

Corona Times

16th JULY 2020
EDITION 7



empowering
networking
globalknow-how

CORONA: “a luminous, audible discharge brought on by the ionization of a fluid such as air surrounding a conductor that is electrically charged”.



A FORTNIGHTLY NEWS-SHEET TO PROVIDE INFORMATION AND UPDATES TO CIGRE MEMBERS

TECH TALK

A series of links to CIGRE Technical documents

Responsible management of electric and magnetic fields (EMF) - TB 806

This Technical Brochure discusses known health effects from exposure to EMF, the associated authoritative guidelines and how to assess compliance with the limits in those guidelines. There is a discussion on possible effects at levels below the guidelines, including the positions of key health authorities and guidance on how to effectively manage public concerns. The brochure also provides guidance on managing the risk of interference with implanted medical devices and details measures that can be used to reduce EMF where this is required.

CIGRE SCIENCE & ENGINEERING - CSE018

In this issue:

- Power system operational resilience – What it means and where we stand by *J. Jacobs et al*
- Improved conductor endurance limit by using a clamp with conical elastomers by *J. Paradis and P. Van Dyke*
- Optimal energy management and storage sizing for electric vehicles by *A. Deshpande and J. Taylor*
- Characteristics and stability threats of resonance caused by forced oscillations in the Nordic power system by *J. Seppanen et al*
- Iron losses in ferromagnetic enclosures of gas-insulated transmission lines under AC by *W. Wiebel et al*
- Verification process for DER modeling in inter-connection-wide base case creation by *R. Quint et al*
- Operation of an all inverter bulk power system with conventional grid following controls by *D. Ramasubramanian*

NGN CORNER

News from our Young Engineer Group

We recently held our fourth webinar – ‘Regulating distribution Transformers for greater rooftop solar PV integration’ by Dr Thomas Smolka, Reinhausen Australia. The topic generated great discussion amongst the attendees and we received a lot of positive feedback. Thank you to the hard work of Sanika Willard (A2 liaison), Adrian Lloyd (C6 and API liaison) and Matthew Zillmann (C6 and Publishing Coordinator) for organising and facilitating.

Load sound power levels for specification purposes of three-phase 50 Hz and 60 Hz liquid-filled power transformers - WGR310_1

Providing guidance towards more realistic load sound level specifications, an improved model, based on the physics behind load noise and on the Reiplinger load sound equation is developed for three-phase 50 Hz and 60 Hz transformers.

The results are presented in the form of easy to use curves, giving the typical load sound levels. The load sound model is defined in such a way that with the information available during the transformer procurement process, it is possible to estimate the load sound level.

DC grid benchmark models for system studies - TB 804

This Technical Brochure provides benchmark models of seven candidate multi-terminal HVDC grids/systems. It includes reviews of the built and planned HVDC systems around the globe, and R&D literature. The models are described, sample results are provided, and the files for the benchmark models are given in a variety of offline and RT simulation packages/platforms.

KIWI COMMENTS

News from across the ditch

The first CIGRE AU-NZ B1 Insulated Cables web Tutorial received wide approval and support from attendees. NZ NGN and WIE members will lead our 5th / 6th August CIGRE NZ 2020 conference, as a precursor to this year’s CIGRE Paris 2020 e-session. They’ve also launched [our refreshed website](#), promoting CIGRE NZ 2020 and its theme “**how our organisations and industry are shaping the power sector beyond 2020**”.

LADY ASTOR’S BILL

Following MP Lady Nancy Astor’s campaign to raise the legal age of drinking in Britain, a law was passed on 13 July 1923 in the House of Commons to prevent the sale of alcohol to anyone under the age of 18. Nicknamed ‘Lady Astor’s Bill’, it won by 257 votes to 10.



CORONA PANEL SNAPSHOT | AU-B2

Overhead Lines

Study Committee Chairman: Herbert Lugschitz (Austria)

AU Panel Convenor: John McCormack

Scope:

The design, construction and operation of overhead lines including the mechanical and electrical (in cooperation with SC C3 and SC C4) design of line components (conductors, ground wires, insulators, accessories, structures and their foundations), validation tests, the study of in-service performance, the assessment of the state of line components and elements, the maintenance, the refurbishment as well as upgrading and uprating of overhead lines.

Panel membership: 37

The AU-B2 panel membership consists of 37 members and specialists from Australia and New Zealand, plus 3 NGN representatives (including an NGN serving as panel secretary and another as full WG member).

The membership represents transmission/distribution utilities, engineering consultants and specialists, OHL construction contractors, and material suppliers.

Working Groups:

There are currently 30 active WG including 11 WG's finalising their work or have issued the final draft for publication. Six new WG's have been commissioned in the first half of 2020, and another three ToR are under review.

AU B2 is represented by four WG convenors (Rob Lake WG40 Electrical Clearances and ROW; Nathan Spencer WG68 Wood Poles; Peter Dulhunty WG 50 Safe Handling of Conductors & Fittings and WG 73 Bushfire initiation and prevention for OHL; Asif Bhangor WG77 Risk of OHL); and 28 members are contributing as either full or corresponding members.

2020 Publications:

Published Technical Brochures:

- [TB 748 "Environmental issues of high voltage transmission lines for rural and urban area" JWG C3.13/B1/B2](#)
- [TB 788 "Dynamic loading effects on OHL - Impact on Foundations" WG B2.23](#)

Due for publication in 2020/21:

- G B2.24 "Overhead Line Supports under static and dynamic Loads"
- WG B2.40 "Review of electrical and mechanical loading combinations for maximum ground/obstacle and Right-of-Way impact consideration"
- WG B2.50 "Safe handling of fittings and conductors"
- WG B2.59 Forecasting Dynamic Line Ratings
- WG B2.61 Transmission Line Structures with Fibre Reinforced Polymer (FRP) Composites

Reference Publications:

- Enhanced Fretting Fatigue Resistance of Conductors for High Voltage Overhead Lines", Kilian Schillai, thesis ETH Zurich – download from the following link: <https://www.research-collection.ethz.ch/handle/20.500.11850/362301?locale-attribute=en>

Paris 2020 Papers:

- Audible Noise Management of Newly Reconductored Transmission Lines, J. RANIGA1, M. WALKER (Transpower NZ Ltd), A LAPHORN (University of Canterbury), R URBAN (Beca Ltd)
- TasNetworks' strategy to mitigate the impact of power lines on threatened birds, Mandy FISH, TasNetworks Pty.Ltd (paper transferred to C3 session)

Upcoming AUB2 events:

The 2020 panel meeting will either be postponed to later in the year once travel restrictions are lifted, or more likely, undertaken by a series of ½ day webinar presentations or internet meetings. Dates to presentation and an agenda will be issued early July. Should webinar events be arranged, members will be encouraged to invite guests to tune in, raise awareness and promote the work of CIGRE.

WG Meetings:

Most WG conduct meetings via internet meeting applications. The schedule can be provided for those interested.

Best regards from the AU-B2 panel

KMS Tips & Tricks

5.6. Share files (avoid emails and third-party "file transfer/drop" sites)

The KMS can be used in the simplest of methods to upload and download files ... just like third party file sharing systems ... but **even better !!** Yes - you may have different editors doing that independently and simultaneously leading to a potential version mismatch as you would with emails or a third party file sharing system. However the KMS will track and archive versions as they are uploaded.

Up/downloading of documents or emailing documents does have many downfalls in retaining formatting styles amongst different company platforms (and hence we recommend direct on-screen editing of draft texts)