

WOODSIDE ENERGY LIMITED

ENFIELD PLUG AND ABANDONMENT (P&A) / VALARIS DPS-1 MODU

Subsea Support - TRT Frame, TRT Inspection & Test Stand and Jacking Mechanism

ICON Engineering was engaged by Woodside Energy Limited (WEL) to provide the engineering design and fabrication of a Tree Running Tool (TRT) Frame, TRT Inspection & Test Stand and Jacking Mechanism, onboard the semi-submersible Valaris DPS-1, in preparation for the Enfield P&A campaign. The key information of each key component is presented below:

TRT Frame

The TRT Frame is designed to interface with a third party provided TRT Crossover, to engage both the Enfield OXT and VXT Subsea Trees. When landed on the TRT Inspection & Test Stand, the TRT Frame will support the weight (and load due to vessel motions) of the Torus III Connector, Speedloc II, TRT Crossover, LRP and EDP.

Design Limit: 59,500 kg

Maximum Gross Mass: 18,700 kg

Designed to DNVGL-ST-E273 for Vessel-to-Vessel and Subsea Lifting.

TRT Inspection & Test Stand

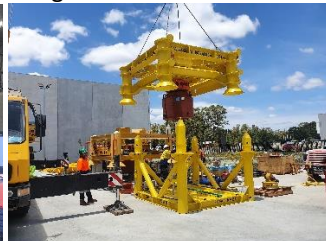
This supports the Torus III Test Stump and facilitates access to the production and annulus test ports, and to allow the Torus III connector gaskets to be changed out without lifting the TRT, improving rig operating efficiency. It also supports the load experienced when the EDP/LRP are stacked on the TRT during deck testing on the rig. There are multiple guidepost spacing configurations to suit either TRT Frame or EDP landout, subjective to operational need. It is designed to DNVGL-ST-E273 for Vessel-to-Vessel Lifting

Design Limit: 64,000 kg

Maximum Gross Mass: 5,500 kg



TRT Inspection and Test Stand



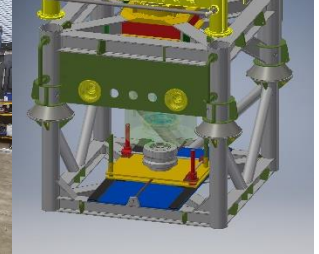
TRT Frame landing on TRT Inspection and Test Stand

Jacking Mechanism

The Jacking Mechanism is fixed to the TRT Inspection & Test Stand and provides a means of support of the Torus III Test Stump. It provides skidding (FWD-AFT) movement capability to enable personnel access and inspection of the Torus III Connector when offshore. It enables jacking (up-down) movement capability to engage the Torus III Test Stump to the Torus III Connector for operational testing requirements.



Jacking Mechanism Testing



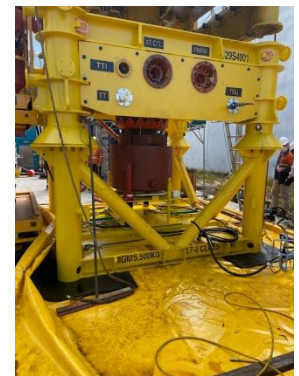
Jacking Mechanism Concept

Fabrication and Onshore SIT

ICON Engineering engaged local vendors for the fabrication and supply of all structures and equipment, and all fabricated items were delivered to WEL on time and within budget. Rigorous onshore System Integration Testing (SIT) operations were successfully completed with third parties during the weeks leading up to offshore operations.



TRT Inspection and Test Stand Load Testing



Jacking Mechanism during Onshore SIT

Operations and Maintenance Manual (OMM) supplied, outlining the following:

- Operating instructions for enabling the configurations of TRT Inspection & Test Stand to allow either TRT or EDP landout;
- Operating instructions of the primary and contingency skidding and jacking movements of the Jacking Mechanism;
- Routine maintenance requirements of the Jacking Mechanism; and
- Seafastening requirements for varying IRS Stack configurations and operating/weather conditions.

Overall Result – Execution on the Valaris DPS-1

The project was successfully completed in May 2022, when the IRS Stack (TRT, LRP and EDP) was deployed on the first well of the Enfield P&A Campaign.