

# Pigging Industry News

*the newsletter of the Pigging Products & Services Association*

## THE PRESIDENT'S LETTER

*By Odd Reidar Boye, IKM Testing, Norway*

As this is the first PPSA newsletter since the Annual General Meeting (AGM) in February, I would like to introduce myself as the new President of the PPSA. Having been through all (!) of the earlier and available newsletters from PPSA, it seems like I am the first Norwegian to hold this prestigious position, so I see this as a bit of a national achievement!

It is with honour and appreciation I take over the presidency after Danny Molyneux, who has inspired us all with his dedication to both the pipeline pigging industry and the Young Pipeline Professionals (YPP) network around the globe. He will however (and luckily) be staying on the Board for another period as Director (to be read Grand Old Father), keeping us in line mainly – but I guess also ensuring continuity of work and direction.

I would also like to thank the Directors who stepped off the Board; Andy Caley of Baker Hughes and Jan Frowijn of Rosen Group. Thank you for your contribution over the years! Furthermore, the newcomers of the Board deserve a big welcome; Neil Mackay of STATS Group and Ben Bergius from NDT Global.

Lastly - but not at all least - I will like to thank Neil McKnight from T.D. Williamson for taking the position as Vice President in the current period. He will be taking over the presidency in February 2025 and has already shown his dedication by reflected insight and good suggestions around PPSA's role in the future pipelines and pigging industry. Looking forward to the cooperation!

As a summary of the year so far, the annual Pipeline Pigging and Integrity Management (PPIM) Conference took place in Houston in February. Being my first time at the PPIM, and as a Norwegian with background primarily from subsea pipelines, it was very

interesting and educational to see and learn about the range and variety of solutions applied in connection with onshore pigging! PPSA was (naturally) present with our own stand at the conference, cleverly and very swiftly organised and put in place by our highly inventive Diane Cordell after our usual stand was lost in storage in Houston.

The annual PPSA Golf Tournament in Houston, this time at the Wildcat Golf Club, was held the day prior to PPIM. Thanks to the sponsors, members and participants for making this a great success once more! It resulted in raising \$4K USD for young pipeliner projects.

Moving to Europe, the Pipeline Technology Conference (PTC) was held in Berlin in April. PPSA was present with our information stand, arriving as planned this time. During the event PPSA also sponsored the YPP get-together venue, as we did on the last PTC.

The next exhibition and conference event for PPSA will be at the IPC in Calgary in September. With the title "Fuelling the Future" and many technical tracks, we look forward to an interesting week! Hope to see and meet many of you members there!

## NEW Members

### Full

**Petrosys Srl, Italy**

**Argus, Canada**

### Associate

**RBWEA, USA**

**Of Bell, UK**

**Roemex Ltd, UK**

### Individual

**Stephen Washington, UK**

Lastly, we (Diane in particular) would like to announce that the Call for Papers and Tutorials for our own PPSA Seminar is now open. The Seminar is taking place on 19th/20th November in Aberdeen, UK. New to this year is the Young Pipeliner Presentation Competition on the 19<sup>th</sup> of November 2024! As indicated above, we will also be continuing with Tutorials on the day before the conference AND we will of course repeat last year's success with Scottish Ceilidh dancing during the Seminar Dinner on the evening of the 20<sup>th</sup> of November! You are all welcome! ●

## 4PIPE-HIDROPIG Plugs for pigging: The best way for cleaning flexible pipelines

**Authors: Mateus Nobeschi & Sergio Furtado**

In recent years, Oil & Gas Operators have been facing challenges in terms of flushing and cleaning flexible pipelines. For decommissioning programs to reuse or to dispose of those pipelines, oil deposited onto the riser can be a big issue:

1. When decommissioning, generally in reels, the flushing and cleaning is challenging due to the pipeline arrangement. Being a robust system, the installation of an ASME standard launcher and receiver becomes difficult and slow. The flange patterns also needs to be considered.
2. In cases where the flexibles do not have a flange, that is, with cut ends, the operator can prepare them but must take into account the removal of the external coating until the arrival of the steel casing to proceed with any welding work.
3. When cutting, the end of the pipe could be easily damaged, ovality and minor kneading can be caused. Due to operational time constraints repairs are often overlooked and not undertaken. In this case if the final end of the flexible wasn't recovered it would make the installation of equipment more complex.
4. When the flexibles are reeled, in large diameters, that is, above 9", installing an ASME standard launcher or receiver becomes extremely difficult for numerous reasons; ground differences, system support, operationalization, among others.

Searching for a solution to these problems, the equipment is designed by IK-Norway and then manufactured, tested and qualified by 4Pipe-Hidropig to suit nominal diameters of; 2.1/2", 3", 4", 6", 7", 8", 9.1/8", 9.5", 10", 11", 12" & 14.1/2" - with capability to adapt the solution for further sizes.

The project itself was a success in all aspects: every trial was performed as planned and the end users were

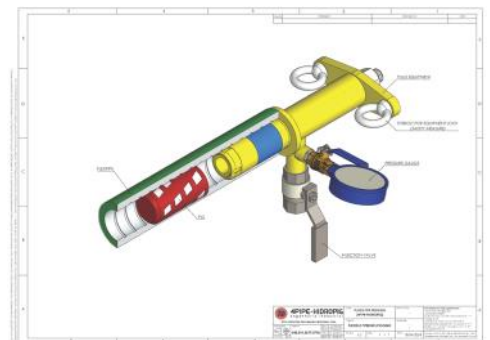
satisfied with results of the operation in terms of safety and efficiency.

By using this system, we achieved a significant improvement in terms of time optimization; achieving a 75% reduction in the entire process and set-up operations.

After the initial client used the device, we were able to demonstrate the operational efficiencies and functionality leading to implementation of the application by other end users in Brazil.

The system works by torquing up the equipment (with defined torque) to seal the flexpipe ID and pressurizing it for launching, not exceeding 150# (10,3 bar or 1,03 Mpa). The "packer" material used for sealing, is made of polyurethane, and is designed using 4Pipe-Hidropig 'know-how'.

The body of device is projected to resist impact and with high yield limit. The only part that needs to be changed (after multiple uses) is the polyurethane packer.



Nominal diameters tested and proven operationally: 2.1/2", 3", 4", 6", 7", 8", 9.1/8", 9.5", 10", 11", 12" & 14.1/2".

