

CIGRE A3

High Voltage Equipment

May 2012

CIGRE A3- High Voltage Equipment

- CIGRE Study Committee A3 covers High Voltage Equipment:
 - Switchgear (HV, MV)
 - Capacitors
 - Surge Arresters
 - Instrument Transformers
- 24 Countries have memberships
- Operates as Technical Advisory to IEC
- Focus on technical/engineering/scientific aspects only
- Work based WG meetings (separate)

A3.24

- **A3.24 – Tools for Simulating Internal Arc and Current Withstand Testing, chair- N. Uzelac, US, TOR available upon request**
- US members:
 - Nenad Uzelac, G&W
 - Mietek Glinkowski, ABB Inc.
- Last meetings: April 2012, Chicago, IL
- TB to be published first half 2013.

A3.25

- **A3.25 - Metal Oxide varistors and surge arresters for emerging system conditions**, chair- B. Richter, CH, TOR available upon request
- US members:
 - none so far, SPD Chair frank.waterer@us.schneider-electric.com
 - Corresponding members:
 - Jon Woodworth - Arresterworks
 - Mike Pouber - Hubbell

A3.26

- **A3.26 – Influence of shunt capacitor banks on circuit breaker fault interruption duties, Chair: Anne Bosma, SE, TOR available upon request**
- US members:
 - Roy Alexander, PPL
 - Luke Collette, Mitsubishi
- Corresponding members:
 - Mark McVey, Dominion
 - Jeff Nelson, TVA
 - Nicolas Toquet, Areva

A3.27

- **A3.27 – The impact of the application of vacuum switchgear at transmission voltages, chair: Rene Smeets, NL, TOR available upon request**
- US members:
 - Kirk Smith, Eaton
 - Mietek Glinkowski, ABB Inc.
 - Pete Meyer, S&C
 - Dave Johnson, consultant
- Corresponding member:
 - Ben Bufi, HVB
 - Ken Edwards, BPA
- global survey completed with 113 responses
- UGT group participated in the global survey with 22 responses (largest group!)
- Last meeting – Tokyo, Japan- April, 2012

A3.28

- **Switching phenomena and testing requirements for UHV & EHV equipment, chair: Hiroki Ito (Japan)**
TOR available upon request
- Field experience and switching behavior during and after commission
- Benchmark study of interrupting requirements of GCB based on model UHV/EHV networks
- Benchmark study of switching requirements of DS, HSGS and ES based on model UHV/EHV substations
- US members: Ben Shperling, NYPA

A3.29

- **DETERIORATION OF AGEING SUBSTATION EQUIPMENT AND POSSIBLE MITIGATION TECHNIQUES**
- Proposed Convenor: Ankur MAHESHWARI (AU)
- **Scope:**
 - Material and equipment deterioration/degradation
 - Lifetime (residual life) assessment techniques
 - Life extension:
 - Life management for new equipment
- **TOR** posted on our Webpage
- US Interested in participating: Jon Woodworth (Arresterworks), Ken Edwards (BPA)

A3.30

IMPACT OF OVERSTRESSING OF SUBSTATION EQUIPMENT

Proposed Convenor: Antonio Carvalho (BR)

- Review key network parameters and anticipated stresses affecting equipment capabilities
- Review of methods already in use to assess the risk of operating beyond the performance limits
- Identification of potential failure modes of overstressed equipment and their impacts (safety, reliability, availability)
- Determination of the capabilities of the equipment involved (Standards, Test Protocols, manufacturer's information, re-testing)
- Mitigation techniques
- Impact of overstressing on residual life (where immediate failure is avoided)
- Usefulness of information supplied at type and endurance testing & proposals for enhancements
- Interaction with age and/or condition information

TOR posted on our Webpage

US interested in participating: Ken Edwards (BPA)

Instrument Transformers with digital output

Proposed Convenor: Farnoosh Rahmatian, CA

- Proposal & analysis of procedures for calibration of the entire measuring chain, both in the factory and on site, for digital output of NCITs or for a SAMU connected to classical ITs and/or EITs.
- Description of the practical applications of using flexible EITs for on-site calibration without disconnection or de-energisation.
- Consideration and description of the migration of the digitalisation process from low voltage equipments (protective relays, meters, ...) to the high voltage equipments. Overall accuracy of the measurement chain, including transient responses for both protective and measuring classes, and taking into account the work of B5.24, will be proposed for consideration by IEC standardisation committees.
- Investigation & proposals for DC accuracy classes and calibration method for HVDC applications.
- Proposal & analysis of EMC test methods considering various earthing and shielding techniques for specific application of EITs and SAMU up to 1100 kV. A test procedure will be developed & proposed taking into account the requirements of the IEC 60044-8.
- Analysis & discussion of redundancy requirements for EITs and SAMU in the context of protection schemes.
- Proposal and analysis of solutions where control functions using digital signals, e.g. for disconnectors or circuit breakers, are integrated into the NCIT or SAMU hardware.

- 1 US member interested but dropped

The group will maintain a close dialogue with the relevant IEC committees via shared membership & mutual reporting.

CIGRE SC A3 meeting

- Meeting of Study Committee A3
 - August 2012 – Paris
 - Fall 2013 – New Zealand
- IEEE Presentation Tutorials proposed
 - A3.22-28 – UHV equipment – Fall 2012 meeting
 - A3.27 – Spring 2013