AUSTRALIAN NATIONAL COMMITTEE
of CIGRE LTD

NEWSLETTER

December 2008

ANC-CIGRE Ltd 2008 MEETING

The annual meeting of the company was held on 14 November 2008 at Sydney's Olympic Park where Mr Kevin Murray, Chief Executive of TransGrid welcomed delegates and formally opened the meeting.

The meeting and associated technical tour was organised around the theme 'Supplying Major Cities' in this case Sydney.

Three key presentations were made to this theme by the utilities responsible for supplying electrical power to Sydney and its metropolitan area – TransGrid, EnergyAustralia, and Integral Energy.
The presentation by Mr Lionel Smyth of TransGrid, 'Meeting the Electricity Needs of Sydney Metropolitan Area,' focused on proposed transmission projects arising from the load growth in the inner and outer metropolitan area against a backdrop of issues ranging from:

- coordinating replacement of ageing assets;
- maintaining reliability and security during network augmentations;
- community expectations and environmental challenges.

The proposed projects to reinforce and augment transmission assets all had common challenges of constrained line easements and substations sites that have arisen from industrial, residential and public developments that have taken place in the years since the easements and substations were first established.

Mr Craig Moody of EnergyAustralia showed delegates that supply to the CBD presented a different set of issues for EnergyAustralia driven by:

- new security of supply standard (N-2);
- small window of opportunity for network outages to replace and refurbish existing sub-transmission feeders and substations;
- scarcity of land for new substations;
- the high financial and public/planning value of land in the CBD, and
- reduction on construction activities within the CBD.

Delegates were given an overview of some of the projects planned to meet the CBD load growth. These included refurbishment/replacement of existing substations as substations reached their assigned load ratings, new substation developments and new sub-transmission feeder corridors to connect new and existing substation developments for the near and long term plans. A solution to the scarcity and high cost of land in the CBD was to provide for commercial and residential developments in the substation development plans.

It was pointed out that such a CBD environment together with stakeholder expectation drive innovation in all areas of design, construction and maintenance, and that ultimate success requires a Master Plan approach

Integral Energy's Mr Rod Howard showed that the drivers and delivery challenges in its supply area arose from:

- changing customer behaviour and expectations;
- the age and condition of its network, and
- regulations under its licence conditions.

The company's supply area included some of Australia's fastest growing communities. Two new developments in its western area were each the size of Canberra with a population of 250,000. There was also an increase in customer's expectations as land use changed from rural and semi-rural to urban. In addition the peak temperatures in this area are typically higher and more sustained than those in eastern coastal area with the result that this placed consistent strain on the network.
The changing customer behaviour was reflected in the great increase in the take-up of electrical powered appliances, in particular air condition which has seen its penetration triple in ten years, with increase up to 10% in the last two years. A further consideration is the increased reliability standard that is required to be met by 2014.

The environment that these challenges brought were at the forefront when developing Integral Energy's network strategy to optimise network capacity, meeting customer's reliability needs, and providing customers with value for money.

To compliment the technical presentations the technical tour covered two modern substations. The first was Integral Energy's Bella Vista 132/11 kV indoor zone substation with indoor SF6 and metal-clad switchgear that supplied a growing urban area, while the visit second was to TransGrid's Haymarket

330/132 kV substation featuring indoor SF6 insulated transformers and switchgear providing a supply point for the CBD. Delegates were also able to view EnergyAustralia's cross-city cable tunnels.

Chairman's Report

Richard Bevan reported that 2007/2008 had been a successful year for ANC-Cigre highlighted by:

- strong member attendance at the CIGRE 2008 Session;
- an extensive and successful seminar and conference program which gave rise to a strong financial performance;
- the appointment of Phil Southwell to the position of Chairman of CIGRE Study Committee C1 (System Development and Economics), and
- ANC-Cigre hosting the CIGRE Steering Committee in Hobart in May.

He complimented the ATC and its members which had also performed strongly with 12 papers for the CIGRE Session, its seminar and conference program, and strengthening relationship between ANC and the Australian Power Institute.

Scholarships 2008

Delegates heard the presentations from the two young engineers who had been awarded the scholarships for 2008. Tilman Weiers (ANC-Cigre scholarship) described his attendance and participation in the CIGRE 2008 Session. His interest at the Session covered:

- diagnostic techniques for transformers;
- update in developments in transformer insulating oils, and
- initiatives in young engineers involvement in CIGRE.

Paul Blue (Sir William Tyree scholarship) in addition to attending and participating in the CIGRE Session also visited a research institute and a number of equipment and cable manufacturers. His interests were in the area of HV DC equipment and cable developments.

Both emphasised the opportunity and value the attendance of the Session provided in networking with other delegates.

Sir William Tyree who was present during the presentations congratulated the winners and complimented them on their reports. He also took the opportunity to reflect how Australia first began its involvement in CIGRE in the early 1950's when he, William Hudson (Snowy Mountains Hydro Scheme) and George Washington (Sydney County Council) saw the potential benefit and value of being part of this international organisation, and decided to promote involvement with it to the Australia power industry.

Australian Technical Committee

Chairman of the ATC, Chris FitzGerald, reported that the ANC now had a member on each of the 16 CIGRE Study Committees. In addition to having one ANC member chairing a CIGRE Study Committee, three members also were chairing international Working Groups. He expressed thanks to organisations who had hosted the annual Panel meetings and to Panel Conveners who had organised and held five successful seminars and conferences during the year.

Chris went on to say that interest in the technical work of the ATC was reflected with increased membership of Australian Panels.

On the previous day the ATC members had met and one item dealt with was a discussion and review of the CIGRE 2008 Session. This led to the identification of a number of areas for improvement and these would be sent to CIGRE for their consideration.

Summary reports of the CIGRE 2008 Sessions prepared by the AP Conveners are available to members on the ANC-Cigre website (www.cigre.org.au). The site also contains a summary of the Major Disturbances workshop held during the CIGRE 2008 Session.

He advised that the new ANC website had been further developed, and its use by the Panel Conveners and Panel members continued to grow.

Invitations had been issued to three CIGRE Study Committees to hold their meetings in Australia. Two Study Committees had accepted the invitations while the third Study Committee was still to decide.

ANC-Cigre/API Cooperation

Barry Finlay, Convener AP D1, provided a summary of the agreement reached by ANC-Cigre and the Australian Power Institute on cooperating in the area of seminars and training programs.

While both organisations were committed to continuing development of personnel in the power industry, there was absence of coordination of the programs for seminars and training courses.

To prevent clashes in the programs in timing and content discussions between the two bodies were held which concluded in an agreement where annual programs would be exchanged and also the details of any international experts would be made known to the other body.

The cooperation and coordination will lead to a better spread of training and development programs over the year, minimisation of peaks in training activities and clashes in content, and possible better utilisation of resources.

ANC Awards

The contributions to ANC-Cigre and CIGRE of Peter Tyree, former Chairman of ANC-Cigre and immediate past Treasurer of CIGRE, were recognised when he was made an Honorary Member of ANC at the meeting.

Phil Southwell, appointed recently as Chairman of SC C1, received the Award of Merit in recognition of his contributions and initiatives provided to AP C1 and SC C1.

CIGRE WGs Chaired by ANC Members

Members were updated on the progress of two working groups being chaired by ANC Members. The WGs were: A2.23 Transformer Fire Safety Standards, and B2.39 Validation of Design Guidelines Implemented for High Intensity Winds.

Election of Directors

Mr Robert Wilson Managing Director Wilson Transformer Co., Dr Patrick Strange Chief Executive of Transpower NZ, and Prof. Michael Dureau Sydney University, were elected unopposed to the positions of General Directors on the ANC-Cigre Board.

CIGRE WGs Chaired by ANC Members

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AORC Panel B1

The activities of the Asia Oceania Regional Committee Panel B1 (Insulated Cables) over the past 12 months, and its future meetings program was presented to the delegates by Ken Barber.

ANC-API Essay Competition Prizes

The ANC and API had sponsored prizes for API Bursary holders who entered the National Energy Essay Competition organised by the Warren Centre for Advanced Engineering of Sydney University. Three prizes were awarded, and Ms Lucy Burke from Adelaide was able to attend the ANC meeting where she was presented with her prize from Richard Bevan and Mike Griffin CEO of API. The prize winners were amongst the youngest entrants to submit essays to the competition.

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ANC NEWS

ANC Membership Fees

The Board at its recent meeting decided to leave all membership fees unchanged for 2009. The present fees have now remained unchanged since 2002.

Study Committee Meetings in Australia

The following Study Committees have accepted ANC-Cigre's invitation to hold their meetings in Australia.

SC A1 (Rotating Electrical Machines) in Sydney, 20-25 September 2009. (Study Committee Meeting and Colloquium) Refer to 2009 Calendar of Events for further details.

SC B4 (Power Electronics and HVDC) in 2011. More details on this SC meeting and associated events will be advised nearer to the date.

2009 Calendar of Events

The events for 2009 that have been confirmed are listed here for members' information:

17-18 March 2009 Melbourne. SEAPAC (South East Asia Protection & Automation Conference)

20-25 September 2009 Sydney. CIGRE Study Committee A1 (Rotating Electrical Machines) Meeting and Colloquium.

