

Pigging Industry News

the newsletter of the Pigging Products & Services Association



President's Letter

by **Gordon Short**
Weatherford P&SS, UK

THIS IS MY first letter as President of PPSA. I would like to thank my predecessor Coleman McDonough, who stood down at the AGM in February, for doing a fantastic job. I hope that I can carry on his good work.

It is an honour for me to have been elected President of PPSA. I first became aware of PPSA some 15 years ago. Back in 1990/91 I had the pleasure of working with Jim Cordell, who was one of the original movers behind the formation of PPSA, and was our Executive Secretary from 1991 – 1998. Jim and others, like Chris Kershaw, talked with a passion (to anyone who would listen!) about PPSA and why it was so important. They felt that our industry needed a vehicle for promoting knowledge of our industry: hence the PPSA. How right they were!

Although much has changed in the last 15 years, the need for a strong and vibrant PPSA is just as great now as it was then. We live in changing times and our industry is evolving rapidly. Changes such as the new US pipeline regulations and the development of pipelines in ultra-deepwater (among many

others) are pushing our members to continuously develop new technologies, products, and services. In these fast-moving times the need to promote knowledge of our industry and the capabilities of our members is required just as much as ever.

As an association we recognize that our strength comes from the broad base of our membership. We take the view that this membership should not be restricted to a narrow definition of companies involved directly in the manufacture of pigging products and provision of services, but also should include users of these products and services, companies providing related products, and interested individuals who may have no direct trade involvement. That is why we created Associate and Individual Memberships. Today we have eight Associate Members and 16 Individual members, and are actively looking to increase these numbers over the next year.

I hope you find this latest edition of *Pigging Industry News* both interesting and informative. ●

PPSA Seminars

3 November, 2004 - Aberdeen

1 December, 2004 - London area (probably near Heathrow)

Details will be on the PPSA site (*see below*) from 6 September

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Industry news

News from BJ

Na Kika pipeline contract completed

A MAJOR contract to provide specialized pipeline services for **Shell Exploration & Production Co's** offshore Gulf of Mexico business unit was completed by BJ PSS in May. The contract, awarded by Shell in 2002, involved the supply of a range of pre-commissioning services for the Na Kika pipeline system, one of the most complex pipeline projects that BJ has undertaken in the Gulf of Mexico.

The pipeline network gathers oil and gas from *Mississippi Canyon* 474 and the surrounding area, from where the oil is exported to an existing platform in MP69 and the gas to MP 260; existing pipelines then transport the oil and gas to shore. The system is extensive, involving a complicated network of both gas and oil export pipelines and flowlines. These include a 24-in x 120-km long gas-export pipeline, including a 11-km long 20-in section at the host in MC 474, an 18-in x 120-km long oil-export pipeline, a 10-in x 16-in x 43-km long north oil flowline, an 8-in x 12-in x 41-km long south oil flowline, and an 8-in x 50-km long south gas flowline. Of particular note is the *Coulomb* gas flowline, which is 8-in x 42km in length, and extends to water depths of 2494m, making it the world's deepest gas flowline.

The company provided hydrotesting, flushing, dewatering, drying, leak testing,

glycol swabbing, vacuum drying, and nitrogen purging; its operations commenced in October, 2002, and first gas was achieved on 25 November, 2003, with the final phase completed in March this year. Gas export pipeline dewatering and drying was accomplished much sooner than expected, and took this task off critical path.●

Major contract for Kern River Gas Co

BASELINE pipeline inspection services are being provided to **Kern River Gas Transmission Co** of Salt Lake City, Utah, by BJ PSS. The company will inspect 2200km of the Kern River pipeline system, which runs from SW Wyoming to Bakersfield, California. The pipeline system is designed to transport 1.7bn cf/d of gas which, when converted to megawatts of electricity, is enough energy to power approximately 10 million homes.

The baseline inspection will be undertaken using BJ PSS' *Geopig* mechanical caliper and *Vectra* MFL tool. The *Vectra* has active speed control and gas by-pass system, which will enable the tool's velocity to be kept constant throughout the run, helping to ensure that the data captured is as accurate as possible. In addition, the gas by-pass makes it possible to perform inspections without disrupting the gas flow, which is beneficial to Kern River and its customers who rely upon a consistent supply of natural gas year-round.

