Patti Metro

Patti Metro has over twenty years of electric utility experience in the following areas: Distribution Planning, North American Electric Reliability Council Compliance and Reliability Standards Programs, Project Management, Transmission Engineering and Operations, System Operations and Training. In her present role as the Manager of Transmission and Reliability Standards at the National Rural Electric Cooperative Association (NRECA), she: acts as NRECA's principal technical expert on mandatory reliability standards, coordinates assigned transmission and system operation-related activities of the NRECA Transmission and Distribution Engineering Committee (T&DEC) and subcommittees, and advises NRECA staff on these issues in the development of technical comments to federal agencies, articles in NRECA publications and other communications vehicles including web-based technical communities. Patti feels the most rewarding times in her career have been storm restoration activities and her involvement with student and employee mentoring programs because this has allowed her to utilize her technical expertise and people skills to make a real difference. She is a NERC certified System Operator and a graduate of Clemson University with a Bachelor of Science degree in Electrical Engineering.

Patti Metro
Manager, Transmission & Reliability Standards
National Rural Electric Cooperative Association (NRECA)
4301 Wilson Blvd., Mail Code EP11-253
Arlington, VA 22203
PH 703.907.5817
FX 703.907.5517
CELL 571.334.8890
patti.metro@nreca.coop

Mandatory Reliability Rules
2008 Engineering Seminar

February 20, 2008
Anaheim, California

Patti Metro
Manager, Transmission & Reliability Standards
NRECA

National Rural Electric Cooperative Association
A Touchstone Energy® Cooperative

1

Introduction

- Reliability: ERO Era
- North American Electric Reliability Corporation (NERC) Compliance Registry Criteria
- Reliability Standards: Overview
- Compliance: Audits & Sanctions

2

Reliability – Old School

- Voluntary compliance with standards and policies
- Primary driver was peer pressure to adhere to standards/policies
- Focus was on Control Area Operator (CAO) compliance
- Very limited Federal government oversight

3

Reliability – ERO Era

- Mandatory compliance to Reliability Standards began June 18, 2007
- Monetary penalties, non-monetary sanctions and remedial actions are allowable for violations administered by Regional Entities (RE), NERC, or Federal Energy Regulatory Commission (FERC)
- Due process by RE and NERC, then approval by FERC
- Increased FERC role in reliability

4

Who Must Comply?

- Users, owners and operators of Bulk Power System (BPS)
- Compliance Registry populated and developed by REs
  - Provides guidance to determine who is a candidate for registration for certain Functions
  - Provides details on how G&Ts can register on behalf of its members
  - Refers to ability to protest registration

5

NERC Functional Model

- Reliability Coordinator (RC)
- Planning Coordinator (PC)
- Balancing Authority (BA)
- Market Operator/Resource Dispatcher (MO/RD)
- Resource Planner (RP)
- Transmission Operator (TOP)
- Interchange Authority (IA)
- Transmission Planner (TP)
- Transmission Service Provider (TSP)
- **Transmission Owner (TO)**
- **Distribution Provider (DP)**
- Generator Operator (GOP)
- **Generator Owner (GO)**
- **Purchasing-Selling Entity (PSE)**
- **Load-Serving Entity (LSE)**

6

NERC Compliance Registry Criteria

- Distribution Provider (DP) Function and Load-Serving Entity (LSE) Function
  - Peak load > 25MW and directly connected to the BPS
  - Designated as responsible entity for facilities required for:
    - Underfrequency Load Shedding (UFLS), Undervoltage Load Shedding (UVLS), required special or transmission protection systems
  - Exclusion – if other party takes responsibility via agreement/contract