Total assembly (fit-in pipe and start pressurizing) of equipment takes, in diameters of 2.1/2" – 6", less than 8 minutes. In diameters of 7" – 14.1/2", takes less than 20 minutes (more time due to increased weight). ●

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## New gas pipeline repair technology slashes carbon emissions by 95%

Innovative new technology used to isolate gas pipelines in need of repair or maintenance has shown to prevent gas leakages and cut carbon dioxide emissions by 95% compared with venting pipeline contents to atmosphere - the equivalent of switching off 1,760 gas boilers for a year or taking 1,000 cars off the road

The UK's National Gas, which owns and operates over 7,600km of gas pipelines underground, has successfully adopted **STATS Group's Remote Tecno Plug® (RTP)** on a recent project near St Cyrus in Scotland.

The RTP was trialled to reduce the emissions released during pipeline isolation, a crucial process used by operators to stop gas from leaking while they perform upgrades and maintenance on the pipes. Usually, this is done through reducing the volume of gas in the pipeline by a process called recompression and then venting the remaining gas to atmosphere. The efficient use of the RTP allows the work to be undertaken more quickly, with zero leaks during operations, improving safety and with the overall discharge of greenhouse gases significantly reduced.

Project managers estimated that traditional venting techniques would have emitted 233 tonnes of gas. However, the RTP reduced emissions to 9.5 tonnes, saving gas released into the atmosphere, but also resulting in significant cost savings of over £100,000 of gas not wasted.

This success has prompted National Gas to formalise a policy encouraging the use of this RTP technology in future isolation projects across the UK - with potential for these tools to be adopted by the individual gas distribution networks across the UK in future. The UK has a legal obligation to reach net zero emissions by 2050 to address climate change, but gas is still integral to the UK, keeping the lights on and industries fuelled. It's also important for the country's energy security, making it resilient to demand spikes or pressures on the system.

The gas emission savings on the project near St Cyrus was the equivalent of switching off 1,760 gas boilers for a year or travelling 5.9 million miles in a 2018 Ford Fiesta - equal to removing more than 1,000 cars off UK roads for a year.

Kirsty McDermott, Senior Engineer at National Gas, said: "Using plugs like the RTP can greatly reduce emissions for temporary pipeline isolations, and on this project emissions were reduced by up to 24 times compared to traditional recompression methods. "In addition to the environmental and economic benefits relative to reduced venting requirements,



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carrying out the trial work allowed us to interrogate the integrity of our pipelines and ensure they continue to deliver energy to where it's needed across the UK."

Neil Mackay, Group Senior Business Development Manager at STATS, said: "This was the first use of our innovative pipeline isolation plug technology on the National Transmission System and following the successful outcome on the project, National Gas will update existing policies to make the use of isolation tools business as usual, which in turn will reduce barriers, increase efficiency and enable more critical maintenance work to be completed."



STATS Group personnel monitoring a 4in Remote Tecno Plug, St Cyrus, Montrose

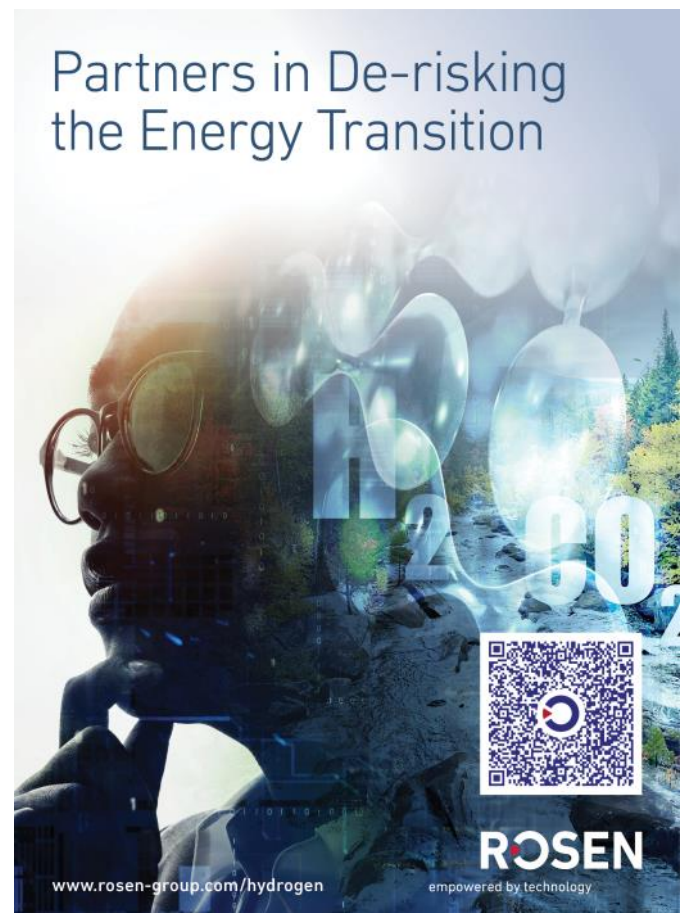
## How ROSEN is safeguarding India's energy supply

India's industrialization as well as urbanization creates huge demands of its energy sector, even though energy use (per capita) is still under half the global average. There are widespread differences in energy use and the quality of service across states and between rural and urban areas. The affordability and reliability of energy supply is a key concern for India.

Over 80% of the energy needs are met by three fuels: coal, oil and biomass. Coal supports the expansion of electricity generation and remains the largest single fuel in this mix. Oil consumption has grown rapidly as well due to rising vehicle ownership and road transport. Biomass, primarily fuelwood, is still widely used as cooking fuel.

Now, with limited own oil or gas reserves, India heavily relies on import of oil and gas for its energy needs.

Another interesting aspect is that India is a major exporter of refined products due to the presence of in total 23 refineries, which makes them the fourth largest in the world after the United States, China and Russia.



### Loading line challenge

In order to import crude oil India relies on crude tankers. These tankers move large quantities of unrefined crude oil from its point of extraction to refineries.

Oil tankers are often classified by their size as well as their occupation. The size classes range from inland or coastal tankers of a few thousand metric tons of deadweight (DWT) to the mammoth ultra large crude carriers (ULCCs) of 550,000 DWT. Tankers move approximately 2.0 billion metric tons (2.2 billion short tons) of oil every year. Second only to pipelines in terms of efficiency, the average cost of transport of crude oil by tanker amounts to only US \$5 to \$8 per cubic meter.

It is the size that makes these tankers efficient, but often harbors are not large or deep enough to handle them. Instead, the industry often relies on tanker loading and offloading lines.



