

ProLATCH System and TruEdge* Inserts: A Solution for Deep-Water Subsea Wellhead Abandonment

Efficiently cut multi-casing and recovered subsea wellhead in a single trip, facilitating plug and abandonment operation offshore Japan.

Wellbore Integrity Solutions (WIS) achieves customers' objectives with successful engineering solutions for deep-water subsea well abandonment.

The customer needed to retrieve two subsea wellheads off the coast of Japan. We proposed using the ProLATCH one trip system to cut the casing and recover the wellheads in a single operation. One significant challenge was performing a dual cut of the 9⁵/₈ inch casing and the 24 inch conductor simultaneously. The 9⁵/₈ inch casing was cemented back to the surface, making it impossible to remove the inner casing separately. Additionally, conducting this operation in open water added further complexity to the pipe-cutting process.

During the job planning stage, WIS engineered a new casing-cutting knife to accommodate the longer knife sweep and integrated TrueEdge inserts technology. The job planning process also included detailed operation parameters, hydraulic analysis for the pipe cutter with the custom knives design, BHA centralization and detailed running procedure.

Leveraging our skilled personnel, WIS successfully executed this challenging operation to cut the concentric multi-casing string of 9⁵/₈ inch x 24 inch casing in a single run. The ProLATCH system flawlessly landed on the subsea wellhead, executing the dual-cutting operation while maintaining tension on the surface. Both the casings and the wellhead were then recovered in record time.



Wellhead and casing conductor retrieved with the ProLATCH System



New design arm set with TrueEdge Technology



9⁵/₈ inch casing x 24 inch conductor cut

CHALLENGE

A customer in Japan needed to recover subsea wellheads in a deep-water setting. The challenge was to accomplish a dual cut of the 9⁵/₈ inch x 24 inch casing configuration in a single run. However, existing tools couldn't fulfill this objective due to the non-standard casing configuration.

SOLUTION

The ProLATCH system was suggested and set up with newly engineered knife designs. These pipe cutter knives were specifically crafted to deliver an extended sweep, ensuring the necessary cutting forces could be applied. Additionally, the design was enhanced with TruEdge* inserts to optimize cutting time and operational efficiency. Detailed hydraulic simulations were conducted to evaluate the performance of the new knife design, including the added knife tip force.

RESULTS

- Accomplished the demanding task of cutting the multi-string 9⁵/₈ inch x 24 inch casing.
- Utilized the ProLATCH system for cutting and recovering the casings.
- Newly designed TruEdge knives met and exceeded customer expectations.
- This innovative solution facilitated the retrieval of the subsea wellhead and multi-casing string (9⁵/₈ x 24 inch) in a single trip.



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