### **PIGGING PRODUCTS &** SERVICES ASSOCIATION

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February 2014

# **Pigging Industry News**

the newsletter of the Pigging Products & Services Association

### THE PRESIDENT'S LETTER

#### By Terry Delasalle, Greene's Energy Group, LLC

Happy New Year to everyone. It seems like 2013 flew by quickly. It was a busy year and 2014 looks to be just as busy. My year as PPSA President is coming to an end it has been an honor and privilege serving as your President. I have learned a lot from this experience and made a lot of new friends and renewed old friendships.

I attended the PPSA seminar in Aberdeen which had excellent technical papers along with good questions and answers after each paper. If you get the chance, you should attend as it will be time and money well spent.

The next day was spent with our Board Member Steve Mayo looking at his company and learning about the oil and gas industry in Aberdeen. Afterwards he introduced me to the oldest and newest pubs in Aberdeen. I learned that I prefer Guinness and beef

#### **PPSA Annual Golf Tournament** Houston on February 10, 2014.

This is a fun, informal event and a chance to meet others in the pipeline industry. As well as some great golf rivalry between the teams there will be some cooking tents at holes serving food and some beverage carts to visit on your way round. This is followed by a buffet lunch and awards for the winning teams, the 'Closest to the pin' and the 'Longest or a root vegetable stew over haggis any day.

I've been asked what the PPSA really is. First I think everyone should find time to serve on the Board of Directors, you'll see our organization in a whole new light. We've taken a lot of big steps in the past two years and I believe we'll take bigger steps in the years to come. The PPSA is a resource center for our members and a place where our customers can get answers and help for their pigging and integrity needs. We are the lump sum of all pipeline integrity and pigging knowledge in the world. We reach out to all corners of the earth. that's a remarkable thing. We receive inquiries for problems, bidding and general information. Our Mission Statement is: "To promote the knowledge of pigging and its related products and services by providing a

Drive'. If you would like to take part or be a sponsor the registration form is on our website at www.ppsa-online.com.

#### A huge thanks to our sponsors:





Individual Joerg Lis, Germany

channel of communication between the members themselves and with users and other interested parties." I think we live up to that statement.

I want to thank Diane Cordell for all of her guidance and help in answering the questions I had this year. I also want to thank the Board, Basil Hostage, Steve Mayo, Mark Slaughter, Ben Cottam, Mark Elliott and Paul Birkinshaw. I've enjoyed working with such outstanding people.

Don't forget, we're coming up on the PPIM conference in Houston where PPSA will be exhibiting at booth 507. We are also holding our Annual General Meeting on February 11th at 3pm. I hope to see you there and at the golf tournament on the 10<sup>th</sup>.

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### **Industry news**

#### FTL Technology's VariPig de-commissioning project

Pipeline pigging equipment manufacturer **FTL Technology**, completed a de-commissioning project on behalf of Qserv, to facilitate the closure of the Atlantic and Cromarty pipeline in the UK North Sea.

The original commissioning of the pipeline took place from onshore at the St. Fergus Terminal north of Aberdeen to sea-bed, decreasing from large diameter 18" to small diameter 16". The decommissioning was carried out from sea-bed to onshore at St. Fergus (16"-18"), to allow all contamination to be collected onshore. This posed a problem as the pig had to do the majority of work in 78kms of the smaller diameter, before reaching the last 3kms which was the large diameter.

To overcome this problem, FTL supplied VariPig – a multi-diameter pig with a specially configured train of three, incorporating a revised sealing package. This was developed to lessen the risk of leaving contamination in the pipeline, reduce the effect on the seals of the extended period in the smaller diameter, and to maintain a full seal within the large diameter. The VariPig train was deployed with a 50/50 MEG and sea water mix as the media to propel the first two VariPigs and chemically treated seawater for the last VariPig. To reduce time and cost for the operation an existing 16" launcher was utilised. During the operation due to limited slug catcher facilities, the VariPig train was frequently paused and relaunched in the pipeline whilst hydrocarbon and ferrous debris was cleared.

The pipeline was pigged at low velocities with approximately the first 30kms distance at 0.35m/s and the remaining distance at between 0.08m/s and 0.05m/s. The pipeline included full bore tees in both diameters and a subsea manifold, which was 15mm smaller than the 16" pipeline.

