CIGRE Study Committees

ROTATING ELECTRICAL MACHINES
SC A1

TRANSFORMERS
SC A2

HIGH VOLTAGE EQUIPMENT
SC A3

INSULATED CABLES
SC B1

OVERHEAD LINES
SC B2

SUBSTATIONS
SC B3

HVDC & POWER ELECTRONICS
SC B4

PROTECTION & AUTOMATION
SC B5

SYSTEM DEVELOPMENT & ECONOMICS
SC C1

SYSTEM OPERATION & CONTROL
SC C2

SYSTEM ENVIRONMENTAL PERFORMANCE
SC C3

SYSTEM TECHNICAL PERFORMANCE
SC C4

ELECTRICITY MARKETS & REGULATION
SC C5

DISTRIBUTION SYSTEMS & DISPERSED GENERATION
SC C6

MATERIALS & EMERGING TEST TECHNIQUES
SC D1

INFORMATION SYSTEMS & TELECOMMUNICATIONS
SC D2

FIELDS OF ACTIVITY OF STUDY COMMITTEES

A_1	**Rotating Electrical Machines** Economics, design, construction, test, behaviour and materials for turbine generators, hydro-generators, non conventional machines and large motors.
A_2	**Transformers** Design, construction, manufacture and operation for all kinds of power transformers including industrial,DC converters and phase-shift transformers and for all types of reactors and transformer components (bushing, tap-changer…)
A_3	**High Voltage Equipment** Theory, design, construction and operation for all devices for switching, interrupting and limiting currents, surges arresters, capacitors, busbars and equipment insulators and instrument transformers.
B_1	**Insulated Cables** Theory, design, applications, manufacture, installation, testing, operation, maintenance and diagnostic techniques for land and submarine AC and DC insulated cables systems.
B_2	**Overhead lines** Design, study of electrical and mechanical characteristics and performance, route selection, construction, operation, service life, maintenance, refurbishment uprating and upgrading of overhead lines and their components including : conductors, earth wires, insulators, towers, foundation and earthing systems.
B_3	**Substations** Design, construction, maintenance and ongoing management of substations and electrical installations in power stations, excluding generators.
B_4	**HVDC and Power Electronics** Economics, application, planning aspects, design, protection, control, construction and testing of HVDC links and the associated equipment. Power Electronics for AC systems and Power Quality Improvement and Advanced Power Electronics.
B_5	**Protection and Automation** Principles, design, application and management of power system protection, substation control, automation, monitoring and recording – including associated internal and external communications, substation metering systems and interfacing for remote control and monitoring.
C_1	**System Development and Economics** Economics and system analysis methods for the development of power systems : methods and tools for static and dynamic analysis, planning issues and methods in various context, assets management strategies.
C_2	**System Operation and Control** Technical and human resource aspects of operation of power systems : methods and tools for frequency, voltage and equipment control, operational planning and real time security assessment, fault and restoration management, performance evaluation, control centre functionalities and operators training.
C_3	**System Environmental Performance** Identification and assessment of the impacts on environment of electric power systems and methods used for assessing and managing the environmental impact of system equipment.
C_4	**System Technical Performance** Methods and tools for power system analysis in the following fields: power quality performance, electromagnetic compatibility, lightning characteristics and system interaction, insulation coordination, analytical assessment of system security.
C_5	**Electricity Markets and Regulation** Analysis of different approaches in the organisation of the Electric Supply Industry : different market structures and products, related techniques and tools, regulations aspects.
C_6	**Distribution Systems and Dispersed Generation** Assessment of technical impact and requirements which new distribution features impose on the structure and operation of the system : widespread development of dispersed generation, application of energy storage devices, demand side management ; rural electrification.
D_1	**Materials and Emerging Test Techniques** Monitoring and evaluation of new and existing materials for electrotechnology, diagnostic techniques and related knowledge rules, and emerging test techniques with expected impact in medium to long term.
D_2	**Information Systems and Telecommunications** Principles, economics, design, engineering, performance, operation and maintenance of telecommunication and information networks and services for Electric Power Industry; monitoring of related technologies.