PIGGING PRODUCTS & SERVICES ASSOCIATION

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Pigging Industry News

the newsletter of the Pigging Products & Services Association

THE PRESIDENT'S LETTER

By Basil Hostage, 3P Services GmbH & Co. KG

First I'd like to give a warm welcome to our three newest PPSA members, Andrew Francis, IK Stavanger and Pipeline Innovations Ltd.

You may remember that our membership voted that PPSA should attend the IPCE exhibition in Calgary, Canada. In September, Diane Cordell, our executive secretary, duly manned the exhibition stand where she met up with some of the familiar faces of our members and also took the opportunity to meet new ones. Thanks to all those who visited us at the stand. The exhibition was well attended with over 190 exhibitors and the whole event attracted approximately 5700 people over 3 days. Many people took an interest in the PPSA association and the Buyers' Guide & Directory of Members was as popular as ever. Diane has since received several enquiries about membership and enquiries about the sourcing of pigging products and services. Several of our Full members told Diane that they are always pleased to receive the technical enquiries that she forwards on to them.

Next week PPSA will be exhibiting again, this time at the Fixing Pipelines Conference in Berlin, Germany, which is organised by John Tiratsoo and BJ Lowe. Our thanks to John and BJ for inviting us to attend this event and providing us with exhibition space. We look forward to seeing more of our members there and telling the delegates about our association.

On 14th November PPSA will be holding its annual seminar on 'Meeting the Challenges of Pipeline Pigging' in Aberdeen, UK. This is a great event where 9 PPSA members, all experts in their own fields, will be presenting papers about the latest developments in the Pigging industry. There will also be an exhibition, a chance to network with industry specialists and the opportunity to ask questions of our Expert Panel. Last year this event sold out so if you would like to book a place, don't delay. For details about the seminar please contact us at ppsa@ppsa-online.com.

Some more dates for the diary in 2013 are our annual PPSA Golf Tournament which is taking place on 11th February at the Blackhorse Golf Course in Houston, USA, and the PPSA Annual General Meeting that will be held the following day, 12th February. The AGM takes place prior to the PPIM Houston conference and exhibition in the Marriott Westchase Hotel in Houston. The AGM is a good opportunity to give us guidance about how the association should move forward each year, so if you are able to attend please do. It is also where the new directors will be voted onto the PPSA Board of Directors.

As you can see, it is a very busy time for our association. We hope to see you in either Berlin, Aberdeen or Houston – or maybe all three! Failing that just drop us an email as we always welcome your feedback and ideas. We hope you enjoy this edition of the newsletter.

NEW Members

Individual
Andrew Francis, UK

Full
IK Stavanger, Norway

Pipeline Innovations Ltd, UK

PPSA exhibiting at IPCE, Calgary, Canada

Sightseeing at neighbouring Banff, before the IPCE event in Calgary, Canada

TDW Offshore Services Completes Subsea Pipeline Isolation

TDW Offshore Services (TDW) has successfully completed a subsea pipeline pressure isolation operation in the Gulf of Mexico. Carried out at a depth of 370 ft (113 m) against 870 psig, this isolation enabled the safe and effective tie-in of a piggable wye to the Mississippi Canyon Gas Pipeline, a 30-inch natural gas line running between the West Delta 143 platform – a hub facility for deepwater oil and gas production – and the Venice Gas Plant in Louisiana.

The isolation project utilized two remote-controlled 30-inch SmartPlug® dual module pressure isolation tools to isolate 45 miles of pipeline.

"The SmartPlug® isolation tool is certified to 'Safety Class High' in accordance with OS-F101 for Submarine Pipeline Systems and is uniquely suited for use in connection with diving operations," says Bjørn-Olav Gilje, project manager for TDW.

Each tool was composed of two plug modules and two pigging modules. One of the tools provided double block isolation on the high pressure side of the tie-in location. The first module on the second tool provided a hydraulic locked barrier of the high pressure side for the divers installing the wye. The second module on the second tool was used to perform a leak test to verify integrity of the new wye after installation.

Following launch, TDW technicians used the remotely-operated SmartTrack™ tracking and pressure monitoring system to continuously monitor the locations of the SmartPlug® tools as they traveled to their subsea set destinations. The SmartTrack™ system uses two-way, through-wall, electromagnetic communication between a transponder and a receiver to track tool progress. Once the tools were set, the isolation period was approximately two and a half weeks.

TDW Carries Out ILI For Perenco UK

T.D. Williamson (TDW) has successfully completed the inline inspection (ILI) of a key North Sea pipeline on behalf of **Perenco** UK. The operation was carried out on the 24-inch line that links the Trent Platform with the Bacton Terminal pipeline.

The pipeline inspection was carried out to comply with Health, Safety & Environment (HSE) obligations. Perenco selected TDW because of its ability to offer state-of-the-art inspection services, along with the full project management package, which included planning, preparation, and risk assessment. TDW responded by providing a sales, customer services and project management team tasked with identifying and responding to Perenco's precise needs. Following site visits, a comprehensive plan was devised, which included progressive pigging, KALIPER® 360 geometry inspection, 24-inch gas magnetic flux leakage (GMFL) inspection, ILI reporting, fitness-for-purpose, run comparison, corrosion growth analysis reports, and other services.

In spite of working in high winds, driving rain, sleet and snow, the offshore phase, during which all site work was carried out, was completed in just 23 days. Support and equipment were supplied by the TDW operations and projects team based at the company's facility in Swindon, England.

The ILI run - from launch to trap - was achieved in less than 21 hours. No metallic components were brought in, and only a small quantity of viscous black residue was produced. The gauge plate showed no signs of any deflection at any point around its circumference. The tool displaced approximately 100 tons of liquid from the line. Because benzene levels were high, the tool was left by the trap overnight to allow it to disperse. Upon further examination of the tool, the polyurethane components were found to be in a good condition with only a small amount of wear to the cups.

Inspecting the world's longest multiphase pipeline

In June 2012, **ROSEN** successfully inspected the 28" x 143 km multi-phase pipeline at the Statoil-operated Snøhvit development, off-shore Norway. The main objective was to gather high-quality metal-loss data from the pipeline. For this inspection ROSEN provided a state of the art combined inspection tool, providing the highest detection and sizing capabilities available in the market. With no access installations on the surface, tools had to be launched from a subsea template.

Background
The Snøhvit development is located 140 km northwest of Hammerfest, Norway, and 600 km north of the Arctic Circle. It includes the Snøhvit field and the neighboring Albatross and Askeladden fields. This is the first gas development in the Barents Sea and its recoverable reserves are estimated at 193 bcm of natural gas, 113 MMbbl of condensate and 5.1 Mt of natural gas liquids.

Snøhvit is the first major development on the Norwegian Continental Shelf without a surface installation.

Figure 1: Melkøya

The large volumes of natural gas are transported onshore for processing at Hammerfest LNG on Melkøya: the world's northernmost and Europe's first liquefied natural gas export facility (Figure 1).

The challenge
Snøhvit's subsea production system feeds the land-based plant on the island of Melkøya through a 28 inch submarine pipeline that is 143 km long. In December 2011, Statoil awarded the contract for cleaning and in-line inspection of this multi-phase pipeline to ROSEN.

The main objective for the inspection program was to detect metal loss due to corrosion. ROSEN was tasked with collecting high-quality data to agreed specifications and completing the field operation within the specified time frame.

The lack of surface installations at Snøhvit meant that the cleaning and inspection tools had to be launched from a subsea template using a temporary subsea launcher (Figure 2) at a water depth of about 340 m.

The solution
The inspection tool selected for this inspection included MFL (magnetic flux leakage), XGP (high resolution geometry) and SIC (shallow internal corrosion) technology.

Because of the complexity and risks involved in the subsea launching operation, full scale testing of the operation was performed at ROSEN's Technology Research Center before mobilization.

For the cleaning operation ROSEN

Figure 2: Subsea launcher Snøhvit

provided brush-magnet cleaning pigs equipped with a gauge plate and pipeline data logger.

The cleaning phase was completed according to plan, with the gauging and cleaning pigs being received at the Melkøya facility in good condition. ROSEN launched an in-line inspection tool subsea on June 20, 2012. The inspection for this pipeline was completed in accordance within the client's specification and with no reported incidents.

Benefits
The combination of the selected technologies onboard a single inspection tool provides the best detection and sizing performance available in the market whilst minimizing operational cost and risk as only one inspection run is needed.

The success of complex and challenging subsea pipeline inspections depends to a large extent on the level of confidence and cooperation that exists between the asset owner and the inspection service company. In this case, close cooperation between Statoil and ROSEN, and support from the providers of subsea equipment, vessels and pumping equipment, delivered a safe, efficient and highly effective in-line inspection project.

STATS Group installs first BISEP™ isolation in Malaysia

The successful deployment of **STATS Group's** BISEP™ isolation technology prevented the costly shutdown of a Malaysian pipeline and allowed it to maintain uninterrupted gas production at full operating pressure of 78 barg.

