North Sea: 24" Gas Export Pipeline Decommissioning

Overview

As a part of decommissioning scope, a 24" Gas export pipeline was required to be flushed with seawater to a cleanliness criterion of OIW (Oil in water) content <30ppm. The pipeline length was 1000m with an estimated volume 150m^3 of condensate present in the line.

Challenge

Due to the pipeline being tied into a producing export system and being liquid filled, this meant conventional options such as cleaning pigs were not suitable and would involve subsea hot taps into the pipeline. This approach would have involved extensive vessel time and coordination of multiple critical vendors to execute the hot tap, flushing, and isolation scopes. Additionally, the intervention would have necessitated a production shutdown of the downstream export pipeline connected to the manifold. Further to these challenges, the additional concern of weather which can impact the schedule was also considered. This method was then ruled out due to high cost, lead-time and the technical challenges associated.

Solution

Following an engineering assessment, **Flexi-Coil®** was selected for its unique capability to negotiate multiple short-radius pipe bends at both surface and within the export riser, enabling a fully platform-based decommissioning campaign. The modular Flexi-Coil® package was distributed across multiple platform decks and installed remotely from the riser tie-in point, demonstrating its adaptability to the production facility's space, weight, and layout constraints.

High-pressure seawater jetting was used to displace condensate from the pipeline and return it to the client's disposal well. The pipeline was subsequently displaced with inhibited seawater, achieving the specified cleanliness criteria of OIW <30 ppm.

Result

- Pipeline flushed & cleaned to OIW<30ppm to allow the pipeline to be decommissioned and left in situ.
- Client was able to complete flushing operations in <3 days of operations activity

Value to Client

- The client eliminated the need for a costly subsea intervention with a vessel
- No production shutdown was required in adjoining downstream pipeline.
- Reduced exposure to weather delays versus a subsea intervention operation (winter operation).

An *Unparalleled Intervention Solution™*

- **Flexible Positioning** Lightweight, compact hardware and flexible composite tubing mean Flexi-Coil® can be hand-positioned across multiple laydown areas and remote from system tie-in points.
- **Bend Beating** Flexi-Coil® work-string and BHAs can navigate up to 1000° of short radius pipe bends - without causing abrasive wear to the inner-wall or flexible carcass.
- **Easy Entry** Direct Vertical Access is not required, unlike with conventional steel Coiled Tubing or HWO Units, enabling intervention on all facility types.
- **Extended Reach** Achieve distances of up to 21,000ft on the horizontal.

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