PIGGING PRODUCTS & SERVICES ASSOCIATION

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Pigging Industry News

the newsletter of the Pigging Products & Services Association

NEW Members

Individual
Che Mokhtar Bin Shaari
Malaysia

THE PRESIDENT'S LETTER

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

Life for all of us in the pipeline industry is certainly not getting any quieter and the PPSA is no exception. Our calendar is filling up as our horizons expand. The PPSA members have voted for us to exhibit at the IPCE event in Calgary this September.

That will be followed by our seminar in Aberdeen on 14 November, which continues to provide a platform for operators and our members to discuss current issues. Other events are being identified in Asia and South America to increase our presence and provide a chance for new members to meet us.

Our AGM took place in February with good participation from members. The Board meets at the same time, which remains the only time that everyone gathers – most of our work being done by e-mail. New ideas are being brought forward for the longer term development of the PPSA to make our voice more effective in the industry. A visual example is our new logo, now decorating our Newsletter and other publications.

At this stage in our development, these meetings provide really good opportunities for direct input and influence from members. There are real questions and issues to grow the PPSA and how to guide the nature of our activities. The more members can take advantage of such direct involvement, the more you will benefit.

Other areas where we will seek to develop our activities in future include creating a support for developing young engineers and bringing them on in the pipeline world. There is a real need to encourage young people into our industry. As our membership grows, we could consider establishing a system of technical committees concentrating on specific areas.

The PPSA continues to offer a free of charge technical enquiry service. We have several independent technical advisors with varying areas of expertise who can offer a real support in the early stages of project development or finding the solution to a particular problem.

On the fun side of things, our golf tournament is really growing into a fixture that many now look forward to each year. We are grateful to our sponsors who make the event possible: TD Williamson, Greene's Energy Group, Online Electronics Ltd, Robins and Myers, Energy Services Group, Weatherford P&SS, PPIM, Tiratsoo Technical, Clarion Technical Conferences, Ayers Meetings and Events, Cudd Energy Services and Evers and Sons, Inc.

The Board welcomes two new directors, Stephen Mayo of Pipelines 2 Data, UK and Mark Elliott of Baker Hughes Process and Pipelines Services, USA.

I want to express thanks and appreciation to my predecessor, Alan Sweeney, and to Peter Fretwell, who comes to the end of his four years' service. Both have been generous with their time and support for me personally and for the PPSA.

PPSA Golf tournament results:

1st place with 56 points:
Monty McDonough, Doyle Black, David Dzierski, Larry Legendre

2nd place with 57 points:
John Hartley, Chris Melbor, Ryan Cook, Mike Lam

3rd place with 59 points: Richard Prior, Kevin Maloney, Geard Lalonde, Rick Odegard

Closest to the hole: Patrick Porter
Longest Drive: Ryan Douglass

PPSA Golf Tournament, Houston 2012

Continued Success from Baker Hughes' CPCM™ Tool

Baker Hughes Process and Pipeline Services group continues to help pipeline operators improve their cathodic protection systems with cathodic protection current measurement technology. In November 2011, Baker Hughes inspected a 12", 37 mile crude oil pipeline in Louisiana, USA. The goal was to assess the performance of the existing cathodic protection system.

The inspection was successfully completed in approximately 12 hours at an average speed of 2.9 mph. The operator had reported seven rectifiers on this line with a total current output of 200 amps. The CPCM ™ tool confirmed all seven current sources and two significant anomalies that were impacting the protection of this pipeline.

The first significant anomaly was located 300 feet downstream of the launch site. The tool called out a 3.8 amp short to a foreign structure. Data from a recent metal loss inspection was imported into the CPCM data for a truly integrated report and it was noted that the metal loss inspection identified a "Close Metal Object" (CMO) at this location in the 12 o'clock position. The operator excavated this location and found an abandoned steel water line resting directly on the pipeline at 12:00. The significance of this short was compounded by the second anomaly found 9600 feet downstream. The tool called out a valve with an inline insulator at this second location. This isolated valve was preventing current from the downstream sources from reaching the pipeline between the valve and the launch. Coupled with the short (at 312 feet) that was removing almost four of the five amps being supplied to the line from an upstream source, the line was left with very little current to protect it from corrosion (0.01 mA/ft^2). The operator had been taking pipe to soil potentials at this buried valve and was unaware of the insulator because the insulator was on the upstream flange of the valve. The operator excavated this valve and found that a jumper wire that had been installed to provide for continuity around the insulator was broken. Both of these anomalies worked together to create very low current densities on this section of the pipeline crossing the Mississippi River.

