Offshore Engineer

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Oil industry faces 'enormous' challenge to change

RAMPANT ENERGY DEMAND GROWTH, GEOPOLITICAL instability, and the push to carry out increasingly complex oil and gas projects with minimal impact on the environment while meeting the public's call for cleaner and higher performance fuels are combining to pose an unprecedented test for the international oil industry. That was the message from ChevronTexaco vice chairman of the board Peter Robertson yesterday in his keynote address at the annual OTC awards luncheon.

Robertson (*pictured*), who is in charge of strategic planning, policy, government and public affairs, and human resources at the US supermajor, said it was a time of 'enormous challenges' for the sector because while 'none of these items is particularly new, the volume on all of them has been turned up and the combined effects of all of them operating in unison is, I believe, putting a strain on our collective capabilities.'

He said far from being in 'retreat', as some industry observers have suggested, the oil and gas industry is 'gearing up' to face the testing times ahead. 'If the buzz around the OTC is how I suspect it is, we are up to the challenge,' Robertson stated.

Pointing to International Energy Agency calculations that forecast a 'colossal' $16.5 trillion will have to be spent by the wider energy industry over the next 30 years to keep pace with mushrooming global demand, the ChevronTexaco vice chair suggested this scale of investment was not 'more of the same [but] signaled something really different'.

'Actually it's not one thing, but a confluence of a whole lot of changes taking place in the world simultaneously,' Robertson said. 'We've had challenges in the past with the production capability of oil or gas in various places and access to new prospective areas – clearly, these are real issues in the US and Europe for both oil and gas today.

'We've had periods of demand growth, in the past, as economies in various parts of the world strengthened and grew,' he continued, 'but I'm not sure we've ever had the surge that we're seeing today from a strong US economy, plus the combination of burgeoning demand growth in China, India and a host of other developing countries.

'And we've recognized and acted on the need for increased conservation, efficiency and environmental performance in the past, but I'm not sure the need was ever as great as it is today,' Robertson added. What is 'unique' at present, he said, was the effect of the 'combination of all these factors'.

To measure up to these changes, in Robertson's view, is going to call for 'lots of technology, lots of great people and partnering skills, and lots of conservation [work]'.

'The good news is that these are things we know how to do,' he said. 'The challenge is that we are now called upon to do more of all of them simultaneously.'

With oil and gas expected to make up a 64% slice of the 'energy pie' as total demand climbs by more than 50% in the next 25 years, not only will the industry's 'E&P capabilities have to grow in size and complexity, but our upgrading, refining, and transportation systems will have great demands placed on them', suggested Robertson.

One truly new challenge confronting the international oil industry is coming in the form of a change in the competitive landscape sparked by the greater cosmopolitanism of many of the world's national oil companies.

'Several of the companies that we today call IOC's [international oil companies] began life as government owned national oil companies,' underlined Robertson. 'Today of course they are widely held, commercial, global enterprises. We have some new formidable competitors in the ranks of the NOCs which have decided to compete outside their own countries for access to the world's oil and gas resources.'

'While this represents another challenge for us in the resource capturing business, we do well to remember this is not really new, it's just more, much more, of what's come before and that in every challenge there's an opportunity,' he said. 'This will be another test for our commercial skills, for our partnering skills and for our competitive juices.'

Robertson sees the problem of skills shortage as the 'real test' of the oil industry's competitiveness going forward.

'I think the real test for us competitively will not necessarily be locating resources and identifying opportunities, but finding and developing a sufficient number of highly skilled technical and commercial people to carry out all this work.'

He compared the shifting demographics of the industry to a production curve. 'To grow, we've got to make up for the declines before we actually get to add incremental volume,' said Robertson. 'Our decline curves are causing lots of headaches in a production sense and our people decline curves are going to similarly accelerate.

'The game will be won by those that can attract the best and the brightest from around the globe to their side,' he concluded. 'Our business is rooted in technology and will always depend on new ideas, from a broad base of backgrounds, experience and skills. The future of energy is indeed a bright one.'

Darius Snieckus

Community watch for world's oceans

MEMBERS OF INDUSTRY, ACADEME AND GOVERNMENT came together at the OTC yesterday to make a plea for industry participation in a global effort to gather data about the world's oceans through the Integrated Ocean Observing System (IOOS).

Described as a 'sustained network of "eyes" on buoys, ships, satellites, underwater vehicles and other platforms that routinely supply the data and information needed for rapid detection and timely predictions of changes in our nation's coastal waters and on the high seas', the system aims to enlist the participation of all industries dependent on the world's oceans for their livelihood.

The initiative stems from a recommendation emerging from the Ocean Action Plan submitted last year to President Bush by a commission of which Rowan Drilling's vice president Paul Kelly (*pictured*) was a member. Kelly was on hand to help correct what he and Harris Corp founder, Andrew Clark, characterized as 'insufficient engagement from industry'.

Industry stands to reap numerous safety and financial benefits from a better understanding of ocean currents, winds and general weather patterns, Kelly said, and so should be anxious to contribute to the effort. Suggestions for industry in the literature and on the Ocean.US website (www.ocean.us) include such things as helping plan IOOS architecture, hardware,

software and IT services, use of its existing infrastructure and sensing capabilities and other industry capabilities.

The effort has broken into more local efforts based on the national and global model specifically aimed at Alaska (Alaska Ocean Observing System) and the Gulf of Mexico (Gulf of Mexico Coastal Ocean Observing System). John Goll, MMS regional director of Alaska OCS and Chis Oynes, MMS regional director for the Gulf of Mexico, were on hand also to publicize their respective efforts and encourage industry participation.

The MMS has also begun requiring as of 1 May that all Gulf of Mexico operators report their collected ocean data in the upper 1000m of their leases to be archived for public access.

Inside

TUBB IS TOPS: This year's Weatherford-sponsored Frank Frazer award for journalistic excellence went to Rita Tubb, current editor of *Pipe Line News* and managing editor of *Pipeline & Gas Journal*. Hailed by former award winner Bob Burke as 'a good, solid reporter, an outstanding writer of talent, and a tough, fierce competitor, Tubb was one of the first female oil writers to attend the inaugural OTC in 1969. Previous Frank Frazer award winners include former *Offshore* editor-in-chief Bob Burke, *Offshore Engineer*'s Rick von Flatern and *Upstream*'s Adrian Cottrill. Pictured are Weatherford's Christine McGee (*left*), Tubb and Burke.

Familiar face, new name

A stalwart OTC exhibitor over the years, Oilfield Publications (OPL) returned this year in less familiar guise having recently merged with Clarkson Research. The new company, known as Clarkson Research Services (**Booth 2742**), chose OTC for its official launch.

The two companies are well matched, with OPL among the industry's leading providers of offshore publications, databases and maps, and Clarksons enjoying a similarly high reputation in the area of shipping information. As well as sharing access to sales offices in London, Houston and Shanghai, the merger is expected to result in improved data management and an unrivalled source of commercial information covering the shipping and offshore businesses.

Clarkson Research Services's Tony Madsen (*right*) with Oceaneering's Bob Burnett at the show yesterday.

Venezuela sticks to its guns faced with US tensions

Venezuelan minister of energy and petroleum and PDVSA president Rafael Ramírez Caerreño took the opportunity of his visit to OTC to do business development work for his country's attending companies while also addressing several issues concerning the Venezuelan petroleum industry to the international press.

At a Monday night dinner hosted by ChevronTexaco and ConocoPhillips, Ramírez said his delegation made a 'clear presentation' of the country's energy policy to a group of US companies that he characterized as being 'very successful'.

In discussing the country's current energy situation, Ramírez (*pictured*) did not shy away from the subject of the ongoing tensions between Venezuela and the US.

'Today there is no doubt there is a conflict,' he said. 'Venezuela is undergoing a period of change and has had a crisis but is now politically stable. Foreign countries need to understand the government is out to change and all we ask is for them to respect our sovereignty and policies.'

Ramírez also took on another hot topic in the press: the rumored sell off of the company's CITGO refinery division. The minister dismissed the bruit as having no connection with the US antagonisms.

'As any company we have to review the business plan,' he said. ' We don't want to politicize the situation and [the sale of] CITGO has nothing to the do with the US. We want to participate in the US.'

'We are also selling refineries in Germany but no one mentions that. I don't know why,' he added. 'We are acting as any other company might act.'

