Electric Transmission Reliability

History of NERC

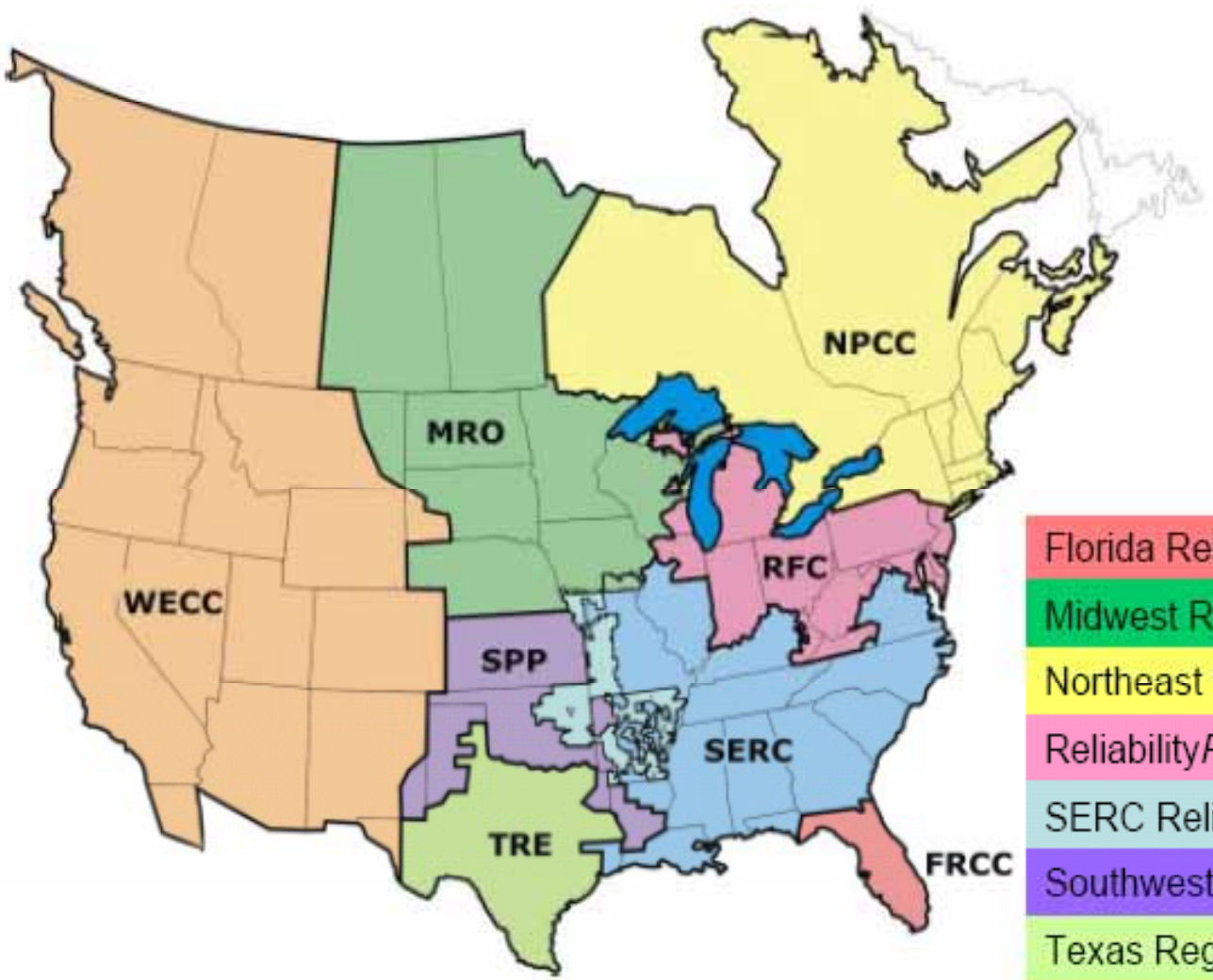
- 1965 Northeast Blackout #1
- 1968 North American Electric Reliability Council (NERC) formed
  - Voluntary compliance with reliability standards
- 2003 Northeast Blackout #2
- 2006 NERC accepted at the “Electric Reliability Organization” under FERC
- 2007 Reliability standards become “mandatory and enforceable” with fines up to $1,000,000

Electric Transmission Reliability
Reliability Concepts

- NERC defines the reliability of the interconnected bulk power system in terms of two basic and functional aspects:
  - **Adequacy —** The ability of the bulk power system to supply the aggregate electrical demand and energy requirements of the customers at all times, taking into account scheduled and reasonably expected unscheduled outages of system elements.
  - **Security —** The ability of the bulk power system to withstand sudden disturbances such as electric short circuits or unanticipated loss of system elements from credible contingencies.

