

4th Session CG KO CIGRE – preferential topics

Group A1 - rotating electrical machines

1. Excitation systems of diesel power unit
2. Implementation of electrical machines in hybrid and electrical vehicle
3. Impact of secondary regulation to stability of generator in HPP Perućica operation
4. Electrical Drives applied to bridge cranes in HPP Perućica

Group A2 – Transformers

1. Experience in operation of transformers
2. Diagnosis and repair of transformers
3. New test methods, technology and monitoring

Group A3 - High voltage equipment

1. Problems of using of high-voltage equipment
2. Maintenance and repair of high-voltage equipment
3. New Testing methods, technology, monitoring

Group B1 – Cables

1. Laying of cables and cable accessories
2. Exploitation of cable
3. Cable Network
4. Regulation for cable and cable accessories

Group B2 – Overhead lines

1. Modern methods for designing, establishing the conditions, revitalization, construction and maintenance of overhead line
2. New technologies, materials, components and techniques for overhead lines
3. Standards and regulations
4. Economy and Management of overhead lines in terms of deregulated and competitive market

Group B3 – plants

1. Implementation of new technical solutions and technologies in plants and substations
2. Experience from reconstruction, modernization and maintenance of plants and substations
3. Transient hydro-mechanic regimes in hydro power plants
4. Optimization of electric power proper consumption in power plants
5. Reconstruction and modernization in power plants
6. Experience in construction and exploitation of SHPP

Group B4 - high voltage one-way (HVDC) systems and Power Electronics

1. Development of HVDC technology, including HVDC grids
2. Existing HVDC systems (performance , management, reliability , maintenance, environmental impact , ...)
3. Implementation of Power electronics in power plants using renewable sources of energy
4. Implementation of Power electronics in flexible systems of alternating current (FACTS)
5. Power electronic converters in electrical drives
6. Uninterruptible power supplies
7. New semiconductor components and topologies of converters

Group B5 - Protection and Automation

1. Application of numerical relays in relay protection techniques
 - ✓ Modern equipment for protection and local control
 - ✓ Implementation of modern domestic and / or international solutions
 - ✓ Testing Methods (Type and command testing)
 - ✓ Work Analysis of Protection systems, the criteria for the replacement or reconstruction of the secondary systems
2. Application of information technologies (IT)
 - ✓ IEC 61850 Protocol
 - ✓ Implementation and experience with Internet / Intranet and Web applications
 - ✓ Tele-protection (communications media, experience and applications)
3. Metering and billing systems and systems for power quality

Group C1 - Development and EEC economy

1. Strategies of Systems Development and capital investments
2. Asset Management of power companies using advanced methodologies
3. Development planning in conditions of uncertainty needs of consumption, production and electricity market
4. Impact of locations for future power plants and regional interconnection to the safety system
5. Securing investment in transmission networks with an increased share of renewable sources

Group C2 - the exploitation and management of EES

1. Increase of operational reliability
 - ✓ The importance of assessment of dynamic stability of systems for management in real time
 - ✓ Methods of state estimation, visualization and modeling of large power systems and corresponding software tools
 - ✓ Sources of balance energy and distributed generation in terms of congestion in transmission network

- ✓ The impact of windmill farms connected to the transmission network on the functioning of the systems
- 2. Coordination and harmonization of operational planning and management of EES
 - ✓ The challenges of coordination between transmission network operators in the interconnection
 - ✓ Interaction of transmission and distribution network – impact to operational management
 - ✓ Establishment and harmonization of work reliability standards of EESs (criteria, indicators, measures of compliance)
 - ✓ Impact of daily cross-border energy trade on the functioning of the systems

Group C3 - performances of the environmental protection systems

1. The harmonization of national legislation is with the standards and EU directives on environmental and labor protection
2. Global, regional and local impacts and evaluation of impacts of, the process of electricity generation from existing power plants to climate change, living and working environment
3. Environmental and other restrictions in terms of design and construction of new power facilities.
4. Waste management and treatment of waste from individual power plants

Group C4 - Technical performance of power systems

1. The impact of renewable and distributed power generation units on performance of power systems
2. Effects of low frequency electromagnetic fields and power plants to the surrounding structures
3. Electromagnetic compatibility
4. Surges and insulation coordination
5. Analysis of power systems reliability and security

Group C5 - electricity markets and deregulation

1. Electricity Markets (commercial models, institutions, characteristics, regulations, ...)
2. The electricity market in Montenegro and region (regulation, access, the Energy Community of South East Europe, regional initiatives, ...)
3. Customers and producers of electricity in the liberalized market (organizations, the optimal portfolio, suppliers, qualified buyers, cross-border capacities, ...)
4. Customers and their position in both the regulated environment, as well as during the transition process to establish a market
5. Techniques and tools used in the electricity market (the electricity prices forecast in liberalized markets, risk management, forecasting, standard products, tariffs, ...)
6. Market and renewable energy resources (connection, benefits, impact of power plants that use renewable sources of electricity to the system, the market and the network rules ...)
7. Balancing Mechanism and balance energy market
8. The experience of the supplier in the electricity market

9. Correlation between electricity markets with other markets (coal , gas , ...)

Group C6 - Distribution Systems and decentralized production

1. Planning, operation and maintenance of distribution network
2. Development and operation of energy systems with distributed and renewable energy source
3. The development of small power plants and their connection to the network
4. The influence of small generators to the distribution network
5. Smart grids

Group D2 - Information Systems and Telecommunications

1. Development and implementation of remote control system with a view of the experiences of the implemented systems
2. Advanced information technologies in the service of electricity organizations business
3. Planning, development and construction of telecommunication systems in electric power companies by using a different technologies and experience in the implementation of it
4. Joining of electric power companies on deregulated telecommunication market