

INFORMATION AND RECOMMENDATIONS

* Why Preferential Subjects?

At CIGRE Sessions Authors do not present their papers. The delegates read the papers in advance and they discuss them around a set of questions given in a Special Report which incorporates the gist of the papers.

To discuss the papers in depth, Session papers must therefore address a strictly limited list of topics, referred to as "Preferential Subjects" and selected by each Study Committee of CIGRE. The "Preferential Subjects" are the main part of this "Call for Papers".

* How are papers selected?

The papers are selected on the basis of synopses.

- They are first screened by National Committees (where applicable), who are entitled to put forward a set number of Papers.
- Then the Study Committee Chairmen, who are in charge of the running of the discussions, will select the proposals received, under the coordination of the Technical Committee Chairman. Authors will be informed of the results.

- A Paper may still be turned down even once written out in full, if considered of insufficient quality.

* Who can propose a paper?

- The main author (assuming there is more than one) must be an individual member or must be collective member staff. Co-authors are not required to be CIGRE members. Co-authors may be from different countries; in this case the Paper is identified as an "International paper".

- A paper must focus on one preferential subject and only one.

- A separate synopsis must be drawn up for each paper proposal.

- The synopsis – 500 words minimum – must closely reflect the various points to be developed in the paper.

- When sending the synopsis, the name and address of the main author - and more importantly his email address which will be used for notification of the selection results -, the Study Committee reference and Preferential Subject addressed must be clearly specified.

- Template: Authors will make use of the sample pages for lay-out of synopses; these are available on the CIGRE website, page "2010 Session".

* Where are synopses to be directed?

- If the main Author is from a country with a CIGRE NC: The synopsis must be sent by the main author to his CIGRE National Committee (Contact details are available on the CIGRE website: see "Links/ National Committees" from the homepage). Any synopsis sent directly to the Central Office will be returned to the sender. For International Papers, the proposal must be sent to the NC of the main Author, only.

- If the main author is from a country where there is no National Committee:

The synopsis must be sent in electronic format (WORD or PDF) to the CIGRE Central Office, to the following address:
Sylvie.bourneuf@cigre.org

- If the proposed paper is written on behalf of a Study Committee (SC Allotment): The synopsis is sent directly to the Study Committee Chairman, who will transfer it to the Central Office.

* Deadlines for reception of the synopses

- Synopses must be received at the Central Office by May 18th 2009 at the latest. Past this date they will not be accepted.

National Committees are required to send all paper synopses to the Central Office by 18th May 2009 at the latest, which implies that National Committees will have received these synopses earlier. Hence authors must contact their National Committee who will let them know by which date they need to receive the synopses (allowing time for screening and meeting the Central Office deadlines).

- Authors from countries where there is no National Committee will be sending their synopsis directly to the Central Office. The strict deadline is 18th May 2009.

- Main authors will be notified of the selection results by the end of August 2009.

- Deadline for receipt of the full Papers at the Central Office is January 15th 2010.

* Acknowledgement of reception

The Central Office will acknowledge receipt of the synopses within 2 weeks. If no acknowledgement is received, the sender should forward the message once again, to make sure the proposal(s) will be duly taken into consideration for the selection process.



22nd to 27th August 2010
Cigre Session

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DEADLINES

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**RECEIPT OF SYNOPSSES AT CENTRAL OFFICE:
18th May 2009***

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**NOTIFICATION OF ACCEPTANCE:
End of August 2009**

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**RECEIPT OF FULL PAPERS AT CENTRAL OFFICE:
15th January 2010**

* Please contact your National Committee to know by which date they need to receive your synopsis for a prior screening.



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All information on the 2010 Session can be found on the CIGRE website:
<http://www.cigre.org/gb/events/session.asp>

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Cigre Session 43 Preferential subjects

STUDY COMMITTEE A1

PS1: Developments in Electrical Machine design and experience in service

- New trends in design, materials, insulation, cooling and bearings technology, improvements in efficiency and maintenance.
 - Impact of intermittent operation on the design of hydro and thermal machines.
 - Improvements in excitation control systems to deal with electromechanical oscillations, load rejection, torsional interactions, transient torques, overfluxing, voltage / reactive power control, etc.
- ### PS2: Lifetime management
- Refurbishment, replacement, power uprating, efficiency improvement, economic evaluation of proposed alternatives.
 - Risk analysis techniques for evaluating costs associated with increasing maintenance, failure rates and repairs, due to deferred capital expenditures.
 - Use of on-line monitoring and diagnostics for risk mitigation - costs and benefits of their implementation.
 - Development in commissioning and suppliers qualification of rotating machines.

STUDY COMMITTEE A2

PS1: Transformer incidents in service

- Fire prevention: new oils, new bushing technologies, avoidance of tank rupture, effectiveness of existing test standards (for equipment and material) in failure prevention, mitigation on urban underground substations, design factors and improvements.
- Fire mitigation: use of fluids with high fire point, fire wall, distances, sprinklers, risk assessment, modeling of internal overpressures by 3D methods.
- Environment: oil spill containment, new types of oil, smoke

PS2: Transformer Life

- Specification: technical and economical considerations for specification and design; experience with CIGRE TB 156.
- Procurement process: design review, experience with CIGRE TB 204, life cost calculations under a procurement perspective, sustainability factors to be considered on transformer evaluation.
- Maintenance: maintenance practice, diagnostic, new technologies, life assessment, use of online monitoring system and expert system, reinvestment policy.

PS3: Transformer Modelling

- Transients: High frequency modelling, to determine stresses induced by transformer system interactions (inrush, switching, ferroresonance), new tests requirements, protection measures, relevant data collection for modelling etc.
- Thermal: Distribution of losses, operation profiles, application of Computational Fluid Dynamics (CFD), parameters affecting accuracy, comparison with direct temperature measurements during heat run tests and in operation, sustainable thermal uprates and life extension by advanced simulations etc.

STUDY COMMITTEE A3

PS1: Development in HV equipment to cater for increasing system demands

- Increased transmission voltage (UHV).
- Increasing load current requirements for equipment e.g. facilitation of renewable and large generation site connections.
- Increasing fault current requirements for equipment.
- Limitations and developments in test techniques.
- Increased use of reactive compensation.

PS2: Lifetime management of HV equipment

- Effective assessment of end of useful life – analysis, testing & monitoring.
- Reliability assessment as a tool for lifetime management and as a driver for improved specification and design.
- Management of potentially over-stressed equipment pending replacement.
- Impact of environmental aspects.

PS3: Prospects for introduction of new HV technologies

- Fault current limitation.
- Vacuum for switching and/or isolation.
- Non-conventional instrument transformers.
- Prospects for application of new materials.

STUDY COMMITTEE B1

PS1: Technical challenges that have been overcome in newly installed underground and submarine cable systems

- Current state-of-the-art in the design of AC and DC, submarine and underground traditional cable systems.
- Current state-of-the-art in cable systems installation techniques.
- Experiences of operation of cable systems.

PS2: Key factors in current and foreseen development of cable systems

- Environmental impact.
- Balancing capital costs (including costs for Right of ways) vs operational costs (including costs for Operation and Maintenance, social costs, losses, dismantling etc).
- Prospects of UHV cable systems.

PS3: State-of-the-art and trends for cable system testing

- Qualification, type testing, routine, sample, after installation testing of cable systems.

- Representation of installation and operational stresses in testing of cable systems.
- Diagnostic testing of cable systems.

STUDY COMMITTEE B2

PS1: Managing the environmental impact of new and existing overhead transmission lines

- Methods of limiting visual impact (integration of OHL in the landscape, new tower designs,...), minimisation of audible noise, minimisation of environmental effects of the electric and magnetic fields.
- Methods for minimizing impact on land use, reduction of the construction, operation and maintenance impact.
- Overhead line component material recycling.

PS2: Increasing the power capacity of existing overhead lines by conversion of AC to DC or by increasing the voltage level

- Methods for AC to DC lines conversion (both conventional and innovative), combined AC/DC circuits on a common structure.
 - Re-construction of tower top geometry to accommodate higher AC or DC voltage levels, modifications of insulator type and configuration, use of surge arrestors.
- ### PS3: Assessment of overall electrical and mechanical availability of OHL
- New methods for estimating residual life of line components (conductors, fittings, supports, foundations).
 - Impact of component ageing, maintenance strategy, dynamic effects and climatic loading on mechanical line reliability.
 - Data management of climatic conditions and revised risk assessment in view of climate change.
 - Increasing overall line availability by adapting existing structures through the application of strategies such as anti-cascading devices.

STUDY COMMITTEE B3

PS1: New techniques/new design of substations

- Impact of stronger constraints with respect to footprint, severe climatic conditions and public amenity on substation design.
 - EHV/UHV substations.
 - Design and construction of substations for offshore wind farms.
 - Design of GIL for bulk power transmission.
- ### PS2: Existing substations, new challenges
- Residual life estimation – Risk assessment, replacement or refurbishment options.
 - Uprating of substations and existing equipment to increase network capacity.
 - Technical solutions for extension of substations on already existing footprint.
 - Reducing the impact of substations on the environment and vice versa.
- ### PS3: New secondary system challenges in substations
- Experience with the shorter lifetime of secondary equipment compared with primary equipment.
 - Impact of distributed generation on substation design.
 - Implication of IEC 61850 on substation design and performance.

STUDY COMMITTEE B4

PS1: Developments in HVDC and FACTS technology

- HVDC transmission at 800 kVdc and above.
- New topologies and developments in VSC Transmission.
- Multi-terminal and meshed HVDC configurations.
- HVDC and FACTS as a means to improve System Capacity, Performance and Efficiency.

PS2: HVDC and FACTS – Operating Experience and New Projects

- Interconnections using land and/or submarine cables and/or overhead lines.
- Embedding of HVDC and FACTS in AC Networks.
- Renewable Energy Applications.

PS3: HVDC and FACTS Project Development Issues

- Environmental issues for HVDC and FACTS schemes, including visual impact, earth return, audible noise, EMF & Ions.
- System performance with embedded HVDC links, including multi-infeed and ancillary services.
- Options Considered, Regulatory, Licensing, Project funding, and Technical Risks issues.

STUDY COMMITTEE B5

PS1: Protection, Control and Monitoring for the next decade

- New requirements for Substation Automation (SA) and Protection.
- New concepts for SA and Protection.
- Information recording and applications.

PS2: Impact of renewable generation and cogeneration on Substation automation and Protection

- Protection coordination.
- Connection & generator protection requirements.
- Automation and restoration policies.
- Islanding detection.
- Future trends on protection and automation.
- Consequences of HVDC infeed from off shore wind farms.
- Future trends in protection and automation.

Common Session D2/B5 (see D2)

STUDY COMMITTEE C1

PS1: Solutions for planning power systems for a low carbon energy future

- System design.
 - New technologies.
 - Reliability, social and economic impacts.
- ### PS2: New business processes to support / facilitate power system design for a low carbon energy future
- Integrated transmission and distribution planning.
 - Multi-regional / multi-national planning.
 - Alternative reliability standards.
 - More grid operational flexibility taking into account different generation and load profiles and locations.
- ### PS3: Asset management challenges/strategies (replacement, refurbishment and maintenance) for a low carbon energy future
- Future integration of large scale renewables.
 - Enhanced information needed.
 - Dealing with flatter load profiles, active distribution networks, uncertain generation, integration of new technology.

STUDY COMMITTEE C2

PS1: Enhancement of Operational Reliability

- Impact of dynamic security assessment and dynamic ratings on real time system operations.
 - Decision making tools and methods, system visualization techniques. Common format and quality of data for wide area modeling and assessment.
 - Balancing generation within transmission constraints, including distributed generation.
 - Impact of wind farm generation directly connected to the transmission system on the Grid code.
- ### PS2: Consistency and Coordination of System Control and Operation
- Challenges/experiences/trends of coordinated operation among TSOs for interconnected system.
 - Formulation and harmonization of operational reliability standards (criteria, performance indicators, compliance measures).
 - Impact of cross-border aspects for reliability and regulation on system operation. Issues on shared responsibilities in system operation and control between real time actors

STUDY COMMITTEE C3

PS1: Innovative Environmental Studies for Power Transmission Corridors

- Integration of Sustainable Development concepts throughout the life cycle • Integrated environmental management of corridors (impacts identification, control measures, monitoring, cumulative impact evaluation and mitigation strategies).
 - Stakeholders engagement and communication in the management of corridors.
 - Environmental Impact Assessment of joint corridors (power transmission lines and other linear infrastructure uses –e.g. railways, highways, gas pipelines...)
- ### PS2: External costs accounting of environmental and social impacts of Power Generation and Transmission
- Assessment of environmental and social external costs in Power Generation and Transmission.
 - Experiences of assessment and integration of external costs on a project base for the Power Sector.
 - Country-based experiences about external cost assessment and their inclusion in the total cost for the Power Sector.

