

# Pigging Industry News

the newsletter of the Pigging Products & Services Association



## Secretary's Letter

### by Gill Hornby, Executive Secretary, PPSA

#### PPSA Celebrates its 20th anniversary

**W**ELL WE'VE made it – PPSA is 20 years old. Having been there from the start, I have seen the association grow from its original 19 members to 90 plus. Our web site is visited by countless people each year and we receive thousands of enquiries.



But what is the secret of PPSA's success? Well I believe it is the personal touch – the fact that every enquiry is dealt with individually – not by an automated response. We pride ourselves on responding by return to all enquiries and, with PPSA members spread across the world's time zones, there is always someone ready to respond.

Most of the enquiries are forwarded direct to all Full Members who decide for themselves whether the enquiry is relevant to them and respond accordingly. In addition we have a panel of independent technical advisers based in the UK and the USA.

Really, this is why the association was formed – to enable pipeline operators to source pigs and pigging services quickly and efficiently and to obtain independent advice. Another aim was to educate and inform. In 1998 it was suggested that PPSA should organize a seminar on pigging. Since then, the seminars have developed into very successful annual events, and probably should be described as

*Delegates at the Aberdeen seminar in November had the opportunity to visit the 12 exhibitors to see the wide range of services and equipment on display.*

conferences now. The one-day event is held in Aberdeen, Scotland at the Marcliffe Hotel. For those of you who want to make a note in the diary, the next one is on 17th November 2010. There are generally eight or nine presentations made by PPSA members plus an exhibition which provides an excellent opportunity for discussion during the breaks.

The association's Annual General Meeting will be held on Tuesday 16th February at the Marriott Westchase Hotel in Houston, Texas, prior to the pigging conference. The day before, on Monday 15th February, our golf tournament will tee off at the Black Horse Golf Club, Houston. All are welcome to make up teams and to sponsor the event. To find out more, please follow the link at the top right hand corner of our web site home page [www.ppsa-online.com](http://www.ppsa-online.com): you can't miss the golfing pigs. ●

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*In a rare photo taken by Jim Cordell in a Tulsa restaurant in May, 2004, Hershel (right) is seen with (clockwise from left) Cathy Foster, Gerry Foster, Ken Jones, Jerry Jones, and Sheila Cordell. The men are all ex-TDW.*

### Hershel Vanzant: 1925-2010

**H**ERSHEL Vanzant was born on 18 February, 1925, in a house near the small town of Avant in Osage County, Oklahoma. The house was provided by Phillips Petroleum Company as part of his father's employment package and from then on, Hershel was never very far from oil-related activities.

In his early working life he learned to operate virtually all kinds of machine tools and used his earnings to pay for his further education at what is now Oklahoma State University. This combination of practical and theoretical knowledge served him well throughout his career.

He began work with T D Williamson Inc., Tulsa, in 1955 and progressed through different areas of the company – not least of which was pigging – to become managing director of T D Williamson (UK) Ltd in 1967 – the same year he employed me.

In 1970, he became the first president of TDW Services Inc., where his skills were particularly useful. He officially retired in 1990 but such was his worth to the company that he was asked and agreed to work part time for a few more years. It was during this period that I worked with him on the development of the manual *All About Pigging*.

He was a very quiet, unassuming person. He was totally honest, very kind, and dedicated himself completely to the job in hand. He earned respect, never demanding it and lived his life in what seemed to others as being in typical mid-west American 'laid-back' style. He liked to go everywhere by car and I went with him on his first visit to the TDW Distributor's offices in Central London. He was obviously enjoying the drive and near Buckingham Palace, I asked him if he knew where these offices were. "Nope" he replied, "But if we drive around long enough, we'll find 'em". And we did!

Hershel died on 15 January, 2010. He was not only a 'helluva' nice guy but someone who gave me the opportunity to achieve things I would never have been able to do had I not met him. He was perhaps above all, someone I feel very privileged to be able to say was a really true friend.