On completion the VariPig train was received back into the pig trap for demobilisation, allowing the pipeline to be capped off and successfully de-commissioned.

### Weatherford's peforms pre-commissioning

Weatherford, Pipeline & Specialty Services have recently performed the pipeline precommissioning services for Noble Energy Mediterranean Ltd. on the new Tamar field, offshore Israel.

This development involves a subsea gas production and transportation system connecting the deep-



FTL Technology's Varipig Decomissioning Project

water Tamar Gas Field to an offshore receiving and processing platform. Gas production from the Tamar Reservoir now travels through five high flow rate subsea wells into the subsea gathering system, which consists of an infield flowline (typ. 3 miles long) from each well to a subsea manifold. From the subsea manifold in 5,400ft water depth, dual 16" subsea pipelines run 93 miles to the Tamar Platform, 790 ft water depth, for processing. The processed gas



**PIGGING INDUSTRY NEWS** 

will then be delivered to the existing Ashdod Onshore Terminal (AOT) for gas sales into the Israel Natural Gas Line (INGL) system.

Weatherford's <u>main</u> pipeline precommissioning scope consisted of:

Tieback Pipelines: 2 x 16" x 93 miles; 790ft – 5,400ft water depth

- Subsea filtered free flood, vessel based pumped flood, clean, gauge and hydrotest
- Base Line Survey: Weatherford Multi-Channel Calliper and Ultrasonic Wall Measurement inspection pigs were run during the pumped flood operation. Weatherford provide a turnkey package combining precommissioning and deepwater inline inspection.
- Vessel based nitrogen dewatering and packing.

In-Field Flowlines: 5 x 10" x 3 miles; 5,400-5,500ft water depth

- Subsea flood, clean gauge and hydrotest (remote logging capabilities) with Weatherford's Denizen subsea precommissioning system. Subsea launch of dewatering pig trains using subsea Mono Ethylene Glycol (MEG) skid and Denizen pumps.
- Nitrogen pack pressure of tie-backs used to provide gas for dewatering of all in-field flowlines without nitrogen pumping at the deepwater section. This is a novel technique employed to save vessel time and equipment costs involved with directly dewatering the deepwater flowline sections.

#### Innospection Ltd's laser inspection of damaged subsea pipeline

Providing innovative solutions to solve inspection challenges is **Innospection Ltd's** forte. For a recent job to inspect a damaged subsea pipeline, Innospection performed a laser scanning to measure the pipeline surface geometry in order to determine the extent of damage.

This was performed in addition to the other advanced inspections including SLOFEC fast corrosion screening, Ultrasonic for wall thickness measurement and visual inspection. All these inspection techniques were incorporated into the sophisticated MEC-Combi Crawler inspection tool to provide comprehensive inspection data within a single inspection deployment.

The subsea pipeline located at a water depth of > 100m was damaged by an external impact which resulted in a dent at a section of the pipeline where its concrete casing with wire enforcement was also lost. The damaged pipeline section had to be inspected for wall thickness reduction and deformation. Quantitative data on the out-of -roundness of the pipe section had also to be obtained for further fitness-of-purpose analysis.

The MEC-Combi Crawler inspection tool with the laser triangulation system mounted to the front was deployed onto the subsea pipeline by ROV. While the SLOFEC scans were performed in the axial direction of the pipe in a single run, the laser and Ultrasonic scans were performed together at individual sections in the axial direction. The quality of the SLOFEC scans was also good except at the dented and out-of-roundness region where the lack of data limited the probability of detection for crack-like defects.

The laser scanner calculated the distances using a triangulation measurement technique. The optical detector measured the angle that the laser light scattered back to the optical sensor and used this information to calculate the distance to the target surface. The density of the laser scans was sufficiently high to allow concatenating the separate scans to yield a single picture of the scanned surface.

In conclusion, the MEC-Combi Crawler inspection tool with laser triangulation system is capable of detecting the out-of-roundness in the pipes, indentation, scratch-like features and wall thickness reduction.



The MEC-Combi Crawler inspection tool that the laser triangulation system was mounted on



#### TDW launches 6– and 30-inch Multiple Dataset tool with SpirALL® MFL

**T.D. Williamson, Inc. (TDW)** has launched two new diameters of its Multiple Dataset (MDS) inline inspection technology, 6- and 30-inch. The platforms include Deformation (DEF), Axial magnetic flux leakage (MFL), SpirALL® MFL (SMFL), Low Field MFL (LFM) and XYZ Mapping.

