

HC Leak from Compressor Cylinder Head

Incident date

September 2011

Summary

A minor gas release was detected by hand held monitor from a cylinder head joint of a reciprocal compressor. The gas was escaping from a seal on the variable volume pocket (VVP). The compressor was shut down to investigate the release.

Alert ID:

Incident consequence

Hydrocarbon release

Cause of accident or incident

Uncontrolled release of a flammable gas or liquid

Location

Offshore Installation UKCS

Activity

Normal operations

Description

Minor gas release from compressor cylinder head

Gas was detected by a maintenance technician working near the VVP of an adjacent compressor. The investigation revealed that gas was passing the o-ring on the cylinder head arrangement. A small blister on the o-ring indicated where the gas was released. Checks of the bolt torques indicated a slight under tension on some of the bolts.

Specific Equipment

Variable Volume Pocket o-ring seal

Lessons Learnt

- O-ring was not properly installed but the system passed a pressure test
- Installation in congested area may have caused problems
- Bolt under tensioning allowed gas to pass at discrete location on the o-ring
- Torque wrench was in certification but calibration was suspected as incorrect

Recommendations

- Care needed when installing o-rings in congested areas as they may be misaligned or become damaged.
- Check calibration of torque wrenches regularly

Contact Details