**Jim Cordell**

## Industry news

### TDW introduces pig-passage indicator

**T**D Williamson, Inc. (TDW) has introduced its *PIG-SIG NIXT* pig-passage indicator. Requiring no line tapping or

welding, the new indicator is a fully non-intrusive device that is designed to provide accurate and consistent bidirectional detection of pigs equipped with permanent trip magnets or carbon steel cleaning brushes. Two flashing

LED lights signal recent pig passages, and these lights are bright enough to be visible up to 50ft away, even in strong sunlight.

The times of the most recent 99 passages are stored in the unit's memory for subsequent retrieval via an LCD graphic display screen. The company says that pig speeds ranging from near zero up



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to 65ft/sec (20m/sec) can be detected. Any unit can be wired for communication with a control room or data-acquisition system, so remote monitoring is possible. For buried pipelines, extensions of up to 15ft can elevate the unit for good visibility.

All standard units can operate on two 1.5-V D-cell alkaline batteries, which are installed by unthreading the back of the unit's explosion-proof instrument enclosure. The unit can also be hard-wired to 24-V DC external power. It features a field wiring box with conduit port, and a detachable terminal block inside this box enables easy wiring to external power and remote SCADA communication.

The indicator requires a minimum of 3.5 x 3.5in of space on the line surface, and it installs easily on 4-in through 72-in (102-mm through 1800-mm) lines, and it is designed to work on steel pipe wall thicknesses up to 1.5in (38.1mm). Ambient temperatures at the pipeline's exterior surface can range from -40°F to 176°F (-40°C to 80°C), although the unit requires hard-wiring at temperatures below -4°F (-20°C) or above 130°F (54°C). An additional LCD heater is required in temperatures below -22°F (-30°C).

Perhaps best of all, the unit is light and easily portable. It weighs just 10lbs (4.5kg), and it features a lock / unlock switch that facilitates portability without false pig detections. An epoxy-coated galvanized steel chain (in various lengths) with a stainless steel turnbuckle is used to attach it to the pipe, and no special tools are required. ●

## Graduate certificate in project management

**BJ Services Co** has launched its second Graduate Certificate in Project Management programme for employees in its process and pipeline services group. The certificate, which is the equivalent SCQF (Scottish Credit & Qualifications Framework) level of an ordinary degree (BA/BSc), is recognized throughout Europe and complies with the Bologna Accord.

In December, 20 of the 22 new participants gathered at Aberdeen's Robert Gordon University (RGU) for a three-day introduction session and the first module initiation. Nearly half of them are based in Aberdeen, while the other students work in the USA, Canada, Australia, West Africa, the Middle East, and the Far East. The primary goal of the programme is to enhance the students' skills in effective project management, with an emphasis on tools and techniques.

The course comprises four 12-week modules, including project fundamentals, managing change, commercial realities for project management, and project strategy and leadership. BJ Services and RGU will deliver the training in the classroom and online.

Throughout the coming year the students will also take part in a five-day training session at BJ Services' base in Singapore, before returning for two additional five-day sessions at RGU. Every student's tuition is funded by BJ Services as part of the company's commitment to improving performance and service.

"I am excited about the prospect that in July 2010, the process and pipeline services group could have more than 30 of its engineering and management staff with the equivalent of a degree in project

management. The benefits to our clients, and the way it will differentiate us from our competitors will be fantastic," said Les Graves, BJ Services' process and pipeline services product line manager.

The Graduate Certificate in Project Management programme was developed in February 2008 by BJ Services in association with the University's commercial arm – Univation Ltd – and the Aberdeen Business School. The first class of graduates received their certificates at a ceremony in July 2009 at His Majesty's Theatre in Aberdeen. ●

## Strategic partnership agreements in Qatar

**GE Oil & Gas (GE)** and **Al Shaheen Energy Services**, a wholly owned subsidiary of **Qatar Petroleum** established to develop partnerships in the oil and gas and energy industries, have signed two partnership agreements, consolidating PII Pipeline Solutions' presence in Qatar and the Middle East, and establishing a joint-venture for aftermarket services of Turbomachinery equipment in Qatar.

Under the first agreement, Al Shaheen Energy Services becomes a 50% strategic J-V partner in the PII Pipeline Solutions business with immediate effect, with GE maintaining operational control of the business. The company name will be PII Pipeline Solutions (an Al Shaheen/GE Oil & Gas Co), and its logo, inspection tool names, services, and software will remain the same. Together, GE and Al Shaheen will establish a dedicated integrity and inspection centre in Qatar, expected to be opened later this year, to support pipeline solutions in the Middle East.

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John Bucci, general manager of PII Pipeline Solutions, said: "Al Shaheen Energy Services, as part of Qatar Petroleum, is an excellent, strategic partner for PII to help us continue to grow and meet our long-term objectives. The partnership agreement will benefit our entire global customer base through the leveraging of additional strategic resources and improved access to the Middle East. This is great news for pipeline operators, our employees and the Middle East region, evidencing the strength and value of the PII franchise."

The two companies have also signed a 50-50 joint-venture agreement to perform aftermarket services for the GE installed fleet in Qatar. This J-V, which includes GE's existing services centre facilities in Qatar, will provide an enlarged range of turbine, compressor, and related auxiliary equipment services. The J-V is intended to help Qatar achieve increased oil and gas capacity by providing the most advanced technologies for the inspection, maintenance, and repair needs of the local oil and gas industry. The broader application expertise available will include LNG and pipeline, gasification and storage, and refinery and petrochemicals. The Qatar services centre will promote Qatar's growth by fostering technology transfer and the development of local talent. ●

### Malaysian pipeline isolation success

**TDW Offshore Services AS** has completed a pipeline pressure isolation operation in Malaysia with **Amserve Engineering** on behalf of **Malaysia LNG Sdn Bhd** (MLNG), a subsidiary of

**Petronas**, the national oil company of Malaysia.

The operation was carried out at the onshore processing plant of **Petronas'** LNG Complex in Bintulu, Sarawak, to which gas is transported from offshore platforms in the South China Sea through four major trunklines. Pipeline pressure isolation services were required for Trunkline 4 in order that six 22-ton motor-operated ball valves (MOVs) could be replaced.

TDW carried out pipeline pressure isolation services on the receiving end of the 36-in diameter trunkline. To isolate this section, the company launched a *SmartPlug* tool at the receiver located at the gas terminal: the tool travelled approximately 750m past the receiver and the beach valve, at which point where the tool was set. The line was thus safely isolated while MLNG replaced the six existing MOVs.

The tools were engineered, assembled, and tested by TDW Offshore Services at its global headquarters in Stavanger, Norway, and transported to Bintulu via Labuan. With a collective weight of 66 tons, the new MOVs were flown in by Persafe Engineering Sdn Bhd on three chartered Boeing 747-400S aircraft from Germany to Kuala Lumpur before arriving in Bintulu.

The pipeline isolation operation was carried out by TDW from Stavanger, with support from the company's team in Singapore. Overall, TDW completed the operation in four weeks, six days ahead of schedule. Early completion of the pipeline isolation operation and MOV change-out resulted in

considerable savings for MLNG.

"This is the first major pipeline pressure isolation operation that we have provided for MLNG, so it is very satisfying that it went well and that the large MOVs were successfully replaced," said Rune Haddeland, managing director of TDW. "That the job was completed six days ahead of schedule makes it that much more meaningful, especially in terms of reduced time and costs," he added. ●

