

Pigging Industry News

the newsletter of the Pigging Products & Services Association



President's Letter

by Coleman McDonough
TD Williamson Inc, USA

I WOULD like to use this opportunity to wish you all a happy and prosperous New Year. This is the first newsletter of the new year, although the last one for me. I will be turning over the presidency of PPSA to Gordon Short in February at our Houston meeting. I will still be active as a director of PPSA, and I would encourage you to attend our Annual General Meeting in Houston if you are able to. I have very much enjoyed my term of office, and I am sure Gordon Short will do an excellent job.

2003 was a great year for PPSA; we had nine new members join since we published the 2003 newsletter. The new members include companies from the Western and the Eastern hemisphere. There is a high level of interest in pigging applications world-wide, and especially in the USA with the new government regulations for gas and liquid pipeline safety. PPSA is seeing an increase in daily activity of supplying pigging information to its membership and other companies world-wide, an indication that we are on track with our mission statement: "to promote the knowledge of pigging and its related products and services by providing a channel of communications

between the members themselves and the users and other interested parties".

PPSA conducted a one-day seminar in Aberdeen, UK, on 20th November, entitled *Pipeline pigging- the emerging issues*, and it was a great success. There were eight speakers and seven exhibitors, and 46 people attended. I would like to thank the following speakers and exhibitors for making this seminar such a success.

Speakers

Richard Cardwell, Pipeline Engineering, UK
Warwick Lockwood, FTL Seals, UK
Dr Konard Reber, NDT Systems & Services, Germany
Dr Andrew Pople, Penspen Integrity, UK
Lee Robins, Tracerco, UK
Tom Sowerby, Tom Sowerby Ltd
Chris Stanley, Weatherford Pipeline & Specialty Services Group, UK
Theo Verleun, N-Spec Europe, The Netherlands

Exhibitors

Clockspring Co

continued overleaf

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tel: (+1) 713 973 0079

President's letter (cont'd)

Nautronix
Penspen Integrity
Pipeline Engineering & Supply
Tracerco
Weatherford Pipeline &
Specialty Services
TD Williamson

We have made some changes in the PPSA structure: Tom Sowerby has resigned as Treasurer and Vice President of PPSA due to his present work load, but will continue his two-year term as a director. I would like to thank Tom for all his hard work within the PPSA organization. The new Treasurer is Derek Harris of TD

Williamson UK, and Gordon Short has been elected as Vice President in the interim.

As a reminder, the PPSA newsletter is published on our website and, for those of you who are running advertisements in the newsletter, the adverts are hyperlinked to the advertisers' own web sites allowing interested readers to click straight through from the newsletter.

In closing, I would like to thank Gill Hornby for all her good work and for her dedication to PPSA, and I would like to encourage all members to be active participants in your unique Association.

Coleman McDonough
TD Williamson, Tulsa, OK

Welcome

Full members

Inpipe Products Ltd, UK
Synergy Chemical Pipeline
Division Inc, USA

Associate members

Penspen Integrity, UK

Individual members

Ken Gibson, Adrian
Engineering Consultancy
Ltd, UK
Ronny Hawkins, Star
Products, USA
Steve Mayo, PSL Energy
Services Ltd, UK

Industry news

Clock Spring repairs bend...

APASADENA, Texas, pipeline company recently called **Clock Spring** to assist with a bend repair for a 6-in pipe carrying ethylene over a small canal. There were additional pipes running parallel, about 5in apart. At certain times of year, the pipes become completely submerged in water and therefore experience corrosion; corrosion pits were scattered through the bend over a 12-ft length.

Clock Spring sent technical representatives to complete the repair. Due to the lack of working space, the hand spool method was

used to install units, 18 of which were used to cover the 12-ft arc across both sides of the pipe. Some of the units were customized to fit the bend properly, and 36 were installed within five hours. A wax tape was used to mould into the gaps and protect the eponymous repairs from subsequent UV intervention.

Clock Spring is an example of technology that saves money, improves safety, and helps to protect the environment, and the use of the repair technology has been expanding as the old methods give way to some modern thinking. The advantage of this composite repair used in this fashion is obvious: not only does a

Clock Spring coil serve as an external defect repair for up to 80% wall-loss anomalies, it also shields the pipeline from any future external corrosion or damage, and forms a permanent repair with a 50-year minimum life.

