

PROPOSAL FOR THE CREATION OF A NEW WORKING GROUP (1)

WG* N° A1.55	Name of Convenor : Sun Yutian (China)
Technical Issues # (2): X	Strategic Directions # (3): 2
The WG applies to distribution networks (4): No	
Title of the Group: Survey on Split Core Stators	
<p>Scope, deliverables and proposed time schedule of the Group:</p> <p>Background :</p> <p>The significant size of large hydro generators makes it impossible to transport them as integral units and also makes site installation very difficult. A split core stator is a practical compromise. The design of a split core stator is more critical than a single continuous stator core as a poor design can result in core vibrations, noise or shaft voltage and can even lead to core and/or winding damage, shortening stator life. It is therefore imperative to investigate and summarize the state of the art designs, manufacturing, transportation and installation of split core stators as it will add significant value to engineering applications in the hydro-generator market.</p> <p>Scope :</p> <p>To conduct a survey on State of the Art of split core stators, the following work should be included:</p> <ul style="list-style-type: none"> ● Shaft voltage analysis on different split core scheme ● Vibration analysis on different split core schemes ● Investigation into experiences on generators with split core stators ● Study on design criteria of split core stators ● Criteria for choosing a split core stator ● Specific technical specifications for split core stators ● Economic demonstration of the best approach ● On site installation procedure ● Core joints mechanical design (including magnetic and winding insulation aspects) <p>Deliverables : Report to be published in Electra or Technical Brochure with summary in Electra</p> <p>Main Tasks and Time Schedule:</p> <ul style="list-style-type: none"> ● TOR approval – January 2016 ● Forming of team – February/March 2016 ● Draft questionnaire 1 – September 2016 (to be presented at Paris meeting) ● Comments by members and experts – December 2016 ● Final questionnaire – March 2017 	

- Draft report 1– August 2017 (to be presented at Vienna meeting)
- Comments by members and experts – December 2017
- Final report approval – April 2018
- Document ready to be published in Electra – June 2018
- Tutorial - August 2018 (to be presented at Paris meeting)

Comments from Chairmen of SCs concerned :

Approval by Technical Committee Chairman :

Date : 12/01/2016

A handwritten signature in black ink, appearing to read "M. Wald", is written over the signature line.

- (1) Joint Working Group (JWG) - (2) See attached table 1 – (3) See attached table 2
(4) Delete as appropriate

Table 1: Technical Issues of the TC project “Network of the Future” (cf. Electra 256 June 2011)

1	Active Distribution Networks resulting in bidirectional flows within distribution level and to the upstream network.
2	The application of advanced metering and resulting massive need for exchange of information.
3	The growth in the application of HVDC and power electronics at all voltage levels and its impact on power quality, system control, and system security, and standardisation.
4	The need for the development and massive installation of energy storage systems, and the impact this can have on the power system development and operation.
5	New concepts for system operation and control to take account of active customer interactions and different generation types.
6	New concepts for protection to respond to the developing grid and different characteristics of generation.
7	New concepts in planning to take into account increasing environmental constraints, and new technology solutions for active and reactive power flow control.
8	New tools for system technical performance assessment, because of new Customer, Generator and Network characteristics.
9	Increase of right of way capacity and use of overhead, underground and subsea infrastructure, and its consequence on the technical performance and reliability of the network.
10	An increasing need for keeping Stakeholders aware of the technical and commercial consequences and keeping them engaged during the development of the network of the future.

Table 2: Strategic directions of the TC (cf. Electra 249 April 2010)

1	The electrical power system of the future
2	Making the best use of the existing system
3	Focus on the environment and sustainability
4	Interactive communication with the public and with political decision maker