LARGE LITRE METER FLOW ASSURANCE ORDER
GOES DOWN UNDER TO ICHTHYS

One of the largest orders for chemical injection flowmeters from UK flowmeter specialist Litre Meter (www.litremeter.com) is on its way 'down under'. A shipment of 45 positive displacement flowmeters is heading to the Ichthys liquid natural gas field off Western Australia via Litre Meter's South Korean distributors S-TEK.

Central to the project are three different sizes of meter, V125, HF40 and HF60, each of which had to be built to a degree of customisation that could not be matched by other suppliers working on the topside element of the project. They are destined for a chemical injection skid constructed in South Korea for the Ichthys platform in the Browse Basin in the Timor Sea.

The V125 meter was designed to measure the discharge of monoethylene glycol (MEG) at the wellhead pump. It was constructed from Duplex with a PVD coated SS nitronic rotor with two-inch ANSI 2500 RTJ connection and pressure rated to 414 bar. The HF40 PD meter is also rated to 414 bar and shares the same connections. The HF60 flowmeter is pressure rated to 690 bar and features two-inch GR14 connections.

As standard, the VFF V125 rotary piston flow meters are pressure rated from 40 bar to 1,035 bar and constructed from 316 stainless steel. The meters are temperature rated between -40 and +150 degrees C and can be used with fluids in a range of viscosities from 0.8 to 2,000 centistokes or greater. The normal flow range of the V125 is 0-6,000 l/h. The HF40 has a flow range of 0-2,400 l/h and the HF60 has a flow range of 0-3,600 l/h. Both have a viscosity range of 0.8 to 1 million cSt.

Under conditions of low temperature and high pressure, gas hydrates can solidify as crystals which may block pipelines and valves, impeding the transfer of oil and gas. This can result in a shutdown and the risk of explosion or unintended release of hydrocarbons into the environment.

MEG is injected at high pressure where there is a risk of hydrates (dew) forming then freezing at low temperature. Litre Meter VFF positive displacement flowmeters measure the correct amount of MEG needed to prevent hydrate formation.

The process, known as bullheading, forcibly pumps MEG into the bore hole to act as an 'antifreeze' to lower the freezing point of gas hydrate. This protects the wells' sub-surface valves from hydrates forming under high pressure and low temperatures during long shutdowns.

Litre Meter CEO Charles Wemyss said: "The size and complexity of this project demonstrates Litre Meter's ability to customise its meters to suit a range of applications that require accurate yet robust solutions.

“Subsea repairs and the associated loss of production are high cost, so protecting deep-water well bores from hydrate formation, plugging and organic fouling is a major flow assurance concern in offshore operations.

“Hydrate prevention strategies provide protection during normal operation, start-up and shutdown.

“Litre Meter’s VFF flowmeter is ideally suited for use in the oil and gas industry and in particular for low flow / high pressure applications.

“Years of experience in chemical injection applications onshore and offshore have confirmed the instrument’s capability to reliably measure fluids under extreme conditions of both temperature and pressure.”

Photo caption: The project required three different sizes of meter, including the HF60, customised to a degree that could not be matched by other suppliers working on the topside element of the project.

Notes :

1. Litre Meter, based near Buckingham, UK, was established in 1975 and specialises in the custom design and manufacture of instruments for measuring and controlling fluids.
2. The company has particular expertise with offshore and sub-sea flow measurement and has supplied flowmeters for these applications throughout the world. The company’s VFF flowmeter was developed specifically for the petrochemical industry.
3. Litre Meter also pioneered the development of the Pelton wheel flowmeter, an accurate and versatile technology that has since been used across many industries to measure a variety of low viscosity materials at both low and high flow rates.
4. The company is also UK distributor for other flowmeter technology including Sierra Thermal, TRICOR Coriolis and Vortex Mass gas flow meters.
5. Litre Meter is part of the Tasi Group of companies which includes AW Lake, KEM and TRICOR.