Inspection of the first section of 307km of 36-in mainline pipe from Salt Lake to Elberta was undertaken in June. The remainder of the 1093km of 36-in mainline, and the 1003km of loop line, will be completed over the remainder of the four-year contract. In addition, a number of 12-in, 16-in, and 24-in laterals will also be inspected.●

Australian defence contract...

NAUTRONIX Ltd has signed a contract with the **Australian Department of Defence** for the supply and support of electronic chart display and information systems (ECDIS) to the Royal Australian Navy (RAN). The ECDIS will improve the efficiency of planning and performing navigation for the RAN. The ECDIS systems will be enhanced with Australian-specific features and will improve navigation safety and efficiency by replacing the use of paper charts with ECDIS technology on board RAN vessels. At its core, the ECDIS combines information from various ships' sensors, satellite, and other position-fixing sources, and from sophisticated electronic chart databases, on to one centralized system. The ECDIS will also be used in Australian Defence Force operational headquarters to streamline operational and tactical level mission planning.●

...and deepwater trial of positioning system

A SIX-station *NASNet* suite from **Nautronix Ltd** was

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recently deployed into an average water depth of 2,040m at **BP's** new deepwater field development site, *Atlantis*, in the Green Canyon area of the US Gulf of Mexico. These trials have been the most intense and comprehensive evaluation of the suite's capabilities yet undertaken, and were completed under the stewardship of BP, who's participation provided not only the deepwater trial site, but also substantial funding of US\$ 800,000.00, encouragement and technical assistance.

NASNet is a wide-area, multi-user, navigation and positioning system based on Nautronix' acoustic digital spread spectrum (ADS2), and can best be described as the underwater equivalent of surface positioning by GPS. It is set to revolutionize acoustic positioning in offshore oil- and gasfields, with its deepwater capabilities. ●

Advanced pipeline integrity software

A SOFTWARE tool to help transmission pipeline operators and local distribution companies assess and manage the integrity of their pipelines has been launched by **GE Energy's** oil and gas business. *PipeView Integrity* has been designed seamlessly to manage multiple types of pipeline-integrity and -facility data in a single environment, integrating information from various sources such as databases and GIS platforms, including data from pipeline assets as well as in-line inspection (ILI) tools and above-ground surveys.

New members

SINCE THE last edition of *Pigging Industry News*, seven new members have joined the Association, bringing total membership up to 79. Who will make it 80?

Full members:

AGR Pipetech AS, Norway
Durham Pipeline Technology, UK
Plugging Specialists International, ASA, Norway
Spetsneftegaz NPO JSC, Russia

Associate members:

Brenntag Nederland BV, Netherlands
Netherlocks Safety Systems, BV, Netherlands

Individual members:

Satoshi Higashi, Hitachi Research Institute, Japan

The software helps pipeline operators maximize safety and asset life by assessing their lines for potential risks. The tool supports informed decisions by helping operators develop appropriate maintenance and repair plans. It is said to be more efficient than existing programs on the market because of its new application platform, which includes a crucial data-access component. This feature allows the various component facilities – including risk assessment, integrity planning, integrity data manager, and feature assessment – to merge various information sources into a single environment.

The software replaces two of GE's existing tools, combining the best of their respective functions. The first of these, *PipeView Risk*, was produced by Kansas City, Missouri-based **MJ Harden**

Assocs, a geospatial data-management company acquired by GE Energy in 2003. The second tool, *PRIMA*, was designed by GE Energy's pipeline integrity operation headquartered in Cramlington, UK. ●

Inspection for Mexican gas line

A \$MULTI-MILLION six-year contract to provide maintenance and inspection services for the new San Fernando Pipeline in NE Mexico has been awarded to **GE Energy** by pipeline owner **Gasoductos de Tamaulipas**. The contract encompasses all related inspection and maintenance work on the 120-km gas pipeline in the Mexican state of Tamaulipas. Gasoductos de Tamaulipas is a special-

continued on page 5

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Efficient pigging leads to cost savings

RICHARD Kershaw of Pigtek Ltd, UK, describes how the efficient performance of heavy-duty cleaning pigs had a direct impact on the operating efficiency of a pipeline.

