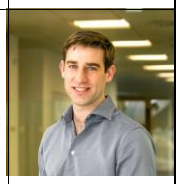
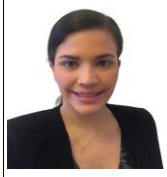
Name	Company Name and Location	Presentation Title	Abstract	Biography	Presenter Photo
Ali Morshed (PhD, CEng, MSc, DIC)	Iindependent Corrosion Engineering Consultant and Rrainer - London (UK)	Reviewing Several Corrosion Management Cases from the Energy Sector	Corrosion remains a major integrity threat for many assets in the energy sector, despite continuous and significant technological advances in a multitude of fields such as metallurgy, coatings and chemicals. Careful review of some of the encountered corrosion issues, failures and leaks has revealed that the majority of them were due to erroneous or inefficient corrosion control and mitigation practices. The review has also illustrated the fact that the majority of such corrosion issues and failures could have been easily and conveniently avoided, in the first place, virtually not requiring any extra resources. Further studies of such cases have further revealed that the main culprits or root causes behind them were the lack of performance monitoring and total lack of or inadequate communication and competency. The latter two culprits were associated with different stages of the asset life cycle: from storage to construction, transportation, storage, installation and finally to the post-commissioning or the operations stage. The prime objective of this presentation is two share valuable integrity and corrosion experience with the pertaining operators and engineering companies in the energy sector so they would not repeat similar erroneous practices in future. Such knowledge sharing should help others to improve their asset corrosion management practices and strategies; thus, enabling them to enhance their company's corrosion failure pre-emption capability while simultaneously optimising their integrity and corrosion costs.	Ali Morshed is a corrosion engineer with around 22 years of experience. He has worked in the UK's North Sea, North Africa, Middle East and South Asia with companies such as: Aramco, Atkins, BP, Cairn Energy, Chevron, Lloyd's Register, NIGC and Wood Group. Ali developed the Morshed Corrosion Management Model in 2012 which has been is use both in hydrocarbon and non-hydrocarbon industries in various countries ever since. The model takes into account both corrosion engineering-based and non-corrosion engineering-based integrity management measures. He is the author of five corrosion management and one MIC book, all published by NACE/AMPP since 2012. Ali is currently providing consultancy and training services in the areas of corrosion engineering, corrosion management, RBI and MIC as a freelance corrosion engineer.	
William Ritchie	Kent Plc (Aberdeen)	Corrosion Control and Management with Carbon Capturing Systems	Systems for capturing CO2 from natural gas and waste gas streams are expected to be rolled out across many industrial sectors as part of an international momentum to meet net-zero commitments. Different technologies exist for capturing CO2 from a process fluid, with varying degrees of effectiveness and technological readiness. One of the most widely used technologies to-date makes use of amines to capture CO2 through a reversible chemical solvent process. A great deal of industry experience has been obtained from the oil and gas industry who commonly use amine-based systems to scrub CO2 from natural gas as a means to meet gas transmission specifications. Whilst a well-designed and well-managed system can be operated with very few issues, rapid and severe degradation of assets can be encountered when the corrosion threats are not understood or corrosion management is not effective at identifying the early warning signs. It will be important to ensure that lessons learnt from the oil and gas industry reach engineers within other sectors who will soon adopt this technology. This talk will discuss some of the different technologies used for carbon capture and then focus on the speaker's experience of amine systems and cases where problems have been encountered.	William is a principal engineer with over 15 years of experience with metallurgy and corrosion engineering associated with Energy and Marine industries. He began his career in Aberdeen performing failure investigations on failed structures and pressure systems within a metallurgical laboratory, before moving into asset integrity management of upstream oil and gas facilities. With time, his experience in asset integrity moved towards downstream facilities, such as refineries and petrochemicals, whilst simultaneously branching into design verification of oil and gas, marine systems, offshore wind and other energy infrastructure. In his latest role, his focus is now predominantly based on the design of energy infrastructure, with a broad mixture of existing and new energy markets.	
