



Study Committee No: A3

WORKING BODY FORM

Group No : WG A3.27	Name of Convener : Rene Smeets (NL)
TITLE of the Group : The impact of the application of vacuum switchgear at transmission voltages	
Scope, deliverables and proposed time schedule of the Group :	
1 SCOPE OF WORKING GROUP	
<p>A first enquiry by the Current Zero Club amongst its members has revealed that more than 4000 vacuum circuit breakers (VCB) are in service at voltage levels between 72.5 and 170 kV, mostly in Japan and China. Given this result, and the fact that VCBs up to a rated voltage of 245 kV are under development, there is a need to study the impact of application of vacuum switching technology at voltages above 52 kV.</p> <p>The scope of the working group proposed to undertake this study is as follows:</p> <ol style="list-style-type: none">1) Establish an inventory of state-of-the-art of applications (who and for what?), products and development of high-voltage vacuum switchgear2) Investigate the impact of specific technical issues related to the application of vacuum technology at increasing voltages. Examples of such issues are: Fast interruption, low energy drives, (protection against) switching transients, dielectric issues such as capacitive switching (make and break), late restrikes etc. A strong input from users' side will be required here.3) Identify areas of possible improvement of standardized (IEC) requirements to better cater for vacuum technology e.g. those which may be based on assumptions of fluid based interrupters. Given a different sensitivity of vacuum (with respect to SF6) to a number of switching duties, an inventory will be made on this issue.4) Make recommendation regarding testing issues. Type testing of vacuum switchgear raises a number of specific issues for which the traditional synthetic test circuits have no answer yet. Solutions will be explored.	
2 PROPOSED CONTRIBUTIONS FROM OTHER STUDY COMMITTEES	
<p>This work falls entirely within the scope of SC A3 and no formalized involvement is expected from other SC's. A close liaison will be maintained with SC C4 with regard to system issues/impacts and IEC SC17A with regard to testing aspects.</p>	
3 DELIVERABLES AND TIME SCHEDULE	
<p>Results will be published in a Technical Brochure. General guidelines and recommendations on the application of VCB at high-voltage level will be highlighted. Interim reports/papers/tutorials will be prepared at key milestones during the life of the working group.</p> <p>The working group is expected to finish its work within 3 years</p>	

Approval by TC Chairman : Klaus Fröhlich

Date : 16/02/2009