innovating safety...



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Avoidable or Inevitable? The two faces of Janus[™]



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The two faces of **Janus**[™]

Avoidable and Inevitable: Loss of life avoidance and safety assurance inevitability.

The safety industry has an imperative to ask this question in relation to any incident: **avoidable or inevitable?** This is how 'lessons learned' work. In 2012 a fatality occurred in the field during a corrosion monitoring routine exercise to retrieve and replace a corrosion probe. Standard integrity management operations.

This incident raised the question for Axess Corrosion in Houston, a business concerned with not only why we monitor but how, and the answer was 'it was both'. With the technology in the field at that time the incident was inevitable, and with Axess' experience and innovation it could become avoidable.

With over 20 years' experience in the field of corrosion monitoring, Roland Anderson, founder and CEO of Axess, had also known the technician who had lost his life, and these personal and technical factors combined and drove him to consider the legacy of the operations on the field, and the legacy products and tools that were being used. This was the moment that he saw as the punctuation necessary to change the face of the 70-year-old practices still in daily use.

Retrieval tools, with over 250 sold per year, have been in use for over half a century,



and their design had been unchanged, and until now there has been no innovation related to the tools or the access systems serviced with them. The retrieval tool designs have not been updated since 1978, and access fittings have not changed since the first field installation in 1950. Over 3000 new access fittings are commissioned each year and it is estimated that over 100,000 are in active service. That is a serious potential for failure and that can range in severity from loss of containment to fatality. Combined with life extension of assets, and diluting field experience, the situation was now in sharp focus and room for improvement a necessity. After the 2012 incident, the 'improvement' came from a decision to move away from online retrieval of intrusive devices with a shift towards utilizing non-intrusive monitors. Where traditionally devices were designed to be changed out under live process pressure, limiting shut down time and inevitably associated costs, non-intrusive monitoring became the favoured approach. Over time end user operators realised that there was a serious time lag related to the responsiveness of non-intrusive sensors versus intrusive.





Non-intrusive permanent wall thickness sensors are excellent at automating inspection points or monitoring rapid metal loss related to erosion, Axess had supplied tools to meet this new approach, they provide good value and an improved safety environment. But when talking about corrosion monitoring, it is often actually chemical performance monitoring that is being undertaken and the non-intrusive method cannot achieve the level of insights required to optimise chemical performance with ultrasonics. This change drove a shift from inspection to monitoring, and ideally complimentary, but the non-intrusive process meant that two different operations would be

required. How would operators retrieve all the information they really required if only non-intrusive was being carried out?

Consequently, Axess were about to change the face of that, and the safety profile of the operations in the field. When launching in 2020, Anderson's mission on starting the company was to ask the necessary questions about why there was a reluctance to any change beyond the move to non-intrusive inspection and why when the reasons to adopt this were removed, many operators remained in the shadow of the risk of fatality and continued to apply the non-intrusive monitoring systems.



The adoption of the Janus[™] products does not require additional training or procedural change, it is integrated into the ongoing operations. In short it is a low-cost high value gain product that saves lives. Axess removed this threat, risk and burden. With the introduction of Janus Guard, they provide the ability to return to intrusive methods – limiting dependency on shutdowns and ensuring continuity of monitoring data and use the existing retrieval tools, and most importantly no risk to life, and removing the opportunity for choice in the selection of other techniques designed to make online retrieval safer. This technology removes the need to consider the space for human error – in this case the inevitable is the positive outcome, the technology the step implicit with risk and the outcome is inevitably safe.

The design principle was to create a method that would be a mechanical **fail-safe solution that could also be retrofitted to existing retrieval tools**. The design should be light weight and have a minimal impact on procedures but maximum impact on risk assessment. As with many truly scene changing innovations in science and technology the design concept was the result of a late-night chat with Axess co-founder, Tony Anderson. The scene was set for Axess to shake the kaleidoscope and launch their first major product that would disrupt approaches to safety and address a 70-year-old legacy process. The following months were invested in development and stringent workshop and client testing with the support of successful field tests by **Shell, ConocoPhillips** and **Hilcorp**.



The result to date is what is now the suite of products in the **Janus**[™] range providing the following:

- Remove the line of fire from retrieval tool operations
- No risk of tools pistoning or handles whipping
- Visual indication confirms correct seal of hydraulic access fittings
- The first double seal and double isolation access fittings and service valves
- Safe purging, plug and abandonment of redundant access fittings







Innovation Award WINNERS 2023

Axess shipped their first tool in September 2021, and further developments include an alternative Janus guard for non-telescoping retrievers and a Janus double isolation service valve to function with the Janus[™] access fitting. These businesses are recognising that this tool will be central to the revisions of the Safety Manuals due for re-draft, and standard application in all Corrosion and Chemical Performance inspection application in all Corrosion and Chemical Performance inspection, monitoring

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and management. And they can continue to use existing core equipment as the Janus Guard is designed to fit both old and new mechanical retrievers. The result has been the adoption of the technology by major operators globally. Axess celebrated receiving an AMPP innovation award during the annual conference in Denver during March 2023.

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Janus™

To access detailed information about the advantages of **Janus**[™], we invite you to click on the links throughout this paper or alternatively you can reach out to us directly using the contact details provided.

Download our Axess Datasheets





About the **speaker**



Roland Anderson

Roland has over 20 years' experience in the Oil & Gas industry focused on internal corrosion monitoring programs across the globe. He has developed and established businesses in many locations including the UK, Middle East, Australia, China, and the USA. The last several years have been primarily focused on business development and product innovation aimed at improving safety.



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