Further on the topic of US relations, the minister was asked about PDVSA's new office in Cuba. Ramírez said this was just another of the company's offices in its expansion plans. He said they plan to use Cuba as a base to transport petroleum products throughout the Caribbean at a lower price for more impoverished countries.

In terms of standing with international operators, Ramírez said the government has excellent relations with these firms and their rights within the country are being respected. This comes even as several contracts between the government and these companies are being reworked to joint venture agreements that Ramírez characterized as a 'way out' for the operators in that it allows them ownership in the resources.

He also added that the company expects to hold a licensing round for new blocks offshore the country's northern coast in June in which 33 companies have already expressed interest, 29 of which have purchased data packages.

Subsea completions boldly go

The low-hanging fruit is quickly dwindling offshore and the limits of conventional subsea completion technology are being tested by ever longer tiebacks and deeper water – and that means increased risk, reliability questions and higher capital and operating expenditures. So said Intec Engineering CEO John Reed at Monday's Topical Luncheon.

'Conventional offshore technology also is reaching its limit of deepwater application,' stated Reed, speaking to the topic 'Innovative approaches to gathering systems for producing wells in deepwater'. He said the industry needs a new development concept 'that effectively incorporates the use of existing floating systems while opening new avenues for the ultimate production goal: production from subsea systems directly to shore.'

To make the most of 'long distance delivery management', certain technologies currently on the drawing board or in early stages of commerciality must be perfected. And to take advantage of the concepts offered by subsea tiebacks, ultimately to shore, added Reed, they must be available, maximizing return on existing infrastructure, and less expensive and safer than existing options.

Technologies whose perfection may prove key to the continuing expansion of subsea tieback lengths and depths include multiphase pumps, subsea compression, electrical flowline heating, subsea separation, control buoys, power boosting for long umbilicals and subsea power generators.

MMS study spotlights deep Gulf trends

The deepwater Gulf of Mexico is in its 11th year of expansion and is beginning to mature but it is still unfolding and still holds some surprises, according to Chris Oynes, Minerals Management Service (MMS) regional director, who unveiled *Deepwater Gulf of Mexico 2005: Interim Report of 2004 Highlights* at OTC yesterday.

Oynes noted that 15 deepwater (MMS considers deepwater as 1000ft of water and greater) projects brought onstream in 2004, calling it the year of the spar as a record four such units were installed. Two TLPs were also installed. 'I'm a bit surprised that no one has filed to utilize an FPSO,' he said, 'but you have to have the right kind of project for that.'

Oynes said GoM deepwater oil production could rise by 300,000b/d in 2005 and by another 100,000b/d during 2006, primarily from deepwater projects coming onstream during 2004 and 2005. There were 107 deepwater projects on production as of March this year. Deepwater production accounted for an estimated 922,000b/d of oil and 3.9bcf/d of gas at the end of 2004. Deepwater oil production accounted for approximately 64% of the Gulf's 2004 oil production.

He said total Gulf oil production is expected to increase from 1.5 million b/d presently to 1.8 million b/d during 2005 and up to 2 million b/d in 2006, again driven primarily by deepwater production. There were also 15 announced discoveries last year and three announced so far in 2005. Of the 15 discoveries announced in 2004, 12 were in water depths of 5000ft and greater in what the MMS terms ultra-deepwater.

Oynes also noted that there have been several natural gas discoveries in the Eastern Gulf south of Alabama that are moving ahead rapidly toward development via the Independence Hub, a floating facility that will be situated in the Central Gulf and involves subsea production from eight Eastern Gulf projects. The facility is expected to be onstream in 2007.

Deepwater exploratory drilling posted a substantial increase in 2004, with 94 wells drilled, a 27% increase on the 74 wells drilled in 2003. The number of ultra-deepwater wells drilled totaled 36 last year, tied with the record high posted in 2001. Last year also saw a record 16 exploratory wells drilled in greater than 7500ft of water, 'an indication of the trends (in exploratory drilling)', Oynes said.

Deepwater leasing activity last year, while not posting any records, was termed 'robust' by Oynes, with 513 new deepwater leases compared with 507 in 2004.

More than 2400 leases in all water depths will expire during 2006/07, including a large number of deepwater leases that were acquired by the industry during record lease sales in 1996 and 1997. Many of these deepwater leases were driven by the prospect of deepwater royalty relief, according to Oynes. They will be offered by the MMS during the next lease sale following their expiration.

'I'm expecting a robust response to the availability of the blocks by companies that would have a new approach to exploring and developing them,' Oynes said.

He was referring to independent operators, noting that he has seen a 'compacting' of the time between discovery and production. He said that independents in particular move very rapidly, with some, such as Kerr-McGee, very aggressive in their attitude toward E&P. Some of the majors also move fairly quickly, he said, but many of the majors are active in deep and ultra deepwater, 'and it's hard to fast track a project there'.

Regarding the effects of Hurricane Ivan in 2004, Oynes noted that more than 99% of the pipelines and facilities affected were already back on production. A public workshop will be held in Houston 26-27 July to discuss the hurricane's affect on the industry.

Additionally, the MMS will soon award contracts for six studies to examine several things that were affected by Hurricane Ivan, including mudslides, clamping or tying down of drilling facilities and air gaps of floating production units, among others.

Congress provided the MMS with $500,000 supplemental appropriation, most of which, Oynes said, will be spent on these contracts.

And the winner is . . .

The UniRough power tong from Viking Technologies (**Booth 4441**) emerged as this year's top innovation as chosen by the American Society of Mechanical Engineers (ASME) in its annual Woelfel Best Mechanical Engineering Achievement Award.

Viking Technology CEO Tore Hansen-Tangen is pictured with the award on his OTC .05 booth.

Lead judge for the award John Vozniak called the system a giant step-forward in pipe handling equipment capable of saving operators upwards of $1 million. The UniRough is a combination spinner and torque tong capable of handling pipe dimensions from 2 ⅜in to 20in with only three easily replaceable clamp elements.




Speakers today include (*from left to right*): Ron Harrell, Ron Gajdica, Dirk McDermott and Ricardo Rodriquez.

Breakfast menu

COMMERCIAL OPPORTUNITIES ON THE Norwegian continental shelf and the country's drive to bolster E&P activity in the province are served up with breakfast at the 'Norwegian offshore opportunities forum' this morning at 07.30.

Hosted by the US Department of Commerce and the OTC board of directors, the session will include presentations by Norwegian Petroleum Directorate director-general Gunnar Berge and state secretary at the Ministry of Petroleum & Energy Oluf Ulseth on the present resource situation and framework conditions on the NCS.

TODAY AT OTC .05

Beyond estimation

'OIL AND GAS RESERVES ESTIMATES' TAKES ON ONE of the most hotly discussed subjects of the last year. A panel moderated by JP Kenny senior specialist Sandeep Khurana and including Ryder Scott chairman and chief executive Ron Harrell, BHP Billiton Atlantis development manager Ron Gajdica, US Geological Survey World Energy Project chief Thomas Ahlbrandt, and Alberta Securities Commission senior petroleum evaluation geologist Dave Elliott will debate issues that may lead to different reserves estimates for different purposes including regulatory reporting and the best way to achieve consistency in reporting mechanisms.

The focus is offshore, where technologies such as 3D seismic, deepwater drilling, and formation evaluation procedures can provide improved estimates that are not necessarily recognized by regulatory authorities as indicators of 'reasonable certainty', least of all within the context of a global industry.

Will technology make a comeback in the energy sector? Who will provide the seed and growth funding? Co-chaired by Energy Valley chief executive Art Schroeder Jr and Lime Rock Partners managing director Tom Bates, 'Crisis in Technology: New Business Models for a New Century' aims to address these and other questions. Panelists include Simmons & Company chairman Matt Simmons, Altira Group managing partner Dirk McDermott, Shell Technology Ventures manager of investments Ricardo Rodriguez, ChevronTexaco Technology Ventures venture executive George Coyle, BJ Services vice president of technology and logistics Mark Hoel, IHS Energy president and chief operating officer Ron Mobed, and BP distinguished advisor George King.

Five set menus

OTC HAS FIVE TOPICAL LUNCHEONS TODAY. A company's hydrocarbon reserves are its most important asset and the proper accounting and estimation of those reserves is crucial to a company's valuation, Anadarko Petroleum Corporation president and chief executive James Hackett will argue in his presentation. His discussion will focus on why the industry needs to expand its disclosure and transparency around oil and natural gas reporting, while explaining how all reserves are not created equal and looking at the important implication of the current value of booked reserves.

