Step Change Safety Alert Template

Alert Title

Hydrocarbon release from gas compression module

Incident Date

10th August 2013

Location Type

Semi-Submersible production platform

Specific Equipment Involved

Small Bore Tubing associated with the impulse line on the compressor

Description of What Happened

During routine access to the gas compression module, a member of the platform team became aware of a hissing noise in the area of the 3rd Stage Compressor. He summoned the operations team to assist in investigating where the noise was coming from.

While monitoring and visually checking the area the hissing noise was narrowed down to a small bore tubing impulse line associated with the 3rd stage of the gas compressor. Shutdown and blow down was manually initiated allowing access to be gained to the area at height where the leak was located.

Cause of Incident

Failure of the tubing was found to have been by corrosion assisted fatigue cracking. This was caused by under deposit corrosion due to contamination by epoxy deposits on the tubing surfaces, and was worsened by cyclic stresses on the line produced by vibration.

Incident Consequences

Hydrocarbon release

Lessons Learned

Increased inspection is required of small bore tubing for similar epoxy contamination and the presence and condition of pipe clamps and vibration damping.
Inspection programs should identify this as a risk.

Recommendations/Actions

- Failed impulse line sent onshore for metallurgical analysis to confirm failure mode.
- Review whether there is a recommended service life for instrument tubing in high pressure gas service
- Assess existing pipe runs and improve routing & support where possible to minimise vibration stresses.
- Assess the locations of existing fixed IR Gas Detectors to determine whether in the optimum position to identify low level cumulative leaks such as this event

Contact Details (Optional)

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