Figure 1: A map of India's pipeline network



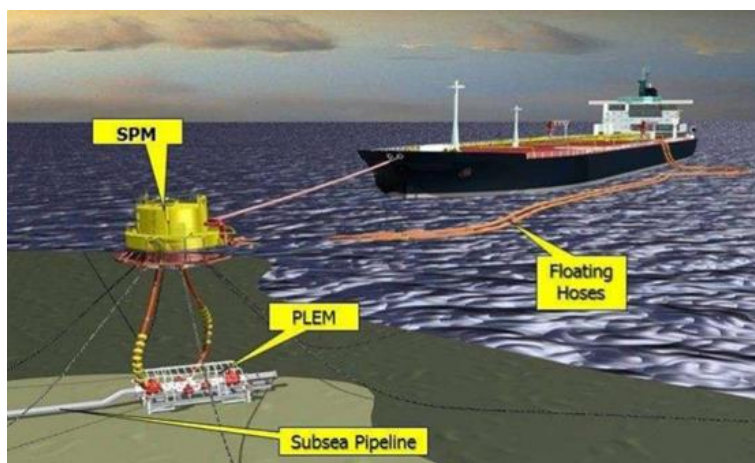


Figure 2: Typical loading line configuration

These pipelines connect a shore-based installation, such as a refinery or tank farm, to a subsea pipeline end manifold (PLEM). The PLEM usually lies in water around 25m to 60m deep and is connected to a buoy by a flexible hose or hoses. Floating flexible hoses complete the connection to the tanker.

Due to their position in a pipeline system or network, they are usually one of the most critical assets in the operators' network since there is no alternative means to import or export the product.

In addition, repairs or replacement is difficult and costly, especially on the sub marine section. For the operator it is therefore of utmost importance to understand the condition and integrity of such pipelines. A solid knowledge will enable suitable preventive actions and ensure the pipeline can be safely operated to avoid any unnecessary downtime that would interfere with regular operations or in a worst-case scenario could result in pipeline failure.

Due to the mechanical configuration the only feasible access point is often within the tank farm of the terminal only, while the line terminates in a subsea PLEM (Pipe Line End Manifold) underneath the mono or calm buoy. In most cases this necessitates bi-directional inspection.

### Threat assessment

Typical threats for offloading lines include internal corrosion due to presence of impurities in the crude (e.g. sulfur, organic acids, additives etc.). The corrosion risk increases due to intermittent operation, use of brackish or sea water to flush the lines and incomplete draining. This allows for water build-up, bacterial accumulation and consequently MIC (mycobacteria induced corrosion). A common source for MIC is cross-contamination from the oil ships tankers.

The stagnant conditions in between tanker offloading operation may further allow for sedimentation of solids (debris) present in the product, typically at low points.

In this context, it should be noted that periodical maintenance pigging is typically not done since lines are difficult to pig, and inhibitor is often not used because proper distribution is difficult without pigs.

The below examples show 2 different 48-inch SPM pipelines, each showing the same corrosion characteristics i.e. BOLC (Bottom Of Line Corrosion) and increasing corrosion density and depth approaching the PLEM.

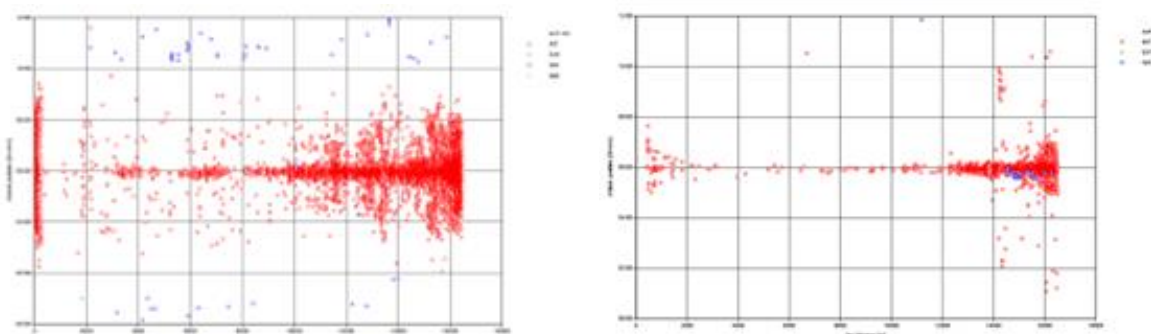


Figure 3: Corrosion characteristics for repeat ILI of 48 inch SPM pipelines with 2 year interval

## Inspection methodology

Although conventional pigging in combination with a subsea trap is generally thinkable, the associated cost complexity and risk of such an operation is excessive.

Two ILI methodologies are generally available for these systems:

### 1. A bi-directional, tethered, self-propelled UT inspection

The main benefit of this approach is that no flow is required.

However, the options to clean are limited and the inspection velocity is rather low compared to free swimming ILI.

### 2. A free-swimming bi-directional MFL and/ or UT inspection

This solution is not restricted in distance or bends and allows for effective pre-inspection cleaning. A bi-directional flow is however required.

For India's offloading lines (typically 48" and just under 20 km in length) the free-swimming approach is selected, because

- it is necessary to clean and
- the available time in between tanker offloading operation is limited and a tethered inspection would take too long.

Setting up a bi-directional flow is easier said than done. Not only very large pumps are needed to establish the flow, also the volume of the line inventory needs to be stored. This means that often the only feasible way to put up a bi-directional flow is to use a tanker.

The tools are launched onshore close to the terminal/ refinery. They are pushed towards the PLEM using terminal pumps. Upon arrival at the PLEM the tanker is pumping the tool back to the launcher from where it is received.

Due to the location (subsea) and construction of the pipelines (concrete coating) and location of features (6 o'clock) subsea verifications or repairs are very difficult.

#### Think about it:

We need a diver to locate a defect in a subsea, potentially buried pipeline, at 6 o'clock. The first challenge is to find the right joint. DGPS does not work subsea and there are



Figure 4: Very Large Crude Carrier (VLCC) moored at SPM (Single Point Mooring) buoy

typically no external reference points. Next, the diver will need to remove the concrete under the pipe and then try to perform an external NDT measurement but not knowing if he is at the correct location – quite a challenge. If we know this upfront, we can do subsea referencing together with XYZ, or simply install heavy duty reference makers at locations where defects are expected.

But there is a better way: We do UT from the inside. Instead of a few external measurements, this tool with 483 transducers does 483.000 measurements (!) per meter. Not only do we improve the sizing, but we also improve POD and POI.

In order to obtain high quality inspection data, pre-ILI cleaning is performed. Because of the bi-directional operation, asymmetric cleaning pigs are used. This “soft in-hard out” approach minimizes debris being pushed to the PLEM, but brings the debris back to the entry point.



