

Redesigned Wellhead Plug Saves Operator 12 Hours Offshore

V0 SRP WELLHEAD PLUG REPLACES PROFILE-LESS RETRIEVABLE BARRIER, REDUCING WIRELINE RIGUP AND ASSOCIATED HSE EXPOSURE

MIDDLE EAST

CHALLENGES

- » Replace shallow-set profile-less V0 retrievable bridge plug
- » Reduce slickline/wireline activity required
- » Minimize HSE exposure

SOLUTION

Redesign original SRP wellhead BPV used as debris barrier to V0 grade

- » Incorporate bi-directional seal
- » Conduct zero-bubble gas test

RESULTS

- » Replaced shallow-set barrier with V0 SRP wellhead plug during offshore completion
- » Saved 12 hours of slickline/wireline activity
- » Reduced HSE exposure integrity

OVERVIEW

Meeting the requirement for two qualified independent well barrier at each stage of a well’s life cycle is especially crucial when the blowout preventor (BOP) is nipped down and the Christmas tree installed. For the gas wells completed in a Middle East field, the operator previously met this requirement using two profile-less V0 retrievable bridge plugs, with an additional wellhead backpressure valve (BPV) plug run as a debris barrier. Like Halliburton, the operator’s objectives focus on solutions that help minimize exposure to health, safety and environment (HSE) risks while improving operation and cost efficiency. As part of the continuous improvement journey, Halliburton collaborated with the operator to develop a more effective and reliable solution, which included a modified SRP wellhead plug to replace the shallow-set, profile-less plug.

CHALLENGES

The SRP wellhead BPV was originally designed with a uni-directional seal stack, which could only be tested and subsequently qualified to hold pressure from above. To help ensure well integrity and match the sealing capability provided by the shallow-set retrievable bridge plug, the wellhead plug needed to provide a V0-rated seal that holds pressure from above and below.



Saved 12 hours



offshore rig time

*through effective
collaboration and
optimization*

SOLUTION

Modification primarily involved redesigning the SRP wellhead BPV with a single, bi-directional seal that would hold pressure from above and below, followed by a zero-bubble gas test to qualify the new plug to V0 requirements. To facilitate meeting this requirement, the plug redesign removed the backpressure valve feature but maintained the nipple profile and remaining plug design to help ensure no tubing hanger design or operational changes were required.

RESULTS

Halliburton Technology successfully tested the modified SRP wellhead plug, over a temperature fluctuation from 40 to 250°F, to API Specification 14L, third edition V0 requirements. The team then performed a system integration test of the qualified plug with the tubing hanger onshore.

During completion of a gas well in the offshore field, Halliburton and the operator agreed to run the V0-grade SRP wellhead plug instead of an upper retrievable bridge plug. The V0-grade SRP wellhead plug successfully provided a shallow well barrier and saved the operator approximately 12 hours of rig time required for wireline runs, thus minimizing the associated HSE exposure.

Through collaboration with the operator, Halliburton identified opportunities for improvement to optimize day-to-day completion activities and maximize asset value. Additionally, this successful well operation showcases how simpler solutions can deliver cost effectiveness and improve efficiency during well completion and execution.

**Reduced HSE risks associated
with wireline rig up/rig down and
surface equipment setup**

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