With the continued and rapid development of China's economy, the energy resource demand the country is now experiencing is unsurpassed. In a presentation entitled 'The Energy Resources Demand in China and Development of China Oil Industry' CNOOC president and chief executive Yuan Guangyu will look at the 'pressures and opportunities' presented by the rapid development of oil and gas fields offshore China.

Recent attacks against operations in the Arabian Gulf give cause to review the current status of security for all segments of the offshore industry, believes US Coast Guard Captain Ronald Branch. He will cover many security measures that offshore operators should take into account, including: consequence management plans; required security procedures for vessel-to-vessel, vessel-to-offshore facility, and vessel-to-shore facility operations; suspicious aircraft operating near oilfield facilities or vessels; and theft of company standard operating procedures, security plans, or other proprietary documents.

'Engineering Drives Projects – What Drives Engineering?' is the central question posed by Mustang co-founder and president Bill Higgs in his presentation on improving project execution. Good, mediocre and poor projects will all come under the microscope as will the tendency to consider past experiences and basic strategies and 'optimistically' anticipate a great project. Engineering must drive project outcomes but how is engineering used to target the desired results? Higgs will ask in an address aimed at owners, contractors, vendors and engineers all.

Oceaneering senior vice president for deepwater technology Dick Frisbie will look at 'The Future of Subsea Technology', discussing the direction technology and equipment are progressing in the areas of subsea construction/completion, intervention and life of field support. The cost implications of these changes, their likely evolutionary paths, as well as the occasional 'dead end' run into by certain technologies and processes that appeared promising will be addressed.

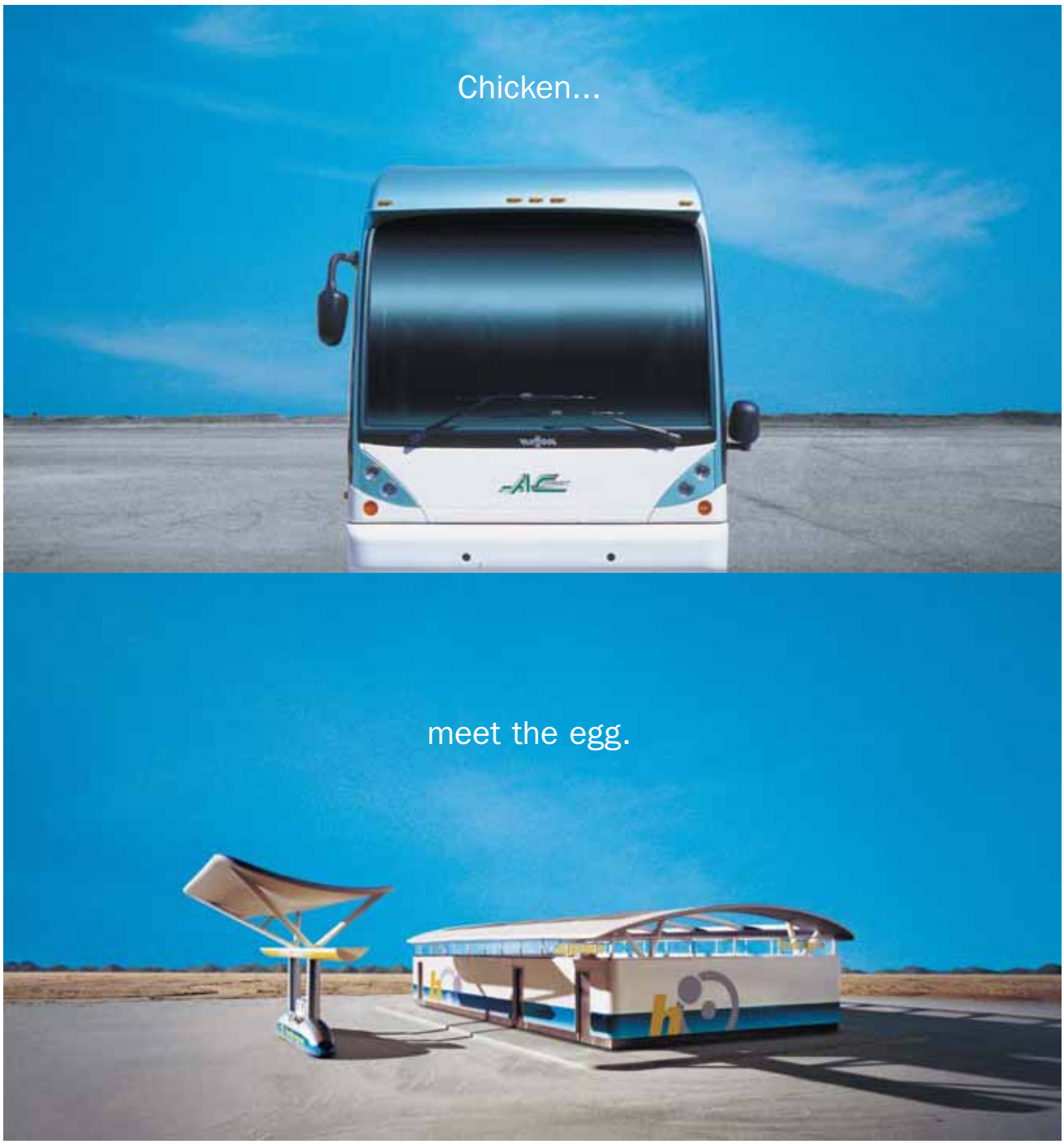
● *All luncheons run from 12.15-13.45.*

General session

'DEMOGRAPHICS IN OUR INDUSTRY – ADDRESSING THE Upcoming Personnel Shortage' takes as its starting point the statistic that North American upstream oil and gas companies will likely lose more than 60% of their employees – along with their experience and knowledge – in just five years.

Since industry employment peaked in 1982, the top 25 surviving companies have cut more than 1 million workers. The average age in the upstream sector is 49, and many employees expect to retire at age 55. If professionals continue to leave and retire at the current pace, exploration and production companies' ability to make sound business decisions and to meet the increasing demand for energy resources will be impacted. The session will close with a look at how the energy industry will fulfill its needs for competent and talented professionals in the years to come.

It's an age-old problem, writ new. Who's going to build an environmentally friendly fleet of hydrogen-powered vehicles without the energy stations in place? But who'll invest in hydrogen energy stations before enough vehicles are on the road to make it worthwhile? So which comes first, the chicken or the egg? At ChevronTexaco, we're jump-starting things by partnering with the US Department of Energy and AC Transit of California. Together, we're integrating new technologies with the existing natural gas distribution network to create a prototype hydrogen energy station, open for business in 2005. By using this practical approach to build stations, we're well on our way to building a better tomorrow.



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HOW THE TELEPERF SYSTEM WORKS (from left to right): Assembly run-in hole; close flow actuating landing collar (FALC) pressure to set hanger/release running tool; pressure to extend Teleperf units; lower running/gage ring through Teleperf liner; sting into FALC-pump cement; pump cement/wiper plug; bump wiper plug; set ZXP-T packer and pull out of hole with running tool.

'Perfless' completions in prospect

Houston-based Baker Oil Tools (**Booth 2223**) is majoring on its innovative Teleperf sand control completion technology at OTC .05. **Rick von Flatern** reports.

PERFORATING IS A DOUBLE-EDGED SWORD FOR WELLS completed in unconsolidated formations. While perforations open conduits through which hydrocarbons flow to the well bore, the perforating process poses significant risks to well productivity.

Now, as a result of a joint investment project, a technology is being field-tested that can install a liner hanger, reservoir connectivity and sand control media in a single trip that eliminates explosive perforation charges and associated risks in cased-hole completions. In unconsolidated formations, say its proponents, the technology could conceivably replace traditional perforating practices.

Generally, well productivity is directly related to the area of flow through a perforation tunnel: the greater the area of flow the greater the well productivity. Entry hole diameter and shot density impact flow area. Perforation debris in the perforating tunnel can block the available flow area, as can fractured and compacted zones and broken pieces of formation. The flow restriction caused by crushed zonal rock can also increase skin values, particularly over the extended lifetime of the well. Studies have shown that in unconsolidated formations increasing depth of penetration will increase not only the skin value of the well, but also the amount of fines in a perforation tunnel.