Operators of smaller diameter gathering and midstream lines can now achieve comprehensive integrity assessment in a single run with TDW's new 6-inch MDS platform. The compact tool weighs only 146 pounds (66 kg) and is a mere 73-inches (1.85 m) in length. Counting the 6-inch inspection runs previously executed in 2013, and those currently scheduled, 14 segments and almost 600 miles of pipeline will be inspected in the diameter's first months on the market.

On the other end of the spectrum, larger diameter transmission operators are also benefiting from TDW's new 30-inch MDS technology. In late October 2013, TDW completed a successful inspection of a 30-inch pipeline, 43 miles (69 km) in length. The operator was pleased with the process and results, and scheduled several additional segments for inspection in the coming weeks.

Integrity threats, such as corrosion or crack-like defects, can often be overlooked by singular inspection technologies. This puts operators in a precarious position. Running too few technologies leaves the operator with only a partial integrity assessment, but running several individual tools is very time consuming and costly. The MDS platform addresses both of these concerns, as it's utilized for detecting and characterizing various pipeline integrity threats in a single run, overcoming the limited scope of individual inspection technologies. For instance, should a seam assessment be required, the combination of SMFL and MFL offers the greatest identification and accuracy for detection of crack-like defects.

Integrity threats, such as corrosion, can be better sized using the MDS platform, due to its ability to see the full extent of metal loss. By applying multiple magnetic fields, versus multiple measurements of the same applied field, the MDS platform provides various views of the same anomaly, which translates into greater understanding of corrosion shape and, thus, accuracy. LFM, available on the MDS platform, is also useful for many threats. LFM is the primary technology used to determine pipe properties; i.e., identification of different types of pipe related to raw material, manufacturing, grade, etc. Additionally, LFM is the requisite technology for hard spot analysis.





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Multiple Dataset Technology

Going beyond detection, when operators utilize MDS inspections they are receiving comprehensive mechanical damage assessment. The threat prioritization process – based on the Battelle research, "Improving ILI For Mechanical Damage in Natural Gas Pipelines" – is able to provide advanced prioritization of mechanical damage. For example, by applying longitudinal metal loss, seen only in the SMFL data, and rerounding or cycling, confirmed by the LFM data, the process may reveal that shallow (less than 1 percent) dents are actually the most critical threat.

The 6- and 30-inch MDS platforms continue a TDW tradition of introducing ground-breaking ILI technology to assist pipeline operators in improving pipeline integrity. The fleet of MDS tools with patented SpirALL® MFL is currently available in 6, 8, 10, 12, 16, 20, 24 and 30-inch.



TDW's 30" multiple dataset tool

#### **Protective coatings from** ROSEN

**ROSEN Group** is well known for its expertise and experience in pipeline inspection and integrity. However, with more than a decade of experience with in-house formulated polyurethane products, ROSEN has also become a major player in the polyurethane elastomer field. After redefining abrasion protection in slurry pipes by RoCoat<sup>™</sup> internal coating, ROSEN

has now successfully introduced novel exterior pipe coatings based on Polyurea.

RoCoat 221 and 230 polyurea spray coatings are now commercially available. Target applications are the rehabilitation and long-term corrosion protection of pipelines in wet salty soils as well as the abrasion and long-term corrosion protection of pipes used in a thrust boring/HDD process. Extensive long-term predictive tests

by independent, certified laboratories were performed. Performance as laid down in international and various national standards was reached and in most tests surpassed. Thrust boring tests as well as a real-life field trial on a running pipeline in wet salty soil for more than 1

Externally coated pipe joint utilizing ROSEN's new polyuria spray coating

incorporate the capability to reliably detect coating faults and areas of disbondment.

year proved that RoCoat

polyurea external coatings

ROSEN is fully committed to ultrasonic technology and the required allocation of research and engineering resource. This commitment can be seen in the launch of new tools in 2014 significantly increasing the current crack inspection tool fleet.

