

Case Study

Project: Pipeline Integrity Assessment

Scope: Revisit of Target Locations utilising subsea Automated Ultrasonic Inspection (AUT) with subsequent Fitness for Service Review.

Equipment: Subsea export pipeline transporting produced fluids (gas, condensate and water).

Solution:

Phase 1: Revisit of 2 off Target Locations where previous degradation had been highlighted by ILI. Subsea AUT Inspection comprised 20 off grid scans for Target Location 1 and 10 off grid scans for Target Location 2. Accurate inspection allowed detailed measurements of both the extent and depth of the degradation to be produced and also confirmed relative minimum thicknesses.

Phase 2: Revisit of current condition of Target Locations and prediction of relative corrosion growth. Analysis carried out in accordance with the requirements of DNV-RP-F101 for both single and interacting defects. Accurate corrosion growth assessment utilising Sonomatic proprietary statistical methods. Review extended to encompass B31G, modified B31G and RSTRENG and also to include the effects of potential thermal compressive longitudinal stresses.

Benefits:

The Inspection activity and the subsequent FFS concluded that the subsea export pipeline could operate safely and that the corrosion growth was in line with the expected degradation highlighted as part of the Design Basis. This provided confidence in continued operation with an extended period to the next inspection. The benefits of conducting a FFS with Sonomatic are:

- **Accurate measurement of defects**
- **Representative defect definitions for FFS ensuring an appropriate level of conservatism**
- **High confidence in corrosion rate estimates based on statistical analysis**

Figure 1:

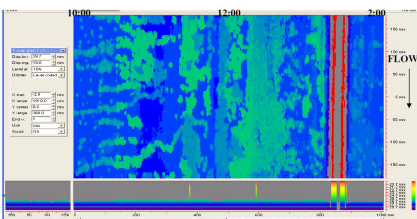


Figure 2:

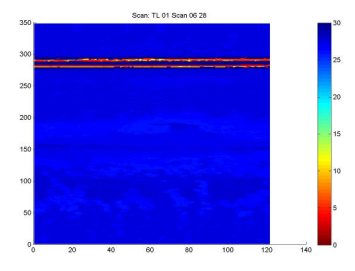


Figure 3:

