



POSITION PAPER - UST COMPLIANCE

Date: August 13, 2018

Subject: Interstitial monitoring of open or closed piping systems in accordance with SC UST Control Regulation, R.61-92, Section 280.20(h)(4)

Regulation background/history: SC UST Control Regulations, R.61-92, Section 280.20(h)(4), requires USTs and piping installed or replaced after May 23, 2008, to be secondarily contained and monitored monthly for leaks. Leaks must be contained and the product removed immediately once detected. Monitoring methods include those allowed under Section 280.44(c) in reference to only Section 280.43(g) for pressure systems.

Discussion: Industry standard codes of practice, such as PEI RP 100, Appendix C, make reference to PEI RP 900, where interstitial monitoring systems are defined as open or closed systems. For all Interstitial Monitoring Systems, (Closed, Open, and Alternative), piping interstice must be open at the low point sump of the piping run, with a sump sensor being installed at the lowest point of the containment sump.

Options: At all other sumps, the following options are for facilities with pressurized piping installed after May 23, 2008, to meet the compliance requirements of Section 280.20(h)(4):

1. **Closed interstice system:** all interstice access points are closed and are continuous throughout the entire piping run with a sump sensor properly installed at the lowest point of each containment sump. Depending on the piping layout, crossover tubing may be utilized to maintain interstice continuity. Leaks from the buried portions of the piping will be forced under pressure to the low-point sump via the continuous piping interstice for detection. Because this system isolates other secondary containment sumps (dispenser and transition sumps) from the low point sump, typically at the STP, sensors are required to detect a leak before it exceeds the capacity of any sump.
2. **Open interstice system:** all interstice access points are open to allow liquid to flow freely into each containment sump. Monthly visual monitoring or sensor monitoring would be allowed at all dispenser and transition sumps because the open access points, with no tubing or fittings to obstruct openings, allow liquid to flow freely from sump to sump reaching the low-point sump sensor, typically located at the STP.
3. **Alternative interstice system:** the interstice access points may be open or closed, as described in options 1 and 2 above, but must allow each piping segment to drain liquid from the interstice into a containment sump. This system allows for test tubing/other connector components to stay attached but also remain open to a sump. This configuration may not allow liquid to flow freely from sump to sump. Therefore, a sump sensor must be installed at the lowest point in each containment sump and must detect a leak before it exceeds the capacity of any sump.

Note: Upon request other alternative interstitial piping monitoring designs will be evaluated by the Department.

Note: These regulatory requirements apply to any facility conducting interstitial monitoring on pressurized piping regardless of installation date. Facilities installed prior to the May 23, 2008 deadline may switch piping monitoring methods to another viable release detection method as outlined in Section 280.44(c) to remove their systems from the May 26, 2020 secondary containment system testing requirements.

Interstitial monitoring systems(piping) (Layman's Explanation)

Closed system:

Submersible turbine pump sump-interstice has to be open with a sump sensor. Sensor must notify operator either using a visual or audible alarm or shutoff power to the submersible turbine pump (positive shut-off). If the sensor is connected to an automatic tank gauge (ATG), you must keep monthly sensor reports. You must have 12 months of passing reports for each sensor location. All sensors must be function checked once every 365 days.

Secondary containment (dispenser and transition)-all interstices must be closed but continuous so that all liquid from the buried piping flows back to the STP sump. All dispensers must have a sump sensor that must notify operator either using a visual or audible alarm or shutoff power to the submersible turbine pump (positive shut-off). If the sensor is connected to an automatic tank gauge (ATG), you must keep monthly sensor reports. You must have 12 months of passing reports for each sensor location. All sensors must be function checked once every 365 days.

Open system:

Submersible turbine pump sump-interstice has to be open to allow liquid to flow freely and have a sump sensor. Sensor must notify operator either using a visual or audible alarm or shutoff power to the submersible turbine pump (positive shut-off). If the sensor is connected to an automatic tank gauge (ATG), you must keep monthly sensor reports. You must have 12 months of passing reports for each sensor location. All sensors must be function checked once every 365 days.

Secondary containment (dispenser and transition)-all interstices must be open so that liquid can flow freely into a sump. Monitoring can be done with visual monitoring or sump sensors. Sensors must notify operator either using a visual or audible alarm or shutoff power to the submersible turbine pump (positive shut-off). If the sensor is connected to an automatic tank gauge (ATG), you must keep monthly sensor reports. You must have 12 months of passing reports for each sensor location. All sensors must be function checked once every 365 days.

Visual monitoring will require a separate log other than the class A and B operator log. This visual monitoring log must indicate which dispenser was observed and if it was dry or wet. If the dispenser was indicated as wet, the log must also contain the corrective actions taken, the date, and the initials of the person conducting the monitoring. Logs can be downloaded from www.scdhec.gov.

Alternative system:

Submersible turbine pump sump-interstice has to be open with a sump sensor installed at the lowest point of the containment sump. Sensor must notify operator either using a visual or audible alarm or shutoff power to the submersible turbine pump (positive shut-off). If the sensor is connected to an automatic tank gauge (ATG), you must keep monthly sensor reports. You must have 12 months of passing reports for each sensor location. All sensors must be function checked once every 365 days.

Secondary containment (dispenser and transition)-interstices may be open or closed or a combination with a sump sensor installed in each secondary containment at the lowest point of the sump. Sensor must notify operator either using a visual or audible alarm or shutoff power to the submersible turbine pump (positive shut-off). If the sensor is connected to an automatic tank gauge (ATG), you must keep monthly sensor reports. You must have 12 months of passing reports for each sensor location. All sensors must be function checked once every 365 days.