Inspection is an essential component of the asset integrity management process. Pipelines are such valuable assets that must be protected ensuring safety, availability, longevity and compliance.

are excellent solutions for both applications. Meanwhile, a large international oil and gas operator has qualified and approved RoCoat polyurea spray coatings.

Key features are:

- Convenient spray application; manual for smaller areas and automatic for long stretches of pipeline;
- very short curing times (minutes); quick backfill possible  $\rightarrow$  cost reduction
- very strong adhesion to steel and to FBE;
- very high abrasion resistance limits damage from thrust boring/HDD:
- non-shielding;
- high, long-term corrosion protection:
- in-field repair kit available;
- increased pipeline life time;
- cathodic protection applicable;

A wide range of potential flaws and

the coating or wall of a pipeline and

anomalies can appear over time in

100% solids, no VOCs.

**ROSEN** committed to ultrasonic inspection technologies

**ROSEN Group** is committed to providing the full range of inspection technologies required for pipeline integrity management . A very strong emphasis in technology development at ROSEN is being placed on the detection and sizing of cracks in liquid as well as gas pipelines. The comprehensive fleet of crack inspection tools available includes piezoelectric ultrasonic inspection tools for liquid pipelines and EMAT tools for gas pipelines. The latter tools also

need to be assessed. Any features potentially affecting the integrity, whether present from the start of the pipeline life, for instance as a manufacturing related anomaly or appearing during the operational

life must be detected, sized and located. In addition it is of greatest importance to also characterize any such features, identifying for instance geometric anomalies, metal loss or cracks. All these needs are addressed by the inspection methodologies and technologies developed and operated by ROSEN.



#### STATS Group successfully completes subsea oil line replacement in North Sea

**STATS Group** were contracted by a major oil producer to supply high pressure isolation plugs to provide a double block and bleed isolation barrier for the safe tie-in of a replacement section of the main 24 -inch oil export line from the platform, without having to de-oil the entire 80km pipeline.

To facilitate the double block isolation and enable a reinstatement leak test in accordance with the pipeline design code, STATS provided two remotely controlled Tecno Plugs<sup>TM</sup>. The first Tecno Plug<sup>TM</sup> provided a proven double block isolation from pipeline pressure. The second Tecno Plug<sup>TM</sup> provided a local leak test boundary. Using two plugs in this manner maintains a safe isolation until the leak test is completed and prevents pressures.

An expert isolation committee of a subsea engineering and construction company, which included their global technical risk experts, assessed the suitability of the high pressure remote isolation plug as a double block barrier for diver breaking containment activities. The critical operational areas of concern were scrutinised and the Tecno Plug<sup>TM</sup> was deemed to



www.statsgroup.com



STATS Group completes subsea oil line replacement in North Sea

provide an acceptable isolation barrier for the required work scope.

Prior to award of the isolation work scope STATS conducted a detailed engineering and piggability study to confirm the fitness for purpose of the Tecno Plug<sup>™</sup>. Further reassurance of piggability and reduction of risk was achieved by deploying a geometry proving pig and a high resolution Inline calliper survey tool.

The primary project objectives of safety and efficiency were delivered to ensure a minimal shut down period was achieved. Excellent project management, intercompany team working and appropriate use of isolation technology resulted in a successful pipeline replacement that was completed in a timely manner.

Dale Millward, STATS Group director of EPRS and subsea services, commented on the successful project: "Although not our first subsea isolation, this project is a milestone subsea isolation project that shows how far we and our technology have progressed since the introduction of STATS' remote isolation plug technology 10 years ago."

#### Vee Kay Vikram & Co's Gel Pig decommissions 16" pipelines

In 2009 VKVC developed the VKVC-GEL-2 Pig to clean small diameter Crude Oil lines. Recently the VKVC-GEL-2 Pig was used for the decommissioning of three 16" NB Pipelines. The lines were to be de-commissioned as the distribution terminal located in Urban South India was to be shifted. All three Pipelines were non-piggable so conventional Pigging was not possible. One Pipeline carried Furnace Black Oil the other two pipelines carried White Petroleum Products.

VKVC mobilized the Gel Pigs and Pigging equipment to site and completed the job in 6 working days. The Gel Pigs were formed at location and then launched. On completion of Gel Pigging the lines were cold cut at the lowest underground point. Afterwards no oil or product was observed in any of the three pipelines and they were touch dry.