Pipeline engineering specialist STATS was approached by **PETRONAS Carigali** to provide double block and bleed isolation services to allow replacement of two welded flange valves at the Onshore Slug-Catcher (OSC) at Terengganu.

The OSC forms part of the Angsi field which is situated off the east coast of Peninsular Malaysia in the South China Sea and is a joint venture between PETRONAS subsidiary PETRONAS Carigali Sdn Bhd and Exxon Mobil Exploration and Production Malaysia Inc. Dehydrated compressed gas from the Angsi complex is transported 166km via the 32" pipeline to the OSC in Kertih, Terengganu.

To allow gas production to be maintained, STATS was required to provide two simultaneous isolations to ensure the receiver, valves and 18" kicker line, were fully isolated to facilitate the valve replacement workscope without interrupting production flow. STATS positioned a 32" Tecno Plug™ which was pushed to the set location with a hydraulic extension and tether control system.

This purpose-built system was installed into the receiver and then activated once inside the closed receiver. The Tecno Plug™ was positioned with millimetre accuracy in a short section of pipe spool inboard of the production tee, and once successfully set and tested STATS installed an 18" BISEP™.

This patented technology was deployed through a single hot tap penetration complete with slab valve into the receiver kicker line, which fully isolated the launcher and enabled easy replacement of two 18" kicker valves.

These simultaneous double block and bleed isolations enabled the two 32" manually operated valves to be renewed with zero interruption to production. All isolation tools deployed in this workscope were designed, manufactured and factory acceptance tested (FAT) at STATS' headquarters in Scotland.

STATS' comprehensive in-house certification of all equipment included hydraulic function testing and pressure testing of the isolation tools. The FAT was performed in a purpose-built test fixture to replicate the client's pipeline, including system configuration and pipe schedule. All testing was witnessed by an independent verification body.

STATS Group's business development manager, Chris Lilley, said: "This project marks a significant milestone. We have previously installed remote controlled Tecno Plugs™ in Malaysia, however, this is the first time that our patented BISEP™ and hydraulically operated tethered Tecno Plug™ technology has been used in Malaysia."

STATS Group's BISEP™ deployed

Enermech Ltd to invest $65 million

EnerMech Ltd is to invest $65 million in rolling out its services in the USA and Americas.

The company has identified a number of potential acquisitions and has up to $50 million set aside for that purpose, while a further $15 million will be spent on equipment for its Process, Pipeline & Umbilicals (PPU) Division.

EnerMech plans to create 60 new jobs and generate profitable revenue of up to $50 million in the US within the next three years, and has appointed Vince Kouns and Alan Sweeney to spearhead the rapid expansion. The company will enlarge its existing Houston operation and open a new Gulf Coast operating base.

Founded in 2008 and now with more than 1000 staff, EnerMech is seeking to replicate its success in the UK, Europe and the eastern hemisphere and will use Houston as a springboard in to oil and gas sectors in Mexico, Canada, Trinidad and Tobago and South America.

CDRiA Pipeline Services Ltd completes fuel pipeline inspection

In 2012, **CDRiA Pipeline Services Ltd.**, Warsaw, Poland, completed an inspection program for two fuel pipelines of approximately 100 km, 12” in diameter, for Belgian Pipeline Organization (BPO), a member of NATO Central Europe Pipeline System (CEPS), in cooperation with WIMACO BVBA Belgium, a fully owned subsidiary of T.D. Williamson SA.

The inspection program included Pipeline Caliper Inspection using the KALIBRAK Geometry tool and Pipeline UT Inspection with Mapping using KORSONIC Ultrasonic tool.

The KALIBRAK tool is designed to record and locate changes in the internal geometry of the pipeline. The purpose of internal geometry measurements of a pipeline is to provide the operator with an inventory report, which includes the location and parameters of out-of-roundness anomalies and fittings.

The KALIBRAK tool

The KORSONIC pig is an ultrasonic inspection tool dedicated to comprehensive survey of crude oil and product pipeline walls. The tool travels through a pipeline propelled by an oil flow measuring and recording local pipeline wall thickness and distance to inner wall surface as it moves through the line. The purpose of this measurement is to provide the operator with a survey report, which precisely documents all defects and anomalies of the pipeline (especially metal losses due to erosion or corrosion) as well as some geometry deformations. The report also includes suggestions as to rehabilitation of the pipeline based on strength calculations.

The KORSONIC Pig

According to their client, the work described above was performed in a professional manner, both operationally and regarding the final report.

Storage, transport and distribution of fuel products for NATO and national forces in Central Europe is carried out using an extensive network of pipelines and storage depots: the Central Europe Pipeline System (CEPS), which is spread from the Atlantic to the Mediterranean, across five host nations: the Netherlands, Luxembourg, France, Germany and Belgium.

