Institute of Corrosion partnering with Simon J. Sparke of International Well Integrity Ltd.

5th October 2020
“A History of Well Integrity in the Operations Phase and its Business Impacts to the Oil and Gas Industry”

Simon J. Sparke, International Well Integrity Ltd.
5th October 2020
About Me

• **Simon J. Sparke, International Well Integrity Ltd.**

• Simon, is an independent consultant with over 40 years’ experience having worked globally in the service sector and more recently as Global Head of Well Integrity for Tullow Oil.
  
  • Building from the ground up, he built one of the first global well integrity management systems, that incorporated the Operating well stock and also the wells the company had partnered in.
  
  • The story of this is published in SPE-142449 MS, ‘The Severn Pillars of Well Integrity Management: The Design and Implementation of a Well Integrity Management System’, March 2011.
  
  • To complement these achievements, Simon was one of the 14 co-authors on ISO-16530 Well Integrity in the Operate phase.
  
  • He is now one of the leading specialists in building well integrity management systems, writing the associated well operating policies and training staff in the practical elements of managing their well stock.
  
  • His training schools have been given to multinational Operators, Regulators, Insurance companies and students.
About our Work

- Well Integrity really impacted our lives and became part of our culture following the Piper Alpha disaster in 1988, the publication of the Cullen report and the impact of the Design and Construction Regulations (DCR) 1996. Since then in United Kingdom Continental Shelf (UKCS), Norway and many other parts of the world, the industry is required to adhere to a wide of guidelines and standards such as the Oil and Gas UK guidelines (O&GUK), ISO-16530 well integrity standard, Norsok D-010 and more, so that these have become part of the daily reading and way of life to demonstrate how we as an industry should and do conduct our business of managing well stock throughout the well lifecycle. This presentation will open with the history of well integrity, how it has developed, the implementation of key management software, the well examination process and much more, and how the industry has shaped our attitude on day to day business. The on/offshore oil and gas production industry as well as the under-ground gas storage business which use of disused oil wells, and salt cavities, is highly regulated and governed. What is now becoming a common industry thread is using Well Integrity Management Software (WIMS), which typically follows the ISO-16530 standard, using the 9 structured elements to look at the technical, operational and organisational element of the oil and gas sector in a structured way to allow reporting and independent review to the standard expected by a wide range of regulators. This is further supported with institutions such as International Well Control Forum (IWCF) and its certification programme for a wide range of staff working on wells, to ensure that they understand and recognize the risks associated with working on and around the well stock. Finally, the recent work of O&GUK will be discussed, which has published competency guidelines to ensure that all Operators maintain a transparent and auditable programme to ensure that workers are periodically reviewed to ensure they comply to a minimum standard.
Q&A

Selection of Questions to Simon J. Sparke, International Well Integrity Ltd,
Post-Presentation 05/10/2020
• **Q.** Does UK well integrity management guidelines cover Onshore Shale gas drilling/well regime?

• **A.** UK well integrity guidelines cover ALL wells
• Q. Although understanding all the new guidance, I am wondering a little why we had 21yrs without an incident 88-09....is it possible that all incidents are not reported?

• A. In my slide I did not identify ALL the incidents just key ones that people will recognise. Depending on the level/seriousness of the incident, it has to be reported. This is held by various regulatory authorities and may result in a letter being sent up to and including a platform shut down.
• **Q.** Given that this is a corrosion audience, it would be interesting to get your general opinion on the extent to which corrosion or metallurgical failures have historically been implicated in well failures?

• **A.** Corrosion is an issue in these environments particularly if it is not monitored and mitigated. We know that corrosion reduces the material strength and in UK the Operator must have an auditable so that on a periodic basis the well(s) are reviewed and ultimately downgraded in their ability to maintain pressure etc. All UK Operators must manage their well stock to ALARP (as low as reasonably practical).
• **Q.** Have we got (Corrosion and Materials) management right now?

• **A.** Yes this is managed but to various levels. As the well life progresses what is produced may have quite different characteristics to the original fluids. The tubing is the key area where corrosion occurs. To combat this higher grade steels or chemical treatments might be used, or, the tubing is changed periodically.

