

Gas Release from Small Bore Tubing



Description of Process:

The wellhead pressure transmitter is tied into a Xmas tree flange that is installed upstream of the production wing valve. The double block and bleed valve (DBB) is installed directly into Xmas tree flange.

The DBB was fitted during the well construction phase, with an adapter fitting designed specifically. This DBB connection was tested during the completion operation and was exposed to the well pressure and hydrocarbons during the well test.

The DBB forms part of the primary barrier when the well is flowing and allows the impulse line and instrumentation to be fitted during the well hook up phase. The impulse line and DBB, including connection to the flange were tested with nitrogen during the commissioning phase of the project.

Description of Incident:

- An intervention team arrived on a normally unattended installation (NUI) and heard an audible anomaly
- On area visual inspection during the standard arrival checks, there appeared to be a leak from the well

SAFETY ALERT

- A GPA and manual process shutdown (PSD) were initiated. This closed the wing valve, with the master valve and down-hole safety valve being closed manually
- A full muster was achieved
- The wellhead pressure transmitter indicated the pressure had bled off in the tree to 0.5 bar
- The flow line was de-pressurisation
- The muster was stood down
- Upon investigation, it was discovered that the coned and threaded connection was loose

Good Practice Guidance:

Fittings:

Autoclave installation competence and assurance: when impulse lines are fitted to small bore fittings, then the vibration on the impulse line should be measured with the well flowing. If vibration is noted, then additional support should be installed to the impulse line.

Detection

Review and update acoustic monitoring requirements - check acoustic detector alarm settings, based on actual background readings. Typically, acoustic alarm settings are set high to avoid false alarms, but on unattended installations the alarm settings can be lower.