

Real-Time Live Testing of Equipment Proves Reliability in the Field

TRUE TO DESIGN, SP™ TRSV DELIVERS SUPERIOR PERFORMANCE AND REMAINS FULLY FUNCTIONAL AFTER 21 YEARS DOWNHOLE

ANGOLA

CHALLENGES

- » Well shut-in six years due to integrity issues
- » Multiple degraded barriers observed

SOLUTIONS

- » Well intervention to restore well integrity, clear hydrates and test all barriers
- » Function test SP™ TRSV before setting the bridge plug

RESULTS

- » SP TRSV fully functional after 21 years downhole
- » SP TRSV metal-to-metal flapper/seat successfully inflow tested



Real-Life
Demonstration
of Reliability

OVERVIEW

In 2001, Halliburton installed an SP™ tubing-retrievable safety valve (TRSV) in a subsea gas injector well drilled and completed for an operator in Angola in a water depth of approximately 4,429 feet (1350 meters). The SP TRSV was closed in 2016 due to well integrity issues. On returning to the well in 2022 to remove hydrates under the Christmas tree cap, the operator observed multiple barriers in a degraded state.

CHALLENGE

With the well expected to be taking losses, the choice of bridge plug was crucial to ensure its ability to set. Bridge plug selection also had to account for TRSV operation uncertainty after six years without functioning due to the reduced inner diameter (ID) if a hold open sleeve was required.

SOLUTIONS

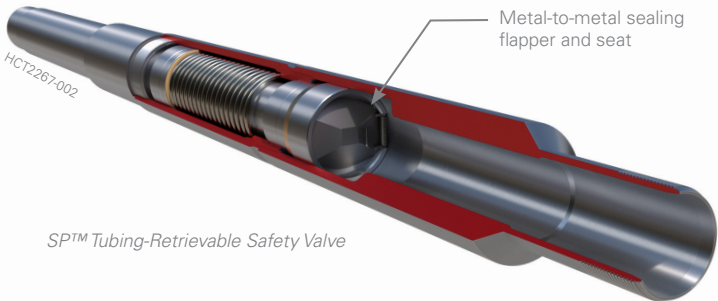
Integrated rig operations were performed to restore the well integrity, clear hydrates and test all barriers.

- » Run coiled tubing to remove the hydrates
- » Run slickline to perform a drift of the completion to the wireline entry guide
- » Deploy bridge plug on wireline and install in the upper completion just above the wireline entry guide

RESULTS

During intervention operations, the Halliburton Angola team function tested the SP™ TRSV several times to confirm valve operation and successfully performed inflow testing with its metal-to-metal sealing flapper and seat. The SP TRSV remains in service and the operator avoided additional intervention time and costs associated with valve replacement.

The ability to function after 21 years in the well demonstrates the SP TRSV's superior performance and reliability.



SP™ Tubing-Retrievable Safety Valve

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