...and Las Cruces team become installers

BERNIE Guerrero, a gas trainer for the City of Las Cruces in New Mexico, in responding to a recent customer survey, said that his team first became aware of **Clock Spring** repair technology through the company's website. Because it is now accepted by the US DOT, his team decided to become certified installers, and has purchased units to have on hand for



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emergency repairs. Bernie is quoted as saying that they are most familiar with Clock Spring and Snap Wrap applications, and highly recommend them to other operators.

"After a slight incident of a dent to a high-pressure gas line, we estimated the cost to stopple and repair would have been \$4,500.00. With the help of Clock Spring using the Snap Wrap process, it was under \$400.00 for Snap Wrap and three hours (of labour) for one employee to install." Bernie now expects a 10% increase of immediate repair applications with the technology, due to further changes within federal regulations.

Rental launchers and receivers

LAUNCHERS and receivers are a must for pigging operations, offering a practical and safe method for launching and retrieval of pipeline pigs. However, the cost is usually too high to justify the purchase, particularly for a one-time temporary use. **Pigs Unlimited** has removed this factor from the equation by offering rental launchers and receivers, thus making their necessity more economically feasible. Rental periods include daily, weekly, and monthly rates, and can also be applied to sale price if customer desires to purchase a unit subsequently.

Constructed of carbon-steel and equipped with all connections for turnkey use, these units are designed to be ready for field and plant applications. Each unit

comes standard with a hinged threaded closure, which allows quick and easy access for pig launching and retrieval. The closures are equipped with pressure-warning devices to ensure safety of personnel.

Stock sizes range from 2in to 36in, and are rated at ANSI 150. For higher-pressure applications, adapter flanges are available. Pig detector adaptors are also available to ensure successful launching and retrieval of pigs. Standard dimensions allow for double pig launching and retrieval of foam pigs, steel-mandrel pigs, and solid-cast pigs; for sphere applications, launching braces are available.

Multi-diameter pigs

MULTI-DIAMETER pipelines pose many problems for pig manufacturers. Most standard pig designs cannot handle the stress of adapting to changes in the internal diameter of a pipe, especially if the change is from one nominal diameter to another, and therefore specially-designed pigs are manufactured. Because of their additional requirements, there are inherited problems associated with these multi-diameter pigs, including excessive wear, by-pass, and elevated pressure required to move the pig, as well as increased costs.

Most multi-diameter pigs are engineering marvels with complicated centring mechanisms and heavy steel construction; without the centring mechanism, the pigs wear excessively on the bottom and have shorter effective life. However, centring devices are

expensive and heavy; they require a strong steel assembly for mounting and support, and the weight adds to the cost and shortens the life of the sealing surfaces and creates inefficient performance of the pig.

Also, nearly all multi-diameter pigs use slotted discs for sealing in the large-diameter pipe. Unfortunately, when the discs are folded back in the larger diameter, the edges leave a gap between them. Due to the firmness of the urethane, there is usually leakage between the matching radial edges of the discs. In the smaller diameter, the slotted discs are folded back, thus causing excessive pressure and friction, resulting in premature wear.

Star Products says that it has overcome these common problems with a new pig design. The pig has a flexible shaft, protected sealing surfaces for the larger-diameter slotted discs, and the lightest possible construction. Conical cups are used to seal in the smaller diameter and slotted discs for the larger diameter; the difference is the conical cups are mounted against the leading surface of the slotted discs, which prevents the disc petals from being blown forward during the pig run, resulting in by-pass. Also, the outer edges of the petals of the slotted discs are sloped to the front of the pig; when the petals are folded back to the larger diameter, the trailing edge of the front disc matches the leading edge of the second disc, and this reduces or eliminates most of the leakage associated with slotted discs.

The flexible shaft is very

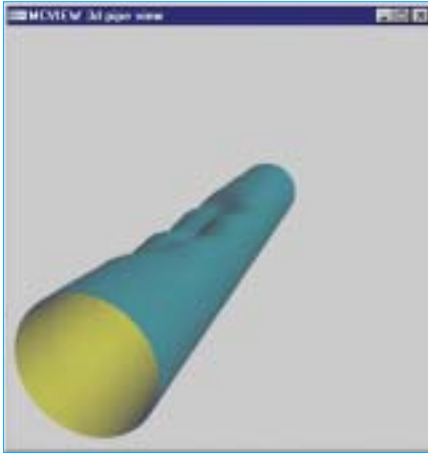
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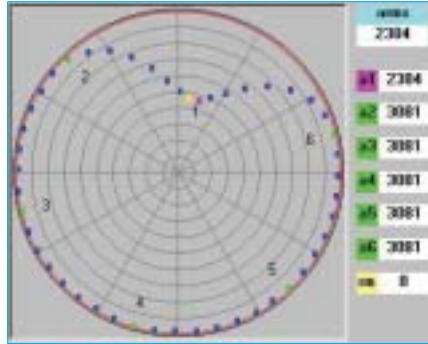
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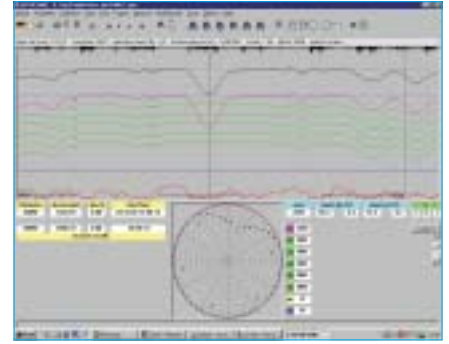
lightweight and eliminates the need for a centring assembly to keep the pig centred in the line during the run. This flexible shaft is very durable and will perform well in small radius bends.

The main feature of the new design is the use of a 'sliding cup'. The conical cups are mounted loose on the shaft; when the slotted discs fold back for the smaller-diameter pipe, the conical cups slide back and hold the petals compressed so there is very little or no contact between the disc and the pipe. This reduces the differential pressure required to move the pig compared to other pig designs. When the pig reaches the larger-diameter pipe, the cups slide forward and the slotted petals unfold and form a seal, which is virtually unworn during the smaller-diameter section.

Recently, two 24-in x 30-in Star Products pigs were used in a single run of 480km of 24-in pipe with several short 30-in diameter sections. The pigs required a customized design of 7ft to seal in the special pipe configurations. When retrieved after the run, the 30-in slotted discs showed very little wear, and the sealing



Analytic Pipe's software can display defects in a number of different ways.



performance of the 24-in cups was excellent. The pressure required to move the pig was minimal. Overall, the pig's performance exceeded the customer's requirements and expectations.

New multi-channel calliper tool

ANALYTIC Pipe GmbH has reached the next stage of its technology development with the design of a multi-channel calliper tool, based on the considerable experience the company has gathered in calliper inspections. As part of its standard service, the company can deliver results one hour after retrieving the tool from an inspection run, and the final report can be produced within 48 hours, if necessary. Reports can be presented in digital format and using *Viewer* software, in addition to the standard format.

Norwegian approval for paraffin and wax dispersing agent

BRENNTAG Specialities has announced that the

Norwegian authorities have given approval to its pipeline cleaning product *N-SPEC 50*, a multi-use dispersant designed to dissolve and remove organic (greasy) deposits in oil and gas systems. Its strong dispersing and solvating properties make it possible to penetrate paraffin and wax deposits, release them from the pipe or vessel wall, and emulsify them into a pumpable suspension. The chemical has already been successfully applied in crude oil and gas pipelines, flowlines, and gas-lift wells, and is now available for safe use in North Sea offshore applications.

As one of the world's leading distributors of industrial and speciality chemicals, Brenntag Specialities provides through its European Oil and Gas Group a full line of chemical products and services to the oil and gas producing and processing industry. The company's expertise in dealing with fouled pipelines, as well as amine or glycol units and heat-transfer systems in refineries, has led to the development of an innovative package of environmentally-friendly cleaning chemicals and supportive technology. The products can be applied on-line,

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allowing pipeline operators to clean their lines during operation without the necessity of shutting-down. In North America, the *N-SPEC* products are commercialized through one of the local Brenntag companies, **Coastal Chemical Co.**

Angola testing contract

WEATHERFORD P&SS was recently awarded a contract from **Stolt Offshore**, Paris, for precommissioning services in Angola. The contract consists of the flooding, gauging, and hydrostatic testing activities of the infield pipelines and risers of the Sanha condensate project offshore Angola. The field activities started in mid January, and the expected completion date will be in April.