Currently, the CEPS - the supplier of fuels meeting all quality demands - has about 5,200 km of pipelines, forty depots with the ability to store 1,100,000 m³ of product and about 90 high pressure pump stations and is connected to the main seaports, petroleum plants (refineries and depots), military as well as civilian storing locations and airports.

Constant changes in the areas of operational capacity and flexibility, automation, security and environmental protection, enable CEPS to provide a unique first class logistical support to the benefit of both military and civil clients.

CDRiA renders services of internal inspection (ultrasound method) of crude oil pipelines and petroleum products with the use of intelligent pigs in order to examine and assess the technical condition of long-distance pipelines.

Meeting the market requirements, confirmed by numerous inquiries coming from various directions, CDRiA are very proud to announce that their Ultrasonic Crack Detection Intelligent Pigs UCDIP 500 and UCDIP 700 will be launched in IVQ 2013 and IQ 2014 accordingly. These two intelligent tools are specially designed for the Inline Pipeline Inspection for Crack Detection and Sizing.

Netherlocks Designs Interlocking System

As part of the Nordstream pipeline project, **Netherlocks** has been chosen to provide an electro-mechanical control cabinet in combination with an interlocking system for the pigging process. A custom, explosion-proof and climate controlled control cabinet was designed and manufactured in close co-operation with Siemens AG.

Pigging is a notoriously complex and dangerous process, but one which can be made significantly safer by using mechanical interlocks. A standard interlocking system guides the operator through the sequence safely. Typically though, it does not include monitoring, it is not linked to the various pressure levels, and would not include the facility for remote operation of MOVs (Motor Operated Valves).

The control cabinet that Netherlocks has designed for this project integrates all these aspects into one unit: remote MOV operation controls are included, and correct pressure and position of MOVs are conditional requirements to release the keys for each stage of the process. By locking the keys in place in the MPCU (Mechanical Process Control Unit) that forms part of the cabinet, only the correct process steps can be made and only when it is safe to do so.

For this particular project the control cabinet also displays the launcher and receiver layout, indicating vessel and pipeline pressure and MOV position at each stage of the sequence. This custom designed solution from Netherlocks therefore combines the key cabinet, display, MOV control system and MPCU into one unit, meaning that the pigging operation is as centrally located as possible, but still mechanically safeguarded by the interlocking system.

Following the Netherlocks philosophy, this project demonstrates that the intelligent use of electro-mechanical safety systems and key inter-locking processes allows the potential risk of human error to be eliminated.

Custom made control cabinet

PPSA's Annual Seminar in Aberdeen, UK - Meeting the Challenges of Pipeline Pigging

PPSA's one day annual seminar is on Wednesday 14th November 2012 at the Marcliffe Hotel. The day will include presentations of technical papers and an exhibition. There will also be the chance to put your questions about Pigging to our Expert Panel. If you would like more details about the seminar please see our website or email us at ppsa@ppsa-online.com.

4" Push-Pull UT Inspection performed by A. HAK

A.Hak Industrial Services has successfully applied their newly developed "Push-Pull" UT inspection tool. This inspection was performed for **Nederlandse Aardolie Maatschappij (NAM)** on one of their 4" pipelines.

This concrete covered pipeline had a length of about 130 meters and could be entered from both ends. The pipeline was filled with water to act as a coupling liquid in order to make UT measurements possible. The tool was launched through a 4" launcher installed by A.Hak inspection engineers.

A.Hak's 4" Push-Pull inspection tool

The Push-Pull tools are equipped with the UT measuring head similar to those applied to A.Hak's well-known Piglet inspection tools used for their un-piggable pipeline inspection services. Inspection results can be seen live on-screen during the inspection survey. Areas which need special attention can be scanned with ultra-high resolution. The final report including all

pipeline anomalies and related color plots are presented to client within 24 hrs after completion of the inspection survey.

The push-pull tools are operated through a so-called flexible pushing rod with a length of 65 meters and are available in 4", 6" and 8''. The Push-Pull inspection tools can pass 1.5 D bends, in total a number of two 1.5D bends of 90 degrees can be passed due to the capstan-effect.

New Pipeline Integrity Management Services

In response to client requests for providing more turn-key pipeline integrity management services, **Quest Integrity Group** has invested in highly experienced and trained resources specialized in project management, in-line inspection support (e.g., line cleaning, batching, pig tracking) and related land surveying and materials procurement. The company offers these resources on an integrated basis with the InVista™ and LifeQuest™ Pipeline in-line inspection and engineering assessment capabilities or individually as applicable in fulfilling clients' needs on a value-driven, regulatory compliant and timely basis.