Figure 5: Bi-directional 40-48" UT tool in 48" configuration



Figure 6: Reverse cleaning pig upon receipt

### Geometrical obstacles

During a recent inspection of a 48" x 15.5 km pipeline a geometry tool sustained damage during the passage of the 16% dent at 9.5 km. The MFL inspection was only partially completed, for safety concerns the MFL tool was not propelled through the dent. The client approached ROSEN to provide a MFL solution that was able to not just pass the dent, but also record data in the dent area and keep the high resolution performance specifications and not restricting them to pass the obstacle.

The technical team evaluated the available data provided by the client, and added a more conservative safety barrier by considering a deeper dent penetration (20%) and long distance ovality portion. To achieve this, ROSEN proposed a multi – sectional tool to ensure we would safely pass the bend considering sealing, collapsibility and full measurement performance.

Proposed configuration ensured full sealing and guidance for the forward and backward run, while the available space at the measuring segment was used to ensure free movement for the measuring system to ensure full measurement specification performance.

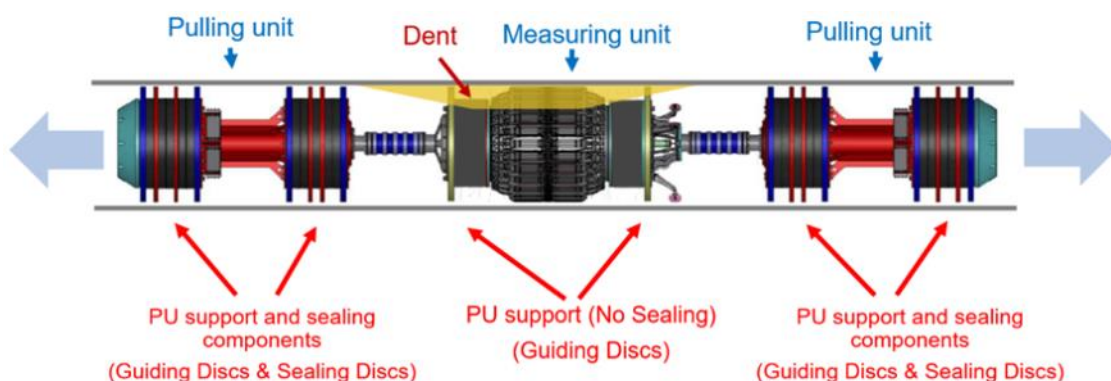


Figure 7: The three module design for safe dent passage

Our job is to keep pipelines safe, not to damage them. The dent needs to be passed. Safely. With 'safe' we do not only mean that there shall be no damage to the tool or risk of a stuck pig. Safe also means that passage of the tool shall not further damage the dent itself.

The team reached out to our integrity experts for advice. Would a passing MFL tool change the dents' geometry and instigate a failure mechanism? The answer was no. But the flow rate was reduced when the tool passed the dent to minimize impact on dent.

Assessing geometry data prior to MFL ILI confirmed that dent was rather long and sealing of a single body

tool would have been compromised. The team assessed all information and concluded that it was safe to load and launch the MFL Inspection tool.

The field work was completed fully in accordance to the plan, and without any accidents or incidents.

### Summary

Managing integrity of complex assets is not just about a tool. It is about offering the right technology, competence, knowledge and people together to satisfy the demanding needs of our clients. This is what we do best - Solutions. Because we can. ●



## Acoustek™ Pipeline blockage detection system—case study

iNPIPE PRODUCTS™ was approached by a North Sea Operator who required assistance with validating their Gas Import / Export SSIV [Subsea Isolation Valve] closes within 60 seconds and meets their pipelines Performance Standard document.

The SSIV forms part of the ESD [Emergency Shut Down] System on the pipeline and as such is classified as safety critical equipment and is subject to regular testing to meet the criteria set out in the Performance Standard document. The SSIV was situated subsea at the base of the riser in 136m water depth and is around 338m along the pipeline length. The SSIV acts as a secondary isolation against hydrocarbon release in an emergency event, but the valve has no position indication feedback to DCS [Distributed Control Systems] meaning an accurate closure time cannot be confirmed by closing the valve alone. Prior to utilising Acoustek™ gas gun equipment, the closure time has been inferred from

hydraulic feedback, but this method does not confirm the status of the closed valve nor closure time without the requirement of venting the riser. Venting the gas from the pipeline riser is a costly option and a process that brings its own set of risks to the platform operator, platform, and environment.

Following a review of the project details and discussions with the Client, iNPIPE PRODUCTS™ mobilised a Field Engineer to visit the site with iNPIPE PRODUCTS™ Acoustek™ gas gun equipment, all of which can be deployed within 24 hours in emergency.

The Acoustek™ gas gun uses acoustic reflectometry to detect blockages or partial blockages in gas pipelines. In essence, an acoustic pulse is generated by a small pressure pulse generated in the gas column. This pulse travels along the pipeline and as it passes locations where there is a change in acoustic impedance it generates a reflection, which then travels back along the pipeline to the injection point, where it is detected and recorded.

Parameter	Detail
Pipeline Nominal Size	6"
Pipeline Material	API 5L X52
Pipeline Length	338m (to SSIV), 5km to Receiving Platform
Production Product	Gas
Production Rate	0 m³/day (during survey)
Operating Pressure	22 barg (during survey)
Pipeline Temperature	14.4°C

Table 1 - Pipeline details

The Acoustek™ connection point selected was a 2" instrument tapping located topsides.

Feature	Distance (m)*	Comments
PI-11036	0.00	Connection point
XSV 11020	2.47	6" Isolation Point
XSV 11027	7.04	4" Isolation Point
Top of riser	30.41	
Bottom of Riser	226.41	
End of Pipeline Spool	326.41	
End of SSIV spool/XSV11043	338.73	SSIV position
Receiving Platform	5,391.90	

\*From connection point

Table 2 - Pipeline feature details



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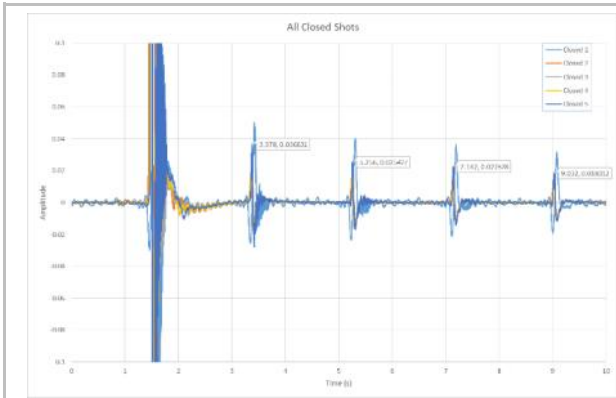


