

CASE STUDY

PIPELINE INTEGRITY ASSESSMENT

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SONOMATIC

INTRODUCTION

A Fitness For Service (FFS) and detailed analysis on a Subsea export pipeline took place following an inspection via advanced automated ultrasonic inspection.

PROCESS

Regions of localised degradation had been previously identified utilising intelligent pig surveys. This was further enhanced by Sonomatic utilising advanced automated ultrasonic inspection in order to confirm the presence of the anomalies, collect high resolution images and provide accurate remaining wall thickness measurements. The data, which was used for a detailed FFP assessment, also provided a basis for monitoring changes and allowing estimates of degradation growth rate.

Analysis of the data using statistical methods indicated a very low probability of high corrosion rates. The results allowed a significant increase in safe remaining life as determined by a probabilistic approach. This gives confidence in continued safe operation with an extended interval to the next inspection.

Additional benefits from the Sonomatic service: include accurate measurement of defects for sound FFP assessment, high confidence in corrosion rate estimates based on statistical analysis and improved understanding of the degradation mechanisms.

OUTCOME

Degradation at an interface between carbon steel and internally clad areas was identified with the potential for additional area to become exposed to the process fluid over time. Statistical analysis was carried out to quantify degradation rates at this area and confirmed that activity had been minimal. Analysis also highlighted new indications within the cladding that had not been strongly evident in earlier inspections.

FIGURE 1:

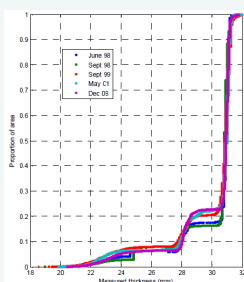


FIGURE 2:

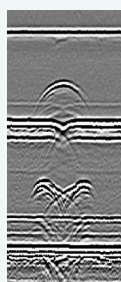


FIGURE 3:

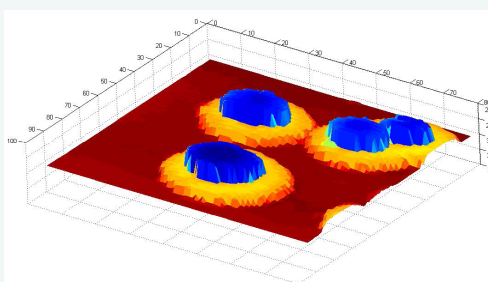


FIGURE 4:

