



Wellhead outlet for use in hotter wells

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AnTech Limited, a UK design engineering and manufacturing company serving the upstream oil and gas industries, has announced that its Wellhead Outlet has been re-engineered to operate safely in the higher temperatures typically generated by the majority of HPHT (High Pressure, High Temperature) wells.

AnTech's Wellhead Outlet, which has been ATEX-certified for use in Zone 1 and 2 Hazardous areas since its introduction in 2000, is a device that connects downhole cable to the surface telemetry system.

The downhole cable terminates in a pressure bulkhead and then connects to the surface cable. This ensures that if, for any reason, the downhole cable is flooded, the integrity of the wellhead is maintained. It is used in permanent completions where pressure and temperature must be continuously monitored.

The new Wellhead Outlet was created in response to customer demand for an ATEX-certified tool that could be operated safely in today's hotter wells. "We realised that we had to alter it in such a way that it would adhere to the ever-increasing safety regulations being adopted to protect those working with HPHT wells," said Toni Miszewski, Managing Director of AnTech.

Previously, AnTech's Wellhead Outlet was rated at a maximum Ta (ambient temperature) of 40°C, which indicates the maximum external temperature around the component; not the air temperature, with a maximum current of 26A. With these specifications, AnTech were able to offer the highest safety rating possible: T6, as the temperature of the device would never rise above 85°C, even if the Wellhead Outlet was operating at maximum Ta and current levels. This is beneficial when operating in reservoirs where temperatures were relatively low.

To create a Wellhead Outlet that would function reliably in hotter well environments, AnTech needed to address the two primary issues: 1) customers were interpreting Ta as a measure of air temperature without factoring in the hotter wellhead temperature, and 2) some companies operating in hotter well regions were unable to adhere to the safety regulations because the Ta was higher than

the Ta rating of the Wellhead Outlet.

Upon investigation, engineers noted that the Wellhead Outlet's 26A current rating was higher than necessary, and could be safely reduced without decreasing the range of applications for which the device could be used. In response, AnTech reduced the current rating to 3A, which allowed for a nominal increase in the operating temperature.

With regard to its high safety rating of T6 at 85°C, AnTech engineers took a closer look at the temperatures typically exhibited in hot wells. They found that 85°C wasn't realistically achievable because the Ta alone could often be higher than 85°C. As a result, AnTech lowered the safety rating to T5 (100°C.) in order that the tool could be used in a broader range of applications, and in hotter wells.

Following rigorous testing and analysis, AnTech's engineering group agreed that the solution was to decrease its safety rating to T5, giving it a slightly higher temperature of 100°C, and lower the specification of the working currents to 3A. Today's Wellhead Outlet is now rated at $-20^{\circ}\text{C} \leq T_a \leq 90^{\circ}\text{C}$ T5.

"With the dramatic rise in the number of HPHT wells, it was time to take the tool to the next level," said Miszewski. "With the new Wellhead Outlet, we now offer a tool that is still extremely safe to use and ATEX-certified for a large number of applications. With its eight-year history of reliable performance, our Wellhead Outlets will continue to improve safety and performance downhole," he added.

Looking ahead, AnTech is planning to further develop its range of Wellhead Outlets. In Q1 2009, the downhole tools specialist will apply for certification of a Wellhead Outlet that will perform safely while operating at a maximum temperature of 125°C. Users will be able to work safely in even higher temperatures, and rest assured they are using the proper equipment for the environment.

Further more information, visit www.antech.co.uk

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