

**APPLICATION FORM  
FOR  
CREATION OF A WORKING GROUP OR TASK FORCE**

**CIGRE Study Committee: D1**

**WG or TF number: TF D1.19      Name of Convener: Joachim Holboell (DK)**

**Title: Solid insulation endurance under transient voltages**

**Terms of reference**

**Background:**

The endurance of high voltage components is affected by the character of the voltage applied. The risk of transient voltages reducing the expected life of insulation systems is already known in connection with rotating machine insulation. Recent problems with transformers in windmills indicate a need for more fundamental analysis of the insulation endurance under transient voltage application.

**Scope:**

The task force shall focus on the occurrence and the effect of transient voltages on modern solid insulation systems and test methods for characterization of this effect. Initially, different mechanisms responsible for limiting endurance due to transients need to be identified and in-service experiences need to be collected and analyzed. This work will take part in close cooperation with apparatus groups within Cigré, where investigations in this area earlier have been undertaken. As an example, working group D1.07 has collected experiences with machine insulation exposed to voltages from adjustable speed drives.

Based on the initial work the tasks will be to categorize the exposure of modern solid insulation systems to electrical transients as seen from the insulation 'hot spot', to analyze and compare existing insulation endurance test methods with respect to their coverage of the range of these categories, to identify possible needs for new test methods for transient endurance, possibly including relevant non-electrical aging mechanisms.

**Deliverables and time schedule:**

Electra paper on transient exposure of insulation systems  
Report to D1, including identification of needs for further work

**Other SCs concerned by the work: SC A1, A2, C4**

**Approval by Technical Committee Chairman**

**Date :**