TECHNICAL BRIEF

TELETEST™ FOCUS+ IN CORROSION UNDER INSULATION APPLICATIONS

The Teletest FOCUS+ system is a guided wave non-destructive testing (NDT) technique developed to screen pipework for metal loss damage.

The technique is a pulse-echo system that aims to inspect large volumes of material from a single test point. The initial application for the technique was for the detection of corrosion under insulation (CUI) for the petrochemical industry, but it has found widespread use in other inspection situations where pipes and tubes are inaccessible. Examples of this are lines that are buried, encased in sleeves, or elevated above ground.

Figure 1 Location of anomaly area highlighted in Figure 2

Eddyfi Technologies was commissioned by one of its customers in Argentina to use FOCUS+ on two cryogenic jetty lines 76.2 mm (3 in) and 203.2 mm (8 in) in diameters. The inspection proved to be very successful with both lines being completely inspected over a two-week period.

Each jetty line was approximately 2 km (1.2 mi) long including several expansion loops and pipe bridges.

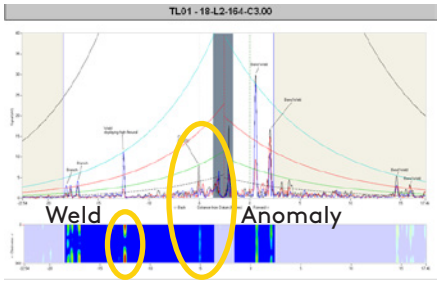

Figure 2 TL01: location of detected anomaly

Several anomalies were identified during the inspection and followed up while operators were still on-site. The first identified anomaly was located during the opening shot of the inspection—this was of utmost interest to the customer as the location was difficult to access as seen in Figure 1. An anomaly classified as medium priority was identified approximately 3 m (9.8 ft) from the tool position (Figure 2).

The area of interest was directly above water, so an access platform had to be erected to follow up. When the insulation was removed, the inspection team identified external corrosion at the 180° position in Figure 3. This area of corrosion was approximately 1 m (3.3 ft) long with a wall loss of 35 %.

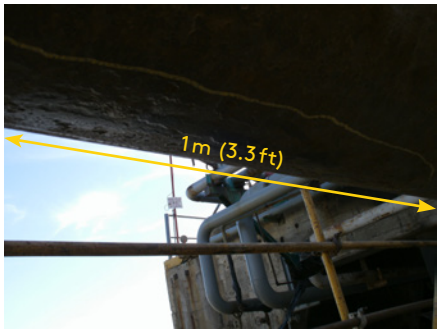

Figure 3 Corrosion detected at 180°

The A-map scan (Figure 2) also served to identify this anomaly. The signal from the weld detected approximately 13 m (42.7 ft) from the tool does not display an axisymmetric response. The echo response from the weld signal should be appear as an even distribution of color, representing a uniform circumferential signal amplitude. The anomalous signal increased the confidence of the operator that the signal seen at 3 m (9.8 ft) was, in fact, a wall loss defect.

Eddyfi Technologies

www.teletestndt.com info@eddyfi.com