CIGRE Study Committee B3

PROPOSAL FOR THE CREATION OF A NEW WORKING GROUP [1]

WG* N° B3.46	**Name of Convenor: Mark McVey (USA)** **E-mail address**: mark.mcvey@dom.com
Technical Issues # [2]: 10	**Strategic Directions # [3]:** 2,3
The WG applies to distribution networks [4]: Yes	
Title of the Group: Guidelines for Safe Work Methods in Substations	

Scope, deliverables and proposed time schedule of the Group:

Background:

This proposed new WG, "Guidelines for Safe Work Methods in Substations" will investigate the experiences and practices of utilities in working safely in AIS, GIS and MTS substations. Safe work methods are relevant at several stages of the asset life-cycle (including temporary and permanent works) such as design, energization, patrol, inspection, operation, maintenance, modification or extension, refurbishment or replacement works and countermeasures for accidents and safety incidents.

The WG will also introduce a suggested training menu and activities to ensure safe working methods are prepared for staff members in a utility and/or for contractors' staff.

Scope:

A questionnaire will be issued to investigate the practices and experiences of utilities regarding methods to: make work plans and to carry out safe work practices, identify points to be considered and monitored during the works, how utilities train staff and contactors for each stage of the works, what procedures are used and what are their responsibilities.

The results will be evaluated and experiences will be shared, especially, but not limited to:

- Items to be planned and prepared in the method statements for each stage of projects, concept to works completion
- Safety measures and practices, with signage and work area indication, quality of works to be monitored step-by-step during each stage of the works
- Pre-commencement safety discussions and work processes for job scope change or response to accident or injury
- Utility measures to ensure safe working practices when subcontracting the works
- Discussion of minimum approach distances for working in an energized AIS and MTS substations
- Operation, interlock and protection safety scheme arrangements for each stage of work with shut down areas and other arrangements.
- Discussion of Human Performance and design as part of lessons learned
- Possible emergency cases (based on real experiences) and actions
- Safety guidelines of steps to do and not to do at each stage of the works
- Recommendation for staff and contractors for working safely including training, certification, licenses and evaluation of safety metrics and performance

Documented experiences will be shared and summarized as a guideline for working safely. The purpose is to have staff and workers understand correct utility practices, so that utility and contractor can proceed and complete work with zero accidents. **Deliverables:** Technical Brochure published: December 2018 Summary in Electra: October 2018 Tutorial: Late 2018 **Time Schedule**: start: August 2016 **Final report**: 2018
Comments from Chairmen of SCs concerned:
Approval by Technical Committee Chairman: **Date** : 04/09/2016

(1) or 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	Preparation of material readable for non technical audience