



## Electric Utility Activities Related to Grid Security

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The major TDUs in Texas participate in lead roles at a national level to address the security of the electric grid. Major types of security concerns include cyber security, the physical security of infrastructure and the potential impact of geomagnetic disturbances (GMD) or electromagnetic pulse (EMP) events.

National activities include the development of mandatory North American Electric Reliability Council (NERC) standards and close collaboration with the Federal Energy Regulatory Commission (FERC), the U.S. Department of Energy, the U.S. Department of Homeland security, the National Institute of Standards and Technology and numerous utility based forums. Below is a catalog of other activities undertaken by utilities in Texas:

### Cyber security

- Ensuring data centers are primed for backup and quick recovery
- State-of-the-art processes and tools to monitor all cyber assets and to respond to cyber threats
- Staffing cyber security divisions with security experts who have deep backgrounds in military and/or banking security
- Ensuring real-time communication and collaboration with government agencies and other entities who are involved in cyber security.
- Constant assessment and improvement of systems and processes

### Physical Security

- Ensuring a robust transmission grid to mitigate outages resulting from a physical attack or natural disaster
- Working with the grid operator to identify risks and bottlenecks
- Expanding detection systems and remote surveillance at critical facilities
- Increasing engagement with local law enforcement at critical substation facilities
- Holding practice drills for service restoration
- Maintaining a sufficient fleet of spare equipment to address multiple contingencies

### Geomagnetic Disturbances and Electromagnetic Pulse (EMP) Events

- Replacing transmission line protection relays with microprocessor relays that are designed to meet electromagnetic standards and are hardened to reduce their susceptibility to EMP
- Reviewing designs, processes and procedures to reduce the amount of damage that would occur in the event of an EMP event
- Working with utilities and associations nationwide to determine best practices in EMP hardening
- Working with suppliers to enhance the EMP protection of enclosures and devices
- Focusing on monitoring of in-service transformers and corrective switching action, in order to prevent damage from a GMD/EMP event

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