Electric Transmission Reliability

Regional Entities



- Florida Reliability Coordinating Council
- Midwest Reliability Organization
- Northeast Power Coordinating Council
- Reliability*First* Corporation
- SERC Reliability Corporation
- Southwest Power Pool, Inc. (Regional Entity)
- Texas Regional Entity
- Western Electricity Coordinating Council

Electric Transmission Reliability

Reliability Standards

- Reliability Standards are the planning and operating rules that electric utilities follow to ensure the most reliable system possible.
- These standards are developed by the industry using a balanced, open, fair and inclusive process managed by the NERC Standards Committee.
- Proposed standards are reviewed and approved by the NERC Board of Trustees, which then submits the standards to the U.S. Federal Energy Regulatory Commission and Canadian provincial regulators for approval. Once approved by these governmental agencies, the standards become legally binding on all owners, operators and users of the bulk power system.
- Standards must be just and reasonable, not unduly discriminatory or preferential, and in the public interest. Participation by industry experts and compliance personnel in the standards development process ensures that the standards are technically sound, fair and balanced.

Electric Transmission Reliability
Compliance & Enforcement

- Along with the Regional Reliability Organizations, NERC has the legal authority to enforce compliance with NERC Reliability Standards, which it achieves through a rigorous program of monitoring, audits and investigations, and the imposition of financial penalties and other enforcement actions for non-compliance.

  Potential violations of reliability standards are identified through means including:

  - Self-reporting by owners, operators and users of the bulk power system, of specific incidents and events
  - Information provided in periodic reports:
    - Annual Compliance Reports
    - Regional Audit Reports
    - Vegetation Management Reports
- Information received by NERC from other industry participants
- Audits and other monitoring programs conducted by NERC or the Regional Entities
- Investigations by NERC or the Regional Entities

Electric Transmission Reliability
Reliability & Adequacy Assessments

- One of NERC's statutory roles is to conduct periodic, independent assessments of the reliability and adequacy of the bulk power system in North America. (Click here for definitions of "reliability" and "adequacy" as NERC uses them.)

  NERC prepares three reliability assessments each year:
  - A Long-Term Reliability Assessment that looks out 10 years, typically issued in the fall
  - A Winter Assessment, issued in the late fall, which reports on the reliability outlook for the coming winter season
  - A Summer Assessment, issued in the spring, which reports on the reliability outlook for the coming summer season.

- To prepare the reports, NERC consolidates data and information from the eight Regional Entities. The information is then analyzed to assess current and future electricity demand, and the adequacy of the bulk power system to meet that demand. Issues related to power generation, transmission, fuel delivery, fuel supply, and demand-side measures all are factored into the assessments.

  In addition, NERC identifies non-system factors that could impact reliability and adequacy, such as the ramifications of an aging workforce and environmental legislation.

Reliability of Facilities
A number of Commission initiated investigations

- Mostly storm restoration concerns
- Include non-storm outage complaints
- Number of means to improve reliability
- U-12270 led to administrative rules –standards
- Latest investigation initiated by order dated June 19, 2008 e-docket U-15605

Reliability of Facilities
Service Quality and Reliability Standards

- Developed under e-docket U-12270
- Unique to industry
- Distinguishes catastrophic storms
- Defines acceptable/unacceptable levels
- Company wide averages & individual customer level
- Credits for lengthy & frequent outages
- Required reports available on internet

Reliability of Facilities
Complaints

- Customer's first contact is utility
- PSC customer complaints could go to utility's Executive Customer Assistance Center
- Formal complaint- relief in form of better service
- Damage claims- relief through court