Their highly satisfied customer recommends the use of the VKVC-GEL-2 pigging system for cleaning pipelines as it's ideal for non-piggable pipelines. The Gel Pig can also be launched in front of conventional cleaning pigs to convey debris. The VKVC-GEL-2 is water based, organic, biodegradable and non-toxic and it can easily be disposed of after use.



VKVC's decommissioning project using the VKVC-GEL-2

#### Online Electronics Ltd precommissions two gas lines

**Online Electronics Ltd (OEL)** recently supplied a package for the pre-commissioning of two gas export pipelines in more than 2000m water depth. The pipelines connect two fields to a subsea central gathering manifold for onward transport of gas to shore.

A four pig train was used for flooding, cleaning, gauging and caliper operations and an eight pig train for dewatering and conditioning operations. Within the four pig train, pigs one and two were cantilever brush pigs, pig three was a circular brush gauge and pig four was a calliper pig.

The package of equipment included acoustic, electromagnetic and magnetic technologies.

The acoustic monitoring system comprised high specification micro -processor controlled, 'smart pingers' (1201), rated to 3000m water depth, an ROV receiver/ hydrophone (2401), an ROV interface (2402RS) and a topside receiver (2001RS).

Pigs one and three of the four pig train were equipped with smart pingers, while pig four was equipped with acoustic and electromagnetic devices.

The electromagnetic system comprised transmitters (3015), which can be configured between two pulsing transmission rates to optimise battery life, an ROV receiver (3004), an ROV RS 232 interface (30011RS) and a surface receiver (3002RS). The eight pig train was equipped with electromagnetic transmitters in pigs one, five, six, seven, and eight. As acoustic devices are not effective in air-filled pipes they were not deployed in the dewatering train.

All pigs were fitted with magnets and magnetic signallers were attached to the pig launchers and receivers. Information was relayed from the signaller display to the surface via an ROV camera. OEL also supplied Audioscope software, which plots the amplitude of audio signals against time, allowing visual monitoring and interpretation of audio signals generated by smart pingers or EM transmitters. This is extremely useful for reading overlapping signals and can help to distinguish the signal from any background noise.

Prior to offshore deployment, onshore trials were undertaken to confirm that the transmitters and magnets could be detected under simulated job conditions. Factors taken into account included: pipeline wall thickness; the distance between the pingers, the magnets and the pipeline wall; and the pig body material and thickness. Positioning of the pig train during MEG (Monoethylene Glycol) conditioning operations was critical to ensure recovery of fluid for analysis and safe disposal.

Magnetic systems provide a reliable means of detecting the passage of pigs, acoustic signals have a long range that can bring a vessel into the right area and electromagnetic transmitters have a shorter range but can pinpoint the pig's location to within a few centimetres. In combination, they provide a powerful suite of complementary technologies that can be used to identify and resolve any pigging problems as efficiently as possible, and as the industry moves into increasingly complex developments, this kind of package will become more commonplace. 🔵



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PIGGING INDUSTRY NEWS

SPECIALIST

SOLUTIONS

### CDI's New pig tracking products for a New Year

To mark the beginning of 2014, **CDI**, one of the industry leaders in the field of pipeline pig location, tracking and passage detection equipment, has unveiled an array of new products. These products are targeted to pipeline professionals who require the best, most modern and flexible products on the market in order to service their pipelines and support their customers.

CDI's new TRAXALL 770 Pig Tracking Receiver is a compact and robust, single-piece design which has been designed to differentiate from among as many as seven different electromagnetic transmitter frequencies simultaneously. Each transmitter frequency is displayed in its own unique color on the system's bright, wide temperature display.

Additionally, TRAXALL 770 has a built-in GPS receiver which can be used to mark points of interest as well as record breadcrumb trails of routes covered during pigging activities. The system's built-in Bluetooth capability allows for remote viewing and control of the receiver system using TRAXALL's Remote View software; this feature gives operators the option of staying in their vehicle during inclement weather.

To complement the powerful multifrequency reception capability of CDI's new TRAXALL receiver, a completely new family of transmitters was required. Starting with a clean sheet of paper and more than twenty years of experience, CDI has created its next-generation family of pipeline pig tracking transmitters. This new family of transmitters is capable of emitting TRAXALL's seven primary frequencies between 15Hz and 32Hz, as well as the industry-standard legacy frequency of 22Hz. For custom client applications, arbitrary frequencies between 16Hz and 100Hz can be achieved without software modification.

