March 13th, 2008

CIGRE SC B2

OVERHEAD LINES

2007 ACTIVITY REPORT

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1. SC working bodies : new and disbanded WB since the last March TC meeting

According to the decision of TC, SCB2 is reorganising its activities creating new WG with focused TOR and disbanding old permanent WG.

Four Technical Advisory Groups have been created in 2007 :

- AGB2.04: Electrical performance (D. Douglass)
- AGB2.05: Towers, foundations and insulators (J. da Silva)
- AGB2.06: Mechanical behaviour of conductor and line equipment (D. Hearnshaw)
- AGB2.07: Asset Management, Reliability and Availability (J. Rogier)

Their responsibilities are :

- to coordinate WG within the scope of the Technical AG ;
- to identify future direction of the technology in the technical area.
- to prepare new items of work and to submit them to CAG and SC Chairman
- to coordinate TUTORIALS between different WG ;
- to attract new Members and retain existing members.

Four Working Groups have been disbanded since last TC meeting in March 2007 :

- WGB2.03 “Insulators”
- WGB2.06 “Principles of Overhead Line Design”
- WGB2.11 “Mechanical Behaviour of Conductors and Fittings”
- WGB2.12 “Electrical Aspects of Overhead Transmission Lines”.

14 New WG have been created :

Three within the technical area “Electric performances” :

- WGB2.26 : A Guide to Evaluating and Accepting New Types of Overhead Conductor including those running at high temperature
- WGB2.36 : Guide for Application of Direct real time monitoring systems on Overhead Transmission lines,
- WGB2.38 : Evaluation of High Surge Impedance Load solutions for increased natural capacity of OHL,

One within the technical area of “Insulators, foundations and towers” :

- WGB2.21 :Arc Protection and Diagnosis for Composite String Insulators,

Five within the technical area “Mechanical behaviour of conductor and line equipment” :

- WGB2.25 : Preparatory studies on specifications for revision of IEC testing of Self Damping and conductor fatigue characteristics (new IEC Spec.), for high temperature Fittings (IEC 61284), for tests on spacers (IEC 61854) and on dampers (IEC 61897),
- WGB2.30 : Engineering Guidelines relating to fatigue endurance capability of conductor/clamp systems,
- WGB2.31 : Modelling of Aeolian Vibration of Single Conductors,
- WGB2.32 : Assessing the performance of aged fittings: - Testing, acceptance criteria & recommendations for HV & UHV Lines,
- WGB2.33 : Guidelines for cable cart/trolley (cycling) safety on old conductors (earthwires) equipped with aircraft warning markers (and other fittings),

Five within the technical area “Asset Management, Reliability and Availability” :

- WGB2.22 : Mechanical security of overhead lines with effective failure containment measures : design loading cases and strategies for effective anti-cascading supports,
- WGB2.29 : Anti-and de-Icing Systems for HV and UHV Overhead Lines

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- WGB2.34 : The Impact of Line Configurations on electric and magnetic fields, radio interference and audible noise for 800 and 1100 kV OHL,
- WGB2.39 : Validation of Design guidelines implemented for High Intensity Wind,
- WGB2.40 : Calculations of the electrical distances between live parts and obstacles for OHL : Preparatory studies for revision of IEC standard (IEC61865 –IEC60826 –EN50341)

Four old permanent WG are going to be disbanded before mid 2008, waiting the publication of their last report or technical brochure :

- WGB2.07 : Foundations
- WGB2.08 : Transmission Line Structures
- WGB2.13 : Maintenance and Management of Existing Overhead Lines
- WGB2.16 : Meteorology for overhead lines

In order to develop overall optimised system solutions, SC B2 cooperates with the systems oriented study committees of CIGRE in the following two joint working groups **(JWG)**:

- Impact of HVDC lines on the economics of HVDC project (**JWG B2/B4/C1.17**) which will finalised its work in 2008.
- Increasing capacity of overhead lines (**JWG B2/C1.19**). This JWG started activities in 2004 and will be disbanded in 2008.

One joint Task Force **(JTF)** dealing with OHL Geographical and asset information system (**JTF B2/D2.18**) has completed his three years duration Task Force and will report in mid 2008.

2. SC publications and tutorials since the last March TC meeting and publication plan for 2008 and beyond

In 2007, SC B2 has produced numerous results among which the publication of 6 Electra Articles, including 5 Technical Brochures and 1 Web Article.

– Electra #232 + web	Generic specification of an ideal load reduction (WG 06)
– Electra #232 TB#322	State of the art of conductors galloping (WG 11)
– Electra #232 TB#324	Sag-tension calculation Methods for OHL (WG 12)
– Electra #234 TB#331	Considerations relating to the use of high temperature conductors (WG 03, WG 11 and WG 12)
– Electra #234 TB#332	Fatigue endurance capability of conductor/clamp systems update of present knowledge (WG 11)
– Electra #234 TB#333	Guide to the establishment of naturally polluted insulators test stations (WG 03)

Eight tutorials sessions were held in 2007 by the WG's. Six during the WG's spring session meeting and one at the SC B2 session (Helsinki) and one at C1 session (Osaka):

- **WG 07 Foundation** (N. Cuer, conv.)
  - **York,** England, April 2007, WG spring meeting:
    - Tutorial on TB 308 "Foundations installation an overview";
    - 26 persons from Power utilities, consultants and OHL contractors.

