



ENVIRONMENTAL TECHNOLOGY

Seal upgrade improves pump availability

A molten sulphur pumping operation at one of the world's leading producers of liquefied natural gas (LNG) in Qatar required continuous availability on three pumps, one in service, and two on hot standby.

However, persistent problems with the standby pumps meant that continuous availability could not be guaranteed, increasing operational risk. In continuous operation, the mean time between failure (MTBF) of the pumps was within acceptable limits. But between July 2009 and May 2016 there were 20 incidences of excessive mechanical seal leakage on these standby pumps, which had an MTBF of just two weeks. The company turned to AESSEAL® for assistance.

The original seals fitted to the pumps were a competitor's bellows seal. This type of seal is not normally recommended for use with liquids with a low viscosity index like molten sulphur. The API Plan 01 and Plan 62 seal support system utilized a steam quench which was not vented to drain. Additionally, the installed seal did not include a deflector plate, which would have ensured that the quench steam flowed to the seal face area.

AESSEAL® recommended the installation of a CAPI-A TXS seal. This seal is a 'pusher' seal, which is more suitable for use with molten sulphur. The seal included a deflector plate to ensure the steam quench was effectively cooling and cleaning the seal faces.

The system was also fitted with a temperature gauge, allowing the seal temperature to be monitored in order to avoid overheating. The recommended solution was fitted to the pumps in May 2016 and ran successfully for six and a half years with no further seal leakage, resulting in savings of £5,600 per pump per year. The customer has since ordered three more seals to upgrade all their pumps.

'MTBF increase from 2 weeks to 6.5 years'

Industry:	Oil & Gas
Product:	CAPI-A TXS with API 01/62 with steam quench seal support system
Application:	Molten Sulphur
MTBF Increase:	>16,000%
Savings:	>£100,000 (>\$130,000)
Reference N.O:	CH01556



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