Super Session Topic Details:

Extreme Events and Grid Resiliency

- What level of blackout is acceptable under extreme events conditions?
- How to respond to a disaster situation?
- Coordination of electric and natural gas infrastructure and inter-dependence during an extreme event or a natural disaster.
- Substation design for resiliency under storms, earthquake, and other natural disaster conditions.
- Advances in understanding and modeling Geomagnetic Disturbances (GMD) and Electromagnetic Pulse (EMP) phenomena, impact assessments, and mitigation.

Energy Storage

- Large-scale utility level energy storage, business cases and applications including peak shaving, reliability enhancement, intentional islanding, and micro-grids.
- Integration of renewable generation, energy storage, and demand response to achieve competitive energy cost.
- Energy storage technologies and long-term environmental considerations.
- Mobile energy storage, such as electric cars, and impact on a dynamic distribution grid.
- Advancements in energy storage technologies and hybrid storage technologies.

Cyber and Physical Security

- NERC requirements and standards for Cyber and Physical security in the Bulk Electric System.
- IEEE PES collaboration with DOE, NERC, and FERC in developing reliability standards and policy.
- Recent changes to cyber and physical security requirements.
- Best practices for cyber and physical security in electric power systems.

Distributed Generation (DG) Regulation, Engineering, Modeling, and Impacts

- Latest on regulations affecting DG, including rate design, community solar, value of solar, and US Assembly Bill 2514.
- IEEE Standard 1547 and the future of standards for interconnecting distributed resources with electric power systems, including challenges, gaps, and needs.
- Grid integration challenges and solutions associated with grids incorporating high penetration levels of DG, including modeling, analysis, and technology solutions (energy storage, demand response, etc.).
- Microgrids, including applications, business cases, challenges, and solutions.
- Protection and control challenges (and solutions) associated with grids incorporating DG.