



WORKING GROUP FORM

Study Committee: B3

WG number: B3.31

Name of Convener: Mark MCVEY (US)

Title:

Air Insulated Substations Design for Severe Climate Condition

Terms of reference

Background:

Numerous substations throughout the world are facing, or will face, various severe climate conditions that require special attention from the substation planners or require equipment that can withstand these conditions and function successfully under them. Such severe climate conditions can include water flooding, extreme temperature both low - high conditions, heavy snow, and strong wind. Not all utilities and asset owners have already experienced or managed such severe climate conditions. The introduction and wide distribution of practical experience acquired by various utilities and users in this domain would benefit the wide community of Air Insulated Substations owners. The objective of this WG is to review current experience and practices of designing Air Insulated Substations and to share knowledge on counter measures, design and specification for severe climate conditions. The document is written from the perspective of planning, engineering, basic design, detailed design, equipment engineering, project engineers who may be facing problems for the first time.

Scope:

The work will do a survey of utilities attitudes to climate change and will:

1. Review the various practices applied in the utilities regarding the design and building of Air insulated Substations for severe climate conditions as follows:
 - Water flooding
 - Hailstorm
 - Low temperature exposure (below -30°C)
 - High snow levels affecting Limits-of-Approach and BIL
 - High temperature conditions (above +40°C)
 - High wind
 - Dessert conditions (sand storms, etc.) and others
2. Evaluate the effect of these conditions and mitigating measures employed by Air Insulated Substations owners. Research and propose alternatives if available.
3. Summarize points to be considered in the design of Air Insulated Substations for severe climate conditions.

Deliverables and time schedule:

- Electra paper and brochure before the end of 2013

SCs /Target Groups concerned

- Utility engineers, Asset owners, Consulting companies, Contracting companies, Manufacturers

Approval by TC Chairman: Klaus Fröhlich

Date: 01/02/2011