

Mechanical handling engineering for water injection motor replacement

CLIENT
ASSETS
LOCATION

Chevron
Alba North Platform
UK North Sea UK

Skidding and mechanical handling systems are often the best solution for replacing machinery in an inaccessible area

BENEFITS

Bespoke engineering to enable the removal of inaccessible critical equipment

Full project management ensuring completion of work scope safely and efficiently

Single contractor to undertake complete project including engineering and equipment supply

Work completed to a tight timescale within a small window of a larger project



DELIVERY ASSURED

CHALLENGE

- As an existing customer, we have a good relationship with Chevron and they required a company with previous experience of successfully implementing similar projects
- The client's water injection system was at risk due to motor failures which would result in the pump stopping and impact on production
- Sparrows was contracted to undertake all aspects of the removal and replacement of the water injection motor
- Replacement of the water injection B motor was previously deemed too complex due to the motor being surrounded by pipework and equipment with limited headroom for lifting on and off its skid
- A laser scan and dimensional analysis were needed to confirm space requirements and prove we had required clearance for manoeuvring the motor to and from the lay down area
- The client requested that the work was completed within a tight timescale in the window of a larger ongoing project, ensuring that the water injection system downtime was kept to a minimum. Any delays would impact on the other project and disrupt production.

SOLUTION

- We completed a comprehensive site survey utilising a laser scanner and carried out a detailed dimensional analysis of the motor unit, cooler, enclosure and transport including the use of 'go no-go' guides
- An analysis of the laser scan and dimensional survey data was completed to confirm clearances for manoeuvring the motor to and from the lay down area
- All items requiring removal were identified and tagged to allow replacement
- A comprehensive survey report detailing all necessary pre-works was submitted to the client and we proposed a movement plan using air skates
- Air skates were the most suitable option due to manoeuvrability and the deck capacity being unsuitable for stand castors
- The design of the lifting beam and transport frame to be used with the air skates was carried out by Sparrows engineering team



- in Aberdeen, with the workshop team also completing the fabrication of the transport frame
- We produced a lift plan in compliance with the clients lifting operations process
- A pre-defined flooring plan was supplied to simplify construction of the skating floor
- Using the lifting frame, the old motor was lifted from its skid and placed on the transport frame which was then air skated to the lay down area. The process was carried out in reverse to manoeuvre the new motor into its final position
- Sparrows provided all rigging, equipment and labour required to complete the scope, with our engineers available to quickly resolve any issues
- Project risks for completing the scope were assessed and contingency measures were put in place to mitigate these.



1.
New motor entered into enclosure.

2.
New motor being lifted to skid.

SUMMARY

Integrated solutions

- Mechanical handling

Capabilities / services

- Multi-discipline engineering / design
- Rigging / lifting
- Site surveys

Equipment sale and rental

- Rigging / lifting equipment
- Mechanical handling equipment.

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