'It has been shown from testing in an unconsolidated formation that the optimum perforation tunnel is not very deep but has a very large diameter,' says Ed Van Sickle, Baker Oil Tools production line manager for tubing conveyed perforating. 'It has also been shown that the larger the diameter the more debris because you are trying to crush more rock. So the deeper you go the more rock you crush and the more volume of rock you need to remove so that you can replace it with gravel pack sand. So if we don't create that perforation tunnel to begin with we don't create the damage that we have to remove and that process is totally eliminated.'

The 'one trip sand control/liner hanger completion system' development JIP formed in 2002 included ChevronTexaco, BP, Eni, Baker Oil Tools and Completion Concepts Inc. The partners agreed on several critical design criteria for their new system including:

- the ability to control sand production;
- the ability to limit or remove formation damage caused by conventional perforating and by drilling fluids;
- open-hole performance from a cased hole completion; and
- the ability to reduce rig time to save on overall completion costs.

The one-trip sand control/liner completion system developed by the JIP installs and deploys a standard liner hanger system, commences primary cementing operations, and provides a production conduit and sand control in a single trip. Eliminating the need for perforating eliminates associated formation damage and debris removal while combining multiple operations into a single trip reduces rig time.

Telescoping

The heart of the system is a telescoping flow conduit called a Teleperf that replaces traditional perforating. The conduits, which contain sand control media, are installed in API casing run into the hole in a manner similar to that for standard liner hanger equipment. Interval length, Teleperf density and mesh size for sand control are pre-determined according to reservoir requirements based on core samples and sieve analysis. Conduit tube density can be as high as 24 Teleperfs per foot (tpf) and are set at 120° staggered phasing in several planes, effectively resulting in 60° phasing. Standard mesh sizes are 20, 30 or 40 mesh.

Each Teleperf is filled with sand control media during manufacture. The media uses stainless steel beads in combination with a sintering process that strengthens the beads while leaving pore throat openings comparable to gravel pack sands. A polymer/acid sealant injected into the sand control media prevents it becoming plugged with debris. Like the Teleperf density, mesh size and interval length, the polymer selection is based on reservoir characteristics.

After the completion system is installed in the liner string at surface and run in the hole, each Teleperf is extended, or telescoped, using hydraulic pressure or mechanical force to form a seal on the formation face. There is no explosive charge to damage the formation face. The seal extends to the formation face and the drill-in fluid filter cake. Two extension lengths accommodate 'to-gauge' open hole and washouts. As the Teleperfs are extended into the formation face, an area of filter cake is trapped on the tube face.

Once the Teleperfs are extended, the liner is cemented in place. Downhole temperatures then degrade the polymer/acid sealant and dissolve the filter cake from the Teleperf and the formation. The dissolution of the filter cake transforms the tube into a continuous pathway to

virgin producing formation. The acid released is organic and does not corrode metal parts or tubulars. The polymers used to encapsulate the acid are water-soluble and known not to incur formation damage.

Operational details

The joint of production liner containing the Teleperfs is deployed in a manner similar to a standard liner hanger deployment operation. The liner can be rotated while running in the hole and circulation can be established for well control. When the desired depth is reached, the section of liner fitted with the completion system is correlated on depth and flow rate through the workstring is increased using a flow actuating landing collar (FALC). Decreasing the flow rate to zero closes the FALC and hydraulically isolates the completion unit and running tools for activation. Packer cups on the running tool isolate hydraulic pressure applied to the system at the liner hanger.

To set the liner hanger and release it from the setting tools, hydraulic hold-down buttons on the running tool are used to negate the upward-directed mechanical force exerted on the liner by the hydraulic pressure described above. The buttons prevent the running tools and workstring from being pumped uphole.

After the running tools are released from the liner, the Teleperfs are hydraulically extended. The drill-in fluid in the hole forms a filter cake on the ID of the completion system that will hold any pressure applied to the workstring. The Teleperfs are then extended to the formation. At a predetermined applied pressure, an expendable seat shears out in the bottom of the FALC to re-establish circulation out the bottom of the liner.

Because the extension pressure of the Teleperfs is lower than the shear-out pressure of the expendable seat, they should extend fully. However, as an 'insurance' procedure, the running tools are run to bottom through the liner and completion system after circulation is established. The running tool has a gauge ring slightly less than the drift of the production liner. This gauge ring mechanically extends any Teleperfs that were not previously extended hydraulically. Additionally, running the gauge ring through the production liner ensures a full opening ID.

Once the gauge ring has been run through the Teleperfs the running tools are continued to the bottom of the production liner. There, a set of seals stings into a receptacle in the top of the FALC and primary cementing can begin.

'We pressure up down the drill pipe and pop open the FALC and circulate, that is how we cement,' Van Sickle says. 'The fact we are cementing through the drillpipe means the ID of the liner is never exposed to cement. When the Teleperf extends it forms a seal on the sand face so cement does not get between it and the formation.'

After the cement has been pumped and the final dart landed in the FALC, the liner top packer setting dogs are activated by increasing pressure. The running tools are removed from the FALC, and any excess cement in the workstring is reverse circulated out of the hole. The running tools are then pulled back to the top of the liner, the setting dogs are fully expanded, and simple set-down weight on the liner top sets the packer. After all tools are pulled from the well, sand-free production can begin.

Optimizing sealant

The polymer/acid sealant injected into the Teleperfs is designed to temporarily seal the tubes from the formation and then to provide a means of acid cleanup of the carbonaceous material found in most drill-in fluids. Proper functioning of the sealant depends on delaying the release of the acid until the flow conduit tubes are in place.

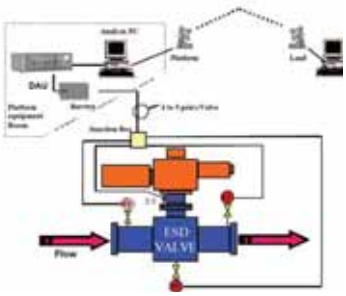
Because the rate of dissolution is proportional to temperature, different polymers must be used to prevent premature acid release. Release times can be designed from a range of several hours to several months. As downhole temperature increases, the flexibility of release times narrows along with the availability of polymers that encapsulate acids and are water-soluble. However, even under these constraints, six-hour release times at 300°F (149°C) are obtainable.

Design criteria for the new completion system put forth by the JIP called for a system cost equal to, or less than that for a conventional gravel pack, liner hanger and tubing-conveyed-perforating (TCP) job. In a line-item-by-line-item comparison, tool costs for both methods are approximately the same, observes Van Sickle. However, service personnel and overall rig time costs are significantly reduced with the one-trip perfless system.

Only one service representative and a back-up are required on the rig floor for the one-trip system, whereas a conventional gravel pack, liner hanger and TCP operation would require up to six service company personnel. Additionally, running the one-trip system requires approximately one-third the time of the three conventional operations. Total service personnel savings approximate 93% while total rig time saved approximates 72%.

And finally, there are savings in the cost of non-conformance. No frac pack or gravel pack operations are required; neither are large pumps or crews placed on and off rigs. As a result, operational and environmental risks are reduced, and logistics simplified. And operators tell Van Sickle they see other cost savings applying the technology to drill stem tests. 'In areas they know may produce sand we see a lot of operators who want to use this for DSTs,' he says. 'Rather than run a full gravel pack, this is an inexpensive way to do sand control and get a DST.'

First field runs for the system Baker Oil Tools says is ready for sale are scheduled in 2005.



Booth 1217 – Crane Valve Services

Listen to the flow

GEORGIA-BASED CRANE VALVE SERVICES REPORTS ITS ValveWatch ESD valve monitoring system is instrumental in helping boost oil and gas platform production. The ValveWatch technology, which has been used on 26 valves in the North Sea, operates by actually listening to the flow of oil and gas at the emergency shutdown valve on an offshore platform and sends the sounds of the flow to an onshore monitoring center which translates them into images to signal smooth operations, caution or alarm without any interruption to production.

The system utilizes dynamic pressure transducers installed in the flow path and the valve cavity, providing information necessary to evaluate leakage. A strain sensor on the ESD valve yoke or stem, combined with static pressure sensor installed on the actuator, provide information on actuator performance as well.

