

Joint IEEE/CIGRE Task Force “Selection of Weather Assumptions for Overhead Line Ratings”

Sponsored by:

IEEE Subcommittee 15.11 “Towers, Poles, and Conductors”

CIGRE Working Group B2.12 “Electrical Aspects of Overhead Transmission Lines”

Joint Task Force Designations

CIGRE TF B2.12-6 & IEEE TF 15.11.2/6

Joint TF Goals

Building on an earlier utility survey by CIGRE WG12 and member experience, identify and describe a practical process for choosing suitably conservative weather conditions for the calculation of static thermal line ratings.

Identify and describe a logical process whereby suitably conservative weather conditions can be selected for use in conventional static thermal line rating methods based on limited field data collection. Though probabilistic methods may be discussed, the selection process is based more upon engineering judgment than upon mathematics.

Deliverable: A technical brochure sponsored by both CIGRE and IEEE that clearly describes a conservative process whereby weather conditions may be selected for overhead line rating calculations.

Recent Activities

Panel Session held at Denver IEEE Power Engineering Society

Presentations at: http://www.geocities.com/ieee_tpc/index.htm

CIGRE Working Group Meeting in Ljubljana, Slovenia

Minutes at: http://www.geocities.com/wg_12/index.htm

Action Plan

(Both IEEE and CIGRE WG's)

1. Collect data of weather and/or rating measurements in actual transmission line environment.

Contact members of both CIGRE and IEEE to collect reports which include high quality weather data which is suitable for rating purposes. Explain the seasonal and daily variability of line ratings. Discuss variation of weather conditions and ratings along a transmission line. Summarize the findings and draw conclusions. Write a report which

will be the first part of the brochure. This report will provide the basis of recommendation 4(a).

Schedule: First Draft: November 15, 2004; Final Draft for comments: March 1, 2005

2. Identify the common terminology and underlying assumptions for line ratings.

Write definitions which describe common rating objectives (clearance limitations, annealing etc.) and clarify the common rating classifications (normal, static, transient, emergency, contingency). Write a report which will be the second part of the brochure. Schedule: First Draft: November 15, 2004; Final Draft for comments: March 1, 2005

3. Guidelines for experimental determination of line ratings

Describe meteorological equipment limitations and capabilities. Discuss the importance of site selection. Provide guidelines for instrumentation and statistical treatment of collected data. Write a report which will be the third part of the brochure. Schedule: First Draft: December 15, 2004; Final Draft for comments: March 1, 2005

4. Recommendations for ratings

Rating recommendations based on three different levels of knowledge:

- (a) Very conservative, to be applied if no valid field measurement data is available.
- (b) Moderately conservative, which can be applied if justified by analysis of field measurements.
- (c) More aggressive line rating assumptions which are possible when lines are monitored in real time.

These recommendations will be based on expert consensus.

Schedule: First Draft: February 28, 2004; Final Draft for comments: March 31, 2005.

Overall time line:

- Final Draft Reports from the teams to full TF by March 31, 2005
- Final Reports to be ready for publication at the end of 2005.

Current members:

Chairman (both CIGRE and IEEE Task Forces):
Tapani O. Seppa, The Valley Group, USA.

	CIGRE	IEEE
Dr. Dale Douglass, PDC Inc., USA	x	x
Mr. Afshin Salehian, TVG, Inc., USA	x	x
Mr. Jerry Reding, BPA, USA		x
Mr. Woodrow Whitlatch, PG&E, USA		x

Mr. Nicholas DeSantis, Florida Progress, USA		x
Mr. Jimmy Robinson, Duke Power		x
Dr. William Chisholm, Kinetrics, Canada		x
Mr. Sven Hoffmann, National Grid, U.K.	x	
Dr. Andrew Maxwell, STRI, Sweden	x	
Ms. Michele Gaudry, EdF, France	x	
Dr. Ralph Puffer, E.ON, Germany	x	
Mr. Javier Iglesias, Red Electrica, Spain	x	
Mr. Rob Stephen, ESKOM, South Africa	x	
Mr. Kresimir Bakic, ELES, Slovenia	x	
Mr. Svein Fikke, Meteorological Consultant, Norway	x	
Mr. Don Koonce, Virginia Power, USA		x