

Presented by Russell Wheatland - Convener

Hobart – 15/11/2018



cigre

For power system expertise

B1

Insulated cables



2018 Paris Session : B1 Insulated Cables

3,600 delegates among 9600 participants from 98 countries

16 tutorials sessions held with a total attendance of 3,600

Australia has a member on each of the 16 SCs

More than 300 exhibitors

CIGRE World Bank joint initiative for "Africa"

The World Bank has the money

CIGRE has the technical knowledge of what is needed



Opening Ceremony

Keynote Speaker Audrey ZIBELMAN

ü **CEO Australian Energy Market Operator AEMO**

ü **Delivered vision of electricity markets & business models of the future**

ü **Global look at the changes effecting the power networks around the world**

ü **Australia is leading the world in adapting to these changes**

ATC Seminar 2018



2018 Paris Session : B1 Insulated Cables

Study Committee Meeting

- ü 35 member countries and over 100 people in attendance
- ü Australia is seen as a valuable member
- ü Several AP B1 members acknowledged for their contributions
- ü SC B1 is one of the most interactive with other SCs

Ongoing works

- Strategic Advisory Group (Haskell, Germany)
- Interest Advisory Group (Boone-Clausen, Germany)
- Customer Advisory Group (Rangan, Germany)
- WG B1.38 On-site Fault Discharge Assessment (Fergus, 2008-2011)
- WG B1.38 After-faulting tests on AC and DC cable systems with new technologies (Fergus, 2011-2014)
- WG B1.41 Long-term performance of oil and load(ing) of cable systems (Zenger, 2012-2013)
- WG B1.44 Work under Insulated Voltages and Insulated Cables (Sachdevandhar, 2012-2014)
- WG B1.45 Thermal monitoring of cable assets and grid operators' use of dynamic ratings (Murray, 2012-2014)
- WG B1.46 Conductor Corrosion: Historical and Electrical Test Studies (Murray, 2012-2014)
- WG B1.48 Testable Technologies (Sergey, 2012-2014)
- WG B1.49 Standard design of a common, dry-type phase-to-phase cable joint and power cable (145 kV (High Voltage)) (Jernisse, 2012-2014)
- WG B1.50 GIS and bonding systems (design, testing, operation) (Sachdevandhar, 2012-2014)
- WG B1.51 Fire issues for cables installed in an aircraft (Zenger, 2012-2014)
- WG B1.52 Fault location on land and submarine HV AC and DC (Sachdevandhar, 2012-2014)
- WG B1.54 Behavior of cable systems under faulting for submarine HV cables (Ohno, 2018-2019)
- WG B1.55 Recommendations for testing of HV cables for submarine HV cables (Ohno, 2018-2019)
- WG B1.56 Cable joint testing systems for power transmission at a rated voltage up to and including 800 kV (Boone, 2017-2020)
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- WG B1.69 Recommendations for testing of HV cables for power transmission at a rated voltage up to and including 800 kV (Boone, 2017-2020)
- WG B1.70 Recommendations for testing of HV cables for power transmission at a rated voltage up to and including 800 kV (Boone, 2017-2020)

28 active B1 working bodies
7 cooperative works with other SCs
approx. 500 experts' community



SC B1
Insulated Cables

New SC Members
Paris, 28 August 2018



Tutorial Sessions

- ü All SCs held a Tutorial session on the outcome of one of their Working Groups
- ü The B1 Tutorial was attended by over 300 people
 - Fault location on land and submarine links
- ü With 3600 attending over the week period = average of 225
 - Insulated power cables continue to have a growing popularity as they interface with more and more HV assets



2018 Paris Session : B1 Insulated Cables

Goals of the Study Committee

The main goals of SC B1 are the following

- ü to promote and to contribute effectively to the progress in insulated cable systems technology
- ü to facilitate the integration of insulated cable systems in electric power networks and in the environment covering the complete life cycle of cables
- ü to maintain its leading position in the field of power cables by providing unbiased and neutral information on all essential cable aspects
- ü to be recognised by the Electric Power Industry as a leading and reliable partner with competence in all engineering issues related to insulated cable systems, i.e. technical, economical, ecological and social
- ü to monitor and assess current trends in cable technology

2018 International Activities

• AORC Meeting

ü Active engagement with the AORC B1 Panel

ü Providing a link with fast growing regional economies

ü 2017 meeting held in India

- SC B1 chairman (Marco Morelli) attended for half a day
- Change-over convenor Australia to Japan

ü 2019 meeting scheduled for March in Bali



JiCable 19

ü Scheduled for June 2019

ü Premier world wide power cable conference



2018 AU/NZ Activities

- § AP B1 has strengthened its links with NZ, taking on 2 new Kiwi members
- § AP B1 now has 25 active members with four from over the ditch
- § CIGRE is now actively engaging with MV assets, with some AP B1 members engaged in MV only networks
- § The Network of AP B1 members has been active this past year
 - ü MV cable accessory forum due to termination and joint failures in the field
 - ü Planning for a cable seminar to present several tutorials
 - ü Planning a Cable Failure database for AU/NZ utilities
- § HV and EHV cable systems are growing in popularity
 - ü Expanding populations in capital cities of both countries
 - ü Redevelopment of city areas wanting to remove overhead infrastructure
 - ü The push for more renewable, distributed generation
 - ü Renewed pressure on aged infrastructure replacement
 - ü Increased use of GIS with cable entry options
- § With now no HV cable manufacturing capability in the region, forums such as CIGRE provide invaluable links to off-shore utilities and suppliers.



2018 Deliverables

Technical Brochures

TB 720 - Fire issues for insulated cable installed in air

TB 722 - Recommendations for additional testing for submarine cables from 6 kV ($U_m = 7.2$ kV) up to 60 kV ($U_m = 72.5$ kV)

TB 728 - On-site Partial Discharge Assessment of HV and EHV cable systems

TB xxx¹ Thermal monitoring of cable circuits and grid operators' use of dynamic rating systems

TB xxy¹ Conductor Connectors: Mechanical and Electrical Test

Note 1 : The central office has already been informed that SC B1 will propose a high number of reports to be published as TBs in the near future, but central office does not want to allocate TB numbers until the paper has been approved by the Chairman and the documents related to the TB (Executive Summary and Abstract) are provided. Once the number has been allocated, the brochure will be immediately made available on e-CIGRE

Thank You