

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

<b>WG* N° B1.50</b>	<b>Name of Convener :</b> Tiebin ZHAO (United States) <b>E-mail address:</b> tzhao@epri.com	
<b>Technical Issues # (2): 9</b>		<b>Strategic Directions # (3): 2</b>
<b>The WG applies to distribution networks (4): <del>Yes</del> / No</b>		
<b>Title of the Group: Sheath Voltage Limiters and Bonding Systems (Design, Testing, Operation and Monitoring)</b>		
<b>Scope, deliverables and proposed time schedule of the Group :</b> <b>Background :</b> <p>The basic information needed to design a bonding system is included in several documents such as Electra 128-1990, TB 283-2005, and TB 347-2008. Some of these documents need to be updated. In addition it is noted that cable bonding components and related national regulations have changed in recent years. The WG plans to address related issues with sheath voltage limiters (SVLs) and bonding systems.</p>		
<b>Scope :</b> <ol style="list-style-type: none"> <li>1. Basic information           <ul style="list-style-type: none"> <li>• Provide an overview of the functions of the bonding systems.</li> <li>• Review existing documents and other engineering information related to bonding systems.</li> <li>• Review service experience depending on bonding schematics, standing voltage and withstand levels.</li> </ul> </li> <li>2. Bonding system design           <ul style="list-style-type: none"> <li>• Consider different bonding designs: single point, multiple point (solid), cross-bonding, and point out different challenges regarding screen protection of cable systems, including joints, terminations and link boxes.</li> <li>• Provide basic knowledge (voltages, current rating, and energy absorption) for selection and implementation of bonding leads, link boxes and SVLs depending on cable system parameters and bonding designs.</li> <li>• Provide recommendations for screen insulation coordination.</li> <li>• Provide guidance on cable system models for overvoltage calculation using computer software. May work with liaison members nominated by SC C4 if such interests arise from C4 side on modeling aspects of this task.</li> </ul> </li> <li>3. Testing of bonding system           <ul style="list-style-type: none"> <li>• Provide guidance on testing of bonding system components.</li> <li>• Provide guidance on testing of bonding systems after installation.</li> </ul> </li> <li>4. Maintenance           <ul style="list-style-type: none"> <li>• Provide recommendations on maintenance of bonding systems including SVLs.</li> <li>• Provide testing criteria while considering interference with implemented monitoring systems.</li> <li>• Consider monitoring of bonding systems</li> </ul> </li> </ol>		
<b>Deliverables :</b> Technical brochure (that will supersede the existing documents) with summary in Electra, tutorial and recommendations to IEC		
<b>Time Schedule :</b> start : 2015		<b>Final report :</b> 2017

**Comments from Chairmen of SCs concerned :**

**Approval by Technical Committee Chairman :**

**Date :** 06/02/2015

A handwritten signature in black ink, appearing to read "M. Wald", written over a light grey background.

- (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)**

<b>1</b>	Active Distribution Networks resulting in bidirectional flows within distribution level and to the upstream network.
<b>2</b>	The application of advanced metering and resulting massive need for exchange of information.
<b>3</b>	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.
<b>4</b>	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.
<b>5</b>	New concepts for system operation and control to take account of active customer interactions and different generation types.
<b>6</b>	New concepts for protection to respond to the developing grid and different characteristics of generation.
<b>7</b>	New concepts in planning to take into account increasing environmental constraints, and new technology solutions for active and reactive power flow control.
<b>8</b>	New tools for system technical performance assessment, because of new Customer, Generator and Network characteristics.
<b>9</b>	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.
<b>10</b>	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)**

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