The topics to be covered by the Colloquium are:

- Generator asset management: (condition assessment; refurbishment; upgrading; uprating; remaining life assessment).
- Large (>100MW) air-cooled generators: (design; life expectancy; maintenance issues).
- Generator grid connection aspects and issues.
- New developments in machine design: (insulation; cooling; materials generally).

Photographs from ANC Meetings

Members who have attend recent ANC meetings will be aware of photographs being taken during the meeting and associated events. The person masquerading as 'paparazzi' is a fellow member David Strong and he has kindly provided copies of photos from recent meetings to the ANC. If you are interested in a copy of the photos on a CD please contact the ANC office. Please allow 3-4 weeks for copies to be made and posted to you.

Obituaries

It is with sadness that we advise the recent passing away of the following members:

Mr Terry Sherman. Formerly of QEC, Terry was instrumental in organising the first ANC Regional Meeting which was held on the Gold Coast in 1993.

Dr Ron James. A strong and active supporter of ANC-Cigre, he was the first Convener of AP 15 (Materials for Electro-technology). Ron was a dedicated CIGREAN and for many years was the ANC representative on SC 15. Recently he jointly wrote a book on condition assessment of high voltage insulation which was published by IET.

CIGRE NEWS

CIGRE 2008 Session

The Session this year attracted record numbers with over 3000 delegates registering for the event. The Discussion Sessions which covered 41 preferential subjects, and attracted 430 papers, were held over four days.

The Opening Panel on 'Integrating Large Shares of Fluctuating Power Sources into Power Electric Systems' and the Workshop on 'Large Disturbances' were held on the first day and attracted large audiences. A panel session was also held on Electric Power Engineering Education which addressed the subject of 'CIGRE – A Learning Platform in Electric Power Engineering'.

The contributions to the Panel Sessions and the Workshop have been posted on the CIGRE website www.cigre.org.

Tim Baker (Convener AP C5) and Garry Brennan (Convener AP B2) were Special Reporters for the Discussion Session, while Ken Brown (Convener AP C2) chaired the Workshop on Major Disturbances.

CIGRE Awards

The CIGRE Technical Committee has recognised the contributions to Study Committee work and activities of two ANC members and awarded them the CIGRE Technical Committee Award. The recipients were John Linton (Convener AP A1) and Gary Brennan (Convener AP B2). Congratulations on achieving these awards are extended to the two members.

CIGRE President & Treasurer Appointments

Mr Yves Filion (President) and Mr Peter Tyree (Treasurer) completed their terms of office during the CIGRE 2008 Session, and the Administrative Council appointed Mr Andre Merlin from France as President and Mr Paulo Cesar Vaz Esmeraldo from Brazil as Treasurer.

Mr Merlin is Special Advisor for the European Commission on Energy. He has a long association with CIGRE from involvement in Working Groups to Chairman of the Technical Committee, and Chairman of the French National Committee, and prior to his appointment as special advisor he was the Chief Executive of RTE, the transmission network utility in France.

New CIGRE Working Groups

Cigre has recently announced the formation of the following working groups:

C4.206 – Protection of the High Voltage Power Network Control Electronics against intentional Electromagnetic Interference.

C4.603 – Analytical Techniques & Tools for Power Balancing Assessments.

D1.19 – Solid Insulation Endurance Stressed by Repetitive Transient Voltages Caused by Power Electronics.

D1.25 – Application Guide for PD Detection in GIS using UHF or Acoustic Methods.

D1.23 – Diagnostics & Accelerated Life Endurance Testing of Polymeric Materials for HVDC application.

D1.24 – Potential of Polymer Nanocomposites as Electrical Insulation for Highly Stressed Insulation Materials in AC & DC Applications.

A1.13 – Feasibility of Updating from Class F to Class H the Electrical Insulation Systems in Electrical Rotating Machines.

A1.14 – Guide for Minimising the Damage from Stator Winding Ground Faults in Hydro-generators.

B4/C3/B2.50 – Electric Field & Ion Current Environment of HVDC Overhead Transmission Lines.

C4.409 – Lightning Protection of Wind Turbine Blades.

B1.29 – Guidelines for Maintaining the Integrity of XLPE Transmission Cable Accessories.

C5.9 – Retail Market Competition–Customer Switching, Metering & Load Profiles.

B1.32 – Recommendations for Testing HVDC Extruded Cable Systems for Power Transmission at a Rated Voltage up to 500 kV.

C5.10 – Establishment of Effective & Sustainable Regulatory Incentives for Capital Investments in Electricity Networks & Generations.

B5.23 – Short Circuit protection of Circuits with Mixed Conductor Technologies in Transmission Networks.

B5.24 – Protection Requirements for Transient response of Voltage and Current Digital Acquisition Chain.

B5.27 – Implications and Benefits of Standardised Protection Schemes.

B5/B4.25 – Impact of HVDC Stations on Protection of HVDC Systems.

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