



Case History

HAEE (Ex) Inspection

FPSO and Drilling Facility Trials

The Challenge

Hazardous Area Electrical Equipment (HAEE) requires inspection and verification of fitness-for-service on an ongoing three-year inspection programme.

The challenge for EM&I was to reduce the risk of HAEE inspection by eliminating the need for rope access and scaffolding to perform the inspections as well as removing the requirement to electrically isolate systems to intrusively inspect the equipment whilst simultaneously reducing the operational cost and increasing equipment and system up-time.

The Solution

EM&I's solution to the access issues was to remove the need for rope access and scaffolding by introducing innovative robotic access and inspection techniques for hard-to-reach HAEE. EM&I's innovative solution included the use of portable robotic tripods with high telescopic reach that are easy to move from one device to another. Affixed to the top of the tripod is a high-definition optical camera with pan, tilt and zoom and integral lighting with the associated control equipment located safely on the deck and controlled by a team of only two specialist operatives and CompEx inspectors.

EM&I performed several onshore tests to refine their techniques which we christened 'ExPert'. The next phase was to take the ExPert™ solutions offshore to trial and prove in a variety of locations on offshore FPSOs and Drill Rigs.

The ExPert offshore trials were performed with only two people and proved a great success indicating that inspection time of HAEE at height could identify all typical Ex failure types that traditional close-up visual inspections are capable of and that comparison inspection time could be reduced by up to 80%.

A similar efficiency was proven for the digital x-ray techniques which proved comparable to intrusive inspection for finding Ex non-conformities.

EM&I are now in discussions with a major owner and operator of petrochemical installations to provide their ExPert services under a Joint Venture and to supplement the new methods with refined RBA HAEE techniques to significantly lower the quantity of Ex inspections according to thousands of actual inspection findings with associated analysis that has been gathered over many years of operations and is already accepted by regulatory bodies globally.



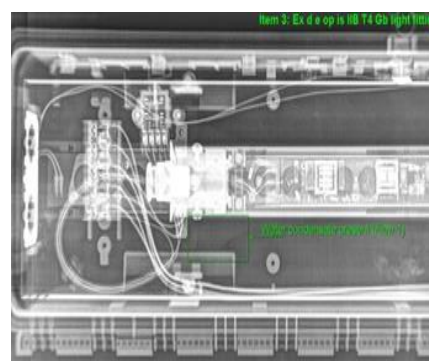
ExPert remote visual inspection



ExPert Telescopic Inspection set-up



ExPert X-ray set-up



ExPert pulsed x-ray digital inspection of HAEE