

Monitoring system improves safety of ZADCO's pumps

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London – Oil & gas major ZADCO has installed a bearing flush monitoring system for API 610 VS4 pumps to prevent bearing failure caused by dry running and to reduce health and safety risks.

Prior to the installation, the company had been concerned about reported incidents within the industry of the bearings in API 610 VS4 pumps running dry, which can lead to catastrophic explosions.

To address this issue, ZADCO commissioned Amarith to review the operations of its existing API 610 VS4 pumps in its Satah plant on Zirku Island, 140 km north-west of Abu Dhabi, and design a new bearing flush system to prevent the bearings running dry.

The existing pumps were first commissioned in the 1990's and although designed for sour oil service, these requirements had increased. The existing clean flush tank was only 26 gallons in capacity and installing a larger tank in this offshore location was out of the question.

In particular, ZADCO was concerned that the tank could become emptied too quickly and the time taken to shut the pumps down could result in the bearings running dry and overheating.

Amarinth, therefore, designed a bespoke flow detection system with automatic shut-down that ensured the pumps could not be started until flow to the bearings was established and would shut the pump down quickly if the flow ceased.

The monitoring system incorporated: A system control panel to constantly monitor the external flush; Pressure control valve to shut down the pump if flow stops; A pressure relief valve to ensure the bearings do not receive too much flow pressure.

The original pumps also only had a single mechanical seal and so this was replaced by Amarith with a new Plan 53B seal support systems and double mechanical seals to better contain the hazardous H₂S.

Amarinth delivered and commissioned the new bearing flush system to a tight deadline and with minimal disruption to the operating plant.

According to the supplier, the system has addressed all of ZADCO's Health and Safety concerns and set a new standard for bearing flush for API 610 VS4 pump bearings.

ZADCO is now considering a site-wide adoption of this system, added Amarith, which has already supplied a similar system to GASCO for four onshore pumps including additional bearing monitoring.

This project came off the back of previous pump orders that we have delivered, said Oliver Brigginsaw, MD of Amarith.

"This puts ZADCO at the forefront of the oil and gas industry for health and safety in this area and we will continue to work with them as they roll out this technology across their operations," Brigginsaw stated.