

Step Change Safety Alert Template



Alert Title

Failure of LP Separator Inlet Isolation Valve Stem Packing resulting in hydrocarbon leak through actuator 'tell tale' ports

What leaked and where from? E.g.: "Lube oil leak from compressor system open vent"

Incident Date

13th August 2013

The date on which the incident occurred, not when this form was completed

Location Type

Fixed production Platform

E.g. Floating/Fixed Production, Drill Rig, Vessel, etc.

Specific Equipment Involved

12" 1500# RTJ WKM Thro Conduit Gate valve with Axelson pneumatic spring return linear actuator.

Give as much detail as possible about the equipment involved

Description of What Happened

During start-up, external leakage from LP Separator Inlet Isolation valve was observed. This valve, which is a fail closed design is fitted to the LP Separator inlet header and is part of the platform ESD system. A leak to sea resulted. Production was immediately shutdown. The valve had not previously exhibited any failure mechanisms of this nature.

Be as detailed as possible. Give equipment history and approximate time(s) of actions/occurrences related to the incident

Cause of Incident

Inspection identified leakage through the stem seal area. The cause of the valve failure was ejection of the valve stem packing during actuator operation resulting in a lack of active seal when the valve is in the open position.

Upon inspection, the spiral spring clip which retains the stem packing had also been ejected and could be clearly seen above the stem packing. This spiral spring clip had been forced out of its retaining groove by the operation of the actuator.

Build from OIR/12 checklist

Incident Consequences

Production was fully shutdown. A quantity of production fluid was discharged to sea and details included on a PON 1

Include the release itself and any subsequent emergency actions/dangerous occurrences

Lessons Learned

All valves of this type or similar should be surveyed and maintenance histories reviewed for each. Any valves with potential to leak in a similar fashion should be considered for isolation and potential repair. Consideration should be given to modifying the stem packing retention mechanism on all valves of a similar design

Include a few bullet points clarifying what was learned from the incident

Recommendations/Actions

Valves of similar design have been identified and are being assessed for repair. Modifications to stem packing retention mechanism will be carried out on all similar valves irrespective of their condition upon inspection. Any valves with potential to leak in a similar fashion should be considered for isolation and removal for repair at the earliest opportunity

Include a few bullet points stating any recommendations/actions that will be made/taken as a result of the lessons learned

Contact Details (Optional)

Step Change

If you would like your submission to be anonymous, leave this section blank