'Production can be increased by performing leakage verification under open flow to eliminate test time with the valve closed, recovery time and shut-ins,' says Crane Valve Services president Kirk Kelhofer. 'Production in the US, where leakage verification testing is required monthly, stands to benefit significantly.'

A prototype system was developed in 2000 in conjunction with Norwegian operators, installed in the North Sea in 2001 and production hardened in 2003. A second generation of the system that includes a wireless option is expected to be available in the third quarter.

AROUND THE BOOTHS

Booth 4505 – Commercial Coating Services

Brown joins CCSI

CORROSION POTECTION SPECIALIST COMMERCIAL Coating Services (CCSI), A corrosion protection provider, has appointed Gary Brown as president. Brown (*pictured right*) has more than 30 years of experience in the oil and gas industry with posts at Halliburton, Dresser Industries, Axelson, Cooper Cameron and most recently as president of CRP Balmoral.

The company also has announced it has received a polyurethane foam (PUF) field joint infill order from Global Industries. The 20in offshore pipeline project being constructed by Global is for the China National Offshore Oil Corporation and is part of the Panyu/Huizhou Gas Development project, which is offshore from Hong Kong, in the South China Sea. The project consists of more than 17,000 field girth welds on the 130-mile pipeline project. The offshore pipeline will be concrete weight coated, requiring CCSI's PUF application over each girth weld area.

CCSI will supply the personnel, equipment and more than 650,000lbs of PUF field joint infill system for the project. This project represents the largest joint infill order since CCSI developed its own field joint infill system in 2003. The CCSI system is a proprietary system formulated without the use of aromatic hydrocarbons that are commonly used in competitive systems. The elimination of hydrocarbons results in a safer, more environmentally friendly system. Pipeline construction is scheduled to start this month.

CCSI is a division of the Bayou Companies and has coated more than two million field joints worldwide and operates the largest fleet of field joint coating systems in the world.

Booth 2377 – Scottish Enterprise

SOAA winners at OTC

OHM's Lucy MacGregor and Dave Pratt receiving the 2005 innovative technology award from Sir Ian Wood..

THIS YEAR'S WINNERS OF THE SCOTTISH OFFSHORE Achievement Awards (SOAA) held 10 March in Aberdeen are being featured at OTC as part of a delegation led by the Scottish Enterprise Energy Team.

The 2005 award winners were:

- PSL Energy Services – Export Achievement and Outstanding Achievement Awards
- impROV Ltd – Small Company Award
- Offshore Hydrocarbon Mapping – Innovative Technology Award
- Universal Sodexho – Health, Safety and Environment Award
- Peak Group – Most Promising Company Award
- Petrofac Facilities Management – Succeeding Through People Award
- Jamie Cochran of PSL Energy Services – Rising Star Award.

As part of the honor, the companies awarded received a business development trip and are being featured on the stand.

'In its 20th year, the Scottish Offshore Achievement Awards continue to thrive, showcasing the dynamism, vision and commitment that has come to characterize the industry in Scotland,' commented Scottish Enterprise Energy Team director Brian Nixon.

'Forecasts suggest encouraging increases in exploration and appraisal activity this year and next, and our businesses are continuing to grow their share of the global oil and gas markets. With this much-needed opportunity for sustainable growth overseas, however, comes a vitally important need for our oil and gas specialists to consolidate their corporate headquarters and knowledge bases in Scotland.'

Phil Bentley (left), operations director with PSL, receives the outstanding achievement award from Scottish Enterprise's Brian Nixon.

AROUND THE BOOTHS

Booth 3359 – Bardex

Seismic restraint

HYDRAULIC LOAD HANDLING SYSTEMS FOR RIG skidding, levelling and seismic restraint for both the skidbase and derrick equipment set (DES) on the Caspian Sea's 48-slot Central Azeri production platform were provided by Goleta, California-based Bardex. The platform, part of the Azeri-Chirag-Gunashli (ACG) project full field development offshore Azerbaijan, came onstream recently in an area acknowledged as being seismically active.

A project requirement was that the drilling facilities must remain stable during a major earthquake.

Bardex responded by supplying a seismic restraint system which included eight sets of 800t seismic lockling wedges for horizontal restraint and eight sets of 1450t restraints for locking the rig against vertical movement.

Booth 2255 – Weir Pumps

Priming the pumps for Alaskan produced water

WEIR PUMPS ESTABLISHED ITS REPUTATION OVER THE years by supplying centrifugal pumps for arduous applications in the harshest environments, pumping some of the most corrosive and erosive products known. A case in point is the painstaking work the company carried out to better equip produced water injection pumps for the rigors of Alaskan oilfield service.

Pumps originally supplied by the company for an Alaskan application in the early 1980s were manufactured in duplex stainless steel, but when first put into service it was quickly realised that the water on this field was much more aggressive than anyone had anticipated and a run-life before complete refurbishment of around six months was not uncommon. Weir worked with operator ConocoPhillips to engineer a solution that would improve this performance.

The first problem dealt with was that of sand erosion of the impeller and diffuser wear rings, which were originally supplied in duplex stainless steel with a traditional stellite overlay to achieve the differential hardness required by API 610. However, the water's high sand content caused the stellite overlay to quickly erode due to the jetting action of the sand laidened water across the fine running clearance. This resulted in loss of material, reduced efficiency and a dramatic reduction in pump performance. By fitting solid tungsten carbide wear rings the run-life of the machines was increased from around six months to four years.

This in itself was some achievement says Weir, but its engineers were confident further improvements were possible through extensive R&D.

Samples of the water were analysed and laboratory tests were conducted to establish the most suitable materials to provide the longevity required. A range of materials were identified, some for their resistance to corrosion, others for their hardness and erosion resistance properties, then Weir produced the 'Rainbow' pump. This was a pump that incorporated parts made from each of the materials that had been identified and was configured such that various material combinations could be performance-tested to establish the best material selection.

The pump underwent extended endurance tests in the field and was then dismantled so that each of the components could be examined for dimensional stability and erosion and corrosion performance. The tests showed that a combination of solid stellite, hard iron and solid tungsten carbide exhibited the best performance characteristics.

A new pump using this combination of materials will go into service mid-2005 and Weir expects it to provide a significant increase in the meantime between overhauls.

Booth 2466 – RigTrain

Underbalanced understanding

THE CONTROL CABIN IS THE NERVE CENTRE OF AN underbalanced drilling (UBD) operation. Data displays, and alarms at different process conditions, are centered in this cabin and it may also house remote controls for flow and shutdown valves. Readouts can include real time digital metering for water, gas and liquid hydrocarbons, both in and out, and real time electronic sensors for temperature and pressures.

Additional data from other service companies such as directional drillers, MWD, mud loggers and snubbing is also shown here. To ensure a safe and successful UBD operation, intensive training is required to cover the diversity of skills and technical complexity concentrated in this one location.

The Weatherford DTL RigTrain team in Aberdeen responded to this industry need with the introduction of its 'Understanding Underbalanced Drilling' course, the manual for which generated considerable interest at the recent IADC drilling conference in Amsterdam.

'This has been developed to meet a level of understanding by all crewmembers,' explains RigTrain's Gordon Lawson. 'It addresses safety, drilling and flow metering equipment, site management and well control. Well bore behaviour is critical during tripping operations, and control of wellbore fluids and pressures are closely controlled and monitored throughout the operation. The course aims to bond a team understanding of the operation as each symbiotic skill is very necessary for a safe and successful operation.'

Booth 3125 – Kvaerner Oilfield Products

'Step change' umbilicals set for Independence

Anadarko Petroleum and Dominion Oil & Gas have awarded Aker Kvaerner the subsea umbilical and production control contract for their Independence development in the Gulf of Mexico. A key element of the contract, with an approximate value of $110 million, is the supply of some 180km of steel tube umbilicals – reckoned to be the largest individual umbilical contract ever awarded.

The fields are located in up to 9000ft of water in the Atwater Valley, Lloyd Ridge and Desoto Canyon areas. Aker Kvaerner says the new deepwater development will utilize several advanced technologies developed by Kvaerner Oilfield Products (KOP) to increase safety and efficiency and reduce power requirements. It described the carbon fiber rod enhanced steel tube umbilical design to be employed for the Independence system as 'a step change in deepwater steel tube umbilical technology'. The umbilicals will be manufactured and delivered out of KOP's Mobile, Alabama plant with deliveries scheduled for completion in 2006.

