

Case study: Dredging, coating removal and cutting of damaged pipeline



Overview

Allseas UK, tasked with installing the pipelines connecting the Total Laggan-Tormore gas fields 125km north-west of the Shetland Islands, encountered a damaged flowline due to a dragged vessel anchor.

Solution

Ashtead Technology's Mechanical Solutions specialists draw upon decades of experience to support construction, decommissioning, inspection, repair, and maintenance scopes throughout the offshore energy industry.

The team was enlisted to cut out the damaged pipework in Flowline 2 (FL2) of the Total Laggan-Tormore gas fields in the UK North Sea, ahead of replacement operations. FL2 comprised an 18in (457mm) OD x 25mm WT carbon steel pipe grade SAWL 450 FDU, with a 3LPP coating and 50mm thick outer Concrete Weight Coat (CWC).

The initial phase of the project involved the use of an 8in UCS Dredge System with a high-pressure Barracuda head to clear a channel under the damaged pipework.

Once this work was completed, the Coating Removal Tool (CRT) effectively and rapidly removed 1.2 metres of concrete coating and 3LPP undercoating.

With an innovative dual-nozzle design halving the debris removal time, the CRT is controlled by technicians topside using a bespoke SCADA control system. This enables the operators to see a graphical representation of the location on the pipe; an essential performance enhancement in poor underwater visibility situations.

The CRT is also able to clean a workspace of 1.5 metres in a linear pass before needing to be repositioned, outperforming comparable technologies. Any size or shape of area within this 1.5 metre area, including the full 360-degree circumference of a tubular, can be cleaned.

Finally, a 42" UCS Diamond Wire Saw completed six cuts, requiring only 44 minutes on average per cutting operation. The remnants were safely recovered to the deck of the Allseas vessel.

Benefits and value

Completed on schedule and with no lost time incidents, the dredging, coating removal and cutting operations were successfully delivered with minimal downtime and cost to the client. All remnants were successfully reclaimed, with no impact on the local environment.

In order to prove that the equipment was suited to the required work scope, a coat removal and cutting trial was performed at our Inverurie facility. It was found that the CRT was able to remove a 50cm long area of the concrete coating, over the full circumference of the pipe, in less than 40 minutes. Two opposing nozzles were used in a linear rotational pattern for effective cleaning.



This scope demonstrates Ashtead Technology's commitment to supporting clients at short notice with innovative solutions, drawing upon multiple areas of expertise across the Mechanical Solutions offering.

"We are passionate about collaborative working; not only to understand the challenges our client base face, but also to deliver tangible improvements to client projects worldwide.



Richard Lind, Operations Manager