Step Change Safety Alert

Alert Title

Hydrocarbon release from flanged joint.

Incident Date

22nd May 2013

Location Type

Fixed Production Platform

Specific Equipment Involved

Control valve on a HP gas system (molecular sieves)

Description of What Happened

At approximately 0900hrs on the 22nd May there was an intermittent trace smell of gas in and around the location of the molecular sieves which could not be located. There was a strong wind passing through the module at the time, making detection difficult. At approximately 1400hrs an individual working in the area smelt gas and left the area to alert a member of the operations team. At 1410 the member of the operations team detected a visible gas vapour emanating from the flanged joint of a control valve and the molecular sieves were shut down and blown down.

Cause of Incident

Failure of control valve flanged joint

Incident Consequences

Hydrocarbon release and emergency shutdown action

Lessons Learned

- Thermal expansion together with fixed supports on the control valve resulted in high compression and bending across the leaked flange. The bending moment was deemed to have induced a considerable tension force on some of the flange bolts, resulting in the effective bolting loads decreasing at these bolts allowing the gas to escape.
- Consideration should be given to alternatives to fixed supports for pipes and/or valves on equipment which is subject to large pressure and temperature variations during normal operation.

Recommendations/Actions

- Assess pipe and valve support arrangements against design intent on all equipment that is subject to large pressure and temperature variations during normal operation.
- If applicable change fixed supports to rest supports.
- If applicable use alternative arrangements where supports are bolted directly onto the flanges with flange bolts.

Contact Details (Optional)

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