KOP will also supply 12 control modules to be mounted on subsea trees, and two control modules for subsea manifolds. Included in the contract is also a lease agreement under which KOP will provide an integrated control system for well intervention and workover.

AROUND THE BOOTHS

Booth 3379 – Innova Gassonic

Failsafe gas leak detector

Ultrasound has become an established feature of many offshore gas leak detection systems in recent years, but with current technologies – point and open path gas detection – there are certain limitations. The gas leaks may still go undetected due to changing wind directions and the quick dispersion of the gas cloud, necessitating regular testing of the ultrasonic gas leak detection system's microphone unit to live up to platform safety standards.

With these shortcomings in mind, Danish manufacturer Innova Gassonic has released a next-generation ultrasonic gas leak detector, the patent-pending Gassonic Observer which has a built-in acoustical self-test to verify that the microphone is functioning optimally.

Easily connected to the central DCS system through the 4-20mA analogue output, the Gassonic Observer is addressable through the RS485 serial digital communication interface, enabling the detectors to be set up and adjusted remotely to cut maintenance costs. The detectors are designed in solid stainless steel and are ATEX and UL/ULC certified for installation in hazardous environments.

Booth 4241 – Odim

Anchor handling made safer

Norwegian hydraulics specialist Odim has launched an innovative system aimed at improving anchor handling operations on offshore vessels. The Odim SAHS (safe anchor handling system) was developed in response to Statoil's challenge to offshore players a year ago to identify and eliminate the most hazardous aspects of anchor handling.

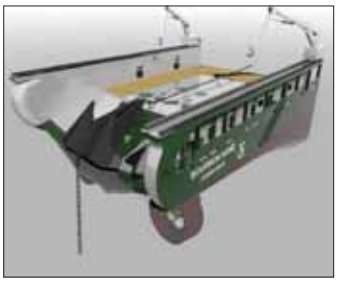
The first such system will be delivered by Odim under a NKr45 million contract for deployment towards the end of 2005 on an Ulstein AX104 vessel being built by Ulstein Verft for shipping company Bourbon Offshore Norway. Odim also has an option for a second vessel.

'We have many people at work onboard anchor handling vessels around the world and we know how hazardous this type of operation can be,' notes Bourbon Offshore Norway's marketing director, Trond Myklebust. 'In partnership with Odim, a recognised supplier of hydraulic solutions, and the vessel design company Ulstein Design, we have come up with a total concept in which we have great faith. Our contribution to the solution has been to identify hazardous operations and be a prime mover in the project. For each of the hazardous anchor handling operations that were identified, Odim developed a safer alternative.'

Capturing pennant wire being winched down from a platform is one of the hazardous activities addressed by the SAHS. A new stern ramp design (*pictured*), which can be tilted at both ends and can be deployed both horizontally and vertically, obviates the need for a crew member to balance on the stern roller while trying to capture the wire with a boat hook, as well as serving to eliminate the forces needed to drag the anchor over the stern roller.

Once the anchor is on deck, there may be powerful rotational spin between the anchor and the cable. A spin tool, which normally lies flush with the deck but can be raised and rotated 90° when needed, is designed into the SAHS to safeguard against this. Moving equipment and loads on a deck strewn with cables can also create a dangerous situation should a cable snap; the SAHS response to this potential danger is to locate movable tugger cranes, with remote control capability, on top of the cargo rail on each side. Moving the tugger cranes to the far stern position also assists in the safe capture of anchor buoys.

'With its multidisciplinary focus on the safety of anchor handling operations, the SAHS concept has developed into a good solution to Statoil's challenge,' says Odim managing director Jogeir Romestrand. 'Remotely controlling many of the deck operations and automated solutions contributes to far safer working conditions for crews. The ramp solution which eliminates the forces usually needed to drag the anchor over the roller also makes a significant contribution to the safety of anchor handling operations.'



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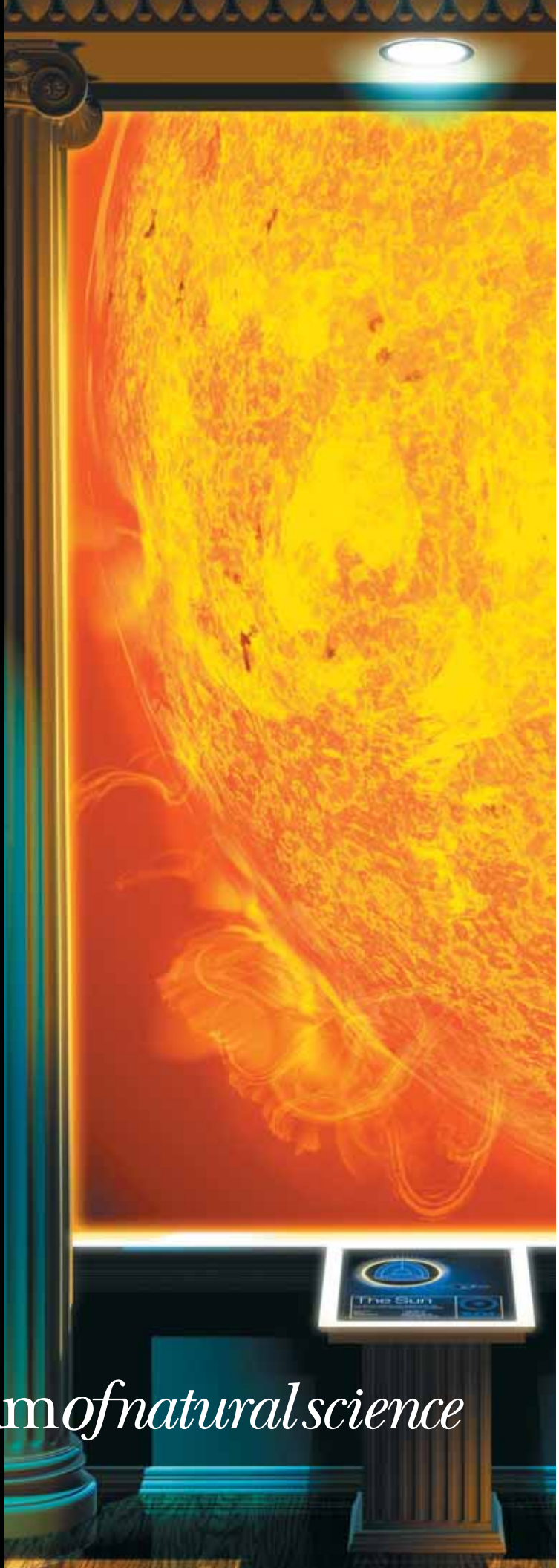


the Houston Museum *of natural science*

AROUND THE BOOTHS

Booth 4263 – Tenaris

Rising to the occasion

SOMETIME THIS YEAR THE WORLD'S LARGEST semisubmersible, BP's Thunder Horse, will come on line. Years in development it is reputed to have incorporated more than 100 Serial One innovations in its construction. Among the most obvious of these are seamless, heavy-wall pipe, steel catenary risers (SCR) specially designed by Tenaris for installation in more than 6000ft of water.

The challenge arose from BP's request for a 1.57in wall thickness seamless line pipe that could withstand high internal pressures and temperatures, sour gas exposure and possess excellent fracture-toughness properties in both metal base and girth welds.

The key to producing the whole package lies in creating a new steel by focusing on the chemical composition of the steel and heat treatment of the pipe. After two years of research and development Tenaris did indeed deliver BP's request as specified.

Items manufactured by the company for Thunder Horse include 6430 tons 65/70ksi SCR in $8^{5}/_{8}$in, $10^{3}/_{4}$in and $12^{3}/_{4}$in OD with wall thicknesses from 1.33in to 1.57in. The company also produced 5640 tons of flowlines in the same steel and sizes with 1.18in to 1.49in wall thickness as well as 1300 tons of 70ksi hull pipe with 1.36in to 1.93in wall thickness. Also the company produced 262 bends using Mother Pipe for 3.6 to 5 and 5 to 8 D Bends for sleds, jumpers and the hull in all three OD sizes using 70ksi and 65ksi steel.

