Learning Event

OPERATING PROCESS EQUIPMENT

HAZARD
Chemical (flammable)

Loss of Containment

CONSEQUENCES
No harm to persons
Potential: Multiple fatalities

WHAT ARE YOU DOING TO PREVENT CORROSION UNDER INSTRUMENT TUBING BLOCK CLAMPS?

Description

An LNG plant has recently identified instances of corrosion underneath instrument tubing block clamps. This corrosion has led to tubing failure and leaks. Examples include:

- a hydraulic oil leak on a loading arm hydraulic system.
- instrument leak on an ethylene compressor discharge line from a ½ inch stainless steel instrument tube. The pressure in the line at the time was 6.5 barg. The line can operate up to 9 barg.

A survey of similar installations across the facility found further evidence of corrosion particularly in marine environments.

Why?

These types of clamps are widely used across the Industry. As they are commonly perceived to reduce the risk of corrosion, inspection regimes do not usually require that they are removed regularly to check for corrosion.

Habits

✓ Understand and use safety critical equipment which applies to the task.

Lessons

- Identify similar clamps to those depicted in this Bulletin. Inspect clamp points regularly to ensure that corrosion is not accelerated at these points. Replace any corroded piping.
- Investigate replacing with anti-corrosion technology clamps where corrosion is identified.
- Report incidence of corrosion to equipment manufacturers to help identify patterns of corrosion arising from use of these clamps.

Could this happen to you?

- Does your facility have these types of clamps? What service are they used in?
- Have you experienced similar incidents?
- Are you able to undertake spot inspections to ensure you are not experiencing the same issues?
- Have you investigated using clamps specifically designed with anti-corrosion technology where corrosion has been identified on lines and tubing at your facility?