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**Amarinth sets new standard in ZADCO for API 610 VS4
pumps with new bearing flush monitoring system**

Amarinth, a leading company specialising in the design, application and manufacture of centrifugal pumps and associated equipment to Oil & Gas, petrochemical, chemical and industrial markets has delivered a state-of-the-art bearing flush monitoring system to ZADCO for API 610 VS4 pumps to prevent bearing failure caused by dry running and to reduce Health and Safety risks.

ZADCO was becoming increasingly concerned about reported incidents within the industry of the bearings in API 610 VS4 pumps running dry, which in rare cases had led 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, located 140 kilometres 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. ZADCO were 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.

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To meet the increased bearing flush requirements, Amarithh 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
- A 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 Amarithh 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. 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 and Amarithh has already supplied a similar system to GASCO for four onshore pumps including additional bearing monitoring.

Oliver Brigginsshaw, Managing Director of Amarithh, commented: "We have built a strong relationship with ZADCO and this unique challenge came off the back of previous pump orders that we have successfully delivered. We are delighted to have been given the opportunity to design this state-of-the-art system that reliably monitors the bearing flush and prevents the catastrophic results that could occur if the bearings ran dry. 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."

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OPTIONAL PANEL or BOX ITEMS



New API 610 VS4 bearing flush monitoring system for ZADCO

NOTES TO EDITORS:

Founded in 2002, Amarith has harnessed the skills, creativity and passion of people who have worked in the pump industry for many years. Amarith delivers world-leading expertise in the design, application and manufacture of centrifugal pumps and associated equipment to ISO, ANSI & API standards, primarily for the industrial, chemical & petrochemical markets. Their portfolio includes:

- **Pumps:** Horizontal and vertical API 610 pumps, chemical and industrial pumps, many of which are interchangeable with the Girdlestone pump ranges, eliminating the need for expensive modifications when replacements are required.
- **Pressure Vessels:** Protect System Plan 52 and 53A and 53B sealant systems with inbuilt condition monitoring for pumps and mixers that are suitable for Safe area up to Zone I.
- **Spares & Service:** High quality, fast lead-time re-engineered spare parts to improve performance and extend pump life, including many which are directly interchangeable with the Girdlestone pump ranges.
- **Packages & Modules:** Condensate Recovery Units manufactured for Spirax Sarco incorporating the innovative Ci-Nergy intelligent variable speed control system, plus bespoke packages & skids built to order.
- **Business Systems:** state-of-the-art e-commerce technologies that deliver 24/7 support enabling customers to select pumps and place orders on-line and then track every stage of manufacture through to delivery, any time, anywhere in the world.

The company operates globally from its base in Rendlesham Suffolk, United Kingdom and has a customer base of world-leading companies, including BP, Shell, ExxonMobil, GlaxoSmithKline, Pfizer, Spirax Sarco, Diageo, AMEC, Fluor and Halliburton.

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