

Oceaneering Inspects Oil Export Line Without Disrupting Traffic

Guided Wave Ultrasonic testing eliminated the need to disrupt transport of personnel offshore



Project Overview

An overdue inspection on the soil-to-air interface of an African oil export line proved to be problematic as the 42-inch line runs under a heavily travelled road, which is the main route to a busy dock. Rather than excavate the road and halt traffic, Oceaneering successfully assessed the line using guided wave ultrasonic (GUL) technology.

Issues

The inspection needed to be completed due to the fact that soil-to-air interfaces of pipelines are prone to corrosion, which can reduce a pipe's thickness and cause a rupture. In the past, the road would have been closed, the soil around the pipeline dug out, and the protective coating removed. Depending on its condition, the pipe might be grit blasted, and then a visual inspection and possibly an ultrasonic inspection would be conducted. However, closing the road was not feasible, as it would cause delays in the transport of personnel offshore.

The Oceaneering Solution

Oceaneering proposed the use of GUL testing to assess the line at the soil-to-air interface and beneath the road. This testing method has been used frequently in the oil and gas industry, but the adaptation of this technology in Africa has been slow. Prior to the inspection, GUL was seldom used at this site because the client didn't fully understand the technology and its different applications. However, the client's management team had changed, and the new team was familiar with the technology and agreed to its use.

Execution Plan

The GUL testing equipment and a qualified technician were already on site when Oceaneering received the client's inspection request. To conduct the inspection, a guided wave transducer ring was assembled with multiple pairs of transducers. The transducer ring was then placed around the pipe circumference approximately 10 ft from where the pipe entered the soil. The system generated ultrasonic waves along the length of the pipe to a distance of 20 ft underneath the road surface, successfully confirming the pipe's integrity.

Equipment Highlights

- » Wavemaker™ G4 Mini by Guided Ultrasonics Ltd
- » Guided wave inflatable Transducer™ ring by Guided Ultrasonics Ltd

Results

The export line was successfully inspected without requiring a work crew to manually excavate the road, which would have taken at least two weeks. Examining the pipe's integrity also ensured that a rupture wouldn't occur, costing the clients millions in financial losses and potentially costing human life.



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