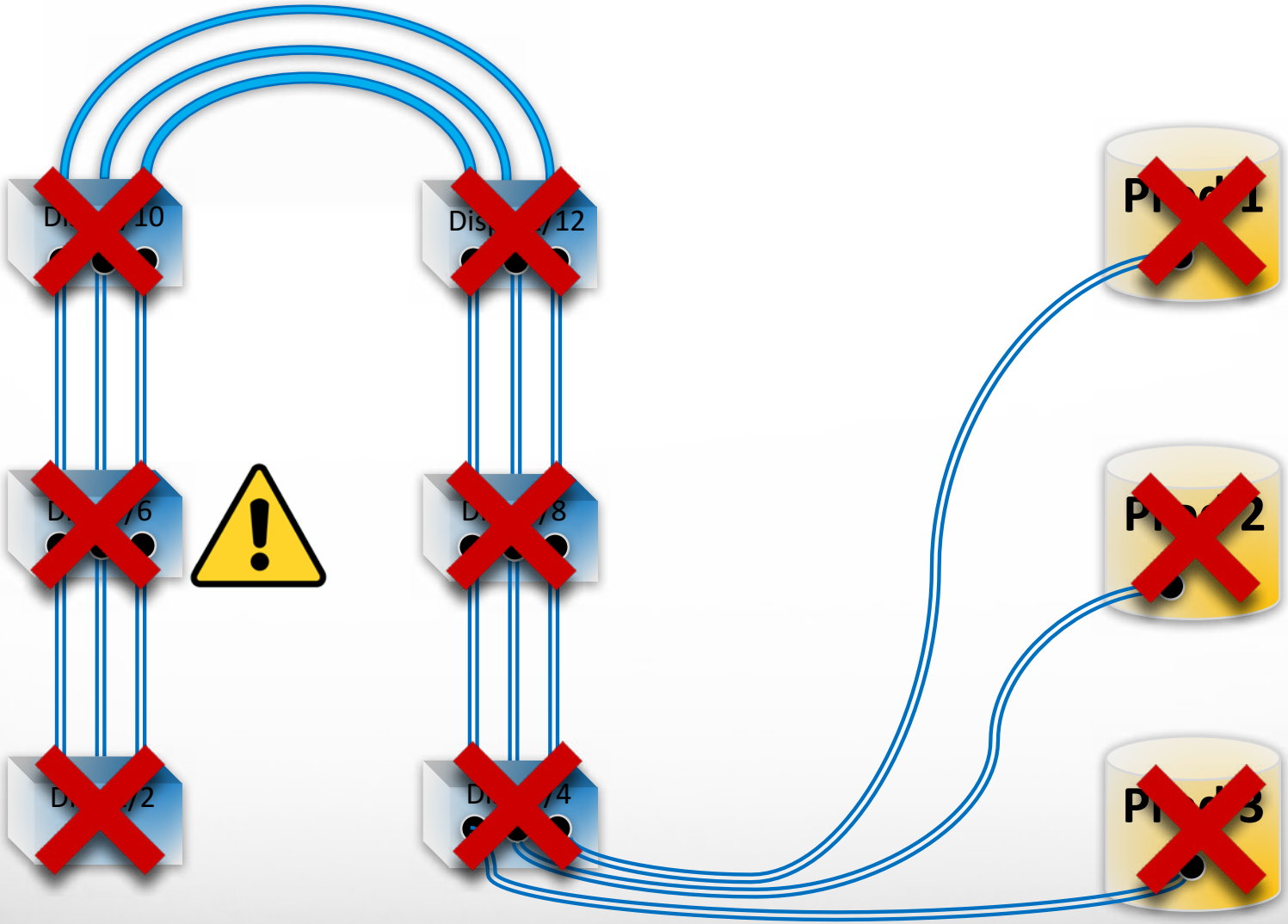


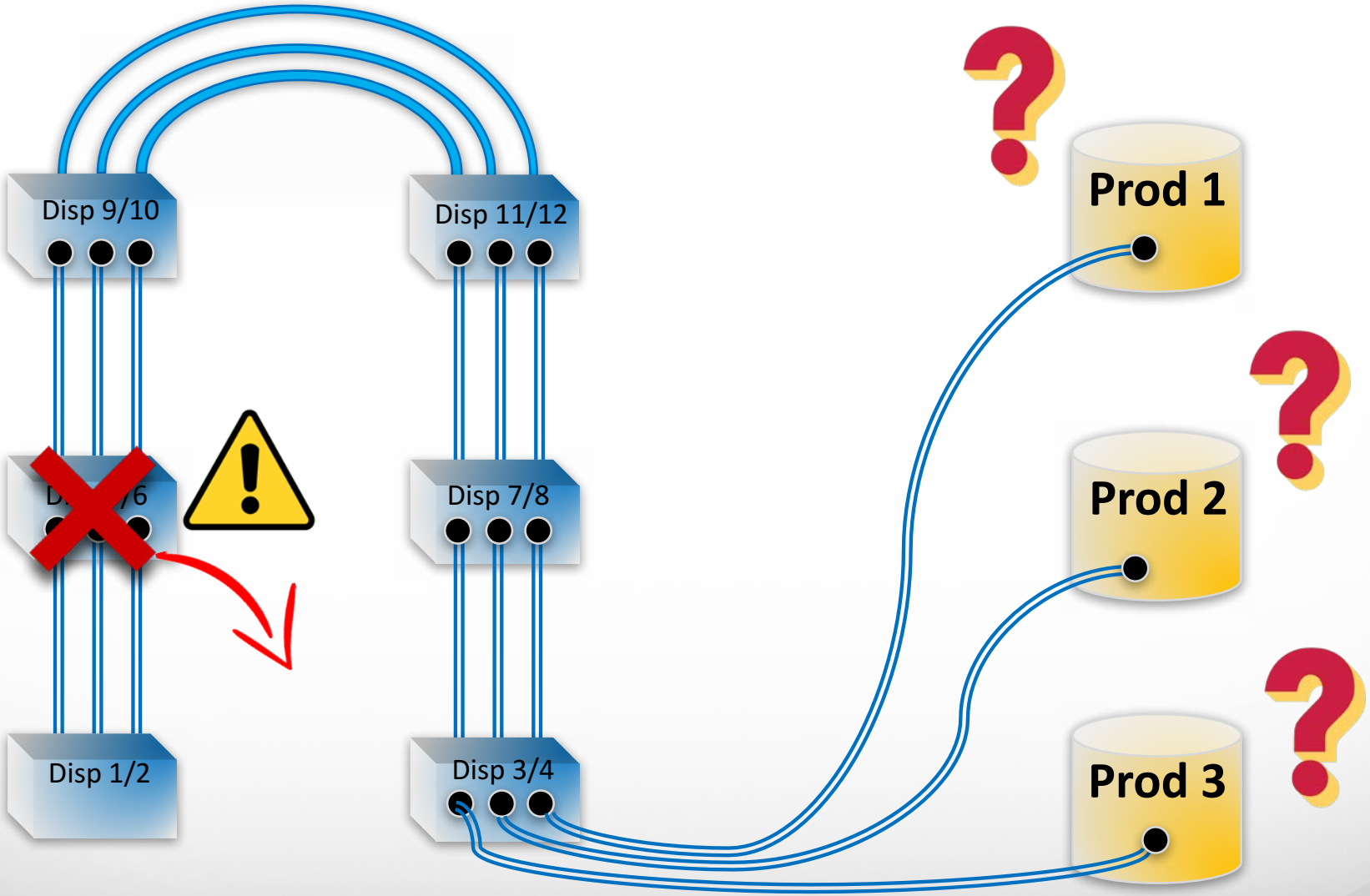
Unless the leaking product pump is shut off, the leak continues to be a problem… pressurized line.

Typical C-Store UST “Open System” Configuration



The only safe option for multi-product dispenser sumps is to shut down all pumps until problem resolved. Ouch!

Typical C-Store UST “Open System” Configuration



If correct pump is not shut off timely, and integrity of sump is bad (only low level testing), release is possible.

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Points to Consider

Even with visual inspections per 280.36 (a) (1) (ii), initial testing of visually "acceptable" sumps are currently showing a 60% - 70% failure rate throughout the industry.

Low Level Testing without first certifying sump integrity with RP1200 testing may leave many sumps with potential leak issues.

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Points to Consider

Low Level Testing places the risk of a release primarily on the correct function and placement of the sensor system since there is no assurance of the sump's integrity if the electronics fail. Of course the electronics never fail.

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Points to Consider

The current procedure, unless amended by the implementing agency, may not completely meet the requirement to be “no less protective of human health and the environment.”

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Points to Consider

Direct experience and contractor feedback has demonstrated that the retail market segment with 10 sites or less (independents) generally invest very little in UST system maintenance per site and have the most problematic leak issues comparatively. 50% of the market?

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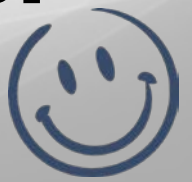
Points to Consider

Unlike RP1200 testing, the Alternate Low Level Test method may not "check" the behavior of "Bad Actors" and may actually increase release risks and the incentive to cheat in order to avoid positive shut down… mystery of the "floating sensors" and other creative "solutions" to sensor alarms.



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Points to Consider:

PEI has declined to accept Low Level Testing as a legitimate option within the RP1200 because of many issues related to maintaining sump integrity.

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Points to Consider:

How does an implementing agency enforce the correct placement and function of sensors in Low Level Testing sites in a way that won't be more burdensome to the agency?

Additional tracking requirements fraught with potential issues.

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Points to Consider:

Ultimately, sumps have to be equipped properly ($), inspected still, and sensors tested annually under Low Level Testing.

With efficiencies in RP1200 testing methods being developed, and cost effective treatment of test water, the cost difference/savings to owners is debatable.

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Testing is progress that will ultimately lead to less risk for all stakeholders.