



Re-opening mothballed facilities

The ZCSC De-mothballing Project is part of an overall programme aimed at enhancing the oil production capacity from Zakum Field.

In order to achieve the additional facilities required for this project, ADMA-OPCO decided to de-mothball and re-commission the existing production facilities at the Zakum Central Super Complex, 83km offshore of Abu Dhabi, which were shutdown and subsequently mothballed in the early 1980's.

Fitting into an existing platform

The de-mothballed facility required six new API 610 OH2 pumps in super-duplex stainless steel with Plan 53B seal support systems for flare knockout drum and gas scrubber duties along with eight utility pumps for potable water pressurisation, sea water pressurisation and sprinkler systems.

However, as is common working on existing platform designs, any adjustments to pump footprint, piping and walkways would become extremely costly to ADMA-OPCO and so had to be avoided if at all possible. In addition, the pumps were required on a tight deadline of just 28 weeks.

Amarinth was approached by NPCC on behalf of ADMA-OPCO for its proven expertise and experience in designing pump systems that reduce the need to alter existing platform infrastructure and for its ability to deliver bespoke pumps on small footprints and minimum weight to very tight deadlines.

Working outside the envelope

The maximum allowable working pressure (MAWP) of the pumps was specified as 78bar @ 38C which fell outside of Amarith's standard envelope of 52 bar.

Amarinth first engineered modifications to the existing casings to accommodate the higher maximum allowable working pressures. This involved pattern modifications and extensive FEA analysis to achieve the higher pressure.

Next, to fit within the available space a reduced base plate was required. Where base plates are reduced there still remains a need however to meet engineering and API standards to ensure sufficient strength and minimise vibration and resonance issues. The restricted headroom also meant that the standard Plan 53B seal support systems required would not fit in the available space.

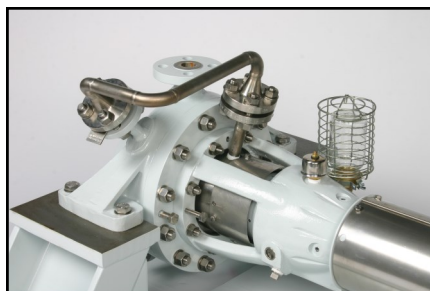
The challenge faced by Amarith was therefore to design a solution that addressed both the technical specifications as well as the physical restrictions

A bespoke solution

To accommodate the pumps and seal support systems and meet the API 610 standard, Amarith designed a completely new and innovative base plate. This allowed the pumps to fit within the platform without any alterations to the connecting pipe work.

Within the new design the attached pipe work followed the specific contours of the pumps bearing bracket, thereby allowing the seal support system to be fitted to the base plate and within the available headroom.

This approach proved extremely cost effective requiring minimal platform alterations during commissioning and was delivered within the deadline and to the satisfaction of ADMA-OPCO.



Abu Dhabi Marine Operating Company

The Abu Dhabi Marine Operating Company (ADMA-OPCO) is one of the companies within the Abu Dhabi National Oil Company (ADNOC), a major diversified group of energy and petrochemical companies

ADMA-OPCO carries out oil and gas exploration, development and production from the offshore areas of the Emirate of Abu Dhabi.

National Petroleum Construction Company

The National Petroleum Construction Company (NPCC), as an established global construction company providing clients with total Engineering, Procurement and Construction (EPC) services in the development of offshore and onshore Oil and Gas fields for the Arabian Gulf and the regional markets.



"NPCC and in turn ADMA-OPCO have been very impressed with Amarith's performance on the De-mothballing contract in terms of providing a fit-for-purpose solution for hardware and accurate on time documentation."

Mohamed Ali
Project Manager