Dr. Isbelis Lopez	ROSEN (Newcastle)	Corrosion Management of Offshore Wind Turbine Towers and Transition Pieces: a Deeper Look at Coatings	The rising demand of renewable energy drives the offshore wind industry moving into deeper waters, which allows for larger turbines and an increase in their numbers. However, these remote, unmanned structures present unique challenges. Access to maintenance is limited, and offshore repairs are significantly more expensive than their onshore counterparts. In order to meet these challenges, robust and reliable corrosion protection and control systems are required. One of such systems may be a humble coating. Historically, coating specifications for offshore wind turbines were derived from the offshore oil and gas industry. However, premature failures in the field have prompted a reassessment of standards and procedures to ensure coatings are fit for purpose. The industry continues a quest to develop advanced paint systems capable to withstand high levels of contamination, surface variations across turbine components, and residual stress during operation. In harsh marine environments, coating failure may lead to corrosion, and thus compromise integrity of the structure being protected. Currently, qualification tests such as those outlined in ISO 12944, are tailored for each environmental zone to verify the coatings effectiveness throughout the structure's intended lifespan. The use of accelerated testing for certification purposes has the advantage of providing results under controlled, pre-established scenarios. However, passing these tests does not ensure effective corrosion prevention, as durability is influenced by numerous other significant factors. Accelerated tests are conducted under ideal laboratory conditions on optimally coated test samples, these conditions often do not reflect real operational environments. While these tests offer rapid insights, they cannot assure long-term corrosion protection due to various critical factors affecting durability. Disparities between laboratory and field test results have been documented, highlighting the complexities of achieving accurate, reliable corrosion measurements and the importance of factors such as application quality. Our on-going work and this presentation delve into these discrepancies, exploring implications and potential solutions for the offshore wind industry.	Isbelis has a Materials Engineer with a PhD in Mechanical Engineering, her research concentrated on mechanical characterisation of protective coatings for offshore wind turbine towers and transition pieces. She is an experienced Materials Engineer with over 7 years of experience in Research and Development, with specific expertise in the fields of materials, manufacturing, materials selection and technical support to process operators.	
Martin Harley	ROSEN (Aberdeen)	Success Factors for Intelligent Pigging Campaigns	Before we get intelligent pigging data, someone's had to successfully run a pig through a pipeline without mishap. But ageing fields sometimes mean not enough speed in the pipeline for the pig to catch data; there might be inches of wax to scrape and a flexible liner carcass that mustn't be damaged; the pig trap door might struggle to seal with no spares to hand; its necessary to negotiate with other operators to agree timing & handling at the destination. And just like in a movie, sometimes all seems lost two-thirds through the job when a spanner comes flying out of left-field in one of those 'we didn't think of that' moments. There's many reasons why a job can come to grief and Success Factors for Intelligent Pigging Campaigns will review some of the things to consider before you get anywhere near launching a pig.	Graduating in Materials Science & Engineering with an MSc. in Underwater Technology, Martin has over 30 years of experience in the oil and gas industry. A chartered Engineer, Fellow of the Society of Underwater Technology and past-chair of the Aberdeen SUT committee, his experience includes design and construction projects; manufacturing, fabrication, site installation, subsea and pipeline operations by diver and ROV.	
Steve Paterson	Arbeadie Consultants, Banchory	Principles of Corrosion	The presentation will cover the fundamentals of corrosion and basic electrochemistry. It will identify different types of corrosion and the key corrosion mechanisms that impact the oil & gas production sector and new energy sectors such as wind, geothermal, hydrogen and CCS. The importance of corrosion control and management will also be explained. Finally, the cost and significance of corrosion will be addressed.	Steve graduated from Imperial College London with a B.Sc.(Eng.) and Ph.D in Metallurgy and has over 40 years experience in the oil and gas industry mostly with Shell. He was involved in materials, corrosion, welding, inspection and integrity management, and worked in the UK, Netherlands, Norway, Middle East and Malaysia. Steve is an independent materials & corrosion adviser with Arbeadie Consultants based in Banchory near Aberdeen. He is a current committee member of the Aberdeen branch of the Institute of Corrosion with responsibility for the Young Engineers Programme. He was awarded the Institute of Corrosion Paul McIntyre Award in 2019.	
Stephanie Okoye	Vysus Group	Risk based Inspection (RBI) in Asset Integrity Management - Overview	Improperly managed oil and gas assets can consume significant amounts of money, time, and resources. A robust asset integrity management system ensures asset availability, safety, and mitigates damage mechanisms that could lead to loss of containment (LoC). Risk-Based Inspection (RBI) methodology systematically evaluates risk, informing decisions on when, where, and how to inspect pressurised equipment in processing facilities due to material degradation. This presentation will define asset integrity, its importance, failure causes/preventions, and the evolution of Asset Integrity Management (AIM). It discusses different RBI approaches, the RBI methodology, and its generic process, including steps to an RBI build, focusing on pressure vessels and piping, and the applicable codes and standards. It will also delve into corrosion studies, a crucial aspect of RBI, providing an overview of corrosion, its control/mitigation, reasons behind metal corrosion, and various damage mechanisms affecting process piping and fixed equipment in refining, petrochemical, and chemical processing industries. It will focus on one internal corrosion mechanism (carbon dioxide corrosion) to demonstrate the corrosion risk assessment methodology. The talk will showcase an example of an RBI build, its output (the inspection plan), and a typical inspection plan. Finally, it will outline the benefits of the RBI methodology.	Stephanie is a Chartered Senior Corrosion Engineer with over 15 years of experience in the oil and gas sector. Her expertise lies in corrosion and integrity management of North Sea Oil & Gas assets, as well as gas and chemical processing plants. She holds qualifications as a Senior Corrosion Technologist by AMPP (formerly NACE) and currently serves as an Executive member of the Institute of Corrosion Engineers (ICORR). She is also a project management professional with a proven record of leading teams, managing, and delivering several projects successfully.	
