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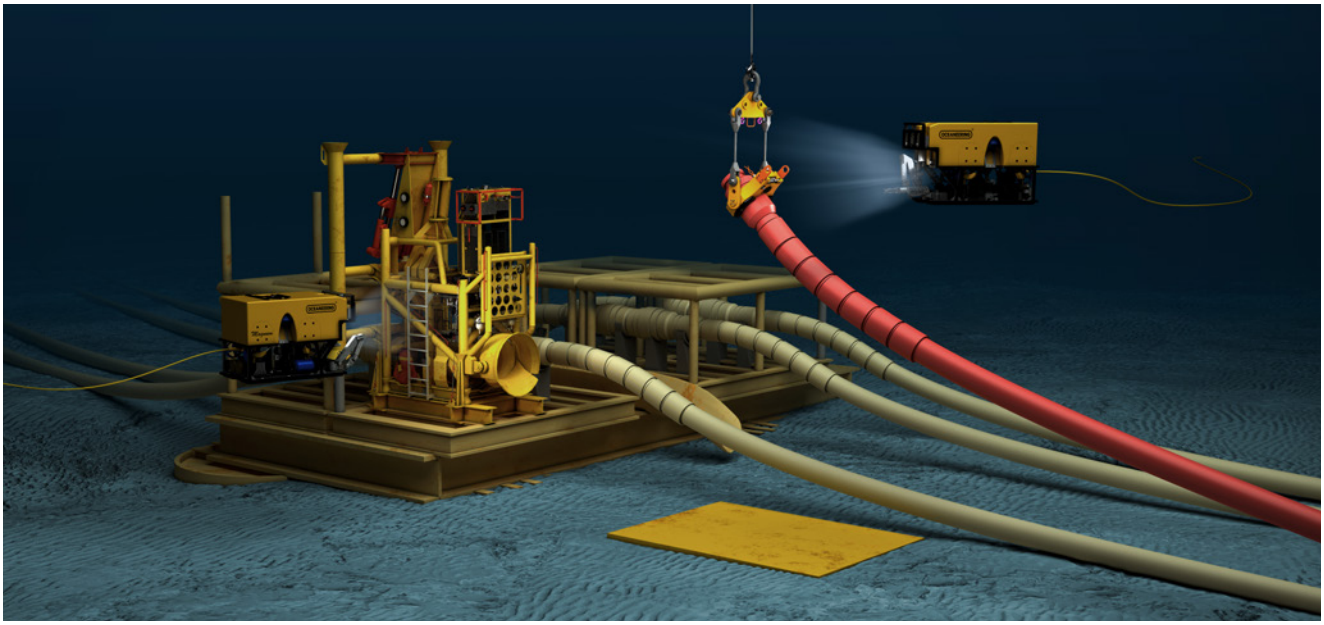
Replacing an offshore vessel with a hydraulic control pod and a laptop

Typical installation of risers requires two vessels including one for riser installation and another for installation and running a Pull-in and Connection Tool. In 2015, Statoil needed to change out subsea risers at the Troll field in the Norwegian North Sea. Statoil turned to Oceaneering to provide a solution that was safe and cost-effective.

Oceaneering was approached and challenged to analyze and modify the Statoil-owned "Pull-In and Connection Tool" (PICT) to save one construction vessel extensive mob-/demob costs during the change-out of subsea risers.

The current equipment owned by Statoil was space consuming and expensive to mobilize, operate and maintain. The information available from Statoil on the tooling details was outdated and limited. However, the engineers and technicians used the information available and performed testing and analysis to get the needed data/documentation to start the modification process.

Modifications involved moving from bespoke surface-controlled equipment to power and control of the PICT through the ROV umbilical. This was done by installing a modular control system and power pack directly on the PICT, and controlling and powering through a custom control software via the ROV infrastructure.



The modified PICT underwent thorough testing before first offshore campaign. Offshore personnel were properly trained and procedures were updated to reflect the PICT's new functionality.

During offshore operation, the re-designed version of the PICT successfully allowed Statoil to change out risers with the use of only one vessel instead of two vessels. Therefore, the savings made were equivalent to the cost of a construction vessel with a moonpool over the duration of the campaign as well as major savings in mobilization and demobilization.

With missing information and documentation on the current equipment, the very close relationship between Statoil's representative and the Oceaneering project team ensured that a new solution was delivered within the timeline of only five months from engineering start to deployment. If underlying documentation for building and operating equipment is unavailable, the engineers will produce new documents as part of the modification. For this project, the project team developed, executed and produced a remote control solution quickly and efficiently by utilizing decades of experience with subsea remote control systems. Much of the technology is already developed by Oceaneering in modular form, so the lead time for this modification was significantly less compared to other possible routes. Statoil was satisfied with Oceaneering's approach and solution to this project. Statoil now has an updated Pull-In and Connection Tool that has proven reliability with no downtime and can be utilized at significantly reduced cost compared to the original solution.

Highlights

- Field proven ROV operable solution for installation of risers
- Huge savings in mobilization/demobilization
- Requires a minimum of deck space and can be deployed by vessel crane
- 100% uptime
- 0 incidents