THE RESULTS achieved by using heavy-duty cleaning pigs regularly outweigh their initial extra cost. The efficient performance from an "advanced" cleaning pig will provide many benefits, such as:

- a greater cleaning capability
- increasing product throughput
- improving pipeline operating conditions
- reducing potential corrosion growth
- reducing power consumption by pumps or compressors
- reducing pigging frequency

Case history

Pigtek Ltd, the UK based pipeline pigging and enhanced cleaning specialist, had previously performed pre-inspection cleaning services for a UK pipeline operator on a 28-in diameter, 21-km long, crude oil pipeline during 2003. The results of this cleaning campaign not only enabled the

Photos show typical debris accumulated by a Pigtek heavy-duty cleaning pig.



internal smart (or intelligent) inspection pigging survey to be conducted successfully, but the operating costs of the pipeline were also noticeably reduced. The pressure and flow velocity required for the product within this pipeline is generated by electrically-powered pumps, and as the pipeline is usually operating continuously, power consumption is a significant operating cost.

The internal bore of any pipeline is naturally reduced if debris is left to accumulate, and a greater demand is then placed on pumps or compressors to ensure that the required volume of product throughput is maintained. Deposit distribution within a pipeline is often very uneven and random, so not only is the internal bore reduced, but flow can also become turbulent. In addition, bacteria and corrosion may grow if allowed to develop beneath the deposits.

During 2004, Pigtek were contracted once again by the pipeline operator to provide pigging services on the 28-in pipeline, but on this occasion the objective was to clean the line to such a level that pipeline operating overheads would be reduced.

Methodology

Pigtek supplied personnel, together with a heavy-duty magnetic-cleaning pig, to perform the cleaning operation. The Pigtek pig was fitted with state-of-the-art magnetic packages that have a large surface area; the packages also use a multi-pole magnetic design to provide a huge magnetic field. The combination of these design features provides an



extremely-efficient ferrous-debris pick-up and hold capability, and the added weight of the magnetic packages on the pig also increases the cleaning capability. Carefully-sized cleaning discs were incorporated into the design of the pig, together with product by-pass to ensure that the accumulated debris was swept ahead of the pig. The pig was tracked both magnetically and acoustically whilst running, and a pig-location transmitter was also fitted.

Results

The magnetic-cleaning pig was run twice through the pipeline and was successful in removing an excessive quantity of compacted wax with a further debris accumulated around the pig body. The operation was completed within a short time, adhering to the pipeline operator's safety and environmental policies to provide an incident-free operation.

Benefit

The direct benefits of using advanced pipeline-cleaning services were the immediate and noticeable cost savings on the power consumed by the electric pumps, the increase in pipeline operating efficiency, and the increase in product throughput. It is estimated that regular pigging will lead to considerable cost savings. ●

Industry news (continued)

purpose company formed by **Pemex Gas y Petroquímica Basica** of Mexico and **El Paso Energy** of the United States.

The 36-in pipeline, built by the prime contractor **Techint Mexico**, runs between Los Indios and San Fernando. The contract also covers two new compression stations erected at Los Indios and El Caracol for the project. The pipeline connects existing Pemex pipeline assets in Tamaulipas, and will carry 1bn cuft/d of gas, significantly increasing Mexico's gas-transportation system's capacity. The new pipeline will initially use gas from the United States, but ultimately will carry gas from the onshore *Burgos Basin* gasfields.

GE Energy will provide all equipment and personnel for the work that includes an integrity and quality audit, a cleaning evaluation, cleaning runs, a baseline inspection, and re-inspections when necessary. The contract also includes a *RunCom* (reinspection) analysis, satellite imaging, assessment workshops, pipeline integrity plan document, the creation and maintenance of a pipeline database, risk assessments, an integrity management plan and programmes, and consultancy work. The company will also initiate a defect-assessment repair plan, an emergency-response plan, and failure investigations when required. Since the San Fernando pipeline is a new system, the first

task will be to initiate a baseline inspection imminently; pipeline integrity management and other related work was scheduled to begin in June. ●

Reducing plant downtime "at a stroke"

THE NEW *Stroke-Test* from **Smith Flow Control** is a novel device that allows testing of critical valves without shutting-down the process flow, ensuring the revenue stream is not interrupted, while also ensuring plant operators comply with industry safety standards. The unit solves the perennial Catch-22 situation: to maximize revenue, operators are under pressure to keep plant running for as many months or years as possible, without interruption. To do this safely, it is necessary to periodically test all automated emergency shutdown and other critical valves. Testing the valves normally requires them to be shut down, stopping the process flow, and therefore stopping the revenue stream. The *Stroke-Test* has been designed to eliminate this problem by allowing plant operators to do both.

