APPLICATION FORM
FOR
CREATION OF A WORKING GROUP

Study Committee: **A1**

WG number: A1.31 **Name of Convener: Franz Ramsauer (Austria)**

Title : State of the art of stator winding supports in slot area and winding overhang of Hydro Generators

Terms of reference

Background :

Generators are designed for operating over a long period of life. High quality of the stator winding insulation system and its support concept is an important factor to guarantee the expected reliability, as it is one of the most critical component for generator unavailability and forced outage rates.
Winding support systems problems are mainly caused by setting processes due to thermo mechanical movements, shrinking processes of organic materials as well as by dielectric degradations in the slot area, the winding overhang and the end winding region, which can lead to damage and breakdown of the high voltage insulation.
The expectations to the winding support system are:

- High reliability
- Low or even no maintenance costs
- Sufficient life expectancy, which should at least be higher as the expectancy for the stator winding

Worldwide experience on winding support systems of large rotating electrical machinery shows, that in several cases the high technical demands could not be fulfilled.

Scope :

The goal of the working group is to investigate the state of the art of windings support concepts with focus on:

- Design of support concepts
- Operation experience with winding supports
- Winding support failure detection techniques during commissioning, operation, maintenance, …
- List of major defects on winding supports during normal operation (e.g. vibrations) and during disturbances (e.g. short circuits), how often do they occur
- Solutions for solving winding support system problems
- The investigation of the working group will focus on Hydro Generators

Deliverables: Report or Technical Brochure to be published in Electra

Time schedule :

- Draft questionnaire – June 2011
- Comments by members and experts – September 2011
- Final questionnaire – December 2011
- Survey – answers – April 2012
- Draft report – July 2012
- Comments by members and experts - Paris 2012
- Final document (Report or Technical Brochure) – March 2013
- Approval of final document – SC-A1 Colloquium 2013

Other SCs concerned by the work: None

Approval by Technical Committee Chairman: Klaus Fröhlich **Date** : 01/06/2011