Pulse and continuous operation of the transmitters may be controlled, and custom pulse patterns may be designed through the use of CDI's "Configurator" Windows program. With Configurator, a technician may control the transmitter's frequency, constant or pulsing behavior, and even design and upload custom pulsing patterns.

CDI achieves another industry-first by allowing the output power of the transmitters to be controlled. For the first time, engineers and operators have the ability to simply and directly control the battery life versus range tradeoff of their electromagnetic transmitters. A horizontal slider control in the Configurator program adjusts the output strength, while a dynamic battery life estimator reflects the device's predicted run time using either alkaline or lithium batteries. For short duration pig runs the range of the transmitters may be maximized, while for longer runs the battery life may be maximized. Standard battery life of the transmitters has also been vastly improved with this new and more efficient design. One of the smaller devices, the X300-2C running on

two standard alkaline C-Cell batteries, has a battery life of 56 days (two months) in 22Hz pulsing mode!

To further increase the transmitter's ease-of-use and flexibility, CDI has designed and integrated its own wireless communications and control network called FieldLink. Each of CDI's X-Series transmitters has a small flexible antenna which pops up from one end when the pressure cap is removed. This antenna communicates to a laptop or desktop PC through the use of CDI's own FieldLink USB transceiver dongle. Using this system, a technician may configure several transmitters on a bench top, or even wirelessly control the transmitter while it remains mounted on a pig!

ATEX compliance is an ever increasing requirement in our industry. Therefore, CDI has applied for ATEX certification for all of its new transmitter designs. Expect ATEX rated versions of these transmitters in the second quarter of 2014.



CDI's FieldLink USB transceiver



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#### A.Hak's new high pressure high speed ultrasonic tool

A.Hak Industrial Services provides a full range of specialized services to the (petro) chemical, refining and pipeline transport market throughout the complete life cycle of a plant, tank or pipeline. Through their Inspection Services (IS) division they provide a full service package related to in-line inspection of (un-piggable) pipelines, heaters, refinery & terminal pipelines around the world.

Their newly constructed training and technology center offers flexible and well-designed facilities for the development of new technologies and equipment, as well as tool manufacturing. The site also contains one of the world's largest test loop facilities for practical pigging training and tool testing.

For the last decennia, pipeline operators have invested in launchers and receivers and numerous related appendages, to make pipelines piggable and regular inspections possible.

To supply this market with a competitive ultrasonic inspection tool, A.Hak has developed a new addition to the Piglet® family – the ILI tool. This new ILI tool provides a flexible platform to be able to determine the integrity of the pipeline by means of ILI, without taking them out of service. The ILI tool is propelled through the pipeline by the operational product (liquid), in addition the enhanced velocity allows more options for ILI's using batches in gas pipelines.

A.Hak's new ILI tool combines the advantages of its well known Piglet® on-line inspection tool and the recently developed furnace inspection tool. Furthermore, the system is able to pass small radius bends, mitered bends and multiple diameters, and is designed for bi-directional operations. Obviously the ILI tool meets the latest inspection requirements/ regulations. The ILI tool uses ultrasound in order to determine the pipeline integrity and inner radius of the pipe. In addition the raw ultrasonic A-scan data is stored for enhanced detailed post-processing analysis in their office.

The ILI-Piglet system has the ability to:

- Inspect pipeline lengths over 80km in one run
- Negotiate an unlimited number of bends
- Travel in two directions (bi-directional)
- Inspect multiple diameters in one run
- Works with Low pressure high flow or high pressure low flow or whatever combination is required due to its modular concept
- Has the ability to store data onboard as well as provide all ultrasonic measurements online
- Save raw ultrasonic data for detailed post-processing analysis.

Using their in-house developed inspection tool, in combination with their highly qualified personnel and the most sophisticated software, the final report is the deliverable component of a pipeline inspection. The purpose of the data analysis and final report is to accurately inform pipeline owners and operators of their asset's condition and give them the necessary tools to make the right calls.

The final reporting service is based on an intelligent data analysis system controlled by their highly trained data analysts. When it comes to reporting, quality and accuracy are essential. All work performed by their data analysts is internally reviewed and verified.