Ahmad Raza Khan Rana MASc, PMP, P.Eng. (APEGA, APENS)	Integrity Products & Supplies Inc. Sherwood Park, AB - Canada	Understanding RBI Deviations for CUI Management – A Comparison of Experimental and RBI Corrosion Rates [ONLINE]	Modern-day risk-based inspection (RBI) platforms are designed to evaluate the safety and/or financial risk of assets using industry-recommended RBI methodologies (e.g., API 581). There are situations where the RBI methodology does not represent the true risk profile of the asset, despite implementing the best possible inspection programs and careful input of inspection data. One of the main pitfalls present is the inherent limitation in the risk calculation methodologies that makes no or little use of the inspection data. An example of such a situation is the CUI risk assessments that are subjected to uncertainties due to numerous scientific parameters that are partially addressed (or even unaddressed) in modern-day RBI approaches. This work addresses two case studies of external corrosion rates due to CUI for two pairs of test rigs made with small bore piping deployed with two different insulation designs, namely conventional design, and moisture egress design. The assemblies were tested using two different methods for CUI simulation and testing conditions. The first pair was tested per ASTM G189-07 under isothermal wet-dry conditions at 1000C (212 F) for three days, while the second pair was submerged under water for two days followed by outdoor exposure for one year. The experimentally determined corrosion rates were compared to those calculated using API 581-compliant RBI software. The comparisons of resulting corrosion rates are complemented by an explanation of deviations & pitfalls.	Along with MASc Degree in materials engineering, Ahmad has around 40+ publications as peer-reviewed journal papers, magazine articles, and conference papers. Ahmad's research focus has been on corrosion, wear, thin-film coatings, epoxy coatings, and risk-based inspection (RBI). Ahmad has invited numerous research grants worth CAD $ 1,00,000 to date. Ahmad is the chair of technical symposia for AMPP for the past 4 years. Ahmad received the MP Innovation of the year Award from AMPP for Innovation aimed at CUI mitigation. Ahmad has also, received the most-impactful publication award (for year 2021) from AMPP and NACE Graduate Student Book award (for year 2019). Ahmad is an active member of standards refining committees for API (SCIMI, SCCM), ASTM (G01), ASME (PCC-3) and AMPP.	
Clare Watt	Intertek CAPCIS	Corrosion Under Insulation – Expect the Unexpected!	Clare will share some of the most surprising and/or interesting things she has learned through her experience with CUI/CUF. She will use these illustrated examples to demonstrate why this corrosion threat is so difficult for the industry to manage, with reference to the current innovation landscape that is aiming to rise to the challenges. Themes include how surprisingly isolated CUI can be, the limitations of accelerated short term laboratory testing, and the reliance on field datasets which underpins global CUI prediction, along with some unvalidated educated assumptions. CUI preferred designs can sometimes be the most difficult to inspect/monitor. Prediction is currently qualitative and conservative, and not always accurate. Examples of CUI failures that have provided key insights, that are not all incorporated into CUI prediction guidance, are shared. As proving what works is surprisingly difficult for emerging design, detection and innovation technologies, key success factors for the future are discussed and include some fantastic suggestions from the ICorr Young Engineers 22 program.	Clare Watt is from the United Kingdom and has over 20 years operational experience in oil and gas corrosion & integrity management including senior technical roles with international operators ExxonMobil, Apache and CNRI. She spent 6 years with KAEFER headquarters in Germany developing Corrosion Under Insulation (CUI) expertise and innovation and recently joined Intertek CAPCIS where she works as a corrosion and integrity consultant. Clare is a member of the Energy Institute Corrosion Management & Asset Integrity Committee and has contributed to various published industry guidance. She delivered corrosion training for Cranfield University MSC students for 13 years and currently co-delivers international CUI training.