Subsea Cables Conference

Tuesday 27th March 2018
Aberdeen Exhibition and Conference Centre
Exhibition Avenue
Bridge of Don
Aberdeen
AB23 8BL
10:00 Welcome

Neil initially studied business in Aberdeen then trained as a commercial diver spending eight years carrying out numerous diving assignments in the UK and Norwegian waters involving new construction projects, pipeline surveys, welding and inspection. He has over 25 years' management experience in director and business development roles, combined with over 15 years in the subsea industry.

Prior to joining Subsea UK, he spent four years managing the National Hyperbaric Centre which included project-managing saturation diving operations and hyperbaric weld trials. He more recently developed the subsea safety training and consultancy aspect of the business, where he regularly lectured to subsea engineers and delivered a range of training courses both in the UK and overseas.

He has experience working in India, Middle-east, Africa and Brazil and has worked with the Oil and Gas Producers diving operations sub-committee on client representative training and competency for subsea projects. He was also an active member of the IMCA diving safety, medical, technical and training committee.

10:10 Market Overview

In his diverse career, Chris led a team providing computer integration services to manufacturing businesses, led as Sales and Marketing Director to the IT sector servicing international corporations, before moving into the Oil, Gas and Renewables Sectors.

His roles have included Operations Director, VP Management Information Systems, HR Director and QHSE Director. Chris has overseen the development of 4C Offshore from a provider of specialised marine advisers and owner engineers to Submarine electricity cable project owners, to one where it has also become the market leading intelligence service to the global offshore wind, electricity Interconnector, port and shipping markets.
Advanced Analysis for Offshore Wind Inter-Array Cables

Traditional approaches for finite element modelling of inter-array cables spanning from the seabed to cable entry on turbine foundations is generally a simplistic approach neglecting individual component responses by using equivalent mechanical properties for the cable and ancillary protection. Additionally, onerous service conditions are often introduced to mitigate against cable vortex induced vibration (VIV) resulting in narrow service windows in mobile seabed and scour zones which can be relaxed by advanced modelling techniques.

Advanced finite element analysis modelling with explicit modelling of cable, cable entry and protection system components provides a more realistic and accurate representation of the cable spans, allowing relative axial movement and gap modelling between components. This approach is shown to significantly reduce conservatism in comparison with traditional modelling approaches. This is presented via a case study demonstrating how through advanced finite element modelling a system can be demonstrated to be acceptable which would be unable to meet manufacturers requirements through traditional techniques.

Advanced modelling is also shown to provide an ability to relax freespan criteria with respect to VIV. Rather than adopting onerous criteria to negate VIV onset, accepting cable vibration and managing the fatigue accumulation within defined limits can increase the acceptable span length, hence mitigating intervention requirements. This is achieved through advanced finite element analysis of the span geometry, cable cross-section and lifecycle metocean discretisation. Modelling the cable response to the environment and the subsequent cable component loadings allows a cumulative fatigue assessment from wave and vibration loadings to be performed and iterated to find acceptable span lengths.

In summary, the advanced modelling of inter-array cable systems provides more realistic loading regimes, reducing conservatism in cable loadings through cable entry systems and relaxation of allowable span lengths to reduce intervention requirements.

Keith Anderson is an accomplished business manager responsible for Subsea and Export Systems at Wood. A Chartered Engineer and Fellow of the IMarEST he has over 22 years postgraduate experience, including 19 years within the subsea industry. During his career he has been involved with offshore developments across the North Sea, West Africa and Australasia. His current role encompasses the management and delivery of the engineering function for oil and gas; power transmission; and marine renewable projects in the offshore environment.

In addition to his primary business role, Keith provides valuable industry experience to Robert Gordon University as an external examiner and he is a guest lecturer for renewable and subsea engineering courses at the University of Aberdeen.
10:50  Accelerating Renewables Development Through Knowledge Transfer

With much of the world looking for fossil-free energy sources, wind power is becoming increasingly popular and proving financially viable. Forward-looking companies are adapting their existing product portfolio for use in the renewables sector.

As the wind energy industry moves further offshore, oil and gas companies can shorten the development time for new concepts by transferring oil and gas industry knowledge and expertise.

Mr. Daniel Bate specializes in buoyancy and cable management products for the renewables energy sector. He has over 10 years of experience working in the offshore subsea industry with Trelleborg and started his career working within the innovation team, developing new buoyancy and cable protection materials.

For the past three years, Daniel worked for a coatings company, with great focus on supporting the growing number of composite wind blade factories across Europe.

After seeing the offshore wind sector go from strength to strength, Daniel returned to Trelleborg due to their focus on the renewable sector and applying their cable protection knowledge to new products for the growing sector.

11:10 – 11:30  Break

11:30  Cable Burial in Subsea Cables

Learning from experience – Canyon Offshore, to date, has been involved with burial of both inter array and export cables on over 20 offshore wind farms within most European waters. Canyon has also been involved with the burial of inter country interconnectors associated with the sharing of electrical power between different countries and is planned to work on another 2 interconnector projects over the next 3 years.

Cables are not just associated with renewables and power sharing and Canyon has buried a number of power from shore cable projects for O&G sector both in Europe and in the Middle East.

This presentation will give some of the lessons learnt having worked with our clients and their clients to make each a successful project as well as present some of the innovation and investment made by Canyon for future cost reduction as well as meeting burial depth obligations.

John has been an Engineer within the Subsea, ROV industry for over 25 years. Initially working with the UK and overseas navies on remote control mine countermeasure ROVs and then for the past 17 years on the ROVs, Ploughs and trenchers used to support offshore oil and gas, submarine telecom and power cable installation. John has had a diverse career from working offshore, through to operations management,
business development and now as director of seabed intervention for Canyon Offshore Ltd.

As Director Seabed Intervention, John is responsible for working with the senior management team to support the business’s strategy in taking its assets and services; supporting all things energy. John is responsible for building relationships with current clients and strategic partners primarily in the North Sea and EMEA region - although his remit, just like the company’s equipment and services - extends worldwide. John’s expertise in the renewables sector and the trenching market merges with the core strength of Canyon Offshore, which is providing services (ROV, Trenching, construction support and vessels) in shallow to deep water marine contracting operations, and allows him to advise global energy, renewables and telecom players on the most cost-effective solution for their project needs.

11:50 Reducing Costs Through Informed Engineering

In order to realise the strike price of the farms most recently awarded, we need to realise cost savings in the order of 50%... but how?

Oil & Gas have recently realised significant supply chain savings through efficiency drives, however they started with a bloated supply chain, full of inefficiency and ‘gold-plating’.

Offshore wind cannot realise similar savings by simply pushing the existing supply chain structure; wind is already a tight market so further tightening margins and removing waste in the existing supply chain, without changing fundamental approaches, will not yield required savings and may put quality and safety at risk.

The answer is in Informed Engineering, targeting the whole process. The wider the system boundaries can be made, the greater the potential to yield results. The main objective is minimising the overall install time which reduces costs of vessels, personnel etc and reduces the non-productive timeline, whilst actually improving safety and repeatability. When engineering in this way, the drivers for improving safety and optimising operations are well aligned.

A process flow model must be employed, with collaboration from all stake-holders for overall benefit. It may include investment in equipment in exchange for reduced operational costs.

Osbit has a case study of a Quadrant Handling System delivered to DeepOcean and used successfully on Race Bank.

Robbie principally leads the engineering projects at Osbit, overseeing the development and delivery of innovative new systems and equipment.

Robbie’s role focuses on utilising appropriate engineering and thoroughly understanding client requirements to develop effective technical solutions.

Along with his colleagues, Robbie has overseen more than 260 successful projects at Osbit, including projects across the entire subsea cable development life cycle.
With a distinguished background in engineering, including direct work on many of the active trenching systems in the market and engineering input to most of Osbit’s projects, Robbie has a unique breadth of knowledge and depth of expertise which is rare.