The system operates on the principle of 'valve partial stroke testing', which allows a safety system to close a valve only partially. So, when a unit is fitted to a valve, it limits the movement of the actuator to

within pre-set travel limits, for example 20°. This means that all the valve control elements, such as solenoids, positioners, and relays are tested, without the valve having fully to close. Since the valve is only partially closed during the test, the flow coefficient is not significantly affected and process flow continues. If the valve is inoperable due to a mechanical failure, misalignment, or some other control anomaly, it will be detected during the test.

The company has also recently appointed **Chemie und Energie-Armaturen GmbH** as its exclusive German distributor. ●

Safe pigging with mechanical process control unit

NETHERLANDS-based **Netherlocks Safety Systems BV** has introduced what it describes as a mechanical process control unit, which is designed to check every step in a procedure – such as pig launching or receiving – to ensure that no critical safety steps are missed. This is particularly applicable in pig receiving, especially where H₂S might be present, and where it is imperative that operators follow set procedures that have been established in advance. In this way, the company says, human error can be eliminated.

Netherlocks' stainless-steel unit can be mounted on the launcher/receiver skid and, according to the company's MD, Albert Buschgens, acts as a mechanical PLC that can be programmed to suit a client's requirements.



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Precommissioning contract for offshore Egypt

WEATHERFORD International Ltd's

Pipeline & Specialty Services (P&SS) division, in alliance with **Norson Services Ltd**, has been awarded a \$multi-million contract by **Technip Offshore UK Ltd** for the provision of pipeline pre-commissioning services as part of the *Simian*, *Sienna* and *Sapphire* development in the Egyptian Mediterranean *West Delta Deep Marine* (WDDM) project. The fields will eventually supply the Egyptian LNG export project, and their development will be integrated with the *Scarab* *Saffron* development.

The *Simian* field lies 114km offshore, in depths of water nearing 1000m. This development includes the laying of an offshore 26-in export pipeline, a 20-in interfield pipeline, five 10-in flowlines, two 4-in vent pipelines, and a 4-in glycol pipeline that will be routed directly from the gasfield to the Idku gas plant onshore.

The *Sapphire* field lies 74km offshore in depths of water ranging from 300-500m. This development has a 26-in offshore pipeline, eight 10-in flowlines, a 4-in vent pipeline, and a 4-in glycol pipeline that will be routed, again directly, from the gasfield to the Idku gas plant. All the pipelines from both fields are to be linked together using subsea manifolds and subsea distribution assemblies, and routed to an existing pipeline end manifold (PLEM). The PLEM is part of the

existing *Scarab* / *Saffron* offshore pipeline system, and it will be used to transport all the gas from the *Simian* / *Sapphire* gasfields to the onshore gas liquefaction plant at Idku. ●

SAAM inspects Canyon Express

IN 2003, **Weatherford Pipeline & Specialty Services'** SAAM smart utility pig technology was deployed in the *Canyon Express* flowlines as part of **Total E&P USA's** planned inspection programme. This represented the technology's sixth run through a subsea tieback development, and the first in the Gulf of Mexico.

The *Canyon Express* system is a joint development of three Gulf of Mexico deepwater gas fields: *King's Peak*, operated by **BP Americas**; *Aconcagua*, operated by **Total E&P USA**; and *Camden Hills*, operated by **Marathon Oil Co.** The three fields are located in 2130-2360m of water, and are tied-in to the *Canyon Express* flowlines operated by Total. The two 12-in flowlines are tied-back 91.2km to a processing platform in 98m of water. This platform, *Canyon Station*, is owned and operated by **Williams Field Services**. First gas from the system was produced on 19 September, 2002, from the *Aconcagua*. ●

Update on the ILIA

THE MEMBER companies of the **Inline Inspection Association** (ILIA) continue to

support the pipeline operator industry in the US in the further development of standards/recommended practices that focus entirely on the inline inspection industry. These efforts include API 1163 *Inline inspection systems qualification*, ASNT ILI-PQ-2003 *Inline inspection personnel qualification*, and a revisit of NACE RP0102-2002 for the *ILI process qualification*.

To date, the API and ASNT efforts are nearing what might be termed 'final draft' stages, with a review and vote by each organizations' respective governing bodies to finalize them. The NACE effort included the reinstating of TG212, the technical group within NACE responsible for the original publication of RP0102-2002. This effort is continuing in order to consider the content of the two above-mentioned standards. The next meeting of this group will take place at the NACE Corrosion Technology Week in Phoenix, Arizona, during the week of 13 September.

