

CASE STUDY

FLEXIBLE RISERS INSPECTION WITH MEC™ - MAGNETIC EDDY CURRENTS

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INTRODUCTION

Inspection of two offloading flexible risers from topside to the Touch Down Point (TDP), using the MEC™-Hug scanning tool. Total length inspected: 2,374m on two sections.

PROCESS

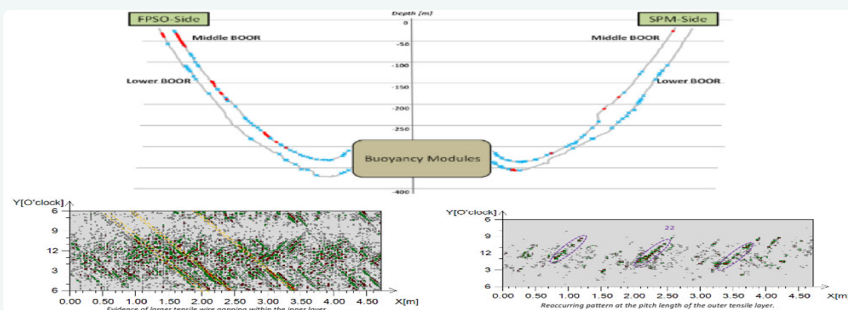
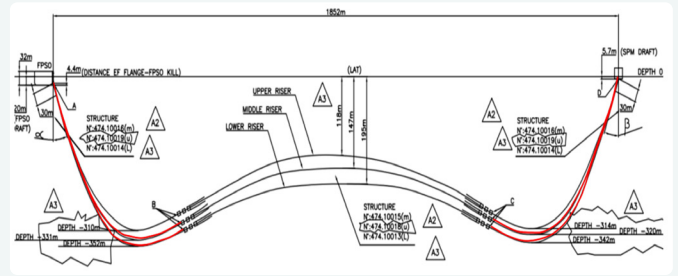
Riser Cleaning: Before the scan, the marine growth was removed from the riser with a Caviblast system. Following the marine growth removal, the visual inspection did not reveal any major mechanical damage/anomalies in the form of deep scratches, gouges, abrasions, dropped object impact, breaches, or deformation to the outer sheath.

Riser Inspection: After the cleaning, the riser was scanned by the MEC™-Hug tool with 17,561 circumferential tracks recorded in total. The longest duration of continual scanning was 26hrs. The overall total length inspected of 2,374m represents a 'first in the industry'.

MEC™ - Magnetic Eddy Current technique allows performing a fast-external scan, with defect detection in up to 3 wire layers. Defects detected: corrosion (pitting/general), wire cracking, wire misalignment/gaps. The signal is separated for each armor layer.

OUTCOME

Integrity Assessment: A major component of the flexible riser integrity assessment is an accurate fatigue life prediction. A 3D model of the risers with the embedded defects detected by the inspection was generated and computed to determine an accurate tensile armor, wire stress time-history for fatigue life predictions. This was performed using a nonlinear FEM solver.



Report extraction: signal consistent with increased wire gap of the order of 5-10mm. No cracks/metal loss/corrosion.