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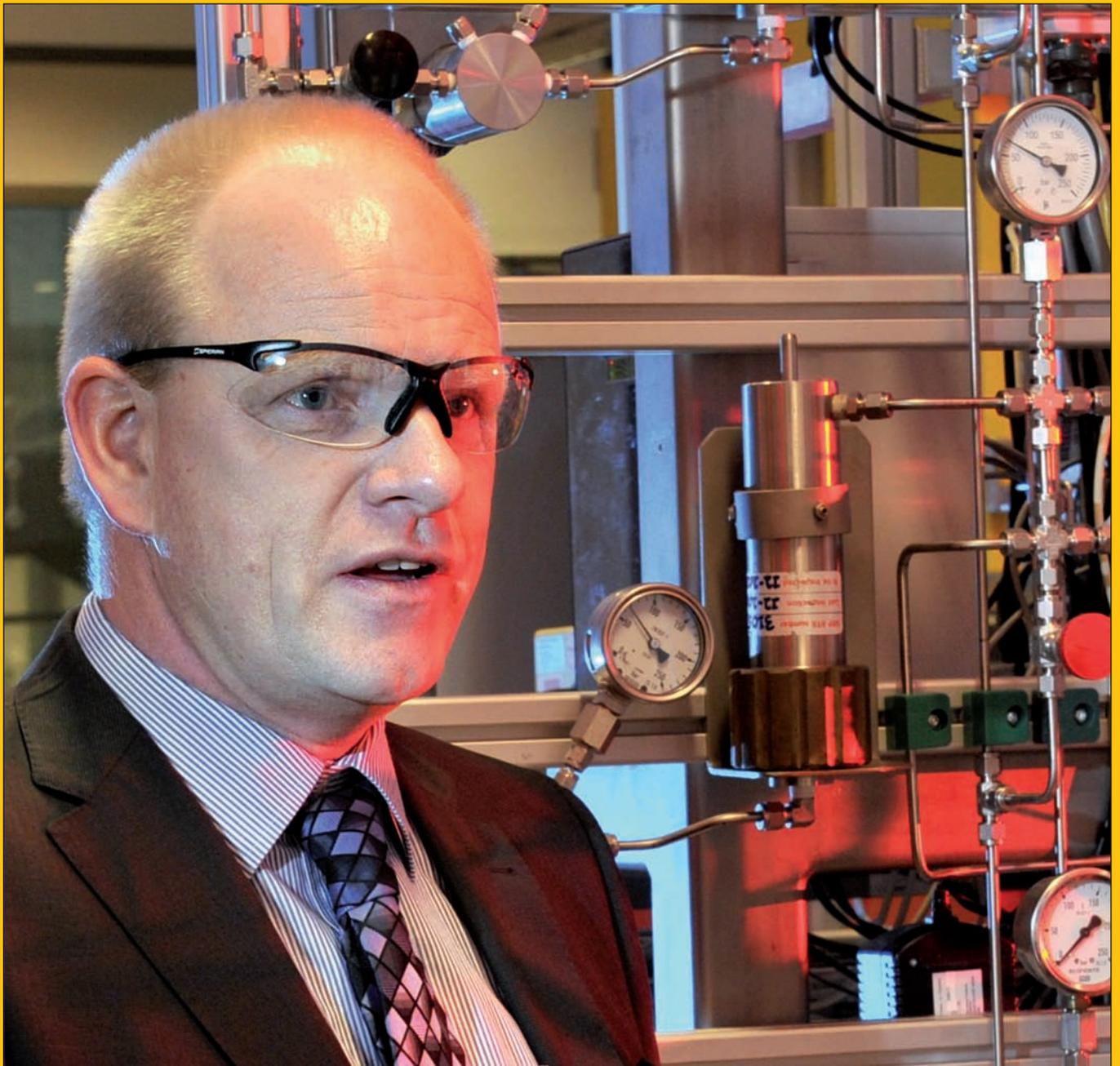
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PLUS: HOW NORWEGIAN OLD-TIMER EKOFISK IS BEING PRIMED TO PRODUCE FOR ANOTHER FORTY YEARS

OE takes a look at some of the latest industry offerings on show at the IADC Drilling Conference in Amsterdam last month.



Integrated approach

In the works for some time, Halliburton's Optimized Drilling Performance (ODP) approach is aimed at improving drilling efficiency and saving drilling time. 'We've evolved this workflow over a few years,' said Jeremy 'Jez' Greenwood, chief global technical advisor for drilling optimization for Sperry Drilling, a Halliburton business line.

The integrated workflow links a number of the service company's specializations and expertise to improve drilling performance. According to Sperry, it saved an operator \$7.5 million and 50 additional days of rig time in deepwaters offshore Brazil.

In developing the workflow, Halliburton documented the processes necessary to deliver drilling services from planning through execution, and to drive increased safety, efficiency and reliability. The workflow includes integrated bit and bottomhole assembly design, mud characteristics and real-time optimization of the drilling process. 'It's not a discrete tool or a discrete piece of software or a discrete bit, but a way of working to ensure everything is integrated,' Greenwood explained.

Customers can also take advantage of Halliburton's digital infrastructure,

including real-time well placement within an earth model that can be updated in real time, he added.

'Halliburton teams now work with this proprietary workflow and the digital infrastructure in our real-time operating centers in every region,' noted Jonathan Lewis, senior VP of Halliburton's Drilling & Evaluation Division. Optimized Drilling Performance can significantly reduce NPT and improve performance, he said, adding: 'This potential represents billions of dollars in savings.'

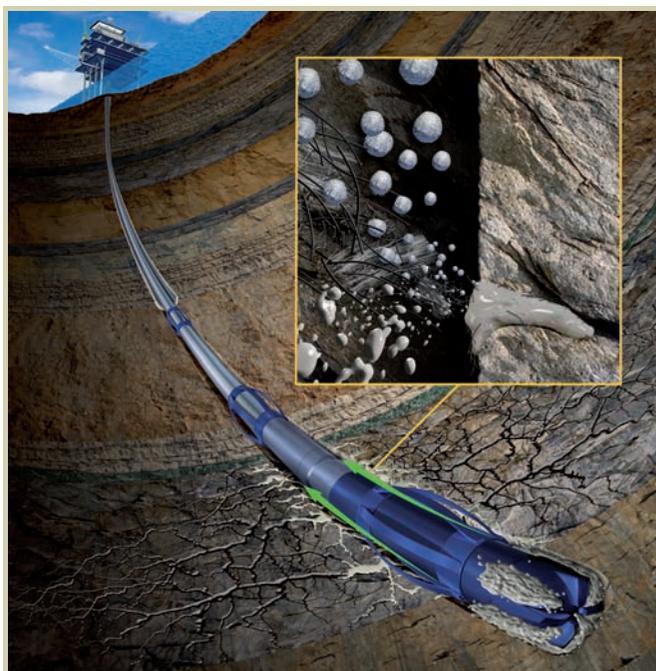
Ensuring accurate choke control

A precision-built choke console for managed pressure drilling (MPD), underbalanced drilling (UBD) and other low surface pressure operations was unveiled by M-I Swaco.

The Low Pressure AutoChoke Console (LPAC) allows the operator to directly set and maintain the desired back-pressure on the well using either the local hydraulic power unit console or the remote human-machine interface (HMI) panel near the driller. According to the developers, the LPAC unit enables seamless transition between AutoChoke, while controlling two units.

With its hydraulic accumulator, air storage tank and uninterrupted power supply, the unit is claimed capable of maintaining pressure for more than two hours after loss of rig air and up to one hour after loss of rig power. Sunlight-readable touch screen panels ensure accurate readings in any weather condition and allow for precise pressure inputs to the AutoChoke units. Screens display additional operating parameters including casing and drill pipe pressures, pump rates, strokes and diagnostics.

The remote HMI comes as standard with the LPAC unit and can be placed anywhere, allowing the choke operator to work in close proximity to the driller throughout the MPD or UBD section of the well.



Two different types of proprietary synthetic fibers make up the Losseal pill. The black fibers are still while the white fibers are flexible. The resulting combination, Schlumberger says, is a pill that, once placed downhole, takes a maximum of 30 minutes of soaking time to plug the loss formation.

Curing lost circulation

The Losseal system, a combination of fibers and solids, is Schlumberger's newest offering to reduce NPT from lost circulation during drilling and cementing operations. Launching it at IADC, Raul Bermudez, the service company's lost circulation product champion, said: 'We can pump it in without pulling out of the hole.'

Traditional fiber treatments for lost circulation have relied on data for the fracture width during bridging and plugging. The Losseal design combines fibers with different mechanical properties and high solids content. The design makes it less sensitive to fracture sizes because the solid particle size is optimized to plug the network fibers as opposed to the fractures, according to the service company. The Lost Circulation Pill Designer software creates the optimal recipe for the pill. 'We are putting the fibers in front of the fracture to make the bridging,' Bermudez explained. 'We use the optimized solid package to plug the fiber network and not the fracture.'

The Losseal pill is a flexible fiber additive that can plug natural fracture formations with a width to 5mm. It is intended for non-reservoir sections that have natural fractures. 'The system was designed to be simple,' Bermudez noted. 'It has to be stable enough from the moment we put it in until we cement the zone.' According to Schlumberger, the pill creates an impermeable grid strong enough to withstand additional pressure from mud density increases, in addition to any other pressure from future drilling or cementing operations. The system also addresses large losses in fissures.

Losseal can be used with natural fractures, in dolomite and carbonate zones, and in spacers ahead of cement slurries. Of the 35 jobs the system had been deployed on by the end of 2010, 11 were in Mexico. It has also been used in the Middle East and Europe. On one job offshore Mexico where an operator was experiencing lost circulation issues, Schlumberger reported, the Losseal system completely cured mud losses and increased mud density while also allowing the operator to drill to total depth and cement the wells without any losses.