



STUDY COMMITTEE B2

Terms of reference of Working Group WG B2.39: 2008- 2011

Working Group title: Validation of Design guidelines implemented for High Intensity Wind

Convenor:
Henry Hawes (Australia)

Needs of Target Groups: (ref. SC B2 Strategic Plan of March 2006):

- Are representative climatic data available and are the weather assumptions valid? (§ 4.1)
- What is the line performance under dynamic loading ? (§ 4.3)
- What are the effects of dynamic loads on supports, foundations, conductors and accessories? (§ 4.4)

Terms of reference

Design loading guidelines, implementation and validation – High Intensity Wind damage mitigation in design of overhead line supports.

Conduct a detailed survey of utilities; review current and recent design practices and performance of OHL designed for HIW; **validate the effectiveness of HIW-design measures** implemented by utilities; review international research findings and correlate with current practices; provide correlation with synoptic wind loadings; and provide validated generic HIW design loading guidelines for OHL's in specific wind regional areas.

Background

In many regions of the world not exposed to atmospheric icing, localized High Intensity Winds (such as tornadoes and downdrafts whose wind profiles are different from synoptic wind storm) pose the greatest risk to failure of overhead lines. Some countries have adopted mitigation measures for specific projects, but the effectiveness of these measures has not been proven.

In other regions where localized HIW events now appear to be more frequent than previously anticipated, utilities are looking at simple ways of reducing the risk of catastrophic failures.

The goal is not to over design OHL supports so as to reduce to a minimum any probability of failure. However, the reliability of supports to localized HIW storms can be increased significantly with relatively simple improvements to the design loading assumptions as applicable for the particular HIW region.

Deliverables and Time Schedule

- Technical Brochure / Electra Report: June 2011; **Validation of the effectiveness of HIW design**
- Tutorial will be available just after issuing the relevant Brochure.

Countries that already expressed their interest to contribute (to be confirmed):

Australia, Brazil, Canada, New-Zealand, USA

Links with other SCs:

CIGRE SCs: C1, D1;

CIGRE SC B2 AGB2.07, AGB2.05, AGB2.06

IEC: TC 11, TC 11/MT1;

CENELEC: TC 11, TC11/WG 08;

ASCE 74, IEEE.

Approval by Technical Committee Chairman: Klaus Fröhlich

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