During data analysis and final reporting they carry out a defect assessment as standard and offer fitness-for-purpose reporting if required. In addition they are also able to offer:

- Immediate notification policy any feature with a depth  $\ge 80\%$ or a failure pressure  $\le MAOP$ must be reported immediately to the client
- Pipeline integrity management through GIS software
- Defect assessment: ASME B31.G, Modified B31.G, RSTRENG, SHELL92, DNV
- Corrosion growth rate analysis back-to-back or historical.



A.Hak's high/low pressure, high/low speed ultrasonic pipeline inspection tool



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#### Innovative Polymers' ultra-durable pigs

#### Innovative Polymers has

introduced a polyurethane that is tough enough to more than double the service life of the cups and discs used on metal mandrel pipeline pigs used by companies involved in the natural gas and oilfield services industry. A longtime market leader in highperformance polyurethanes, Innovative Polymers developed the new product specifically for manufacturers of hydrostatic testing and maintenance/cleaning pigs.

The methylene diphenyl diisocyanate (MDI) ester-based polyurethane, known as Innotuf<sup>®</sup> HP-1085, features a low viscosity for easy mixing and can be processed and cured at temperatures significantly lower than required by traditional thermoset prepolymers. The polyurethane can be molded in low-cost epoxy tooling that provides for fast production of molds for the broad variety of sizes and contours needed natural gas and oil-field pigs and other components.

Cured Innotuf<sup>®</sup> HP-1085 polyurethane features good dimensional and UV stability, outstanding wear/cut/gouge and abrasion resistance, and excellent oil and chemical resistance.

High elongation, high tensile strength pigs molded with the advanced polyurethane maintain a reliable seal inside pipelines from six to 36 inches in diameter and lengths of up to 60 miles. In the past, many of the polyurethanes used by pig manufacturers were solid, Toluene diisocyanate– based (TDI), "hot pour" systems that called for casting and curing at temperatures above 210°F (99°C). By contrast, the new MDI-based polyurethane is a liquid that can be mixed and handled at temperatures of around 100°F (39°C) and cures at 150°F (66°C).

Key features of Innotuf<sup>®</sup> HP-1085 polyurethane include:

- Energy/cost saving manufacturing at temperatures between 100° F and 150°F (39°C and 66°C)
- Extremely low Taber Abrasion loss values ranging from 4-25mg
- Good stiffness to maintain structural integrity and shape during use
- High elongation of 660 to 800%
- High tear strength of 325 pli
- Easy pigmentation to virtually any color.

With this combination of characteristics, Innovative Polymers' tough new polyurethane is a natural choice for pig manufacturers seeking to enhance the reliability of their products in the challenging gas and oilfield environment.

#### **PII promotes pipeline** safety to operators

**PII Pipeline Solutions** (PII) is working with pipeline operators on both sides of the Atlantic to enhance awareness about pipeline inspection methods, displaying the latest technology and informing the general public of the important work carried out to help maintain environmental and pipeline safety.

**TransCanada PipeLines** has been running a series of open house discussions designed to inform local citizens and allow them to ask questions about a proposed new west-east oil pipeline. PII was invited to show its MagneScan<sup>TM</sup> "pipeline pigging" technology display at some of the locations along the route, highlighting to visitors one of the best practices used by the operator to help detect potential flaws inside steel pipelines.

TransCanada Corp. had official representatives on hand to answer the queries of residents and provide information about the project. The Calgary-based company is proposing to convert 3,000 km of an existing natural gas pipeline and build approximately 1,400 Km of new pipeline to carry western crude oil to the Irving Oil refinery in Saint John, New Brunswick. The pipeline is expected to transport up to 1.1 million barrels of crude oil a day.

In early October in Belgium, PII also partnered with **Total** at a local Antwerp Refinery for their open house event. Total opened its doors for three days: Friday for schools, Saturday for its own employees and Sunday for the general public.

PII's exhibits showcased a range of technology with in-line inspection tools models to detect defects such as corrosion, cracks or dents that may occur in pipelines. The scale models provided talking points for the engineering behind the tools, and how pipeline inspection supports the overall maintenance program within the refinery.

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#### **Open house invitation to Greene's Energy Group's new test loop facility**

**Greene's Energy Group, LLC** (GEG) has announced an open house event for the completion of its pipeline training and test loop operations at its Houston Pipeline Services facility on Thursday, February 13, 2014, immediately following the close of the Pipeline Pigging & Integrity Management Conference.

The facility is available for third party operator training, equipment and procedure testing, industry research and development projects. Classroom facilities are also available for use in conjunction with the test loop.

The test loop includes 1,100' (335 m) of 6" (152 mm) standard wall piping and 1440 psi (100 bar) working pressure with 2000 psi (138 bar) test pressure. Other highlights include 3D bend radius, 120' (37 m) underground, two replaceable 10' (3 m) spools for deflect detection, vertical/horizontal launch/receive capabilities and various features for equipment and instrumentation hookup.

RSVP by close of business on February 7, 2014, to training@greenesenergy.com including your company name, number of people attending, names, position titles, phone numbers and email addresses.



IK design and manufacture in-house solutions to your pigging challenges for either standard products in new applications, operational changes in pigging activities or special "one-off" solutions to resolve your immediate needs.

We have an excellent track record in delivering quality products and flexible innovative solutions.



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#### Jee Ltd's pigging webinar

Independent subsea engineering and training company **Jee Ltd** will draw on its extensive pigging experience to host a webinar exploring the topic on 13 March 2014.

Senior subsea engineer Paul Otway will present the webinar, focusing on 'Best Practice for Management of Pipeline Integrity by Pigging in Complex Environments.' Pipeline corrosion can have serious health and safety, environmental and operational effects, therefore it is imperative that offshore operators constantly monitor corrosion to determine the condition of pipelines.

The webinar will take place online at 3 p.m. GMT. Interested participants can register online by visiting http://www.business-review-webinars.com/webinar/ Energy/InLine\_Inspection\_Ensuring Fitness for Purpose of Subsea P-QyP39YW8

#### Smith Flow Control's Key Management System

To complement its key interlock system, industrial safety company **Smith Flow Control (SFC)** offers a high quality key management system.

SFC has designed a range of horizontal key cabinets to hold operational keys and ensure safe application under secure supervisory control. Each interlocked system has a dedicated, engraved tag location within the key cabinet to ensure total integrity and all keys are visually displayed inside the cabinet during periods of normal operation.

Once the initial key has been retrieved from the central key cabinet, an operator can begin the sequence of key transfer events that allows dangerous machinery and critical valves to be operated in a safe and pre-determined way, eliminating human error.

To facilitate this, key cabinets should be located in a secure place,

typically a control room. Initial keys are typically issued by the Permit Officer. Key cabinets have fully lockable doors to prevent unauthorised access.



Smith Flow Control's Key Management System

#### **PPSA seminar, Aberdeen**

On 20<sup>th</sup> November PPSA held its annual seminar on Operational Pipeline Pigging in Aberdeen, UK. The event started with an evening welcome reception in the exhibition area, consisting of a curry buffet and drinks. The seminar was well attended with a record number of almost 150 delegates. At the seminar 9 papers were presented on a wide range of pipeline pigging subjects. Our thanks to all those who attended the seminar and to the presenters, chair people and the expert panel. If you would like to attend the next seminar it will be on 19<sup>th</sup> November 2014. The call for papers will be announced around May time. The seminar papers are now available on our website at www.ppsa-online.com.



Networking at the PPSA seminar 2013, Aberdeen, UK



#### **PPSA Hands On Pigging Awareness Testloop Day, Montrose, UK**

On 19<sup>th</sup> November 2013 PPSA held a Hands On Pigging Awareness Day at **Petrofac Training Services'** testloop facility in Montrose, Aberdeenshire, UK Our thanks to Andrew Gordon of **Petrofac Training Services** and Steve Mayo of **Pipelines 2 Data** for putting together and delivering the programme, and a special thanks to Petrofac Training Services for making the testloop facilities available to PPSA free of charge.

First of all the delegates attended a classroom session to find out about different types of pigs and the situations they could be used in. They also learned about the different pig components and how pigging is performed. Then the delegates put on their protective clothing and headed to the testloop for some hands on experience of running pigs through a pipeline.



Delegates at PPSA's Hands On Pigging Awareness Day at Petrofac Training Services' testloop facility, Montrose