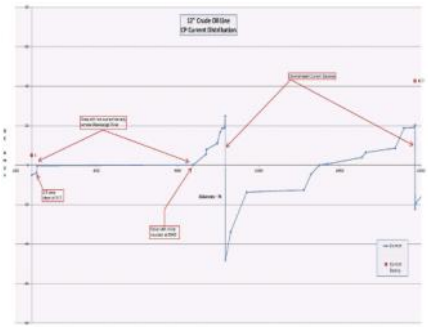


Figure 1

The current distribution chart below shows the anomalies and the resulting low current density across the river. Figure 1.

Dogs and Pigs Get Along Great Together

Pipelines are widely accepted as being the safest and most economical means of transporting hydrocarbons over long distances; however, as they age they can corrode, fatigue, and become damaged in service, leading to product leakage.

Consequently, the pipeline industry is always searching for ever more effective means of leak detection. Current methods include the use of aerial surveys, pressure and temperature sensors, optic fibres, acoustic monitoring, thermal monitoring, and line flying or walking, all of which work well but also have significant drawbacks including high retrofit costs and poor location accuracy. Operators are using sophisticated, online detection systems for more modern networks, but even these have limitations; with a detection tolerance of approximately 1% of pipeline flow, anything less may go unnoticed.

It is also a well known fact that ILI can struggle to detect very small pinhole defects or accurately size defects with a depth greater than

80% wt. Given this, the risk of a pipeline leak that has gone undetected via ILI is considered a possibility.

Despite all the methods available, 51% of leaks in liquid pipelines and 42% of leaks in gas pipelines are presently first detected by third parties, such as passers-by. As an industry, our task is to improve these statistics and ensure leaks are detected more rapidly and effectively by technologies. One solution **Penspen Ltd**., UK has identified is the use of dogs.

Since 2007, Penspen Ltd UK, MJL and Newcastle University have been researching the feasibility of using dogs as a leak identification resource. The results gathered during a 4 phased study where the dog's accuracy and reliability were assessed, verified and quantified. The results confirmed that trained dogs can be deployed along pipelines as a reliable and accurate leak detection tool.

Recently, a UK operator used this methodology to screen a liquid pipeline prior to inspection via ILI. The pipeline had been out of service for a number of years, and an ILI conducted 18 years ago had reported some significant corrosion. Consequently, the risk of a current leak was considered credible.

Penspen's preferred dog, (Blitzen) was quickly trained on the scent of the product and deployed along the pipeline. The results confirmed that the pipeline did not contain a leak. The dog was successfully calibrated before, during and after the inspection. This case study has confirmed that trained dogs can be deployed as a routine inspection method or run in parallel to any scheduled ILI inspection to fully evaluate and confirm the integrity of any pipeline.

Trained dogs deployed as leak detection tool.

PII's PVI Lite Software

PII Pipeline Solutions has introduced its PVI Lite software, the company's newest addition to its family of PipeView™ Integrity software, a fully integrated software environment that enables pipeline operators to easily control and use data, perform advanced risk assessment and establish integrity management plans for their networks.

When dealing with inline inspection (ILI) data, operators face several key issues to keep track of the volume of data generated, accurately compare one run to another and leverage ILI data to determine a pipeline's fitness for service. Currently, operators typically use spreadsheet-based solutions, which are time consuming and prone to error, to perform these tasks.

The PVI Lite software provides the opportunity for real productivity gains for integrity teams by allowing operators to conduct consistent and accurate ILI integrity evaluations—including fitness for purpose assessments—using formulas based on proven industry best practices. This product is a "plug-and-play" solution that works directly from ILI files, with no data conversion, commissioning or implementation required.

Additionally, operators can use the PVI Lite software as a tool to catalogue and organize ILI and other data associated with a pipeline network. Operators also can use the software to assess the significance of ILI-reported features on the immediate and future integrity of the pipeline. The PVI Lite software can be used with data from a variety of vendors, including PII. Most importantly, the tools found in the software are the same as those used by PII's internal integrity engineers.

The new software already has been adopted by operators in North America, Europe and Australia, particularly by those customers that need to conduct in-house integrity evaluations but do not want to invest in a GIS-based solution. The new product was developed to fill a gap in the market between software provided with ILI reports and comprehensive data management systems.

CDI'S New Traxall 770 Tracks It All

CDI's new TRAXALL 770 uni-body receiver has added MFL magnetizer tracking as well as 7-frequency color-coded transmitters tracking to traditional 22Hz tracking. These strong new features give unprecedented flexibility to operators, commissioning companies and inspection tool vendors.

With TRAXALL 770, tracking moving pigs and locating stationary pigs is performed through a wealth of information provided on TRAXALL 770's large color display. The new Pinpointer user interface replaces old nulling techniques and makes precise location a breeze. To pinpoint a stuck pig or locate one in a launcher, simply moving the receiver along the pipeline near a transmitter will trigger a loud and colorful signal lock on the Pinpointer's large "X-marks-the-spot" dial.

In addition, MFL tools may be tracked using nothing but the tool's magnetizer which removes the need for any kind of built-in electro-magnetic transmitter. This new magnetizer tracking and locating capability frees inspection tool designers up to create smaller and lighter tools with an even longer battery life.

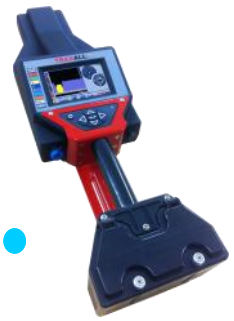
Perhaps the most exciting new feature of TRAXALL 770 is its ability to separate, identify and record as many as 7 color-coded transmitter frequencies simultaneously. Using CDI's new family of TRAXALL transmitters, an operator may equip each pig in a train with its own color-coded frequency. Regardless of how close the transmitters are to one another, TRAXALL 770's digital frequency analysis will sort them out and display them all automatically with the nearest color highlighted.

Built-in GPS and wireless Bluetooth round out a variety of modern features which complement the pig location and tracking capabilities of TRAXALL 770. Using GPS, Waypoints may be set and navigated to at a later date while Trackpoint breadcrumb trails may be recorded as operators walk the line.

Bluetooth wireless communications allows for remote pig passage monitoring from vehicles in inclement weather, as well as signaling to remote devices such as lights and horns.

Since the full color graphics display in TRAXALL 770 has been fully tested over the wide temperature range of -20°C to +70°C with no change to its brightness or contrast, you can be assured of seeing all of these vibrant colors regardless of whether you're in the frozen tundra or the burning desert.

CDI's new TRAXALL 770 receiver is a durable, water-tight and compact assembly of sensors and gadgets for tracking and locating any type of pipeline pig with confidence.



CDI's new Traxall 770

Weissker Group Acquires NDT System & Services

On April 1st, the international technology leader in the field of ultrasonic inspection systems for the oil, gas and steel industries based in Stutensee near Karlsruhe in the southwest of Germany has been acquired by the Weissker Group, an international, mid-sized business holding based in Greiz in Thuringia in east-central Germany.

"NDT is well established in the market and has an outstanding reputation. The company is perceived by its customers as technology leader in the field of automated non-destructive ultrasonic testing systems, especially regarding in-line inspection tools and stationary systems for plate inspection in steel mills. We want to build on this technological strength and use our own expertise to ensure a sustained economic success for NDT in the future, in the best interest of our customers and our employees", says Stefan Matthaei on behalf of the Weissker board. Working jointly with Weissker, the management of NDT has great plans for the future, securing the Stutensee location as well as expanding the international activities of the company.

STATS Group Performs Isolation on NGL Pipeline

STATS Group provided a double block and bleed isolation on a 14 inch NGL pipeline as part of a scheduled plant shutdown, facilitating routine maintenance of an ESD valve. Qatar Petroleum approached STATS Group to assist with providing a safe isolation at their fourth Natural Gas Liquids Plant (NGL-4) in Mesaieed Industrial City, Qatar.

In order to undertake this operation safely and efficiently, STATS proposed the use of a remotely operated Tecno Plug™. Conventional repairs of this type would typically require the pipeline to be completely hydrocarbon free by flaring the NGL and nitrogen purging the entire length of pipeline, in this case 40 kilometres, to enable a safe intervention. The NGL flaring and subsequent purging of the pipeline would have added extensive operational and procedural requirements which would have significant time, environmental and cost implications.

The whole project was managed by a designated project engineer and co-ordinated by STATS Qatar based business development manager. The project began by STATS deploying a specialist field technician to the workscope location to carry out a detailed site survey, collating data and critical dimensions. Based on these findings STATS designed and manufactured a custom built Remote Tecno Plug™ at their Aberdeen headquarters.

The Remote Tecno Plug™ was configured in a four module arrangement, as design analysis proved this to be the ideal configuration to allow the tool to negotiate the pipeline system. A full Factory Acceptance Test was performed in a purpose built test fixture which was created to simulate the client pipeline configuration.

Onsite, the Remote Tecno Plug™ was deployed from an 18 inch launcher and successfully pigged passed four valves, a barred tee and monolithic joint before negotiating a 5D bend and setting immediately beyond the ESD valve. Once at the desired location the plug was set using through-wall communication. Communication is achieved using an extremely low frequency (ELF) radio control system for reliable tracking and accurate positioning. The Remote Tecno Plug™ eliminates the need for tethers or specially modified pig-trap doors and is ideally suited for valve maintenance activities.

After monitoring the set plug for 12 hours, the isolation certificate was issued to verify the double block and bleed isolation, the client then carried out the maintenance work.

STATS Group's 14" Remote Tecno Plug™

With maintenance work successfully completed the Tecno Plug was used as a test boundary to perform a reinstatement pressure test. The plug was then unset and pigged back to the launcher for demobilisation.

Weatherford's new ATEX certified SAAM® tool

Weatherford P&SS has completed development and manufacturing of their new generation, Smart Analysis Acquisition Module (SAAM®). A key aspect of the new CE marked tool is ATEX & ICEX certification for use in ESSA and Western Hemisphere markets.

The SAAM tool is a data logger installed within its carrier cleaning pig allowing the operator to inspect and register pig behavior and data parameters, providing the operator with a variety of information. The technology has been proven over 100 separate projects since 1997.

The primary application of the SAAM tool is to provide an assessment of the pipeline condition with respect to debris. This allows it to monitor the condition of newly commissioned pipelines or monitor the progress of pre-ILI cleaning programmes and verify the cleanliness of the pipeline prior to running the ILI tool. Weatherford have a strong track record in analyzing the acquired data for debris assessment and providing prompt reporting whilst the cleaning operation is still in progress.

Additional applications are identification of bore restrictions, measurement of pipeline pressure and temperature and profiling of the vertical and horizontal shape of the pipeline, allowing baseline 3D out-of-straightness calculations to be made of the full length elevation profile and localized 3D features. Comparison of future surveys against this baseline can monitor for pipeline movement and identify any new features such as upheaval buckling or sagging. This function has been improved by inclusion of a MEMS mapping device in the new generation tool, now pressure-rated to 400 bar.

Performance upgrades to the new tool include higher performance and sensitivity, rechargeable batteries, increased duration, a delayed start facility, faster data upload via USB and a fully revised user interface and analysis software.

