Case Study Well Barrier & Isolation

Full workover avoided through innovative use of an LWIV to perform first subsea slickline intervention in Nigeria

The Challenge

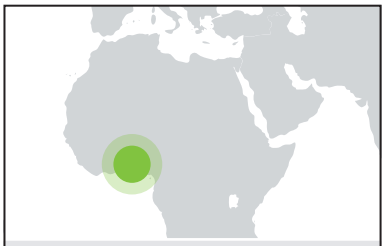
A Customer experienced a Tubing Retrievable Surface Controlled Sub-Surface Safety Valve (TRSCSSSV) failure on its subsea well at 951m, with 7000bopd production locked in.

The objective was to offer a cost effective solution which included setting a new type of valve in place of a full workover, in a challenging subsea environment.

Considerations

The TRSCSSSV is a safety valve system designed to be fail-safe and isolate the wellbore in the event of any system failure. Its malfunction in the 'closed' position had clear implications for well activity.

Ensuring well integrity was not compromised during the operation was a priority.



Location: Offshore, Africa
Customer: National Oil Company
Well Type: Single String Oil Producer
Casing Sizes: 5-1/2" 17lb

Products/Services: 5-1/2" SIM Retrievable Bridge Plug and Boost Running Tool

Significant cost savings (The alternative was a semi-submersible rig with day rate cost of US$1M)

10 days
Duration of subsea operation

7000+ bopd
Well production unlocked

15 hrs
Total length of time to conduct drift run and set solution

"Very good job by personnel and excellent performance of the equipment."

National Oil Company, Africa

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Peak's Solution

Peak collaborated with their Nigerian partner to support a Light Well Intervention Vessel (LWIV) operation using slickline. LWIV costs are significantly less than a semi-submersible rig with no requirements for support vessels.

Peak utilised the unique design of its SIM System to mechanically set (via slickline) a 5-1/2" SIM Retrievable Bridge Plug above the failed valve at 951m using Peak's Boost Running Tool.

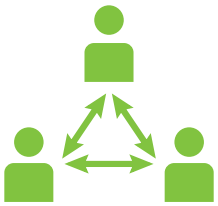
The Boost Running Tool is activated by downward jarring which primes an in-built hydraulic chamber, creating an augmented high force output, to ensure the device is fully set. The tool automatically shears when the required setting force output is achieved, allowing the tool to be released from the device.

A spacer measuring 5.4m, connected below the SIM Plug, acted as the hold open device and an autonomous Safety Valve below the TRSCSSSV, completed the flow control package.

A successful In Flow Test was carried out ensuring well integrity was ascertained and the well was returned to full operation.

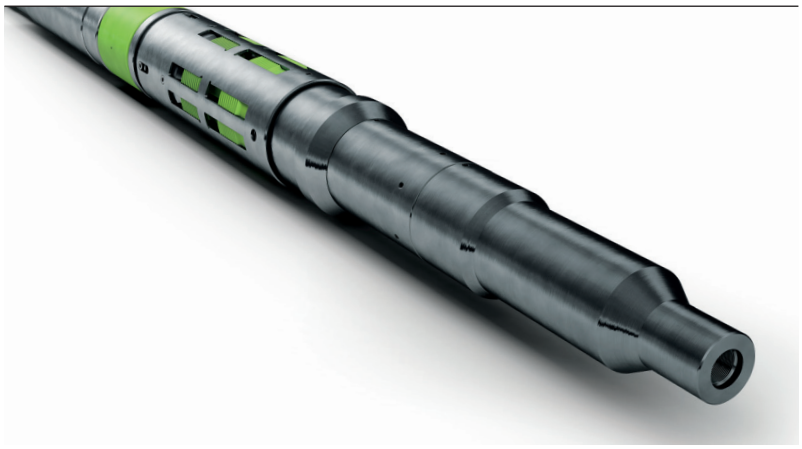
Value to Customer

Efficient communication ensured Peak and their Nigerian partner worked competently to provide the client with a prompt and cost effective solution.



Successful communication between all parties

The successful replacement of the valve (as an alternative to a full workover) and innovative use of an LWIV in Nigerian waters, to perform subsea slickline intervention, was significant.



▲ Above: Boost Running Tool
◄ Left: SIM Retrievable Bridge Plug

Product Code(s): Boost Running Tool - 364, SIM Retrievable Bridge Plug - 351

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