Booth 2025 – Schlumberger

Feeling the pressure

IN THE PAST YEAR, SCHLUMBERGER HAS INTRODUCED eight pressure-specific services, all of which are being highlighted this year at their stand. Services on display include:

- Osprey Risk software for well planning;
- PressureXpress formation pressure while logging;
- StethoScope (*pictured below*) formation pressure-while-drilling tool; and
- Phoenix Select gauges that measure pressure, temperature, and vibration at the ESP intake and discharge points plus pressure and temperature at the sandface.

Production related systems include: the ProductionWatcher for remote real-time surveillance of producing wells; the espWatcher for remote real-time surveillance and control of ESPs; and DECIDE! software that captures, analyzes, conditions, and transforms historical and real-time production data into actionable operational decisions.

Booth 1663 – J Ray McDermott

EPIC presentations

EPIC FIRM J RAY MCDERMOTT IS SHOWCASING some of its capabilities from engineering through to installation with daily presentations each day at the company's booth from 13.00-14.00.

One of the topics being presented is combining the capabilities of two of the company's software systems.

The company says by establishing an interface between its MicroSAS proprietary software that provides detailed modeling capabilities, precise and efficient load generation and fatigue analysis and Ansys, a best-in-class finite element analysis software, it can provide full analysis and design of both floating and fixed offshore structures.

Also, through its SparTEC division, the company has unveiled details on its new Ring Spar design, the fourth generation of spar technology. This new floater, says McDermott, behaves hydro-dynamically similar to the truss spar but with a 15% lighter hard tank, 30% lower piece count and is more constructible. The new design has been optimized for both wet and dry trees which the company adds will be very competitive with a semi or TLP.

The company has also unveiled plans for its 'extreme makeover' for its Morgan City, Louisiana, fabrication facility. This upgrade plan for the largest yard on the US Gulf Coast has been designed to make the facility more efficient and competitive. Also featured are a new worldwide automatic welding system and development planning techniques from the Mentor Subsea group.

AROUND THE BOOTHS

Booth 4075 – Stratos Global

Neat networking

STRATOS GLOBAL IS UPGRADING ITS EXISTING GULF of Mexico microwave network to an IP-based platform, which will be linked to the corporation's core network to support newly developed value-added applications.

In addition to offering greater bandwidth options, the upgraded microwave network will also be capable of supporting the WiMAX last-mile, broadband wireless technology standard, allowing Stratos to create wireless wide area network (WAN) 'hotspots' in the Gulf of Mexico. WiMAX provides high-throughput, point-to-multipoint broadband connections over long distances, up to 15 miles, and can be used for applications including last-mile broadband connections and high-speed enterprise connectivity for businesses.

'By installing WiMAX-enabled wireless WAN "hotspots" onboard certain platforms in the Gulf of Mexico, Stratos will have the ability to offer wireless broadband coverage, in addition to its current fixed-location microwave service,' notes CEO Jim Parm. 'Once enabled, this new network will have the ability to provide oil and gas operators, contractors and crew members with a truly mobile, on-demand, wireless broadband communications option in the Gulf of Mexico that operates not only onboard fixed-site platforms, but also on vessels in range of the network.'

Stratos is looking to have both its IP core network enhancement and the GoM microwave network upgrade fully implemented in the first half of this year.

Booth 2455 – UK Trade & Investment

Business mission

AS PART OF ITS MISSION TO SUPPORT BOTH companies in the UK trading internationally and overseas enterprises seeking to locate in Britain, UK Trade & Investment (UKTI) has holding a number of events on its booth during OTC.

Yesterday, it hosted a one-hour presentation during which representatives from the Louisiana Department of Economic Development discussed reasons for companies to consider Louisiana as the base for their oil and gas operations. This was followed by an open forum on the theme of 'The Americas are Open for Business'.

Today – at 16.00 – UK commercial officers will be on the booth for an informal reception and to meet conference attendees interested in discussions on how the UKTI can assist their businesses.

Also today, in conjunction with the Society for Underwater Technology, the group is hosting three technical presentations on the upper floor of its booth. At 09.00, Christopher Lindsay-Curran will offer his insights into 'Intelligent Wells Interface Standardization', following which Maris International's Laurie Ayling and Jim Jenner, will discuss the 'Seabed Rig of the Future – an ITF Pioneer Project'. In the final talk, at 13.30, Insensys' Lenny Sutherland will be focusing on 'Riser Monitoring'.

● Key figures in the UKTI's Oil & Gas Business Advisory Board attending OTC .05 include its chairman John Weedon, KBR's head of upstream sales for Europe and Eurasia, Brian Gallagher, UKTI's director, international oil & gas business and engineering, Neil Bruce, AMEC's managing director, oil and gas, and independent business development consultant John Langler. The board advises UKTI on the selection of markets, market failures and barriers to exporting, and where government can add value to industry's efforts.

Booth 5771 – Yokogawa Electric Corporation

Integrating process control with safety

YOKOGAWA ELECTRIC CORPORATION HAS STARTED marketing ProSafe-RS, a new safety system designed for integrated use with process automation applications. This safety system is used to constantly monitor the status of oil, natural gas, petrochemical and other process applications, shutting down a plant whenever an unexpected condition is detected. German certification organisation TUV Rheinland recently certified the system's compliance with the IEC 61508 and IEC 61511 international standards and approved its use in SIL3 applications.

ProSafe-RS can be integrated with Yokogawa's well established CENTUM series of process control systems, eliminating the need to build process control and safety systems separately and enabling efficient centralised management of plant information. The new safety controller is a core building block in

Yokogawa's 'VigilantPlant solutions' campaign which promises to bring plants operational excellence by creating an environment where plant personnel are prepared to take action. 'Operational excellence can be achieved by detecting pending abnormal events well before they become a problem, transforming the role of the operator from reactive to proactive,' says the company.

According to Yokogawa, ProSafe-RS is the world's first safety system to receive SIL3 certification under the IEC 61511 standard.

MARKET FORECASTS

Going to ever greater lengths in the depths

In the third of a series of reports produced exclusively for the *OTC .05 Show Daily*, **Will Rowley** of energy data analysts Infield Systems (**Booth 2340**) looks at how the industry continues to expand its reserves.

DEEP (>500M) AND ULTRA-DEEPWATER (>1500M) activity continues to provide one of the key drivers to the overall expansion of offshore activity around the world. But while the growth in exploration activity of the past five to seven years manifests itself into record breaking levels of expenditure it is important to see through this fog of activity and effort and look at where this sector is heading.

In relative terms the deep and ultra-deepwater regions are still under-explored and hold considerable potential but the industry has to face the reality that, without diminishing the inherent risks and challenges, deepwater is not the frontier zone it was five years ago. This particular point was made by the Nigerian authorities in their latest licensing round and begrudgingly accepted by the major operators.

The reality is that within the Golden Triangle of Brazil, the US GoM and West Africa considerable infrastructure is in place in terms of facilities and lines that will act as the key to many of the future fields under development and in prospect.

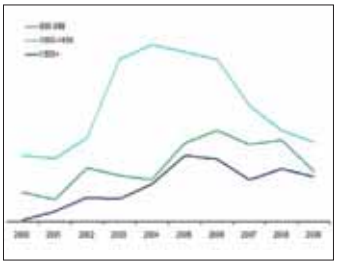
A raft of new deepwater facilities and facility expenditure that averages over $3bn per annum will continue but it is expected that most major operators will take a truly two-pronged approach, one targeting new facilities but a with a second of equal effort concentrating on maintaining the production profiles of the behemoths that have been developed over the past few years.

One exception to this prognosis is the continued growth and development of ultra-deepwater activity and expenditure. While still regarded as a niche area and with activity heavily concentrated in the US GoM, the five facilities installed over the past five years will expand threefold over the next five years.

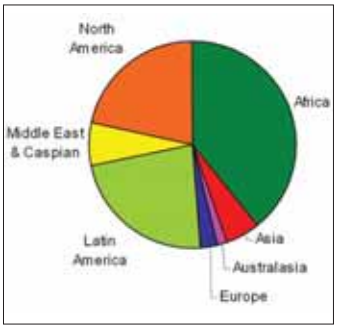
Beyond the record breaking peak of $5.2bn of deepwater facility expenditure forecast for 2006, beyond the next five year window this sector will maintain its position as one of the bedrocks of expansion of the offshore industry. Within this picture, regions such as Asia and Australasia are likely to contribute an increasing percentage of both units and expenditure as the lessons and experience of the Golden Triangle are applied throughout the world.