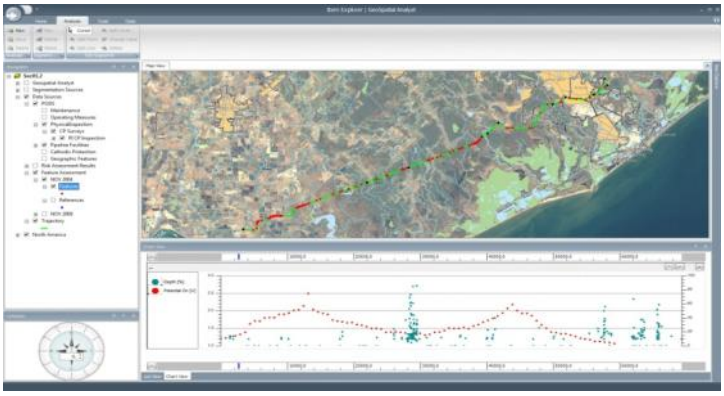
Baker Hughes Wins Award

Baker Hughes has won NACE International's Top 10 Innovations award with their Cathodic Protection Measurement tool. The award was presented to Kevin Scott, Baker Hughes, USA by NACE International's President, Oliver Moghissi.

CPCM™ Tool Wins Award

ROSEN extends ILI Reporting Services

In response to operator demand for analyzing and comparing ILI results between non-adjacent pipeline features, **ROSEN** offers supplemental services for linear and geospatial comparison and querying.



ROSEN's Integrity Management Software (ROAIMS)

Immediate actions taken in response to ILI findings are usually not only based on anomaly dimensions and resulting code-based safety measures like "Safe Operating Pressure", but also in consideration of their location with reference to environmentally critical objects (e.g., HCAs), as well as other detected anomaly types. "Where are all the reported Top-side Dents > 4% within 5ft of any Metal Loss in an HCA?" is typical of queries that lead to a criticality ranking on "what needs to be tackled first".

ROSEN utilizes its Integrity Management Software (ROAIMS) to configure such decision tree matrices in the form of complex algorithms, and then loads and aligns all required data (ILI from any vendor, HCAs, Foreign Line Crossings, CP measurements, etc.) as the basis for calculations. Together with the Final Report, the operator is then provided with a fully spatialized and categorized record set of his anomalies, ready to be uploaded to an Integrity Management Software or GIS for visualization and archiving purposes.

Using the ROAIMS software modules, this task usually only takes a couple of days following the release of the Final Report. Furthermore – where previous ILI run data is available – weld-to-weld matching and combined visualization is part of the offering.

Closing the entire process loop and also allowing the assignment of results from the ditch back to the prioritized anomalies, ROSEN also provides ROAIMS as part of the package.

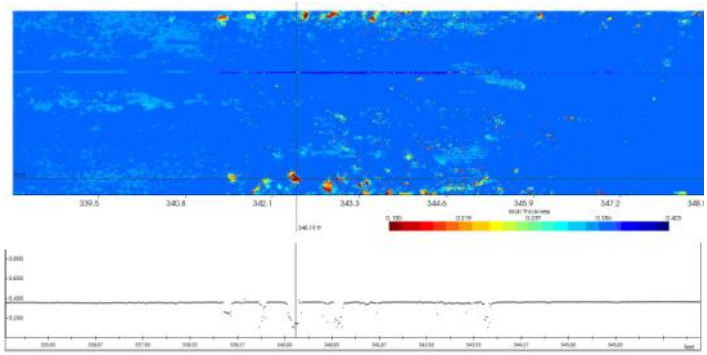
Having, for example, a hosted implementation doesn't require major involvement of IT and keeps software investments to a minimum.

Quest Integrity Group Introduces Larger InVista™ Tools

Quest Integrity Group continues to innovate by introducing larger InVista™ tool sizes to meet industry demand for in-line inspection of unpiggable pipelines. The 16-inch tool is available now for ultrasonic in-line inspection projects and has completed a series of successful surveys in North America. This unique industry leading single module tool is followed by a 20-inch and a 24-inch tool that will be available for projects scheduled in Summer 2012.

The technology is a light weight tool that can be hand-carried, lifted and loaded. It performs in low flow/low pressure environments and can navigate 1.0D bends, including back-to-back and mitre bends. Along with this unique navigational capacity, the large diameter InVista tools boast longer battery life and faster on-board computing for greater axial flaw resolution and increased inspection velocity. The technology is ideal for space-constrained environments such as terminals, refineries and offshore environments and delivers a high-resolution data set for a detailed direct-measurement inspection with operational simplicity.

