

STUDY COMMITTEE B2

Terms of reference of Working Group B2.45 : 2010- 2013

Working Group title:

Bushfire Characteristics and the Potential Impacts on Overhead Line Performance

Convenor: Hein Vosloo (South Africa)

Needs of Target Groups: (ref. SC B2 CAG Survey - July 2009)

- Anticipating climate change impacts on overhead line design and long service life
- Improved bushfire performance of overhead lines in serviceability and faster restorability
- The effects of wild fires on phase to ground mid span air gap and possible ways to mitigation – and design parameters to withstand the effects of bushfires

Terms of reference

This study group is to review the characteristics of wild fires in varying vegetation types, terrain, and associated climatic influences, and the criteria for flashover to occur during fires in close proximity to overhead lines; review electrical characteristics associated with fire trips; review climatology associated with severe fires where major outages have occurred, fire rated conditions, and the potential risk for severe fires; review possible mitigation measures that can be applied to reduce potential risk of fire trips; review climate change impact trends associated with recognised high fire risk regions; review vegetation management strategies and fire risk assessment techniques; and review fire trip impact mitigation techniques applied during extreme fire weather.

The working group study will produce a reference guide to enable a better understanding of wild fire, related fire trips, and for the design and operation of high voltage overhead lines to enable the reduction of risks associated with line trips and potential loss of major electrical load transfer capability in networks, during major wild fires in high fire risk areas.

Background

Fire related trips is a major concern for the performance of high voltage transmission industry in a number of sub tropical countries.

There is currently limited design material available on the subject of fire trips on overhead lines. Vegetation types and their management on overhead line corridors may vary around the world, but there are very distinct similarities in the characteristics of severe wild fire and associated climatology in sub tropical continental regions.

There is also continuing international research being carried out by bush and grass fire researchers following some major fire storm disasters in recent years in Australia and USA .

Major bushfires in Victoria, Australia in February 2009 following prolonged heat wave conditions caused almost 200 people to perish; major loss of property over thousands of square kilometres; numerous major transmission line fire trips and load loss; and loss of major interregional transmission interconnection.

Deliverables and Time Schedule

- Technical Brochure / Electra Report: June 2013
- Tutorial



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

Australia, South Africa, USA

Links with other SCs:

CIGRE SCs: C1, C2, C3,

Approval by Technical Committee Chairman: Klaus Fröhlich

Date: 06/09/2010