SUBSTATIONS 2019



Renewables and digitalisation driving future direction

Hobart Tasmania, 7 - 8 November 2019

| Welcome & Introduction to Conference. Welcome from Bess Clark, General Manager Project Marinus, TasNetworks Welcome from Bess Clark, General Manager Project Marinus, TasNetworks Welcome from Seve Davy, Chief Secutive Officer, Hydro Tasmania Introduction to Guest Speaker Key Note Addisses Shon. Guy Barnett - Minister for Primary Industries & Water, Minister for Resources, Minister for Energy Futurists Networks: Grid Collection Substations Anurag Gupta GHD 0920 -0940 Integrating Synchronous Condensers into Renewable Generator and Grid Substations Connecting Renewable Generation Sources – Now a Network Issue George Bergholts Lee Ucich Perry Tonking DERMS – The Future of DER Operation in Microgrids Perry Tonking Lee Ucich Perry Tonking Horizon Power 1050 - 1110 1111 1115 1115 1115 1116 1116 1117 1117 | DAY 1 – Thursday, 7 November 2019 | Presenter | Company | |
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| Questions and Answers 1710 - 1720 | Developments in the use of non-SF $_{\! 6}$ gases and gas mixtures for a more sustainable grid | Terry Krieg | | 1650 - 1710 |
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| | Cocktail Pacentian & Naturating Function - Trade display as | on Mrast Daint Co. | -1 | 1720 2020 |

| DAY 2 – Friday, 8 November 2019 | Presenter | Company | |
|---|-------------------------------|----------------------------------|-------------|
| Welcome | | | 0830 - 0835 |
| Tutorial - Low Cost Substation Design Solutions (for developing countries) This tutorial presents the work of CIGRE WG B3.43 and the technical brochure 740 published in August 2018 and presents a contemporary approach to the design of high voltage substations. The work provides a good basis for the many considerations involved with design and is just as applicable for developed as it is for developing countries. | Perry Tonking | Convenor of WG B3.43 CIGRE | 0835 - 0935 |
| Questions and Answers | | | 0935 - 0945 |
| Morning Tea | | | 0945 - 1000 |
| Introduction | | | 1000 - 1005 |
| Tutorial - Current Interruption in Atmospheric Air David Peelo is an international expert on switching in high voltage networks with particular expertise in current interruption using air-break disconnectors. The tutorial explains the behaviour of free burning arcs in air as related to the interruption of transformer magnetizing, capacitive charging and loop currents with a view to achieving safe operating practices. | David Peelo | | 1005 - 1100 |
| Questions and Answers | | | 1100 - 1110 |
| Tutorial - Substation Earthing System Design Optimisation Through the Application of Quantified Risk Analysis (QRA) This tutorial presents and explains the creation and application of CIGRE TB 749. It shows the staged use of QRA in a practical and robust earthing system design approach which can reliably produce a balance between cost, practicality and management of risk for the resultant earthing system. | Stephen Palmer Bill Carman | Safearth | 1110 - 1210 |
| Questions and Answers | | | 1210 - 1220 |
| Lunch | | | 1220 - 1250 |
| Introduction | | | 1250 - 1255 |
| Workshop – High Power, Grid Forming Inverters enabling tomorrow's high renewables NEM This workshop will detail and discuss some of the key network services provided by the BESS, including issues such - BESS - Virtual generator - Stability and synthetic inertia services - Reliability and microgrid functionality - Power quality support (frequency and voltage) - Fault current provision - Integration of renewable energy sources: centralised and distributed - Non-convention control methods to increase hosting capacity - Future developments and applications as sizing, system strength and capability, and will include discussion of the learnings from design, installation and testing of BESS in substations. | Stephen Sproul | ABB Australia | 1255 - 1500 |
| Questions and Answers | | | 1500 - 1510 |
| Thanks and Conference Close | | | 1510 - 1515 |

CIGRE Australia acknowledge and thank the following sponsors who have helped stage this event:





