



Questioning specifications

Amarinth was approached by NPCC to supply 28 API 610 VS4 and 8 API 610 OH2 pumps for production facilities in the ADCO operated Bab Thamama field. The requirement was for pumps to include Inconel shafting (to withstand the harsh H₂S rich environment) and Plan 53B Seal Support Systems.

Plan 53B Seal Support Systems are usually specified to ensure the total containment of pumped fluid but in the case of these VS4 pumps would only be used to control vapour. This led Amarith to consider whether the simpler Plan 74 Seal Support System could be used instead of the more complex and costly Plan 53B.

Plan 74 Seal Support Systems

Plan 74 Seal Support Systems use pressurised nitrogen to create the seal meaning there is no mechanical contact at the seal faces resulting in less wear, improved seal longevity, less seal failure, higher efficiency and extended maintenance schedules.

When Amarith and EagleBurgmann reviewed the site as part of the customer requirements they found there was an existing nitrogen feed on-site with a plentiful supply close to where the VS4 pumps were to be located. With the need to only contain vapour, this on-site nitrogen feed meant that Plan 74 Seal Support Systems could be delivered more cost effectively, both in capital cost and through-life cost, than the Plan 53B originally specified.

Four way collaboration

Amarinth took the lead in a four way collaboration with EagleBurgmann, NPCC and ADCO to design and manufacture the API 610 VS4 pumps with Plan 74 Seal Support Systems to ensure that they would meet all of the ADCO specifications.

The pump was fitted with an API 682 3rd edition double balanced seal cartridge pressurised by the nitrogen supply so that the seal would always remain closed even in the event of barrier gas pressure loss. The barrier gas pressure seal film of 0.5 microns results in frictionless operation generating no heat and no wear during normal operation.

The Plan 74 seal support system prevents pressure fluctuations from the external nitrogen supply by regulating the supply via a pressure control valve. The control panel offers visual flow and pressure indication and includes a low pressure alarm in case of pressure loss.



Turn-key solution

As part of what had now become a full turn-key solution, Amarith designed the components and interconnecting pipework to bring the nitrogen supply to the VS4 pumps. The pipework had to fit around the limitations of the site layout and this involved Amarith in a significant amount of coordination as there were many alterations and conflicting demands from the various interested parties such as pipework engineers, electricians and process designers, all of which has to be taken into consideration in the final solution.

Finally, Amarith has offered commissioning services to assist on-site once ADCO are ready to start this phase of the project.



Abu Dhabi Company for Onshore Oil Operations

The Abu Dhabi Company for Onshore Oil Operations (ADCO) operates onshore and in shallow coastal water of the Emirate of Abu Dhabi to explore, develop and produce hydrocarbons.

ADCO produces mainly from six oil fields: Asab, Sahil, Shah, Bab, Buhasa and North-East Bab (Dabbiya, Ru-maitha & Shanayel).

The Bab field is located in the onshore area of Abu Dhabi Emirates, about 150 Km to south west of Abu Dhabi city. It is the largest onshore field in Abu Dhabi covering approximately 1200 sq. km.

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



"EagleBurgmann and Amarith have developed an effective technical working relationship to support its customers and this collaborative approach has again resulted in an innovative sealing technology that has delivered benefits to our joint customer."

Alastair Dodd
International Projects Sales Manager
EagleBurgmann Industries UK LP