### CPCM cathodic protection inspection services

**A** PROGRESS REPORT on **Baker Hughes'** Pipeline Management Group's new *CPCM* cathodic protection inspection technology was presented to the US Government/Industry Pipeline R&D forum in Washington, DC, in June. The forum, sponsored by the US Department of Transportation (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA), is held periodically to set a national pipeline research agenda. Baker Hughes' *CPCM* technology, winner of a best joint technology award at the 2008 BHI Technology forum, is a joint development project between **Shell Global Solutions** and Baker Hughes PMG with partial funding provided by the DOT. Out of 155 total projects receiving funding from the DOT since 2002, the *CPCM* technology is one of only nine technology projects that has reached commercialization, and is believed to be the only technology available to assess the effectiveness of a pipeline's cathodic protection system from inside the pipeline. Introduced commercially in 2008, the technology measures the magnitude and direction of cathodic protection current



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flowing on a pipeline, particularly useful on pipelines with right-of-way access challenges. ●

### Isolation smoothes path for safe NSea riser repair

**TDW Offshore Services AS** has successfully completed an innovative low-pressure isolation operation on a 12-in diameter export pipeline riser in the North Sea.

In 2007, a vessel collided with the SE face of a satellite platform jacket, damaging the 12-in export riser. Production from the platform was immediately shut-in via the emergency shutdown valves, leaving the pressure in the pipeline at approximately 4bar. Before production could resume, the operator needed to repair the riser. The objective was to cut out and remove the damaged riser section, and replace it with a new one. To facilitate the repair process, TDW was retained to formulate a low-pressure isolation solution in order to isolate the damaged section of the pipeline riser from the export pipeline gas inventory. By doing so, the damaged riser section and associated topside pipework production system could be replaced, safely and efficiently.

Following analysis, engineering, and testing, TDW developed a solution using its range of specialist pipeline pigging, pig tracking, and remote communications technology. The approach involved using multiple high-friction pigs in order to seal off and replace the damaged riser section and pipework, and consisted of the following elements:

- a custom-designed TDW pig

- trap and pigging spread
- a high-friction pig train furnished with the *SmartTrack* remote tracking and pressure-monitoring system
- a *SmartTrack* subsea remote tracking and pressure-monitoring system
- a *SmartTrack* topside tracking and monitoring system with radio link to the dive support vessel
- a pipeline isolation ball valve

During August 2009, TDW used its remote-controlled *SmartTrack* technology to successfully isolate the damaged riser section from the gas inventory in the export pipeline without venting or flooding the pipeline, or displacing the pipeline's gas. A three-module high-friction pig train created an isolation against the gas pressure in the pipeline. The first step was to verify and record the pipeline inventory gas pressure, and close and isolate the emergency shutdown valve (ESDV) 050. The redundant topside pipework located upstream of the ESDV was removed, and a temporary spool and 12-in valve were installed upstream of the valve. Leakage over the ESDV was monitored closely, with a view to minimizing pressure build-up in the spool.

Using the pig trap and pigging pump, the high-friction isolation pig train (HFIPT) was launched and pigged with water to the pre-determined isolation position within a straight spool section of the vertical riser. Using TDW's remote-tracking technology, technicians on board the dive support vessel (DSV) tracked the position of each pig to verify that the HFIPT was located below the damaged section of riser that was designated for replacement. Communication skids were positioned over the three pigs and connected to the pig monitoring

system, allowing TDW to monitor the downstream pressure of each isolation pig continuously throughout the operation using its through pipe wall communications technology that makes it possible to send isolation integrity data by radio link to a DSV.

The existing topside pipework was removed and replaced with new pipework. The section was successfully cut and removed using a crane on board the DSV. A mechanical connector was locked onto the existing riser. The new riser was attached to a crane on the platform and lowered down to rope access workers who installed it on the topside pipework closing spool and to the existing riser located above the HFIPT.