12:10 **New Subsea Cable Insulation Monitor for Detection up to 10GΩ.**

Matching the needs of the Subsea Industry, Bender has brought a new 10GΩ subsea cable insulation monitor isoHR685 to the market.

State-of-the-art in terms of reliability, measuring technique, operability and design, the new generation Line Insulation Monitor (LIM) delivers a higher level of integrity monitoring.

The isoHR685W-D-B improves measurement accuracy by synchronisation of up to 50 isoHR685 to limit cross cable disturbance between long parallel cables.

*Mumtaz Farooqi works as a Technical Manager at Bender UK Ltd. He currently leads a team of engineers to provide application and product support across Industrial and Medical sectors.*

*His focus is on delivering new concepts to the market to improve electrical safety, protection and availability through advanced condition monitoring. Subsea applications include umbilical’s, subsea pumps and ROVs etc.*

12:30 – 13:30 **Lunch**

13:30 **Reducing Operating Costs Through Automated Fault Response and Realtime Condition Monitoring in Power Cables**

Disproportionately high insurance claims and operational costs come from failures of cables used in all offshore wind arrays. As the industry moves to larger turbines and 66kv cables, the risk and cost of failures only increases, yet operators are still working without realtime visibility of electrical performance – the key parameters for failure prevention, avoidance and ultimately the best way to improve productivity. This lack of visibility and control is due to the prohibitive size, cost and complexity of traditional instrumentation systems required to protect, monitor or control key HV assets like cables, turbines and their terminations.

Synaptec have just launched a new technology to address this, using a patented distributed photonic sensing technique to make sensors small enough to fit in the palm of your hand, completely passive, GPS and datacomms-free and using the cables themselves to provide the communications network required. Our first-generation products save O&M costs by detecting faults at least 10X faster and automating the response to save days outage, human O&M response and asset damage. The second generation of products will also offer condition monitoring services for dynamic line...
rating, impedance to fault and power quality functions to safely optimise usage of export cables and termination without exceeding design parameters.

Saul brings 25 years of sales and marketing experience, having led growth for start-up and established brands in the IT, mobile, unified communications and most recently semiconductor industries in every major global market.

13:50

14:10

14:30 – 14:50   Break

14:50

15:10

15:30   The European Subsea Cables Association (ESCA) and the Important Role that ESCA Plays in Support of Subsea Cables

An introduction to ESCA and its history.

ESCA liaison activities with Government and non-government agencies.

An overview of the Sub-groups within ESCA.

An overview of the operational guidelines that ESCA have composed for the benefit of the subsea cables sector.

Protection of cables comes in many forms: ESCA fishing liaison and KISORCA.

Antony Zymelka is a very well known cable focused professional who has amassed around 40 years of experience in the Subsea Cable industry. He has been involved in approaching 200 Subsea Cable projects worldwide.

Antony was qualified by Pirelli (now Prysmian) in the Design of Super Tension Power Cable Accessories and the Installation, Testing, Commissioning, Fault Location and analysis of SCFF, MIND and Elastomeric (XLPE, EPR etc) Super Tension AC and DC Power Cables.

Having spent many years Offshore on various Cable Ships, and Onshore in Design, Engineering and Project / Senior Management, his Subsea Cable Installation Operations, Installation Engineering and Offshore and Onshore Management experience is extensive. This experience encompasses Power, Telecommunication, Umbilical, Military and Scientific Cables.
Antony is considered by many as being a leading authority on Subsea Cables and sits on the executive committee of the European Subsea Cables Association (ESCA). He also chairs the ESCA Renewables and Power Cable Sub-Group composing various industry guidelines including: Proximity, Subsea Power Cable Installation and Repair. Antony is also an active member of CIGRE and participates on various CIGRE Technical Working Groups.

Recently, Antony has had the pleasure to accept a Directorship at BPP Cables where his expertise is being applied across many projects. BPP Cables being unique in their cables focussed technical capabilities including design, is considered to be at the forefront of providing INDEPENDENT cabling solutions.