

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

<b>WG* N° A1.57</b>	<b>Name of Convenor :</b> Fred Claassens (South Africa) <b>E-mail address:</b> fred.claassens@eskom.co.za
<b>Technical Issues # (2): XXXX</b>	<b>Strategic Directions # (3): 2</b>
<b>The WG applies to distribution networks (4): No</b>	
<b>Title of the Group:</b> The Visual Inspection of Stator Windings and Cores of Large Turbo Generators	
<b>Scope, deliverables and proposed time schedule of the Group:</b>  <b>Background :</b>  <p>The purpose of this Working Group is to set out the generator inspection requirements that should be complied with during outages when work is performed on generators. Inspections performed on generators and all of their components are some of the most important tasks expected of a person responsible for these state of the art components and must be performed by adequately trained and experienced maintenance personnel, generator contractors and all other supporting staff. Generators are high capital equipment and perform an essential function in the power generation process. All safety aspects such as the high kinetic energy present in the rotating rotor shaft, the presence of Hydrogen gas which can be extremely hazardous and the presence of high voltage on the stator terminals and stator winding require diligent scrutiny to ensure optimal performance. This Working Group will recommend an inspection regime and the necessary competencies that are necessary to avoid generator failure.</p> <b>Scope :</b>  <p>To conduct a survey on best practices employed pertaining to the following generator related equipment:</p> <ul style="list-style-type: none"> <li>● Quality plans</li> <li>● General Procedures</li> <li>● General inspection requirements</li> <li>● Periodic maintenance inspections           <ul style="list-style-type: none"> <li>- End-winding support structure inspections</li> <li>- Core inspections</li> <li>- Back of Core inspections</li> <li>- Casing inspections</li> <li>- Terminal box inspections and</li> <li>- Rotor inspections</li> </ul> </li> <li>● The Visual Inspection of the stator - <b>Rewinding:</b> <ul style="list-style-type: none"> <li>* Prior to Stator Rewind</li> <li>* Before bar installation</li> </ul> </li> </ul>	

- \* During bar installation
- \* Before installation of the circular phase connections
- \* Before polymerization
- \* Before installing the Teflon hoses
- \* Before inserting the rotor
- \* With Rotor Out
- \* With Rotor In

**Deliverables :** Report to be published in Electra or Technical Brochure with summary in Electra

**Main Tasks and Time Schedule:**

- TOR approval – March 2016
- Forming of team –April 2016
- Draft questionnaire – 15 June 2016
- Comments on draft by members and experts – 1 August 2016
- Discussion at Paris meeting
- Final questionnaire issued – 30 September 2016
- Responses due – 20 December 2016
- Draft report – 30 April 2017
- Comments by members and experts – 30 July 2017
- Final report approval – Vienna Meeting – September 2017
- Document ready to be published in Electra – November 2017
- Tutorial - August 2017 (to be presented at Vienna meeting)

**Comments from Chairmen of SCs concerned :**

**Approval by Technical Committee Chairman :**

**Date :** 29/04/2016



- (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)**

<b>1</b>	Active Distribution Networks resulting in bidirectional flows within distribution level and to the upstream network.
<b>2</b>	The application of advanced metering and resulting massive need for exchange of information.
<b>3</b>	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.
<b>4</b>	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.
<b>5</b>	New concepts for system operation and control to take account of active customer interactions and different generation types.
<b>6</b>	New concepts for protection to respond to the developing grid and different characteristics of generation.
<b>7</b>	New concepts in planning to take into account increasing environmental constraints, and new technology solutions for active and reactive power flow control.
<b>8</b>	New tools for system technical performance assessment, because of new Customer, Generator and Network characteristics.
<b>9</b>	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.
<b>10</b>	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)**

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