

Rotech Case Study

TRS1-LD



Cable De-burial, Trenching, & Backfill Ops - Taiwan



Project Overview

Rotech Subsea was contracted by Jan De Nul to support cable de-burial, post-lay, and remedial trenching operations at an offshore wind farm located off the coast of Taiwan. The project involved working in water depths ranging from 30 to 55 metres with varying seabed conditions, including silty sands, clays, and very dense gravel with cobbles. Currents in the area reached up to 2 knots, with general sea states between 0.5 and 3 metres. The scope included de-burial of wet-stored export cable sections, export and inter-array cable remedial burial works, and backfilling operations. Rotech deployed its TRS1-LD Controlled Flow Excavation (CFE) tool to carry out these works.

The Rotech Solution

The TRS1-LD was deployed from the starboard side of the vessel using the ship's crane. Outriggers and clump weights were positioned fore and aft of the tool and connected via running lines to control orientation. The TRS1-LD remained suspended above the seabed and cable throughout all trenching operations. The vessel's dynamic positioning system was used to manoeuvre the tool along designated cable routes. USBL transponders were fitted to the TRS1-LD to provide precise positional data, ensuring accurate operation locations. A sonar imager mounted to the CFE tool monitored trench depth in real time, confirming both cable exposure during de-burial and correct burial depths for remedial works.

Rotech conducted initial trials over 10-metre sections using power levels between 30 and 80 percent. Various standoff distances were tested, with 1.3 metres from the cable and 2 to 4 metres offset from the trench line. Vessel speeds during operations ranged from 2 to 5 metres per minute, and trench depths between 0.35 and 1.2 metres below top of trench (BOT) were achieved.

Following the trials, the optimal settings were used to carry out the full trenching scope efficiently and to the client's specification. The TRS1-LD system, capable of delivering a maximum outlet pressure of 140 kPa and jet flow of 2,600 litres per second, performed well despite the variable seabed conditions.

Results

Rotech Subsea successfully completed all trenching and backfilling works on schedule, with no issues encountered. The TRS1-LD performed to expectations, achieving the excavation depths and specifications required by the client. Effective coordination and communication between the Rotech and vessel deck crews ensured safe and efficient tool launch and recovery operations. Final survey work by the client confirmed that all trenching operations met the required technical specifications. The project was delivered safely, efficiently, and to the satisfaction of the end client.



Project Information

Client: Jan De Nul

Scope: Cable de-burial, post-lay & remedial trenching, backfill ops

Water Depth: 30 - 55m

Soils: Silty sands, clays, very dense gravel with cobbles

Currents: Up to 2 knts

Sea State: 0.50 - 3m