

# Crane life extension project

ASSET  
LOCATION

Offshore platform  
UK

Extending the life of your critical equipment ensures reliability and minimises downtime

## BENEFITS

Extended life without compromising safety or integrity

Removal of 'single point failures' from original drive train design

A solution that provided minimal disruption to ongoing platform operations

Adequate crane coverage to serve platform through to cessation of production and decommissioning



DELIVERY ASSURED

## CHALLENGE

Our client requested our support to assess various platform crane options to see if an extension of 15-20 years beyond their original 25-year design life was recommended or whether a replacement would be required. As their preferred contractor we had previously replaced the heaviest used cranes on their platforms with latest generation models.

The options required to be assessed without compromising the integrity of the crane whilst satisfying the UK Health and Safety Executive (HSE) Key Programme 4 (KP4) requirements.

The main challenge was to provide a technical solution that minimised platform disruption and didn't interfere with Simultaneous Operations (SIMOPS) as the crane was critical to ongoing drilling operations.

## SOLUTION

We carried out a thorough evaluation of the maintenance requirements of the crane for the remaining platform life – focussing on safety, costs, outage time scales and single point failures in equipment, using inputs from the Failure Mode, Effects and Criticality analysis (FMECA) process to risk rate component failure effects.

After assessing the risks and costs associated with replacing the crane versus extending its service life, we discovered that:

- Replacement with a temporary crane would have an unacceptable impact on platform operations
- Replacement with a heavy lift vessel would take the least time but was by far the most costly option

- Upgrading the crane and revising the maintenance strategy would allow continued service with the least disruption to operations.

The chosen solution was to maintain the existing crane with the following key requirements to ensure integrity over an extended life:

- Fatigue analysis of structure
- Replacement of winches, pumps and motors due to parts obsolescence
- Revised maintenance strategy to suit future crane usage.

## SUMMARY

- Project management and engineering / design services
- New equipment supply
- Offshore manning and tooling



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