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- **WG 08 Tower** (J. da Silva, conv)
  - **Montreal,** Canada, May 2007, WG spring meeting
    - Joint activity with seminar of NSERC/HQTE industrial chair of Université de Sherbrooke (Prof. Louis Cloutier, chairman);
    - 54 persons from Hydro-Quebec engineers (19), consultants engineers (9), university students (21) and university teachers (5).
- **WG 19 OHL Capacity Increase** (P. Pramayon, conv.)
  - **Helsinki,** Finland, July 2007, SC B2 meeting:
    - Joint activity with workshop presented by Finnish national Committee;
    - More than 110 persons who attented the SC B2 meeting;
    - **Osaka,** Japan, October 2007, in conjunction with SC C1 annual meeting;
- **WG 12 Electrical Aspect of OHL** (D. Douglass, conv.)
  - **Lisboa,** Portugal, May 2007, WG spring meeting:
    - Tutorial on TB 324, Sag/tension calculation method.
- **WG 06 Principles of OHL design** (J. Rogier, conv.)
  - **Prague,** Rep. Cschek, Mai 2007, WG spring meeting:
    - Tutorial on TB 278, line configuration, and TB 289, RBD.
- **WG 13 Management of existing OHL** (K. Lindsey, conv.)
  - **Orlando,** USA, January 2007, WG meeting:
    - Tutorial on upgrading and uprating of OHL.
- **WG 11 Galloping of conductors** (D. Hearnshaw, conv.)
  - **Helsinki,** Finland, July 2007, SC B2 Technical meeting:

    Tutorial presented by J.-L. Lilien and D. Havard; 94 persons.

For 2008 following publications are scheduled :

– Electra 237 TB 2008	Lessons to be drawn from ice and wind storms (WGB2.06)
– Electra 237 TB 2008	AC resistance of conductor (WGB2.12)
– Electra 238 TB 2008	Mid span clearances (WGB2.06)
– Electra 238 TB 2008	OHL response to High Intensity wind (WGB2.06)
– Electra ____TB 2008	Development of information system, as far as geographical and asset management (JTFB2/D2.18)
– Electra ____TB 2008	Probabilistic design of Foundations (WGB2.07)
– Electra ____TB 2008	Guidelines for design wind speed calculations in local topography (WGB2.16)
– Electra ____TB 2008	Basic Electric and Mechanical Performance of HVDC System (WGB2/04.17)
– Electra ____TB 2008	Increasing Capacity of OHL (JWG B2/C1.19)
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– Electra ____TB 2008	Comparison of general practice for lattice tower design an detailing (WGB2.08)
– Electra ____TB 2008	Discrepancies between predicted and measured value of towers during test (WGB2.08)
– Electra ____TB 2008	Improvement on the methodology of tower testing (WGB2.08)
– Electra ____TB 2008	Power Arc Protection of Composite Insulators Strings (WGB2.21)
– Electra ____TB 2008	Fatigue endurance capability of conductor / claim system (WGB2.30)

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3. SC website : on-line contents and date of last update

SC B2 has its own web site [http://www.cigre-scb2.org] in which all documents are published and may be downloaded. The web site receives about 410 visits per month. SCB2 web site is up dated every 2 months.

4. SC Strategic Plan and Action Plan : status

The main changes to the SC was the issue of non permanent working groups and the transition to new WGs. The SC has accepted shorter term (4 years) life of working groups. An action plan was drawn ensuring that the productivity is not decreased, that networking is maintained and that information from old working groups is not lost. The action plan stated that:

- Each old WG (irrespective of period of existence) have a revised TOR with a list of tasks that are to be completed beginning of 2008.
- The new 2008 working groups are to be proposed with tasks focused for the next 3 years.
- All actual conveners have proposed new future activities with terms of reference for each new topic and new WG. These new topics were based from a list of items coming from the SC B2 Target Groups .

Three advisory groups dealing with Strategic direction, Customer needs and Publications and Tutorials were defined to ensure better participation from the SC members.

Four advisory groups are created to coordinate WG, prepare new items of work to submit to CAG and SC chairman.

5. SC planned meetings in 2008 and beyond

The next Technical and Administrative meetings will be held in Paris in August 2008, in KOREA in 2009 and in ICELAND in 2011.

6. SC participation to Regional Meetings and Symposia : in 2007 and following years.

SC B2 has participating to SYMPOSIUM in CHINA in JULY 2007. The session 2-2 (lines) has been chaired by Liang Xidong (SC B2 member) and with Bernard Dalle (chairman of SC B2) as reporter.

7. Relations with other Organisations

WGs of SC B2 have regular exchanges with IEC TC 11, TC 36. Links with the Canadian Electric Association may also be pursued.

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