In conjunction with the global expansion of deepwater activity, there is an increase in the number and mix of both operators and field partners. The deepwater club is no longer the exclusive domain of a select band of major operators as the number of players with exposure to this sector grows exponentially.

As the number of players has grown, the international skills and experience base has continued to develop and is actively contributing to the globalization of deepwater activity.



Deep and ultra-deepwater expenditure by water-depth band (m).



Deep and ultra-deepwater facility expenditure (%) by region 2005-09.

Double Daily duty

The *Offshore Engineer* team (**Booth 1501**) has been contracted by OTC to produce the official *Show Daily* newspaper for the next two years. 'We are delighted to be continuing with this successful partnership,' commented *Offshore Engineer* publisher Rob Garza, pictured (*right*) with OTC executive director Mark Rubin. 'Publishing the show news for the industry's premier event is a great honor.'

COMPANY NEWS

Stepping on the regas pedal

First use of Torp Technology's HiLoad LNG regas unit moved closer to becoming a reality following the completion this week of financing for the permitting of a new $400 million receiving and regasification terminal offshore Dauphin Island, Alabama, in the US Gulf of Mexico.

Project plans propose installation of two HiLoad units, powered and controlled from a service platform, at the Torp LNG Terminal 1, which will be operated with one unit unloading and regasifying an LNG carrier while the other unit is awaiting the arrival of the next tanker.

HiLoad LNG regas units are designed to connect to LNG carriers with capacities as large as 250,000m³. Send-out capacity for the terminal is projected at 1.4bcf/d, with gas flowing through existing pipelines into Alabama, Louisiana and Mississippi.

'We selected this location for the high takeaway capacity to some of the best gas markets in the US,' said Torp chief executive Lars Odeskaug, adding that the terminal would be 'well over the horizon' so as to present no safety threat to the area's coastal population.

Torp Technology anticipates filing for the project with the US Coast Guard in the fourth quarter, and has hired environmental consulting firm Entrix to prepare the project's deepwater port application, award of which is expected in late 2006.

The Norwegian company won the Woelfel Distinguished Innovation Award at last year's OTC for its HiLoad technology, which has gone on to be 'approved in principle' by classification societies DNV and ABS.

Subsea study launched

Scottish Enterprise (**Booth 2465**) and One North East are giving financial backing to Subsea UK to carry out a major study to size up the need for a National Subsea Test Center that would serve as a portal to bring new subsea technology to market and pave the way for future subsea developments on the UK continental shelf. The study has as its mission to 'provide a strong regional and national picture' of Britain's subsea business clusters and their present and coming testing requirements, as well as recommending prime locations for a center and proposing a preliminary budget.

'The need for a wide-ranging subsea test center has been the subject of debate for many years,' stated Subsea UK chief David Pridden. 'We now have the opportunity to assess the requirement in a structured and open manner. I firmly believe that an onshore and offshore test center would enable us to bring new technology to the market more quickly and compete more effectively with our counterparts in the US, Norway and Brazil.'

Middle East orders flow

Norway's Roxar (**Booth 5425**) will supply more than 50 of its topside MPFM 1900VI multiphase flow meters to an unnamed client in the Middle East as part of the 'largest recorded single order to date' for the technology. 'Having pioneered this technology for topside well testing and further developed multiphase and wetgas meters for continuous monitoring of subsea wells, the market is now responding to the value of these meters offer to all producing wells,' stated Roxar chief executive Sandy Esslemont. The contract follows other recent deals in the region for the company's reservoir modeling software Irap RMS, watercut meters and downhole pressure and temperature gauges.

Mooring moves ahead

Yokohama Rubber (**Booth 1475**) has launched a new simulation software package called Iamos (Integrated Approach Mooring and Operation Simulation) to help vessel operators and designers determine mooring arrangements, including selection of pneumatic fenders. According to the Japanese company, though such software 'should be essential' to offshore production and transfer operations, mooring using pneumatic fenders has to date relied completely on onsite experience. 'Our new system will greatly reduce time and costs in mooring operations while optimizing safety,' said Yokohama Rubber.

Benguela-Belize boon

Acteon company UWG (**Booth 2355**) has landed its largest order to date in the form of a $1.5 billion deal to supply conductor centralizers, stop collars and cellar-deck items for the integrated drilling and production platform destined for ChevronTexaco's Benguela-Belize development on block 14 offshore Angola.

Delivery is slated for mid-year, with installation of the centralizers scheduled to start in August to coincide with tieback operations between the platform and the field's compliant piled tower.

Another Acteon company, Intermoor, will fabricate the 112 main conductor centralizers at its Amelia, Louisiana facility. The 112 stop collars and 28 commissioned cellar-deck centralizers, which will double as hole covers, will be manufactured in the UK.

Procurement push

Craig International Services (**Booth 2450**) is opening offices in Houston as part of its push to break into the US Gulf market for oilfield procurement. 'The weaker US dollar has made it more attractive to us as we will be able to source and buy products at more competitive prices to supply our clients' operations around the world,' said CIS managing director David Allan.

Scottish technology ships out

Two North East of Scotland-based companies have entered into a co-operation agreement to promote their technologies worldwide. Montrose based Merpro (**Booth 2373**) and Aberdeen-based CETCO Offshore, which supply complementary technologies to the oil and gas production processing industry, inked a deal that enables the companies to co-operate in promoting CETCO's CrudeSep induced gas flotation and CrudeSorb filtration systems and Merpro's topside process solutions incorporating hydrocyclones and their patented Tore technology.

Merpro chairman and managing director Bert Smith called the deal a 'win-win' solution for both companies. 'It means that we can work together to supply complete packages where, for example, Merpro can provide bulk oil/water separation, sand handling and de-oiling equipment, with CETCO's CrudeSep and CrudeSorb providing the water polishing elements. Combining the two technologies provides operators with cost effective, light weight and compact solutions,' he said.

Neil Poxon, general manager of CETCO added: 'Both companies have substantial expertise in providing processing equipment with extensive reference sites around the world.'

von Flatern's view

The problem with a discussion of oil industry collaboration, as in Tuesday's panel session, 'Global Collaboration Among Operators and Contractors in Deepwater and Ultradeepwater Fields', is that it quickly resembles a dated discussion of the once hot topic of alliances. Indeed, to many around the offshore business who watched the rise and fall of that concept, the very vocabulary of the panel session was all too familiar.

For instance, the axes of the curves referenced by two of the speakers directly and the others indirectly are labeled 'shared risk' and 'aligned goals', terms that must have stirred in industry veterans more than a few uncomfortable memories of a phenomenon of the last decade known as 'drilling in the '90s'.

It is perhaps a sign of lessons learned, however, that this time round a touch of reality often missing 15 years ago seemed to keep panel participants more realistically grounded. Some cautionary remarks delivered from both sides of the conversation seemed downright skeptical.

Halliburton vice president Mark McCurley, for instance, brought to the discussion a reality check that included a short list of common industry practices that would almost certainly sabotage any attempts at operator-contractor collaboration.

Under the wrong circumstances, he said, alignments can in fact create conflict rather than harmony when procurement is price-focused, contracts are designed to shift operator risk to contractors or business strategies are aimed at commoditizing new technology.

Just as telling of the new frankness between contractors and operators were the candid remarks from ChevronTexaco general manager drilling and production Randall Kubota, who in no uncertain terms defined empowering contractors or entrusting them with too much responsibility as a form of operator risk.

While few honest observers would argue Kubota's point, since by definition an operator must relinquish a degree of contractor oversight in order to 'empower' them, it is a bit of a shock (if a refreshing one) to hear it expressed so candidly.

It must be remembered however that the view of a ChevronTexaco is not going to mirror that of a smaller company since, if independents want to play in the hugely expensive game known as deepwater, it must rely on outside talent since its overly lean engineering departments must remain narrowly focused and are already too thinly spread dealing with their core exploration and production business.

In the end, then, it may be that independents like Kerr-McGee who are greatly increasing their share of deep and ultradeep water acreage without being able or inclined to take on more staff, will be the real drivers of operator-contractor collaboration, and win-win contracts and alliances and EPIC and all those other thread bare concepts that seem otherwise destined for the dustbin of history. The difference this time, however, may be that since the operator truly needs the service company to get the job done and not just as a matter of simple cost cutting, both parties may actually have a shot at making money at it.

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