Solutions

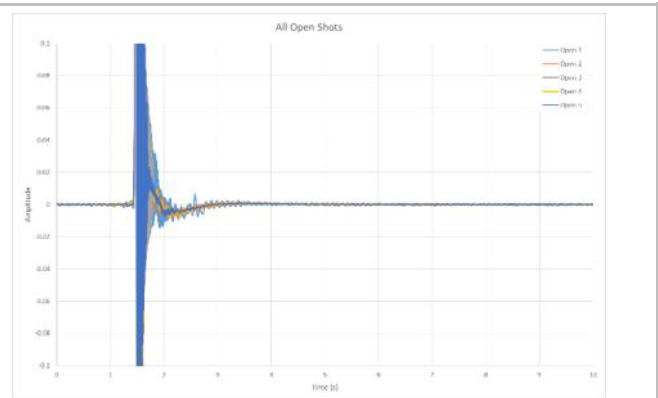


This scope of work was conducted by the iNPIPE PRODUCTS™ Field Engineer, supported by the Control Room, Area Authority and was completed within a single shift. The acoustic data was processed by aligning each shot and as the 'Timed' case was identical to the 'Closed' case, the valve is confirmed as closed by the time the pulse reaches it in the timed case. This transit time is <1 second, indicating that the valve is closed at 41 seconds (worst case) after the command was issued. If the valve was still partially open at this point, one would see a reflection at lower

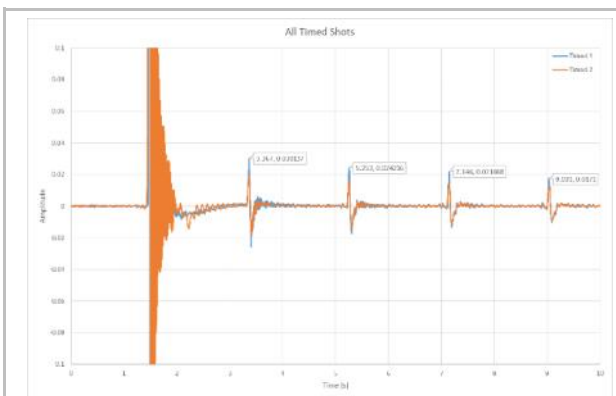
amplitude than the fully closed case and therefore a conclusion can be made with absolute confidence that the SSIV meets HSE guidelines. Figure 6 provides corroboration of the technique, showing a reflection consistently detected in the 'Open' case at approximately 31.5 seconds. The initial pulse being at 1.5 seconds, this corresponds to a feature at 30 seconds round trip time. Based on the speed-of-sound this will be at a distance of approximately 5.4 km, consistent with the distance to the Receiving platform.



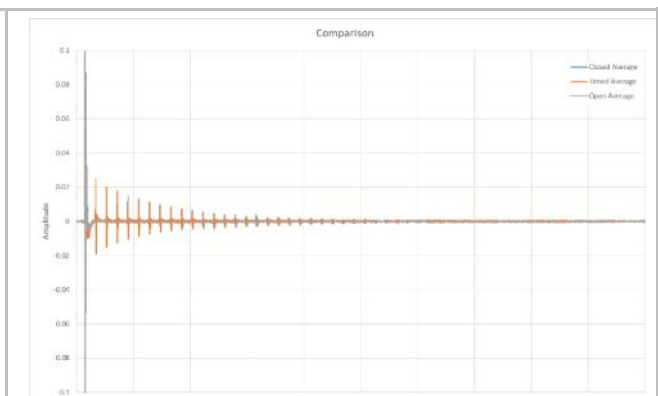
**Fig 1 - Acoustek Shots - SSIV Closed**



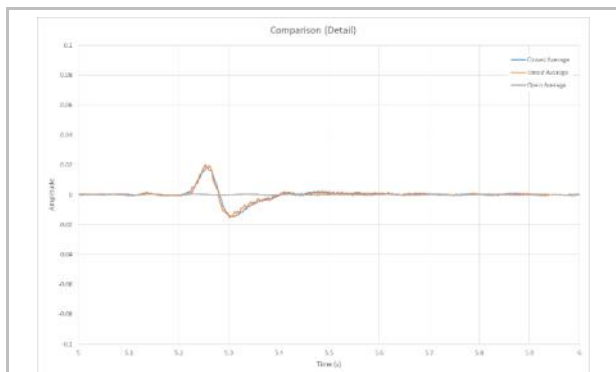
**Fig 2 - Acoustek Shots - SSIV Open**



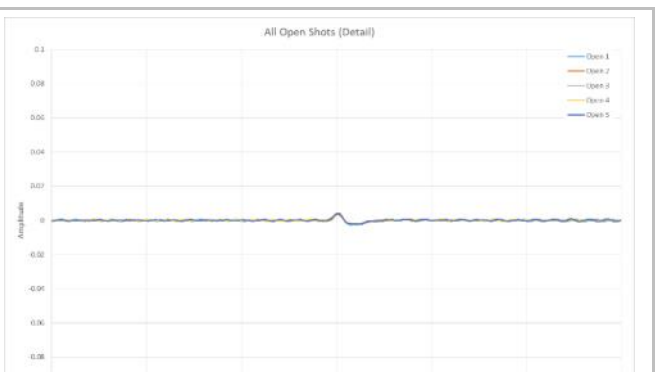
**Fig 3 - Acoustek Shots 40 Seconds After 'Close' Command**



**Fig 4 - Comparison of Shots**



**Figure 5 - Detail Comparison at 1st Echo**



**Figure 6 - Open Detail**

## IP Pipeline Technology marks milestone in High-Speed 42-inch gas pipeline project

By: Thom Wang and Daisy Huang

Recently, **IP Pipeline Technology** achieved a milestone by successfully wrapping up the on-site inspection work for the inaugural phase of the AGP inline inspection project it spearheaded. These pipelines, boasting a diameter of 42 inches, with wall thicknesses of 15.9mm, 19.1mm, 25.4mm, and 28.6mm.

Reliability and efficiency stand as the cornerstone principles of IP Pipeline Technology's service ethos. The initial phase of this inspection endeavor encompassed four comprehensive sections, spanning a combined length of 394 kilometers. IP Pipeline Technology engineers worked continuously with high intensity and quality, completing the on-site operations without interruption. Remarkably, they accomplished all tasks within a mere span of 20 days, exceeding client expectations and significantly truncating the overall project timeline.