Following installation of the new riser section, TDW verified that the ESDV and new 12-in valve were operating properly and fully open. After purging the riser and topside pipework, TDW used its pigging pump to slowly increase the water pressure to begin pigging the HFIPT downstream away from the platform to the launcher. The ESDV and 12-in valve were then closed, and the pipeline gas inventory pressure was increased to keep the HFIPT moving forward. After all pigs were recovered in the temporary pig trap, the ESDV and new valve were closed. Using the platform crane and an ROV, all pigging equipment was removed and the TDW crew demobilized. All offshore operations were carried out in about 10 weeks, from 20 May – 2 August, 2009. ●

### Inpipe's biggest-ever order

**UK-BASED Inpipe Products** is bucking the trend of the recession having had its busiest



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year in its 25 years' existence. In addition, it has also just completed its largest-ever order. The company manufactures pipeline maintenance equipment. Celebrations of the company's 25-year anniversary took place with international sales agents travelling to North Yorkshire to learn more about the company and its plans for developing in the future. Its highest-ever order, worth half a million pounds, was placed by **Petrojet** of Algeria, and was manufactured in record time and dispatched before Christmas. ●

### Subsea precommissioning for Helix Energy

**BJ Services Co** has completed a major contract to provide a range of precommissioning services for **Helix Energy Solutions Group** on an 18-well subsea production system in the KG-D6 field in the Krishna Godavari Basin in the Bay of Bengal, offshore the east coast of India. Hydraulic and electrical testing of the dynamic and infield umbilicals was carried out during the pre-installation, installation and post-installation phases of the operation water depths of up to 3,937 ft (1200 m). The 99 miles (160 km) of steel tube umbilicals were monitored throughout the entire construction process.

In spite of the deep water depths and dynamic work environment, the operation was completed on schedule in just 13 months. All related services were conducted by BJ Services from the Helix ESG vessel, the *Express*. The company drew upon equipment, staff and resources from its bases in India and Dubai.

The KG-D6 network gathers gas from the Krishna Godavari Basin for export onshore to India. The

system is extensive, involving a complicated network of subsea production systems, flowlines, and umbilicals. The gas from the KG-D6 development will be transported through pipelines to an onshore gas terminal located approximately 19 miles (30km) south of Kakinada, on India's east coast. At peak production, the KG-D6 facility is expected to produce more than 550,000bbl oe/d. ●

### ...and precommissioning for Akpo in Nigeria

**BJ Services Co** also recently completed a major subsea pipeline precommissioning operation for **Saipem S.A.** in Nigeria on the Akpo development, one of the largest deepwater developments ever undertaken. The Akpo field lies in the Oil Mining Lease (OML) 130 Block approximately 124miles (200km) south of Port Harcourt, Nigeria, with water depths of 3,936ft to 4,593ft (1200m to 1400m).

Initially, Saipem awarded BJ Services a contract in the Autumn, 2007, to provide subsea flooding services on the flowlines after lay. The aim of this process is to displace the raw seawater in the flowlines with filtered, treated seawater. BJ achieved this during the initial phase by running cleaning and gauging pig trains in the production and gas injection loops. Working from the *Bourbon Trieste* vessel, BJ used its remote-flooding module, which offers a number of benefits. For example, lines can be flooded without connection to a vessel, reducing vessel time and related costs, and seawater from the seabed is used, allowing for immediate hydrotesting of the lines, if required. Finally, safety is enhanced because the process is carried out without a downline and diesel-pumping spread, and impact on the environment is

reduced because no byproduct from the diesel engines is released into the atmosphere.

BJ Services supplied a further complex series of precommissioning services on the Akpo flowlines and umbilicals, as the result of a contract awarded by Saipem in March, 2008. Phase 1 involved precommissioning the 16-in diameter, 147-km long, gas export line. During Phase 2, the production, water injection, gas injection and oil offloading lines were precommissioned. The overall flowline precommissioning workscope included post-lay flooding cleaning and gauging pigging, post tie-in hydrotesting, dewatering, drying and nitrogen packing services.

The third and final phase of the precommissioning programme was carried out on the infield static and dynamic umbilicals, which range in length from three to six miles (5-10km). This included a full range of hydraulic and electrical testing.

