

CIGRE Study Committee B5 «Protection and Automation»

PROPOSAL FOR CREATION OF A NEW WORKING GROUP

WG B5.45	Name of Convenor : Cahuet Eric (FRANCE)
Title of the Group: Acceptance, Commissioning and Field Testing Techniques for Protection and Automation Systems	
Scope, deliverables and proposed time schedule of the Group	
Background: Modern numerical relays and systems can have a large number of integrated functions and impose additional test requirements over older, more traditional and simpler static and electromechanical relays. Such systems and relays would be difficult and time consuming to test using traditional test equipments. At the same time, test equipments have also become much more sophisticated and higher functionality software driven, enabling much faster and comprehensive testing. New communication capabilities added to the numerical relays and the data that must be sent to Substation control system systems under fault conditions adds new possibilities for relay testing.	
Scope: Collect information about homologation like procedures, considering: <ul style="list-style-type: none">a) Relay hardware testing by type tests based on existing international standards in order to ensure its environment performance.b) Steady state type test based on international standards in order to ensure its correct operation for its protection function.c) Dynamic type tests, using power system model and/or COMTRADE files to reproduce complex, dynamics and common faults, to insure its performance and operation times. To evaluate the performance of multifunction relays and systems appropriate to the factory acceptance, site acceptance and commissioning tests and practices that are needed. Collect information to establish acceptance, commissioning and troubleshooting practices in use around the world, particularly considering field monitoring and actions taken during incorrect operation: vendor's actions, end-user reports and statistics. Compare the timescales of traditional testing techniques for electromechanical/static relays with modern techniques for multifunction relays. Provide guidance to ensure and test that unused functions are switched off and do not impact protection functions in use and its behaviour to the DSAS. Recommended scope and coverage of FAT, SAT and commissioning tests of DSAS. Optimisation in coverage between these three test phases. Commissioning tests following an update of hardware, software or parameters on the SAS or the relays already in service. Role of automated tests and automated test analysis and reporting. Propose best practice acceptance, commissioning and troubleshooting guidelines and recommendations based on typical practices followed by utilities, contractors and vendors. Examples of typical digital testing scenario files (COMTRADE) for quick commissioning and checking amongst various parties involved especially in utilities that outsource protection and control design and settings. The testing and commissioning of distributed functions within protection and automation systems.	

Deliverables:

- Technical Report (Brochure) aimed at utilities and vendors containing current best practices and recommendations regarding Homologation, FAT, SAT, commissioning and field testing.
- ELECTRA Executive Summary
- Power Point Presentation for Tutorials

Time Schedule: start: 2011; Final report: 2014.

Comments from Chairmen of SCs concerned :

Approval by Technical Committee Chairman : Klaus Fröhlich

Date :03/01/2011