

Remote Opening of eMotion®-LV Valve Delivers Significant Cost Savings to Customer

VALVE HELPS OPERATOR AVOID TWO WEEKS OF RIG TIME

UK NORTH SEA

CHALLENGES

- » Eliminate intervention for setting well barriers prior to removing the BOP and installing the subsea tree
- » Bring well online remotely from a processing plant

SOLUTION

- » eMotion®-LV remotely operated isolation barrier valve as a shallow-set barrier to facilitate the removal of the BOP and installation of the vertical subsea tree

RESULTS

- » Remotely opened via main umbilical MEG line, then brought online via 125km pipeline
- » No additional intervention required
- » Saved operator approximately two weeks of rig time, delivering significant cost savings.



OVERVIEW

Total E&P UK wanted to increase the efficiency of its Laggan Tormore subsea well operation by eliminating all interventions during completion mode. If Total E&P UK could not bring the well online remotely, then rig modifications would have been required, as the rig was not capable of running the combined subsea tree, emergency disconnect package (EDP), and lower riser package (LRP) as with larger, more modern rigs.

Halliburton proposed the eMotion®-LV remotely operated isolation barrier valve as a shallow-set barrier to facilitate the removal of the BOP and installation of the subsea tree. The eMotion-LV valve offered remote opening capabilities, which removed the requirement for rig upgrades while increasing operational efficiencies.

The remote closure of the eMotion-LV valve allowed Total E&P UK to set a secondary well barrier prior to removing the BOP and installing the subsea tree. The well was brought online by opening the eMotion-LV valve remotely via a 125km main umbilical MEG line, which eliminated the need for rig upgrades – thus avoiding approximately 10–14 days of rig time.

Using the eMotion-LV valve as a remotely operated shallow barrier enabled the well to be brought online remotely from a 125km main umbilical MEG line, and saved Total E&P UK two weeks of rig time, delivering significant cost savings.

CHALLENGES

Total E&P UK asked Halliburton to help the company increase the efficiency of its Laggan Tormore subsea well operation by eliminating all interventions prior to removing the BOP and installing the vertical subsea tree. Total E&P UK also wanted to avoid the delays that a rig modification would require in order to run the LRP/EDP in a separate trip as the rig was not capable of installing a subsea tree/LRP/EDP combined. Having the ability to bring the well online remotely would eliminate the requirement for rig upgrades.

SOLUTION

To address these challenges, Halliburton proposed the installation of the remotely operated eMotion-LV valve to act as a shallow barrier and to enable the well to be brought online without any intervention.

The eMotion-LV valve was run in hole with the ball in the open position. The valve was programmed to remain in a "sleep mode," ignoring all changes in downhole pressure during the displacement to base oil, the setting of the production packer, the tubing test, and the inflow test of the tubing-retrievable surface-controlled subsurface safety valve (TRSCSSV). Once pressure was bled off following a successful test of the TRSCSSV, the eMotion-LV valve was "awake" to look for the closing pressure command. The deep-set fluid loss device was cycled open, the TRSCSSV was closed and inflow tested to provide a primary well barrier. A low-pressure signal against the TRSCSSV triggered the eMotion-LV valve to close, creating a second well barrier to facilitate removal of the BOP and installation of the subsea tree. Following a successful installation of the subsea tree, the eMotion-LV valve successfully opened remotely 28 days after installation.

RESULT

Using the eMotion-LV valve as a remotely operated shallow barrier enabled the well to be brought online remotely from a 125km main umbilical MEG line, and saved Total E&P UK two weeks of rig time, delivering significant cost savings.

The successful installation of the eMotion-LV valve in this application has given Total E&P UK confidence to modify its completion installation program for future wells if connected to a processing plant. Now that the technology has been proven in this application, a light well intervention (LWI) could be used for contingency opening of the eMotion-LV valve. This would further increase operational efficiencies by not mobilizing the EDP/LRP and moving the rig as soon as the subsea tree commissioning was completed.

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