Work was carried out from the deepwater support vessel *Bourbon Trieste* and the Akpo FPSO by BJ Services personnel with equipment from the company's base in Port Harcourt. ●

### Pipeline services for Sarawak Shell Berhad

**TDW Offshore Services AS** has entered into a frame agreement with **Amserve Engineering** to provide a range of pipeline services on a call-out basis on behalf of **Sarawak Shell Berhad** in Malaysia. The agreement calls for TDW to supply *SmartPlug* pipeline pressure isolation and hot tapping services as required, in addition to subsea repair clamps. The work will be



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carried out at Sarawak Shell Berhad's facilities in the South China Sea, offshore western Borneo. The facilities include the M3, B11, E11 RB, F23, and F6 platforms, located 80km to 200km from Miri and Bintulu. Gas is transported from the fields through four major pipelines to an onshore processing plant in Bintulu. Shell and its co-venturer **Petronas Carigali Sdn. Bhd.** are the production-sharing contractors for Petronas, the Malaysian national oil company; Shell is the operator.

Work associated with the agreement has commenced, and TDW has successfully carried out pipeline pressure isolations on the F23 and the M3 platforms, with plans to complete two isolations in order to facilitate a pipeline tie-in on the F23 and to replace two valves on the E11 RB imminently. ●

### API Certification for Rosen

**T**HE American Petroleum Institute (API) has completed its annual compliance audit of **Rosen USA's** quality management system and found it continued to be in compliance with API Specification Q1. The company says that it was the first ILI vendor to earn and maintain an API Q1 Certification that includes API 1163, the recognized in-line inspection services standard for the oil and gas pipeline industry.

The API Q1 Standard is an umbrella document that, by reference, incorporates two additional standards: NACE RP 0102 and ASNT ILI-PQ. By complying with these standards, Rosen's clients are ensured they are using an ILI vendor that employs qualified personnel and

operates qualified in-line inspection technologies.

### First stopple train intervention in Europe

**T.D. Williamson SA** has performed its first stopple train intervention operation on a pipeline in Europe. The operation took place in Italy at the SARPOM Refinery, which is owned by ExxonMobil and ERG Petroli, and is located on the border of the Piedmont and Lombardy regions in the heart of the Po Valley. In preparation for scheduled line maintenance, TDW was retained in March, 2009, by ExxonMobil to provide stopple intervention services to ensure that a key hydrogen sulphide line could be cut, plugged, and safely isolated without shutting it down. The only other alternative would have been to shut the line and production unit down, resulting in a complete halt in production, which was deemed unacceptable.

The TDW team commenced work on the intervention operation at 9.30am on 18 November using a standard 660 tapping machine to hot tap the line, and one 6-in simple-position stopple train double-block and bleed plugging system to plug the line. The operation was successfully completed by 16.30 one day later, on 19 November. As a result of TDW's experience and careful preparation, the line was isolated, creating a secure environment in which critical maintenance and servicing could be carried out. The fact that the line was isolated with a minimum amount of equipment and required only one fitting also meant that costs associated with welding and fittings were significantly reduced.

The stopple train plugging system is a double-block and bleed design that makes it possible to insert

two plugging heads through a single fitting. The void between the two plugging heads can be bled down to provide a 'zero-energy' zone. The sealing element on the secondary plugging head provides double block features at pressures ranging from zero to 1000psi. ●



*Ben Cottam, the latest member of PPSA's Board of Directors.*

### New member appointed to PPSA's Board of Directors

**B**EN COTTAM, Managing Director of **Cottam Brush Ltd**, UK, has been appointed to serve as a non-executive director of PPSA. His role will be to represent the views of associate and individual members and thereby to improve PPSA's services to all members. Ben joined PPSA in 2006 and his company has been represented at recent Houston pigging conferences, exhibiting for the first time in 2009. Ben was one of our chairmen at the 2009 Aberdeen seminar and did a first class job, as those of you who were there will remember. He is very enthusiastic about joining the Board and we look forward to welcoming him at the Directors' meeting on the 16<sup>th</sup> February, which will be held prior to the AGM. ●

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