


CIGRE Study Committee B1

PROPOSAL FOR THE CREATION OF A NEW WORKING GROUP (1)

<p>WG* N° B1.45</p>	<p>Name of Convenor : Blandine HENNUY (Belgium) E-mail address: blandine.hennuy@laborelec.com</p>
<p>Technical Issues # (2): 9</p>	<p>Strategic Directions # (3): 2</p>
<p>The WG applies to distribution networks (4): Yes</p>	
<p>Title of the Group: Thermal monitoring of cable circuits and grid operators' use of dynamic rating systems.</p>	
<p>Scope, deliverables and proposed time schedule of the Group :</p> <p>Background :</p> <p>Nowadays, due to a more variable situation and increasing loads in the power grids, a dynamic rating system and other measurement values aid the asset manager in making optimal decisions in planning investments in the High Voltage grid. Based on measurement a grid operator can on the one hand decide if a hotspot in network should be taken away to increase the capacity or if the hotspot should be managed with the dynamic rating system and on the other hand will know the load and overload possibilities in real time and for the coming hours.</p> <p>Scope</p> <ol style="list-style-type: none"> 1) To review the literature (experience, history) on the subject 2) To establish the appropriate terminology and characterization parameters 3) To collect the present experience with thermal measurements on cable systems by means of a questionnaire 4) To define the needs of the grid operator 5) To determine which data should be collected in order to assess the transmission capacity of the link 6) To collect information about the technology 7) To examine the points of attention during installation 8) To describe the necessary maintenance operations and the time intervals between those operations 9) The WG will take into account system complexity, effectiveness, ease of operation, maintenance, history, experience of workers, practicality of retrofitting (if required) to existing circuits and cost. 10) The following assets will be managed: EHV, HV and MV cable systems, Underground and submarine cable systems and HVDC cable systems 11) The following points are considered as out of the scope: Integration with a temperature monitoring system of overhead lines, Systems that do not involve temperature measurements, Type, sample and routine tests of the systems and Thermal model of the cable system <p>Deliverables : Report to be published in Electra, Technical Brochure and tutorial</p> <p>Time Schedule : start : 2014 Final report : 2016</p>	
<p>Comments from Chairmen of SCs concerned :</p>	
<p>Approval by Technical Committee Chairman :  Date : 24/04/2014</p>	
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- (1) Joint Working Group (JWG) - (2) See attached table 1 – (3) See attached table 2
 (4) Delete as appropriate

Table 1: Technical Issues of the TC project “Network of the Future” (cf. Electra 256 June 2011)

1	Active Distribution Networks resulting in bidirectional flows within distribution level and to the upstream network.
2	The application of advanced metering and resulting massive need for exchange of information.
3	The growth in the application of HVDC and power electronics at all voltage levels and its impact on power quality, system control, and system security, and standardisation.
4	The need for the development and massive installation of energy storage systems, and the impact this can have on the power system development and operation.
5	New concepts for system operation and control to take account of active customer interactions and different generation types.
6	New concepts for protection to respond to the developing grid and different characteristics of generation.
7	New concepts in planning to take into account increasing environmental constraints, and new technology solutions for active and reactive power flow control.
8	New tools for system technical performance assessment, because of new Customer, Generator and Network characteristics.
9	Increase of right of way capacity and use of overhead, underground and subsea infrastructure, and its consequence on the technical performance and reliability of the network.
10	An increasing need for keeping Stakeholders aware of the technical and commercial consequences and keeping them engaged during the development of the network of the future.

Table 2: Strategic directions of the TC (cf. Electra 249 April 2010)

1	The electrical power system of the future
2	Making the best use of the existing system
3	Focus on the environment and sustainability
4	Preparation of material readable for non technical audience