



July 27th, 2010

STUDY COMMITTEE B2

Terms of reference of Working Group B2.44 : 2010- 2014

WG number: WG B2.44	Name of Convener: Masoud Farzaneh, Canada
Title : Coatings for protecting overhead power network equipment in winter conditions	
Needs of Target Groups: SC B2 Strategic Plan, July 2009: <ul style="list-style-type: none">• Methods that will increase the reliability of lines	
Background : <p>One of the major problems of power transmission by overhead lines in cold climate regions is ice and snow accumulation on various equipment such as conductors and insulators. This may lead to major power outages caused by mechanical failures of line components or by flashover of insulators, as observed in Europe, Asia and North America in recent years.</p> <p>An interesting and promising technique to protect the lines in these conditions is the use of active coatings, or passive coatings with superhydrophobic/icephobic properties, which can significantly reduce or even eliminate ice accretion. In addition, some of these coatings can also provide protection against corrosion, while others, characterized by high permittivity or conductivity, can considerably improve the electrical performance of insulators under icing, pollution or combination of both. In addition to their hydrophobic and icephobic properties, these coatings would allow the reduction of corona noise levels and related interferences. As well, most of these coatings are applicable to other structures affected by icing, such as wind turbines.</p>	
Scope : <ul style="list-style-type: none">- Review and classify the icing events at the origin of major power outages, as well as their causes in order to discern associated patterns.- Review and classify active coatings, as well as passive coatings according to their hydrophobic/icephobic, anti-corrosive and electrical (permittivity and conductivity) properties.- Analyze the data and recommend the most appropriate coatings for applications to various equipment.	
Deliverables : <ul style="list-style-type: none">- Technical report and Electra article- Presentation at CIGRE session	
Time schedule : <ul style="list-style-type: none">- Establishment of the WG and definition of the proceeding (2011)- Completion of review and analysis (September 2012)- Preparation of 1st draft report and recommendations (2013)- Final report and presentation of results (CIGRE Session 2014)	
Other SCs and WG concerned by the work: <p>To be determined. Possible interest from SC A1 concerning applications to wind turbines.</p>	
Approval by TC Chairman: Klaus Fröhlich	Date: 06/09/2010