• Corrosion in the casing strings can be an issue, but chemicals, cathodic protection are more are commonly used.

• A good operator will have production chemistry in mind at all stages of the production phase
Questions and Answers – MCF / ICorr Joint Event
Aberdeen – Oct.2020

• Q. Wondering even with this huge development of well integrity, well control policies, guidelines, we still see major accidents, in your opinion where is the lack of understanding?

• A. Accidents occur for a variety of reasons, competency is always an issue and in this current climate of redundancies, COVID etc we are loosing the experienced staff.

• I believe that there is scope for a range of awareness courses to educate the workers, but in this current economic climate it is hard to ush.
• **Q.** Generally from a pipeline perspective a large share of failures are caused by corrosion that could have been prevented. Is this a similar situation with regards to the failures of wells or is it down to bad design rather than bad operation?

• **A.** I don’t believe wells are badly designed they must be constructed to DCR-96 requirements this follows the Cullen enquiry; I also don’t believe they are badly operated. The well examination process is in place to be totally impartial and independent, and is solely designed to make the wells safe.
• **Q.** With low oil price, previously O&G companies will implement technical requirements more stringent than international standards & regulations. do you see the trend for O&G companies to reduce their requirements to just bare minimum to pass the internal standards & regulations ?

• **A.** Any prudent Operator will not want to be exposed to bad practices, look what happened regarding Macondo. In Europe, plans may get delayed and will be acceptable to the regulator provided they have mitigated the issue and risk assessed the problem. The HSE is very strict and will shut Operators down. In Norway they are even stricter.
Questions and Answers – MCF / ICorr Joint Event
Aberdeen – Oct.2020

• **Q.** One thing that should be noted is that in the Operating Phase, when repairs/workovers are required, these processes can have impacts to topside piping, change of process chemistry pH etc. through treatments used?

• **A.** Absolutely, but topsides can be bypassed, repaired, isolated etc, whereas a well can only be isolated with an intervention.
Questions and Answers – MCF / ICorr Joint Event
Aberdeen – Oct.2020

• **Q.** If my memory didn't betray me I remember you previously led an international effort to share operators data among each other. Do you think with cloud implementations becoming more popular, would something like this be possible?

• **A.** Clouds will not change anything, unless there is a will to make that change and share information. Operators regrettably are generally unwilling to do this especially if there is a cost attached to collect and manage the data even if it means they benefit.
Questions and Answers – MCF / ICorr Joint Event
Aberdeen – Oct.2020

• Q. Perhaps OSDU (Open Group Open Subsurface Data Universe) is an attempt towards greater information sharing. What do you think?

• A. Yes it certainly is. Putting Data at the Center: All Subsurface and Wells Data Stored in a Single Data Platform The Open Group Open Subsurface Data Universe™ Forum is developing a standard data platform for the oil and gas industry, which will reduce silos and put data at the center of the subsurface community.

• The OSDU data platform will: • Enable secure, reliable, global, and performant access to all subsurface and wells data • Reduce current data silos to enable transformational workflows • Accelerate the deployment of emerging digital solutions for better decision-making • Create an open, standards-based ecosystem that drives innovation This will revolutionize the industry’s ability to deliver new capabilities and reduce implementation and lifecycle costs across the subsurface community.

• **Q.** When it comes to inspecting a well for corrosion, how easy is it? Where should or can we actually inspect i.e. are we restricted to just what we can see and the probes that have been installed or is there a similar tool like ILI that can be used to give a greater coverage?

• **A.** Firstly it can be very easy if you use a production chemist, sample the fluids and get their opinion. This can be done for a very low cost; sample and analysis. But running a tool into a well can give some answers as well to support the corrosion hypothesis. Also there are some good software packages that can be used.
• Q. Can we have a copy of the Slide pack?

• A. The webinar has been recorded and will be available through the MCF and ICorr websites over the next few days.
THANK YOU FOR ATTENDING

This Webinar was brought to you by MCF working in partnership with ICorr and International Well Integrity Ltd.