Figure 1: MFL+TFI Launching site

This inline inspection project encompasses a total of 10 sections, covering an extensive distance of approximately 1310 kilometers. IP Pipeline Technology is poised to tackle the remaining six sections, accounting for a span of 916 kilometers, over the next two months.



Figure 2: Caliper launching site

The project faces two primary challenges:

1. **High Velocity:** With an average flow velocity of 8m/s, maintaining optimal detection performance becomes crucial. IP Pipeline Technology has addressed this challenge by implementing a speed controller on detectors. This innovative solution allows for real-time adjustments to the tool's operating speed, ensuring that the detector consistently operates within the optimal range of 4m/s. This meticulous control guarantees the attainment of the best detection results.
2. **Long Inspection Distances:** Each of the ten sections extends beyond 100 kilometers in length, posing a logistical hurdle. IP Pipeline Technology tackles this challenge head-on by leveraging high-performance, wear-resistant components like durable cups and probes. These components ensure that the inspection equipment functions normally within the pipeline for prolonged periods, enhancing reliability over extended inspection distances.

Upon the completion of each on-site inspection operation, IP Pipeline Technology promptly dispatches engineers to perform both preliminary and detailed inspections of the inspection equipment. Following the preliminary inspection, it has been confirmed that all 112 probes of the inspection equipment in each section are in optimal condition, with the data channels for inspection functioning seamlessly and ensuring clear data collection. The steel brushes and bowls exhibit typical wear, while the odometer wheel system and electronic components operate within normal parameters, with no anomalies detected.



Figure 3: Safety training

After a meticulous inspection, it has been determined that the average operating speed of the inspection equipment in each section is 3.9m/s. This represents a 50% reduction in the average operating speed of the equipment compared to the pipeline flow rate. Remarkably, this adjustment has not compromised the quality of the inspection data. Furthermore, the overall data collection volume for each section has reached 600GB.

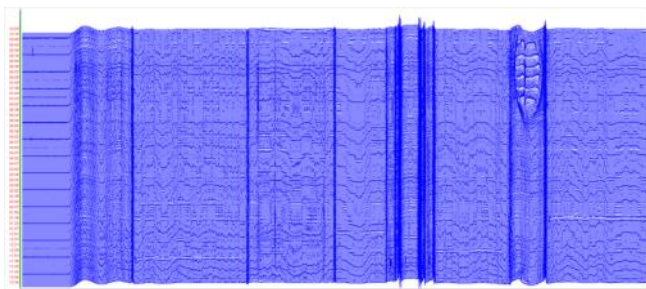


Figure 4: Data screen shot

Building upon the on-site work conducted during the initial phase, IP Pipeline Technology has garnered commendation from the client for its adept on-site management capabilities and cutting-edge detection technology. Bolstered by this positive feedback, IP Pipeline Technology remains steadfast in its commitment to delivering high-quality inspection services throughout future execution endeavors. With unwavering confidence, the team is poised to flawlessly execute and conclude this inspection project with precision and excellence.



Figure 5: MFL+TFI tool launching

## The 19th Pipeline Technology Conference (ptc)

From 8-11 April 2024, Berlin hosted the 19th annual **Pipeline Technology Conference (ptc)**, bringing together more than 1,000 attendees from 51 countries, representing a global forum for discussions on the future of pipeline technology. This year's conference and exhibition marked a significant milestone in the event's history, attracting delegations from 98 pipeline operating companies.

"The Pipeline Technology Conference has once again proven to be the premier gathering for the global pipeline community. ptc 2024 provided a comprehensive platform for pipeline operators and industry professionals to explore the latest technological advancements and tackle the current and future political, economic, and technical challenges facing the industry worldwide," said Dennis Fandrich, Chairman of the Pipeline Technology Conference and Member of the Management Board of the organizing EITEP Institute.

Highlights from the conference included a series of high-level discussions on topics such as the resilience of energy infrastructure in complex geopolitical landscapes, the role of digital transformation and AI in optimizing pipeline operations, innovative strategies for managing methane emissions, and a focus on Germany's ambitious hydrogen core network plans. The event also featured technical sessions across six tracks, delivering insights into cutting-edge developments in pipeline technology.

This year's ptc also featured an ever-growing exhibition with 91 exhibitors from around the globe, highlighting the latest technologies and services in the pipeline sector. Marian Ritter, Member of the Management Board of the EITEP Institute, emphasized the exhibition's importance: "The expanding scope of the ptc Exhibition mirrors the dynamic advancements in the pipeline industry and provides an invaluable platform for networking and knowledge exchange.

The event saw significant contributions from young professionals, with the involvement of technical students and members of Young Pipeline Professional communities around the globe, highlighting the industry's focus on nurturing the next generation of pipeline experts. This year's conference further emphasized the role of diversity within the industry with the Global Women in Pipeline initiative, which connected and inspired women through a series of talks and networking opportunities. The 20th Pipeline Technology Conference will take place from 5-8 May 2025 again in Berlin. For additional information, including access to the technical papers from the conference, visit [www.pipeline-conference.com](http://www.pipeline-conference.com).



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## Cottam Brush's Cutting edge leap

**Cottam's Cutting-Edge Leap: Local University Joins Forces to Propel Offerings Forward!**

Cottam is thrilled to announce that it has been granted an Accelerated Knowledge Transfer (AKT) by Innovate UK, in collaboration with the esteemed team at Teesside University.

The collaboration commenced with a dynamic Discovery Day hosted at COTTAM HQ, where both teams delved into the realm of 'brushy innovation.' Together, they discussed avenues to enhance and refine brush techniques for pipeline cleaning and inspection, while also brainstorming strategies for the development of ground-breaking products tailored for pipelines.

Under the guidance of Teesside University, students will now embark on assessing the feasibility of novel production methods for brush manufacturing, employing data-driven digital modelling techniques. ●

## Online Electronics rebrands to IK Trax – Signalling a new era of technological innovation

**Online Electronics** proudly announced its rebranding to **IK Trax**, which became effective on March 26th, 2024. As an Aberdeen-based company, it experienced significant advancements over the past year, culminating in this strategic decision to rebrand. The new brand identity is underscored by a technology-driven slogan, "Intelligent Pipeline Technology", reflecting IK Trax's position as a forward-thinking leader in the industry. This evolution not only reinforces the company's dedication to providing real-time data and total assurance to clients but also signals a closer integration with the wider **IK Group**. This will allow the company to leverage collective resources and expertise, enhancing its ability to address clients' needs globally.

