CUTTING-EDGE SUBSEA DECOMMISSIONING IN THE DUTCH SECTOR OF THE NORTH SEA

ACTEON | ENERGY SERVICES

PROJECT OVERVIEW

Claxton, a cutting and decommissioning brand in Acteon's Energy Services division, was contracted to perform subsea severance of well structures in the Dutch sector of the North Sea. The well decommissioning campaign was performed from the anchor handling supply tug vessel Island Vanguard.

THE CHALLENGE

The mudline suspension (MLS) wells that were decommissioned were in water depths from 24 m to 50 m, requiring abrasive water jet cutting at 6 m to 11 m below the mudline. The wells consisted of both single-string and multi-string configurations, with mostly non-cemented cavities between the strings. The most sophisticated multi-string wells configurations were four-string wells which consisted of 9-5/8" x 13-3/8" x 20" x 30" casings.

CUSTOMER GOAL

To perform a vessel-based abrasive water jet cutting well decommissioning campaign of 30 cuts, both multi-string (11) and single-string (19) jet cutting was required, within the planned schedule of 40 days.

OUR SOLUTION AND ITS COMMERCIAL BENEFITS TO THE PROJECT

Market-leading services and integrated solutions

- The abrasive water jet cutting tool was deployed from the vessel through the moonpool and entered to the well with the help of the vessel crane. The cutting tool was submerged into the well and positioned at the relevant cutting depth below the mudline before the packers were activated to lock the tool inside the well and abrasive cutting was performed.
- The multi-string wells were without a standard subsea wellhead, meaning that the Claxton multi-string abrasive water jet cutting tool with mechanical inflatable sealing packers was used for the severance.
- The typical cutting time for the multi-string wells was 10 hours from the tool running into the hole up to the removal of the cutting tool from the well.
- The typical single-string well casing was 30" with 1" wall thickness. For severance of the single-string wells, Claxton used dedicated single-string tools based on the internal diameter of the casing. In this case, the internal cutting tool (ICT2436) for 24" to 36" casing range was used. The tool was deployed and entered the well in a similar way as the multi-string cutting tool but was secured mechanically with the help of several retractable arms without internal well sealing. When the tool was secured in the well, the retractable arm with the cutting nozzle was activated and the cutting process was performed.
- The typical cutting time for the single-string wells was two hours from the tool running into the hole up to the removal of the cutting tool from the well.
- After the cutting was performed and the tool was recovered to the vessel deck, the severed wells were pulled and recovered with the help of an anchor handle vessel winch.

Operational bases across the world

- The project was mobilised and demobilised from Tananger, Norway, providing proximity to the customer.
- There were five port calls in Den Helder, Netherlands, to offload severed wells and recovered debris and change crew.

Work at scale with a proven track record for delivery

- The abrasive water jet cutting spread consisted of a high-pressure water pump which delivered high-pressure water into the abrasive mixing unit (AMU). The AMU served to mix the abrasives and water in a controlled suitable ratio.
- The cutting slurry was delivered through the umbilical and stored in the umbilical winch to the abrasive water jet cutting tool located inside the well, several meters below the mudline subsea.
- 11 multi-string cuts and 19 single-string cuts and were performed with the help of abrasive water jet cutting.

PRODUCTS USED

- Abrasive water jet cutting
- High-pressure and ultra high-pressure water jetting systems