"Adding the Pipeline Integrity Management (PIM) service extends our integrity management solution set for our clients to address their more challenging, historically unpiggable pipelines and process piping assets. Our clients demand comprehensive service quality and this addition enhances our ability on their behalf to manage quality over a broader, integrated services spectrum," said Jeff Ott, President, Quest Integrity Group.

Apache Pipeline Products Ltd's *Integrity XB*

The ***Integrity XB*** has been developed specifically for the North American market and is made to fit existing brush cleaning pigs. The brush has been designed to clean better and last longer than existing products and features a new and unique construction method with Pencil Brush Technology. Each brush features stiff 22 gauge memory wire bristles at the front for heavy scraping and longer, flexible 25 gauge bristles at the rear for deep cleaning. High grade tinned hardened & tempered steel memory wire, providing excellent cleaning performance and corrosion resistance.

Amazing Cleaning Performance

- New Pencil Brush Technology
- 360 degree Rebound Memory Wire
- Increased Wire Bristle Density
- Over 7,000 Hardened & Tempered Steel Wires Per Brush

Corrosion Resistance

- All Parts Have Corrosion Resistance
- Powder Coated Back Plate
- Tin Coated Individual Steel Wires
- Non Corrosive High Grade Urethane Base

New & Unique Product

- Different To Anything Else In The Market
- Options To Customize
- Fully Developed And Tested

New Apache Pipeline Products' Integrity XB Cleaning Brush

Online Electronics Ltd's new appointment and Valve Business

Online Electronics Ltd specialise in the design and manufacture of pipeline pig monitoring equipment and high-tech pipeline data communication and logging systems.

In 2012 OEL has given a high priority to investment in additional personnel in their R&D department increasing capacity to design and provide new cutting edge technologies to meet the demands of the pipeline industry. The recent appointment of Paul Sergeant adds a new dimension to the development team, following 19 years at Baker Hughes/BJ Services where he was Pipeline Engineering Manager.

2012 has also been a milestone year for the Group with the formation of

subsidiary company Online Valves Ltd (OVL) headed by Dave Sim who has a 12 year track record in the pipeline valve and components sector. OVL is a specialist valves business based operating from the Group's Aberdeen HQ. OVL offers a fast response and quick delivery of pipeline valves and associated products to the Oil & Gas and petrochemical industries worldwide.

PII Pipeline Solutions' CFAS Service

Incidents in recent years illustrate how pipelines can be vulnerable to different types of flaws— including cracks, corrosion and dents—that interact simultaneously at the same location. This despite the fact that each type of flaw, or feature, has previously been detected by separate in-line inspection (ILI) technologies at different times. As a result, it has been difficult and time consuming for operators to easily identify features that may be coincident with each other because such detection requires the alignment, matching and overlay of data from multiple ILI runs using different technologies, often from several years apart.

To help oil and gas pipeline operators improve their ability to detect coincident flaws that potentially could lead to costly pipeline failures, Cramlington, U.K.-based **PII Pipeline Solutions**, a GE Oil & Gas and Al Shaheen joint venture, has added its Coincident Feature Assessment Service (CFAS) technology to its suite of inspection software. The service helps customers easily identify coincident cracks, dents, corrosion and other anomalies across multiple ILI runs. "With CFAS, PII is the first company to develop a product that accurately and efficiently identifies coincident features from multiple ILI data sets and helps make the detection and reporting of these features easier for our customers," said Michael Bellamy, general manager of PII Pipeline Solutions.

CFAS saves operators time by providing a consolidated pipe-listing report that summarizes features from separate ILI runs and highlights the ones that are coincident and, therefore, may be interacting to pose a problem. CFAS offers file conversion, alignment and matching of features from separate ILI runs. The ILI runs can be performed by any ILI vendor and any ILI technology, making CFAS vendor-agnostic and inherently more flexible for operators.

In addition to its Excel-based report, CFAS includes a PipeImage -based client viewer that enables the customer to view all features from the five ILI runs on one screen. The customer can interact with the feature data in many ways, including assigning different colors to cracks, internal corrosion or dents as well as switching particu-lar feature types, ILI technologies or even specific runs on or off the screen. The PipeImage-based viewer also allows customers to alter the parameters defining how close features have to be before they are considered coincident. This enables customers to choose their own level of conservatism and take into account ILI tool positional tolerances.

Do you need help sourcing pigs and pigging services?

If so email ppsa@ppsa-online.com and see if our members can help you.