"We are thrilled to unveil IK Trax as the next chapter in our company's journey," said Carey Aiken, Marketing Manager at IK Trax. "This rebranding is more than just a name change; it highlights our commitment to delivering innovative solutions that

empower our clients and drive seamless operations."

IK Trax's new online home, found at [www.iktrax.com](http://www.iktrax.com), offers a modern website where users can easily find the complete range of products and all necessary information, making navigation more intuitive than ever before. Vice President Charlotte Hope stated, "We are incredibly proud of how far we have come as a company. As we embark on this new phase, we are excited to align our brand with our product offering and values, ensuring continued excellence in serving our clients."

"We extend our deepest gratitude to our clients and partners for their continued support throughout the years," Charlotte continued, "As IK Trax, we are excited about the journey ahead and look forward to continuing to innovate alongside our valued clients." ●

## PPIM 2025 to continue impressive trajectory

**PPIM 2025** is expected to continue its pattern of growth over the past decade, coming off another attendance record of 3945 in February. "We had a significant increase in Technical Management attendees in 2024. They represented 21% of the participants and a growth of almost double in that category," according to PPIM executive editor Ben Stroman. "These are individuals who hold positions such as Engineering Manager, Director of Engineering, Director of Integrity Management or Asset Integrity Manager, for example," he added.

"At PPIM the focus is pipeline inspection, assessment and repair, as well as regulatory compliance and Integrity Management Programs," Stroman explained, "so it's a very specialized program that attracts a wide range of people. Technical developments and experience are reported in the presentations, and these are brought to life in the exhibition hall, where the tools and the professionals who do the work are available for private conversations."

Plans are underway for the 2025 edition, which takes place January 27-31 at the George R. Brown Convention Center in Houston. The Call for Papers has just been published, with details available online at [ppimconference.com](http://ppimconference.com). ●



**PPIM 2025**  
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## Long-term composite repair solution for tank and pressure vessel reinforcement – 3X Engineering

### Overview

The objective of the repair performed in September 2021 by **3X ENGINEERING (3X)** specialists was to reinforce a separator damaged by internal corrosion on 12 areas located inside the tank. According to the defects and the asset specificities, the damaged areas were repaired using **REINFORCEKiT® PATCH** solution to reinforce and restore original integrity. The Separator tank has a diameter 198" (5m) and is located in a refinery in South America.

### Scope of Work

The repair design was performed in compliance with API 653 and ASME PCC-2 standards. **REINFORCEKiT® PATCH** solution is a composite technology made of several Kevlar® patches and bi-component epoxy resin and needs an installation by trained and certified applicators as described below :

#### 1st STEP - SURFACE PREPARATION AND CLEANING

Surface preparation was performed on the damaged locations of the separator by hydroblasting. The surface profile was checked using a roughness tester to validate that roughness was acceptable and superior to 60-micron. Climatic conditions were checked before applying the resin. Patching areas were previously delimited with abrasive tape and cleaned with acetone.

#### 2nd STEP - FILLER AND RESIN APPLICATION

3X filler with high mechanical properties and chemical resistance was firstly applied on all delimited areas to reshape them. Then one layer of 3X specific resin was applied over the filler to protect the surface before patching.

#### 3rd STEP - COMPOSITE PATCHING REINFORCEMENT

Kevlar® patches impregnated with R3X150 resin were applied on the 12 defected areas. Patching size was determined according to the defect (the smallest one measured 795x445mm and the largest one 1270x2073mm. Each patch was impregnated separately and superimposed one after the others.

### Results

This was a quite arduous project because of the numerous large patches to apply but was successfully managed and performed by our team of specialists. The separator tank is now reinforced and protected from further deterioration that could affect its integrity. ●

## YPPE Mini-Conference was a success!

Authors: Sameera Naib

The **Young Pipeline Professionals Europe (YPPE)** hosted their Inaugural Mini-Conference in October 2023. YPPE Mini-Conference is a one-day event aimed at bringing young pipeline professionals together, give exposure to the community and help them gain knowledge, skills, and network. For the employers, it is helpful to nurture their young professionals to build their network and train themselves early in their career as they are the future of the company.

The conference was well received by the attendees with a lot of positive opinions. Eight technical papers were presented on the stage by young professionals while three esteemed guest speakers – Suriya Jayanti from **Eney** spoke about Positioning Individual Careers and the Pipeline Industry for the Energy Transition, Michelle Unger from **Rosen** explained How to Master Your Professional Development Journey in the Pipeline Industry and Simon Joyce from **SGN** gave a talk on Onshore Pipelines: Lessons from the Past, Preparing for the Future.

The conference proceedings can be found on <https://www.yppeurope.org/events/yppe-mini-conference/conference-proceedings/>.



YPPE thanks its supporters - **PPSA, UKOPA, ROSEN, Baker Hughes, ENIVIBES, TDW, EITEP, PTJ**, the conference attendees and well-wishers for making our event a success. We hope to see you all in the second edition of our Mini-Conference in the Netherlands in October 2024.

You can get in contact with YPPE at [contact@yppeurope.org](mailto:contact@yppeurope.org) and register via the website [www.yppeurope.org](http://www.yppeurope.org). ●

## Knowledge transfer for pipeline engineers in the new hydrogen economy

**Authors: Michelle Unger, ROSEN Group; Phil Hopkins, Phil Hopkins Learning Ltd., UK**

Fossil fuels (coal, oil, and natural gas) currently account for around 80% of the world's primary energy demand [1] but the United Nations [2] notes that they are by far the largest contributor to global Climate Change, accounting for over 75% of global greenhouse gas emissions and nearly 90% of all carbon dioxide emissions.

This 80% energy share is expected to decline to around 50% by 2050, depending on the measures taken by governments to combat Climate Change and achieve net zero emissions targets [3]. This will need renewable energies to grow rapidly and potentially provide around 50% of the world's energy needs by 2050 if governments are to meet all their pledges to tackle Climate Change. This development means that we are living in an exciting world of new energies, including hydrogen.

Hydrogen can play various roles on the path to a carbon-neutral future, which is why we now speak of a "hydrogen economy." This includes, among other things, balancing the amount of carbon dioxide released into the atmosphere with the amount absorbed or removed from the atmosphere. To use hydrogen as a new energy source and fully exploit its potential, pipelines are needed to bring this new fuel to customers.

The cost of new pipelines is very high; therefore, the industry is considering reusing the existing natural gas pipework. This re-purposing of gas grids comes with some additional operational challenges; for example, hydrogen can embrittle pipeline steels and welds, it will need more compression (higher energy demand), it is easier to leak (hydrogen has a much lower density than natural gas), etc.