STUDY COMMITTEE C4

PS1: EMC/EMF and PQ for future networks - compatibility requirements, assessment techniques/tools, and technical performance improvement programmes

- Management of PQ in networks with a high penetration of renewables, disturbing loads, and loads sensitive to PQ phenomena - technical and economical issues.
 - Extremely Low Frequency (ELF) field mitigation techniques for HV power systems.
 - Protection of the HV power network control electronics against intentional/unintentional Electromagnetic Interference.
 - Influence of power network on other installations.
- ### PS2: Advances in insulation coordination and lightning knowledge for improved performance of electric power systems
- UHV AC systems.
 - Lightning attachment to OH lines and to tall structures.
 - Earthing systems performance.
- ### PS3: Techniques and Tools for Power balancing assessments and Risk-based security assessment
- Modelling methods and tools for analyzing power balancing issues.
 - Risk based approaches.

STUDY COMMITTEE C5

PS1: Challenges of national or state regulations of transmission and system operators in regional markets

- Multi-regional markets developed for enhanced competition.

- State, Provincial or National regulations versus regional regulations (cross-border exchange, transmission capacity allocation, system expansion procedures, cost allocation – operation and expansion, congestion revenue allocation).
 - Market designs – harmonization of grid codes and transmission tariffs.
- ### PS2: Impact of intermittent resources or demand response on market designs
- Market design aspects and coordinated procedures for day-ahead and intra-day markets.
 - Enhanced flexibility of intra day markets to facilitate intermittent resources and flexible demand.
 - Ancillary service markets to effectively cover system needs and impact of increased share of intermittent resources on ancillary service requirements.
 - Rules for simplified access to the market
- ### PS3: Interactions of environmental incentives and markets (e.g. carbon) with electricity markets
- Impact of local/regional/national quotas on electricity market design and stability.
 - Challenges of different environmental incentives or support schemes within same market system.
 - Environmental market designs – impact on electricity market clearing procedures.
 - Return of experiences of environmental incentives.

STUDY COMMITTEE C6

PS1: Planning and operation of Distribution networks incorporating Dispersed Energy Resources (DER) and Renewables Energy Sources (RES)

- Performance characteristics of distribution networks with high penetration of DER/RES, Operating experiences.
 - Effect of large scale integration on reliability.
 - Provision of ancillary services by DER/RES.
 - Regulatory schemes to support DER/RES.
- ### PS2: Demand Side Integration
- Load characteristics of appliances.
 - Practical experiences of demand side integration through pricing.
 - Impact of electrical vehicles connection to the Grid (challenges and opportunities).
- ### PS3: New concepts and technologies for the electrification of rural and remote areas
- Microgrids.
 - Advanced grid based concepts and renewables.
 - Development of rural electrification projects including financial and commercial issues.
 - Practical experiences, including upgrading the local system and/or connection to the grid.

STUDY COMMITTEE D1

PS1: New materials for improved efficiency and sustainability of AC&DC power equipment

- Nanomaterials.
 - Biodegradable materials.
 - New gas compositions.
 - Recyclable materials.
 - Innovative polymers.
 - High Temperature Super Conductors (HTSC).
- ### PS2: Challenges for testing and diagnostics
- New requirements for ultra high voltage.
 - Interpretation of diagnostic results for condition assessment.
 - New test and monitoring methods .

PS3: Endurance of materials especially in harsh electrical and physical environments

- Off-shore applications.
- Repetitive transients.
- Load cycling.
- Thermal overload.
- Irradiated environment.

STUDY COMMITTEE D2

Common session with B5

PS1: Practical implementation of IEC 61850 in electric power systems

- Advantages for implementation outside the substation.
- Impact on substation automation (security, WiFi, teleprotection requirements).
- Architecture and information technology aspects between substation automation and remote communication.
- Communication needs for system protection schemes and wide area measurements (WAMS).

D2 Session

PS2: Information and Information Technology (IT) security for electric power utilities

- Convergence of physical and logical security.
- Frameworks for management of information security.
- Cyber security for Supervisory Control and Data Acquisition (SCADA) systems.
- Assessment and management of the risk in information and IT security.