Like all of our intelligent pigging tools, the 16-inch tool uses ultrasonic technology to detect metal loss and deformations, is bi-directional and has dual-diameter capabilities. In addition to corrosion and dents, an InVista survey can also identify anomalies such as laminations and verify nominal pipe wall thickness. The survey comes with a complete engineering fitness-for-service assessment integrated with the standard pipeline feature table.



Wall thickness data from 16-inch test pipe

A.Hak receives Performance Award

Abu Dhabi Marine Operating Company (ADMA-OPCO) has recently awarded to **A.Hak Industrial Services Middle East L.L.C.** their ADMA-OPCO's Outstanding Performance Award.

This award was granted to A.Hak Industrial Services for the successful performance of executing a 3 year inspection contract in less than 1 year. Additionally A.Hak Industrial Services Middle East L.L.C. has been awarded a new 5 year contract consisting of de-oiling, cleaning and inspecting 120 non-piggable oil pipelines all by the use of A.Hak's UT Piglet® technology. These inspections will mainly take place in Abu Dhabi's major offshore fields ZAKUM and UMM SHAIF. It's the aim of ADMA-OPCO and A.Hak by a joint efficiency program to execute this contract is less than 3 years.

A.Hak Industrial Services' Middle East office has been very active over the past 8 years in their wide field of activities for ADMA-OPCO and other local Oil Companies. A. Hak is looking into some sizable investment in the region and further, to provide their brought range services to other major players in the GCC region.

PPSA Seminar—14th November 2012, Aberdeen, UK Meeting the Challenges of Pipeline Pigging

For details contact ppsa@ppsa-online.com

Looking for the answer to your Pigging questions?

Contact our free technical information service at ppsa@ppsa-online.com for help with technical enquires or with sourcing products and services.

TDW Advances Science of Corrosion Inhibition

To help pipeline operators combat internal corrosion, especially top-of-the-line corrosion, **T.D. Williamson (TDW)** now offers the V-Jet® Coating System. This system applies a patented binary chemical formulation known as IS-2500 using the TDW V-Jet® Pig to ensure the line is coated top to bottom. The coating can be applied in newly constructed lines or on-stream lines flowing natural gas, crude oil and products. Unlike conventional corrosion inhibitors, the IS-2500 compound preferentially adheres to the pipe surface and will subsequently and spontaneously cure to a tough, adherent, very thin, corrosion-resistant coating. This coating acts as a temporary barrier that does not allow corrosive materials to contact the inner surface of the pipe.

Depending on line conditions, IS-2500 lasts five to six times longer than traditional batch inhibitor treatments, or more than 12 months. Additional benefits include increased flow due to smoothing of the pipe wall and a reduced need for pigging due to debris not adhering to the wall.

The IS-2500 is applied using a V-Jet® Pig, which features a series of spray nozzles mounted on the front. Using differential pressure and bypass flow, the IS-2500 is siphoned from the bottom of the line and sprayed to the top, giving pipes full 360-degree coverage.

TDW's V-Jet® Coating System.

TDW's SpirALL™ Inspection in Spain

T.D. Williamson (TDW) recently performed a SpirALL™ MFL / Multiple Dataset (MDS) inspection in Spain for Compañía Logística de Hidrocarburos (CLH), S.A. CLH and TDW partnered on the execution of an MDS inspection in a 96 km long 12-inch pipeline. The intent of this project was to create a means to qualify TDW's latest inline inspection technology advancement for use in CLH's pipeline system. The inspection was performed on April 20, 2012.

CLH is an oil operator in Spain whose main activities include storage, transportation and distribution of oil products in the mainland Spanish territory and the Balearic Islands, under a system that guarantees free access by third parties to its logistics system. The company has one of the largest and most efficient integrated oil product transport and storage networks in the world. CLH operates more than 4,000 kilometres of oil pipelines, and a storage capacity of 7.8 million cubic metres, which are at the disposal of all oil companies that operate in Spain.

The use of TDW's most recent technology provided CLH with enhanced characterization of pipeline integrity threats, such as metal loss in seamless pipe and mechanical damage caused by third party intervention. At this time TDW is in the process of analysing the data and will present the report to CLH for review, correlation with previous excavation results, and further field validation.