DEEP WATER

CASE STUDY

Operator Saves 42 Hours of Rig Time and $0.5M During Subsea Completion

EMOTION®-LV BARRIER VALVE ELIMINATES INTERVENTION IN HIGHLY DEVIATED WELL TO IMPROVE COMPLETION EFFICIENCY AND REDUCE OPERATIONAL AND ENVIRONMENTAL RISK

WEST AFRICA

CHALLENGES

- Eliminate intervention for setting the production packer in a highly deviated deepwater subsea well
- Install and test completion with TCP gun string in a single run
- Reduce rig time and risk during completion operations

SOLUTIONS

eMotion®-LV remotely operated barrier valve

- Used as packer setting device and to facilitate fluid displacement
- Unique programming to reduce risk of firing TCP guns prematurely

RESULTS

- Reduced rig time by 42 hours
- Saved operator $0.5M
- Recognized as an optimal solution for future operations in the remaining fields
- Successfully completed second installation

OVERVIEW

An operator wanted to increase efficiency and reduce operational risk during completion operations in its single-zone subsea wells.

To achieve the operations objectives, the completion design included a combined tubing-conveyed perforating (TCP) gun string below the completion string. In addition, the operator wanted to eliminate the intervention required to hydraulically set the production packer.

The operator performed a risk assessment of several techniques to determine the packer setting method that best met the completion design and ultimately selected the eMotion®-LV valve. Using multiple unique close and open commands, specifically programmed to fit the completion design, the eMotion-LV valve enabled completion deployment, packer setting without intervention, fluids displacement and TCP gun activation in a single run.

Compared to traditional plug methods, the eMotion-LV valve saved the operator 42 hours of rig time and $0.5M on a single-zone gas injector. Additionally, the eMotion-LV valve helped minimized safety and environmental risks. Following this successful operation, the operator decided to implement eMotion-LV valve technology in the upcoming single-zone wells planned for the remaining fields.

CHALLENGE

Due to a well trajectory of 77 degrees at packer depth, the operator wanted to eliminate intervention to set a hydraulic production packer because of the additional rig time, cost and risk associated with intervening in highly deviated, deepwater subsea wells. In addition, the ability to install, test and perforate the combined completion string with TCP guns in a single run and allow for fluids displacement required methodical planning and adoption of new technology to maximize efficiencies and reduce operational challenges.

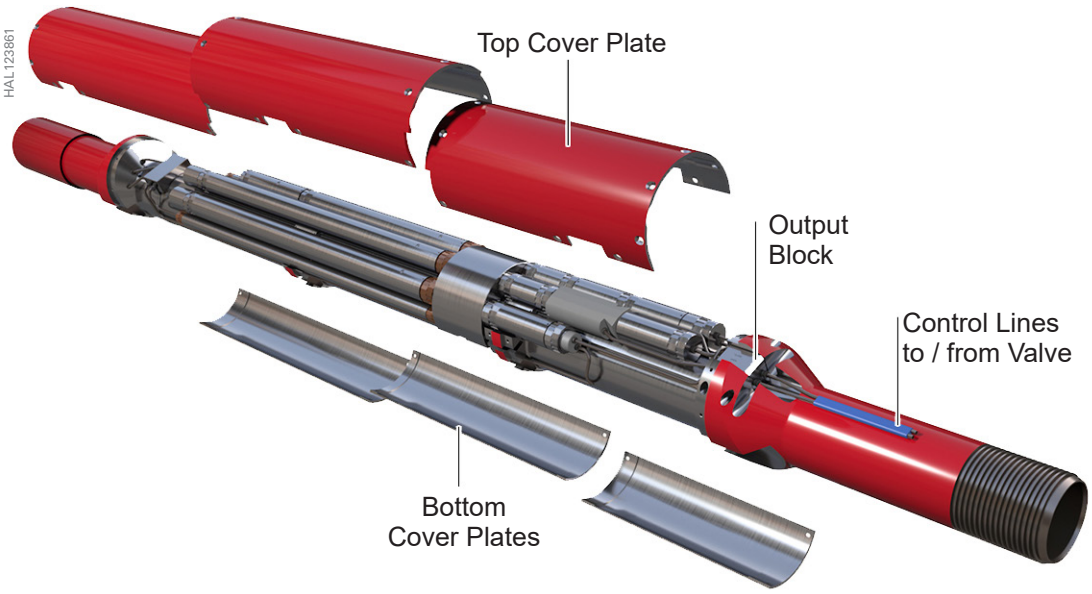
SOLUTIONS

Halliburton proposed the eMotion®-LV remotely operated barrier valve to set the production packer and install the combined completion with TCP guns in a single trip while facilitating the planned operational steps safely and efficiently.

The eMotion-LV valve was run in hole in the open position and programmed to close via hydrostatic pressure, which initiated a closing timer and allowed sufficient time to deploy the completion to final target depth prior to closing. Once the tubing hanger was landed, locked and tested, surface-applied pressure re-opened the eMotion-LV valve for a specified time to displace the packer fluid and base oil. With the eMotion-LV valve re-closed via the timer and the TCP gun string isolated below, surface-applied pressure set the production packer without risk of firing the TCP guns prematurely. Next, the tubing and annulus were both tested prior to locking open the eMotion-LV valve via surface-applied pressure. Finally, the TCP guns were fired to perforate the well and perform injectivity testing.

RESULTS

The eMotion-LV valve helped eliminate four wireline runs and 42 hours of rig time, which significantly reduced safety and environmental risks in this highly deviated, deepwater, subsea single-zone gas injector well and saved the operator $0.5M to maximize asset value. Using eMotion-LV valve technology vs. conventional plug methods also helped reduce emissions for this operation.



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