CIGRE Study Committee N° D1.37

PROPOSAL FOR CREATION OF A NEW WORKING GROUP

WG D1. 37	**Name of Convenor :** Edward Gulski (The Netherlands) **Name of Secretary:** Thomas Strehl (Germany)

Title of the Group: Guidelines for basic and practical aspects of partial discharge detection using conventional (IEC60270) and unconventional methods

Background: PD detection and evaluation belong to fundamental measurements applied to HV components. Due to on-going development process of their application in laboratory and under field conditions there is a continuous need to support this process with guidelines for PD detection and testing describing new and established methods.

Scope :

1. Maintenance of IEC 60270:
   - Specification of pulse parameters of internal step voltage generators of PD calibrators,
   - Specification and evaluation of PD quantities relevant for PD tests under DC voltages,
2. Evaluation of quantities to correlate conventional (IEC6027) PD detection to unconventional methods:
   - definition of quantities and procedures to consistently correlate standardized PD [pC] and unconventional (HF and acoustic) instrument reading(s),
   - Overview (case studies) of good-praxis methods to apply and to evaluate PD measurements for testing purposes of different components,
   - effects of advanced noise suppression and signal processing techniques on the reading(s) sensitivity,
3. Methods to determine the sensor sensitivity:
   - evaluation procedures of parameters to describe the sensor-sensitivity,
   - frequency spectrum (magnitude, power spectrum),
   - impedance of sensors versus frequency / effective high

With regard to component specific issues of detection and measurements techniques possible cooperation with

a) IEC TC 42 High Voltage Testing Techniques
b) Cigre SC A1 Rotating Electrical Machines
c) Cigre SC A2 Transformers
d) Cigre SC B1 Insulated Cables

Deliverables: Guidelines for basic and practical aspects of partial discharge detection using conventional (IEC60270) and unconventional methods

Products:

1. WG progress report (Electra paper) on recommendation modification to conventional PD detection
2. WG progress report (Electra paper) on unconventional PD detection
3. WG final report (Cigre brochure) on Guideline for PD detection on HV components

Time Schedule:

2010: Kick-off meeting: definition of activities; appointment of WG members,
2011: progress report on recommendation modification to conventional PD detection; support to IEC TC42
2012: progress report (Electra paper) on conventional PD detection
2013: progress report (Electra paper) on unconventional PD detection

Final report: 2013, final report (Electra brochure) Guideline for PD detection on HV components

Comments from Chairmen of SCs concerned : A1, A2, A3, B1

Approval by Technical Committee Chairman : Klaus Fröhlich **Date** :27/05/2010