

# Oceaneering Offers One-Stop-Shop Reel Refurbishment in Angola

Local in-country Oceaneering team provides all necessary services and saves client approximately USD 3 million



## Project Overview

In Angola, a client's installation and workover reeler and umbilical had deteriorated into a non-operational condition due to wear and tear. The client needed a cost-effective solution and approached Oceaneering to overhaul its existing equipment. The local Oceaneering team successfully refurbished the equipment, eliminated delays with the shipping of parts, and provided all necessary services at one location – enabling the operator to avoid purchasing new equipment, which ultimately saved the company approximately USD 3 million.

## Issues

The two main drivers for the project were that the umbilical needed to be replaced, and some of the drive and level wind equipment required servicing or replacement. With the umbilical removed, the reeler needed to be completely refurbished to original equipment manufacturer (OEM) specifications.

The operator had to decide whether to purchase a new system, to return the existing equipment to its point of origin for servicing outside of the country, or to service the existing equipment in-country. The operator decided

not to purchase a new system or to return the existing equipment to its point of origin, as these options would involve significant costs and scheduling delays. However, for this in-country reel refurbishment project, the operator faced the challenges of finding service provider to evaluate the system, locating a sufficient area dedicated to re-spooling, re-terminating the new umbilical and obtaining the services required on demand throughout the project.

Oceaneering was selected over the OEM due to the Oceaneering team's in-country staff and its one-stop shop facility in Viana, Luanda, Angola. The facility had the equipment and space to service intervention workover control systems (IWOCs). Oceaneering could offspool and store the old umbilical while the reeler was disassembled and rebuilt. The entire reel and reeler could be shot blasted and painted, and mechanical repairs could be carried out in the Oceaneering machine or hydraulic shop. Additionally, all work could be inspected by onsite non-destructive examination (NDE) personnel. The Oceaneering Viana facility was, therefore, very cost effective, as all services could be provided on site and not subcontracted out to third parties.

### The Oceaneering Solution

The Oceaneering team in Angola determined that it could complete the full project at its manufacturing facility in Viana, Luanda, which was fully equipped to service IWOCs. The scope of work would include shot-blasting and painting, manufacturing and/or repairing parts, ordering new parts through the Oceaneering supply chain management system, and then rebuilding and testing the reeler.

### Execution Plan

The rebuild process was successfully managed from Angola. The Oceaneering team was responsible for all aspects of the work, including assessment, troubleshooting, sourcing, and provision of all replacement parts.

Oceaneering was also responsible for reinstalling and testing all controls as per piping and instrumentation schematics for the reeler. The drum was removed from the reeler and all bearings were serviced. Oceaneering also rebuilt and modified the subsea termination of the umbilical. The umbilical was an integrated electro-hydraulic design, and all testing of the umbilical was



done to original Factory Acceptance Testing (FAT) specifications. All assessments, repairs, and testing were conducted by Oceaneering personnel, except for termination of electrical cable which was conducted by a third party.

Upon completion of testing, a new tarp was placed over the system, and it was then transported approximately 31 miles (50 kilometers) to a storage facility.

### Challenges

This project marked the first time that the Oceaneering Angola team had undertaken such a large scope of work of this type in country. While Oceaneering in-country personnel had experience operating and performing typical maintenance on IWOCs, it had never performed a complete strip-down and rebuild operation in Angola. In addition, the system had been built by another company. To address this issue, the Oceaneering Angola team consulted Oceaneering subject matter experts (SMEs) in Houston as needed. If an issue was not clear, then the OEM was contacted. This procedure enabled the work to be performed safely and efficiently.

### Results

Providing a one-stop shop in Angola for this project enabled Oceaneering to eliminate logistical and scheduling issues, and to provide an efficient progression of work. Effective team communication ensured that information was shared promptly. Performing all the work at one facility, and without subcontractors, ensured that the Oceaneering team could refurbish the client's existing equipment efficiently, safely, and successfully. This helped the operator avoid purchasing new equipment to replace the existing equipment, thus ultimately saving the client approximately USD 3 million.