

Real-time Line Thermal Rating with direct conductor measurement

WG 36

Rob Stephen – Chair

Gerhard Biedenbach - Secretary

Main targets of WGB2.36 (Guide for Application of Direct real time monitoring systems) Countries represented

- **Main targets : Deliverables and time schedule**
To identify and describe general requirements for direct real time capability monitoring systems for overhead Transmission lines.
 - Definitions of report 22-304 (2000), guidance for direct systems based on measurement of conductor temperature, tension sag or clearance.
 - Placement of sites, accuracy and resolution requirements etc will be covered.
 - Technical brochure and Electra summary in place end 2010.
- **List of the WG Regular Members with their country :**
 - **CANADA**(George Watt) ; **USA** (T. Seppa, D. Douglass) ; **GERMANY** (R. Puffer, G. Biedenbach); **BELGIUM** (B. Risse) ; **BRAZIL** (S. Ueda) ; **ITALY** (F. Massaro); **UK** (S. Hoffman); **FRANCE** (Patrick FERRIERES); **SCC2** (Rui Pestana, Ninel Cukalewski)

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- First:
 - 1 - What information is needed by the operator? [maximum power flow (MVA/amps) and time for which the maximum applies (minutes, hours)]
 - 2 - What field data is necessary to produce what the operator needs or can utilize? [direct meas of conductor temp, air temp, solar heat input, line current]
 - 3 - How "effective perpendicular wind speed" is calculated from the field data and how well this works at low line current?
 - 4 - How point measurement of cond temp, average over span and average over line section impact calculated real-time line thermal rating?

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THEN:

5 - If not direct meas of cond temp, how is this determined from line measurements such as sag, clearance, tension, catenary tilt, vibration frequency?

6 - Advantage and disadvantage of various direct measurement approaches in terms of operator needs.