In addition, the **Punj Lloyd-Limak JV** recently awarded the company a contract for the provision of resources and technical services for pre-commissioning part of the onshore section of the BTC pipeline project in Turkey. The project window for work on the 34-in diameter, 125-km long, and 42-in diameter, 207-km long sections, is Q3 2003 – Q3 2004.

In a third project, the company has completed work for the **China National Bluestar (Group)**



Corporation on the West-East gas pipeline project in China. The work scope included pre-commissioning activities on a 668-km long section of the the 40-in diameter line, and was carried out between May and August last year.

Successful precommissioning for Goldeneye...

HALLIBURTON Energy Services has successfully completed the precommissioning of the Goldeneye 20-in and 4-in pipelines at St Fergus, Scotland, for **Saipem UK**. The pre-commissioning work on the two

Halliburton on site at St Fergus.

pipelines included flooding, cleaning, gauging, high-pressure flushing, and hydrotesting the pipelines from onshore to enable them to transport gas and condensate from the field to Shell's onshore gas plant at St Fergus.

The Goldeneye gas-condensate field is operated by Shell UK and lies in the Outer Moray Firth area of the UK Central North Sea, 100km NE of the St Fergus gas terminals. Saipem UK installed the 20-in diameter, 101-km long, gas export and 4-in diameter mono-ethylene-glycol pipelines simultaneously in water depths of

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120m using its pipelay vessel, *Castoro Sei*.

...Goldeneye gas condensate contract...

FOLLOWING ON from Halliburton's successful job, the contract to supply a variety of pipeline and commissioning services for the Goldeneye Venture has been awarded by **Shell UK** to Aberdeen-based **BJ Process and Pipeline Services**.

Because it is, naturally, extremely important that the process facility be leak-free prior to commissioning with live gas, BJ PPS will provide pre-commissioning nitrogen/helium leak detection services on the offshore process facility pipework systems. To achieve this, the company will employ its specialist nitrogen helium leak detection technology to provide a safe, leak-free start-up. In addition, it will provide nitrogen de-watering, MEG conditioning, and commissioning of the gas-export pipeline, as well as commissioning the service pipeline that will transport hydrate and corrosion inhibitors.

BJ PPS commenced the work this month (January) at Shell's St Fergus gas plant and at the new Goldeneye NUI (normally-unattended installation). Upon completion, the 20-in 102-km export pipeline will transfer gas and condensate under reservoir pressure from the unmanned platform on the field to the onshore processing facility at St Fergus. The resulting gas will be

delivered to the Transco National Transmission System at St Fergus, while NGLs and condensate will go to the Fife natural gas liquids plant at Mossmorran through an existing pipeline; following further processing, various products, including condensate, propane, and butane will be produced. The Goldeneye field is expected to produce commencing in 2004 for seven to 10 years.

... new US base...

BJ Process and Pipeline Services has opened a new base for operations in Houston, from which all the company's operations in the southern US, Mexico, and South America will be undertaken. The new base replaces the existing facility, and is at: 4101 Oates Road, Houston, Texas 77013, tel: (+1) 832 519 2000, fax: (+1) 832 519 2001.

... precommissioning in Ecuador

A CHALLENGING pipeline precommissioning contract for **Techint International Construction Corporation** in Ecuador has been completed by **BJ Process and Pipeline Services**. The company supplied pre-cleaning, hydrotesting, and filling services on the pipeline network, which runs from Lago Agrio to Esmeraldas on the coast. The pipeline then splits into four offshore loading lines running out to two CALM loading buoys approximately 13km offshore.

BJ PPS used some of its largest

high-head centrifugal pumps to pump water at flowrates as high as 3500gpm and pressures of 2000psig at elevations of up to 4050m over the rugged Andes Mountains. By using these large pumps, it is unnecessary to carry out multiple set-ups as services are carried out along the pipeline. As a result, transportation costs are significantly reduced, and intrusion into the environment is kept to a minimum.