The ILIA has represented the industry at the following functions thus far in 2004:

- INGAA Foundation workshop: pipeline integrity - scheduling and coordination, 12 May, The Woodlands, Texas
- Pipeline Pigging and Integrity Management Conference, 17-18 May, Amsterdam, Netherlands

As part of the conference held in Amsterdam, the ILIA sponsored a technical merit award which was presented to Andrew Cosham and Dr Phil Hopkins of Penspen Integrity for their paper/



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presentation titled *The assessment of corrosion in pipelines: guidance in the pipeline defect assessment manual (PDAM)*. Andrew Cosham made the presentation to the audience and was on hand to accept the award. ●

Racing pigs

THE PPSA'S correspondent reports from deep in rural England

PIGS. Pigs, pigs, pigs pigs, it's all we've heard about for weeks. At last the day has dawned and the long-anticipated moment has arrived. The Hamdown Pig Races are about to begin. I don't suppose there is much I can tell you people about pigs. Have you ever raced them?

We have raced many things in this village over the years: ferrets down drain pipes, home-made rafts downstream to the pub, plastic ducks down Church Meadow, terriers and donkeys down the cricket field. The last Donkey Derby was a disaster – a power cut disabled the beer-barrel pumps. Beer is a very important part of any village event, particularly when you hope to divest people of their hard earned cash.

But I digress. Today is pig race day! The pigs have been in training for several weeks, the beer tent is open, the tote is at the ready, the judges are testing the camera for the photo finish, a colourful crowd has gathered, the punters are inspecting the runners in the paddock, the auctioneer's atop a pile of straw bales and..... it's raining.

This is England on a summer afternoon.

A big crowd is now forming around the auctioneer as he starts the bidding. The runners are sold at the beginning of each race. The highest bidder becomes the pig's 'owner' for the day and if it comes first, takes a slice of the winnings. "Who'll offer me £50 for Fancy Trotter? £50 on my right, 60 on my left, 70, 80, any advance on £100?" There is fierce competition between several locals who want to show they can outbid the other. "Any more bids? Going, going: sold to the lady in the yellow boots." In the meantime, the bookies are doing a lively trade in a green-and-white-striped tent with a leak. People are queuing, placing their bets, and speeding off to get a good view of the first race.

The runners are jostling out of the paddock towards the starting line. There is chaos as the head pig man gets swept off his feet by the eager little porkers. Bob the tractor man leaps on his machine. The pigs stamp their trotters. The tractor engine roars. The TV camera rolls. Mud flies as tractor and trailer, with its load of pig nuts, pound along beside the race track. The pigs, like Pavlov's dogs, excited by the thought of food, respond to this familiar sound. They're off! Well most of them are. Pork Chop trots half way and decides to head back to the paddock; Spare Rib and Crackling stop and do what excited pigs tend to do. The judges put down their beer mugs, a fat lady stands in front of the photo finish camera and is angrily shunted aside. She indignantly storms, "I have just bought one of those pigs!" Children jump and shout, waving



Pork on the run...

flags and sticky hands; old ladies brandish their umbrellas, having staked their pensions on the favourite.

"They're coming!" Bacon Sandwich, the lead pig, streaks round the last bend – it's cleared the last hurdle – winning by three lengths and a curly tail. A cheer goes up from the crowd. The rest of the pigs arrive like a pack of sausages, in a tight bunch. The fat lady is back in front of the camera. Was Hamburger second or was it Hog's Pudding? I glance at the judges. How can they tell them apart? They calmly announce the names of the first three pigs. Everyone seems to accept their judgement, even the fat lady with the yellow boots.

By the end of the afternoon the crowd, damp but happy, disperse clutching their winnings or empty wallets. The tote tots up their takings. The committee retire to the beer tent to empty the barrels. It has been a very successful day. £3000 has been raised, some to go towards a motorized wheelchair for a disabled child, and the rest towards the new sport's pavilion.

What are we doing tonight? We are barbecuing a couple of loins of pork and having a party! ●

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- ☆ free copies of the PPSA Buyers' Guide and Directory and regular copies of *Pigging Industry News*
- ☆ **the opportunity to present papers and/or exhibit at PPSA seminars**
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