

PROPOSAL FOR CREATION OF A NEW WORKING GROUP

JWG* N° A2/D1- 41	Name of Convenor : Prof. Küchler (DE)
Title of the Group: HVDC transformer insulation – Oil conductivity	
Background : JWG A2/B4.28 showed the impact of conductivity variations of combined oil/solid insulation system components on design and reliability of HVDC Converter Transformers. The effectiveness of existing standard dielectric DC and PR tests in respect of oil conductivity and polarization time has been reviewed. Oil conductivity was found to be the dominant factor and, considering that there is no standard procedure, which is consistently applied to the measurement of oil conductivity, this could result in dielectric stress during test lower than in service. Therefore JWG A2/B4.28 recommended that the priority shall be assigned to measuring oil conductivity throughout the transformer lifecycle and evaluating the effect of the oil conductivity during the design and design review stage.	
Scope of work: The proposed WG will undertake the following tasks: <ol style="list-style-type: none">1. Review available literature on conduction mechanisms in organic liquids, in systems with uncovered and covered electrodes.2. Review techniques and standards for measurement of conductivity of liquids, and how representative they are for conditions in an oil gap in a composite HVDC insulation system.3. Give recommendation of sampling and handling of samples of oil taken from service.4. Guidance for evaluation and interpretation.5. Advise on possibilities for a simple and representative test of oil quality to be used by suppliers, OEMs and End Users. This is to be used for acceptance tests and during service, if possible.6. Advise a test procedure for measurement of conductivity of oil impregnated pressboard.7. Perform a campaign of measurements to determine oil conductivity values of HVDC transformers at production and in service.8. Analyze the impact of the values found in respect of dielectric test effectiveness and reliability.9. Suggestions for new standards, if possible.	
Tasks (deliverables): The task force should produce: <ol style="list-style-type: none">1. A brochure2. A resume article suited for Electra and IEEE Insulation magazine3. A power point tutorial	
Time Schedule : Start Feb 2010	Final reports : Dec 2013
Comments from Chairmen of SCs concerned : Pierre Boss (A2), Ernst Gockenbach (D1)	
Approval by Technical Committee Chairman : Klaus Fröhlich Date : 01/03/2010	