During the past five years, BJ PPS has carried out similar pre-commissioning services for Techint, including hydrotesting, air testing, and cleaning and drying services on several of the Argentina to Chile gas pipelines, including Gas Andes, Gas Pacifico, and NorAndino. The operation for Techint represents the first time that BJ PPS has provided services in Ecuador.

Strategic alliance with Wrapmaster

CRAMLINGTON-based **PII Pipeline Solutions**, a unit of **GE Oil and Gas**, has entered into a five-year exclusive agreement with **Wrapmaster Inc.**, based in Longview, Texas. The agreement authorizes PII to utilize magnetic pig detectable composite sleeve repairs developed and manufactured by the US company throughout Europe and Africa.

This strategic alliance between the two companies allows PII to market the product throughout the region, and makes PII one of the only pipeline integrity businesses capable of offering two sleeve repair technologies. The



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The ATL from Smith Flow Control.

Wrapmaster *PermaWrap* repair system complies with the US Department of Transportation's regulations for both gas transmission and liquid pipelines, and is available in a range of sleeve sizes covering 4-in to 56-in diameter pipelines. The product has been successfully used by many of the major pipelines in the US and was recently utilized by the **Kenyan Pipeline Co** where PII performed the intelligent pigging.

New anti tamper valve lock

BY ENSURING valves and actuators are only operated by authorized individuals, the new anti-tamper lock (ATL - above) from **Smith Flow Control** secures companies' assets by reducing the risk of human error or deliberate tampering. The way the lock works is very simple: the standard condition of the device in service is locked (key-free), with the handwheel free-rotating. (The standard unit is available in two sizes to suit all lever- and

handwheel-operated valves.) Operation involves three steps: firstly, a coded key from the control authority is inserted, engaging the drive; secondly, the valve is operated to the desired position; finally, the key is removed and the valve is locked in the desired position.

Because the lock base adapter is machined to suit host equipment (which can be done on-site, or it can be supplied already machined to specification), the *ATL* significantly reduces costs. Also, as this process simply replaces existing handwheels or levers, the integrity of pressure envelopes is not compromised in any way. Because the lock is only installed and commissioned once, permit-to-work and lock-out/tag-out authorities can focus their attention on other matters rather than worrying whether the engineer has installed the lockout device correctly.

The *ATL's* housing is stainless steel coated with yellow polyester resin. For safety applications the internal components are manufactured from stainless steel 304, with acetyl bearings, while for security applications these components are manufactured from hardened steel, with a protective security 'skirt'. Both versions can operate in temperatures ranging from -50°C to 100°C .

Welding pig...

ONE OF **Pipeline Engineering's** most recent developments has been the 'welding pig', developed in response to issues welding duplex

pipe without an argon shield. PE proposed a manually-inserted device to sit astride the circumferential weld, creating a seal in the pipe and thus providing an argon shield to the back of the weld. Equipped with inflatable tyres, it is possible to position the tool precisely; once in position, the tyres can be inflated, giving the 100% seal required. Using a special perforated collar, argon gas can be fed in during the welding process. Once the operation is complete, the device can be pigged out of the pipe in the normal way.

...and major isolation challenge

LAST YEAR **PE's** service dept took on its most challenging contract to date. The scope was to simultaneously isolate both ends of a 36-in diameter, 240-km long, gas pipeline and provide isolation and joint testing services for the removal and replacement of the 36-in ball valves at each end. The isolation was carried out live, so the use of launch cans with stuffing glands was required.

An isolation plug was deployed 15m into the pipeline, just past the production tee. Once in place and set, both the main line and production tee valves were removed and replaced. The next stage was the joint testing of the new valves using an extended internal joint tester and the company's bladder seal. The whole operation was run simultaneously with service crews at both ends of the pipeline working around the clock to minimize downtime.



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 - ☆ free technical information and problem-solving
- ☆ free copies of the PPSA Buyers' Guide and Directory and regular copies of *Pigging Industry News*
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 Individual member: £140

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