

The Headline: Design and manufacturing of bespoke hydraulic jacking and recovery tooling for subsequent Subsea Tree upgrade

Client: Unnamed Operator

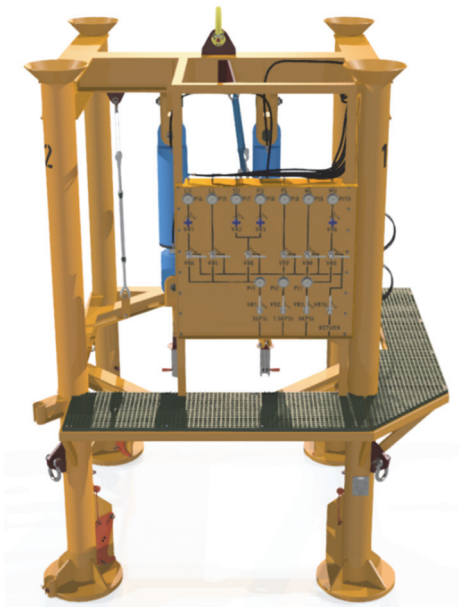
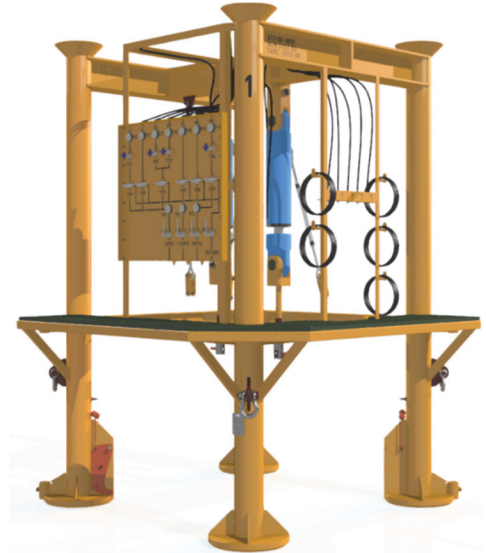
Location: Central North Sea

Year: 2023

Sector: Oil and Gas

The Challenge: As part of a re-development of their ageing subsea assets, our client required the removal of a Re-Entry Hub (REH) from the top of one of their subsea xmas trees (XT) to allow re-purposing of the well. The original running and removal tooling for the REH had been scrapped, and due to its age, the operability of the REH was questionable.

What We Did: We developed a bespoke REH removal tool for our client, which would allow them to mechanically over-ride the REH connector operation in the event that the connector hydraulics had become inoperable, and to provide an additional overpull of up to 126 tonnes to remove the REH if it had become seized. In addition to this core functionality, we also incorporated a diver platform and diver operable control panel to allow operation of not only the removal tool, but of the REH connector itself, simplifying the dive operation and reducing necessary vessel time. This was all integrated into a lifting frame, which also provided guidance of the REH for the initial portion of the lift, ensuring that the vital interfaces of the XT below, remained protected and in good condition for re-purposing of the well.



Astrimar scope of supply included:

- 🔧 Review of historic drawings and project documentation
- 🔧 Creation of CAD models of existing subsea equipment
- 🔧 Development of design concepts for the removal tool
- 🔧 Detailed design of the tool
- 🔧 Analysis of the tool and the existing REH and XT interfaces, by classical calculations and Finite Element Analysis
- 🔧 Client and Peer Design Review
- 🔧 Failure modes, effects, and criticality analysis (FMECA)
- 🔧 Production of manufacturing drawings
- 🔧 Manufacturing management
- 🔧 Development of test and operational procedures
- 🔧 Supervision of testing

Find out more

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