For anyone working with hydrogen pipelines in the future, it is crucial to understand the characteristics of hydrogen as well as potential threats and the actual material properties of pipelines. This means that special and specific knowledge will be required for the integrity management of these hydrogen pipelines, so "*What new competencies are needed, and what level of competence is required?*" are questions to be answered.

Competence is the ability to take responsibility and perform activities to a recognized standard. It is a combination of skills (ability to perform a task), knowledge (ability to understand and explain the task), experience (type, years, supervision to acquire the knowledge), and behaviors. A modern, objective

approach to demonstrating competence is the use of "competency standards," alongside academic and professional achievements, training programs, and relevant experience [4, 5]. Competency standards provide a common definition of a competency, with its minimum requirements, and are used to assess the competency of an individual.

To date, there have been competency standards for many pipeline disciplines, such as inspection and integrity management [5], but these are focused on oil and gas pipelines. As these standards are now being extended to the hydrogen economy, the **ROSEN Competence Club** now offers a competency standard for engineers dealing with hydrogen pipeline integrity based on currently available knowledge [6]. This competency standard illustrates three levels of competency (awareness, foundation, and practitioner) and the required knowledge that can be achieved through a mixture of training, experience, and mentoring. These skills will provide pipeline engineers with the knowledge they need to manage the transportation of hydrogen and ensure its safety.

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## Richard Williamson buys Tulsa Facility built by Pipeline Industry Pioneer, Grandfather Truman D. Williamson Sr.

Richard B. (Dick) Williamson, president of **R.B. Williamson Energy Advisors (RBWEA)** has purchased the historic Tulsa Operations, located at 2737 East Latimer Street near the culturally significant Kendall-Whittier neighborhood.

The facility was the original factory for engineered pipeline equipment and services company **T.D. Williamson (TDW)**, the namesake company of Dick Williamson's grandfather, Truman Dale Williamson Sr. TDW sold the Tulsa Operations building in 1981. Since then, there have been multiple owners and tenants.

Dick Williamson and the RBWEA team are restoring and renovating the buildings and surrounding property to address the growing technical and regulatory compliance needs of the pipeline and energy industry. The work includes reinforcing the building to meet current codes and adding a retention pond to reduce the risk of flooding in the nearby residential and industrial neighborhood.

According to RBWEA Business Development Manager Emily Williamson Perkins, the west side of the facility, including Truman Williamson's former office and a small boardroom, have been virtually untouched over the years and remain in nearly pristine condition.

**A Commitment to Kendall-Whittier and to Tulsa**  
Setting up shop adjacent to the Kendall-Whittier neighborhood represents RBWEA's commitment to the continued revitalization of the area, and to Tulsa as a whole. Acquiring and restoring the Tulsa Operations facility, Williamson said, is also a unique opportunity for RBWEA and its advisors to return to the location where a tradition of innovation and services was born.

"The company founded by Truman and his wife, Edna Mae, anchored their mission around serving customers well, caring for their employees and engaging with others to address the critical needs of the community in which they resided," Dick Williamson said. "Those core business values were sustained for more than 100 years and continue to guide the RBWEA team on their journey of service." RBWEA is scheduled to occupy the building beginning in June 2024.

**Building on a Tradition of Innovation and Service**  
Native Tulsan Dick Williamson established RBWEA in January 2023 to help energy operating companies address critical challenges, leverage new opportunities, and achieve their strategic objectives. The company's advisors have more than 200 years cumulative experience in pipeline safety, operations, maintenance, code compliance and strategic planning. Their work has taken them from the shop floor to the field, from offices to international professional societies and has "prepared them to help the industry improve upon what it has done well and to seek solutions to matters that have heretofore not been addressed," Williamson said.

## The Piggings Products and Services Association's golf tournament

The tournament took place on February 12, 2024 at the Wild Cat Golf Course, Houston, USA. Thanks to the tournament sponsors—helping us raise \$4K for Young Pipeliner projects. We are already looking forward to the next one on Monday January 27, 2025.



## iNPIPE PRODUCTS™ awarded RoSPA Gold Medal for Health & Safety Achievements

iNPIPE PRODUCTS™ is proud to announce that we have been awarded the prestigious **RoSPA** Occupational Health and Safety Gold Medal (5 consecutive Golds) Award for Health & Safety Achievements 2024.

This marks our seventh RoSPA Award, showcasing our unwavering commitment to safety excellence.

This recognition is a testament to the dedication of every individual in our team, and it fills us with pride to see our commitment to safety acknowledged at such a prestigious level.

The esteemed RoSPA Awards program now celebrates its 68th year as the UK's largest and most impactful health and safety programme. With almost 2,000 entries annually from over 50 countries, impacting over seven million employees, they offer a platform to spotlight an unwavering commitment to continuous improvement and excellence in health and safety.



## North Yorkshire pipeline pigging specialist iNPIPE PRODUCTS celebrates 40<sup>th</sup> Anniversary

One of the UK's leading manufacturers and suppliers of pigging products – North Yorkshire based **iNPIPE PRODUCTS** – is celebrating a business milestone as the company marks its 40<sup>th</sup> year of trading.

Formed in 1984, iNPIPE PRODUCTS employs 68 members of staff - including eight apprentices – from its Brompton-on-Swale and Aberdeen sites and works with many of the world's largest brands across Europe, the Middle East, North America, South America and Asia.

Only last year the business welcomed Prime Minister,



Rishi Sunak on one of its most successful years to date and which saw the company invest in a new service centre in Aberdeen and grow its global customer base. The visit also provided the chance to tour the six-acre site, now one of the largest single employers in the Richmond (Yorks) constituency.

Speaking about the 40<sup>th</sup> anniversary, Simon Bell, MD at iNPIPE PRODUCTS said: “The business is obviously very proud to have achieved such a remarkable milestone and it is the commitment and expertise of our team members and our global customers who have very much contributed to this success.

“Throughout our 40 years in business, iNPIPE PRODUCTS has carved a reputation for ingenuity, professionalism, and expertise with our teams delivering leading pigging products across the globe. It is the huge experience and innovation of this team – many of whom have been with us for more than 25 years- who have played an enormous and integral part in making iNPIPE the successful business that it is today.”

iNPIPE PRODUCTS is a world leader in the design, manufacture, supply and hire of pipeline pigging, maintenance and testing products across the oil and gas, petrochem, powergen, mining, nuclear, water and food processing industries. The business exports 70% of its turnover worldwide and, as a result of growth, prides itself on increased opportunities for apprentices with almost 12% of the workforce now being made up by its apprenticeship programme.