Power System Planning and Operations

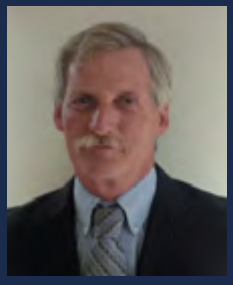
The electrical industry is facing unprecedented challenges on many different fronts, from the push for penetration of renewables to the effective planning and operations of the electrical grid with variable energy resources. The fast-paced implementation of smart grid technologies also present challenges for the analysis and effective management of big data.

To address these and other emerging issues, the Power System Planning and Operations Program (PSPO) focuses on new technologies that enhance the use of existing lines and facilities, adequately preparing to meet the needs of the future while continuing to maintain a high level of reliability. The program facilitates research and the exchange of technical information and best practices through a committee structure, developing specifications and guides and focusing on finding solutions to problems of mutual concern to electric utilities worldwide.

Topics & Issues

1. Advances in Power System Modelling and Analysis
2. The Use of New Technologies and Tools in the Power System
3. Expanding the Role of HVDC Transmission
4. Integrating Renewable Generation Sources and Storage Technologies

Technical Advisor



Mr. John Sabiston (BSc., P.Eng.) is an electrical engineer with 35 years of power utility experience at Ontario Hydro and Hydro One Networks Inc. He specializes in the areas of transmission system planning and was responsible for developing plans and getting approvals for over $2B worth of work over his career. He also participated on the Northeast Power Coordinating Council (NPCC) for 25 years of his career.

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Power System Planning and Operations

Selected Collaborative Projects

- Impact on Transmission Operation and Reliability when Integrating DER
- Investigation, Control, and Mitigation of SSTI and SSCI Between HVDC Installations and Wind Turbines or Turbine Generators
- Commissioning and Maintenance Best Practices Guide for HVDC Lines and Converter Equipment
- Fault Current Management at the Medium Voltage Level
- PMUs - New Applications and Disturbance Monitoring
- Transmission Planning with FACTS Devices & Emerging Technologies
- Predicting the Amount of Voltage Sensitive Load Lost during Contingencies – Phase I: Problem Characterization
- Maximizing Transmission Capability on Existing Rights-of-Way

Issues and Areas of Focus

Planning and Operations Practices

- Planning for Short Circuit Contributions from Wind and Solar
- Effective Planning Techniques for Evolving Smart Grid and Renewables Integration
- Peak Shaving Techniques and Practices
- HVDC Planning Solutions
- Smart Grid for Transmission - Planning and Implications

Means to Increase Capacity and Security

- Effective Use of Energy Storage Devices
- Dynamic Loading of Transmission Lines
- Exploration of Means to Reduce Line Outages due to Short Circuits
- System Adequacy
- Investigation of the Impacts and Mitigation Techniques Relating to Geomagnetic Disturbances

Modern Tools and Techniques

- Effective Utilization of Demand-Response Resources
- Tools and Techniques for Increased Uncertainty in Load Generation Patterns
- Wide System Monitoring to Enhance System Behaviour Tracking
- Power Flor Controllers: Economic Impacts

Market Operations

- Restructuring and Competitive Environments
- Price Elasticity of Power Demand

Annual Activities

- Annual Conference or Workshop
- 2 Face-to-Face Meetings
- Training Webinars
- Conference Calls
- On-Demand Information Exchange
- Collaborative Project Development

*Participation is open to Electrical Utilities, Independent System Operators, and Government Agencies.
For a complete project listing, please visit www.ceati.com/**PSPO**

CEATI International Inc. (CEATI)
1010 Sherbrooke Street W., Suite 2500
Montreal, QC, Canada, H3A 2R7
+1.514.866.5377 / www.ceati.com / info@ceati.com