7

NRECA Registered Entities

- G&Ts: ≈ 50
- Distribution Cooperatives: ≈ 100
- Total: ≈ 150

8

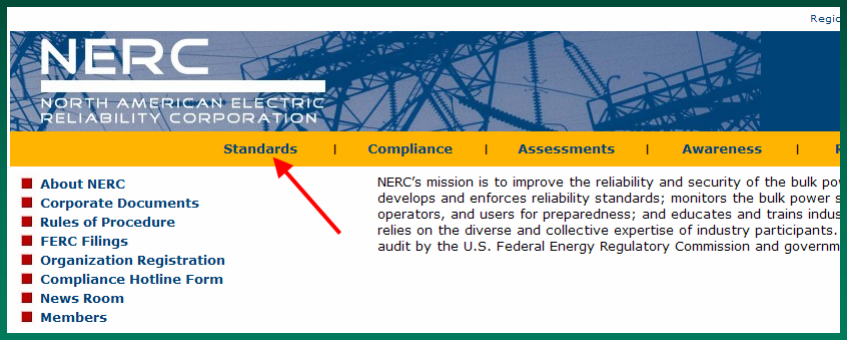
Reliability Standards Focus Areas

- BAL: Resource and Demand Balancing
- CIP: Critical Infrastructure Protection
- COM: Communications
- EOP: Emergency Preparedness and Operations
- FAC: Facilities Design, Connections and Maintenance
- INT: Interchange Scheduling and Coordination
- IRO: Interconnection Reliability Operations and Coordination
- MOD: Modeling, Data, and Analysis
- NUC: Nuclear
- PER: Personnel Performance, Training, and Qualifications
- PRC: Protection and Control
- TOP: Transmission Operations
- TPL: Transmission Planning
- VAR: Voltage and Reactive

9

Reliability Standards

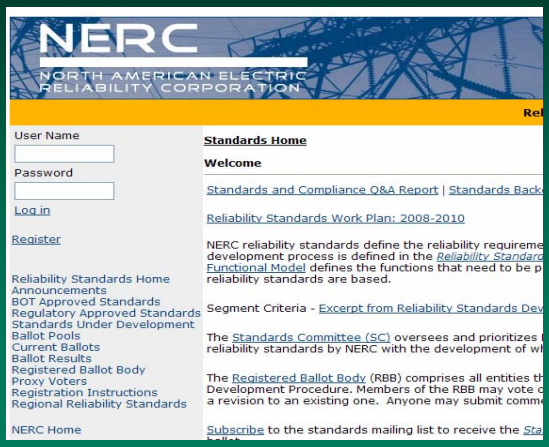
http://www.nerc.com/



10

Reliability Standards

https://standards.nerc.net/



11

Reliability Standards General Requirements

- **Documentation**
- **Directives**
- **Data Supply**
- **Assessments**
- **Analysis**
- **Maintenance and Testing**

12

Examples of Requirements

Standard PRC-008-0: Underfrequency Load Shedding (UFLS) Equipment Maintenance Programs

R1. The Transmission Owner and Distribution Provider with a UFLS program (as required by its Regional Reliability Organization) shall have a UFLS equipment maintenance and testing program in place. This UFLS equipment maintenance and testing program shall include UFLS equipment identification, the schedule for UFLS equipment testing, and the schedule for UFLS equipment maintenance.

13

Examples of Requirements

Standard TOP-001-1: Reliability Responsibilities and Authorities

R4. Each Distribution Provider and Load Serving Entity shall comply with all reliability directives issued by the Transmission Operator, including shedding firm load, unless such actions would violate safety, equipment, regulatory or statutory requirements. Under these circumstances, the Distribution Provider or Load Serving Entity shall immediately inform the Transmission Operator of the inability to perform the directive so that the Transmission Operator can implement alternate remedial actions.

14

Compliance Audits

- Focus on compliance with reliability standards
- Quarterly public non-compliance reports
- Timeframes
  - 3 year cycle for larger entities
  - 6 year cycle for smaller entities
  - Spot checks possible
- Violations will result in penalties

15

Sanction Guidelines

- How will penalties be assessed?
  - Monetary or operational
  - Aggravating factors (repeated violation)
  - Mitigating factors (compliance program)
- Ability to pay
- Mitigation plan
- Settlement permitted
- Financial penalties up to $1 million per day/per violation for most serious violations

16

Summary

Topics discussed:

- Changes from voluntary to mandatory compliance to FERC approved Reliability Standards
- NERC Compliance Registry Criteria
- Reliability Standards Overview
- Processes utilized to determine Compliance to Reliability Standards

17

Questions?

Patti Metro
Manager, Transmission & Reliability Standards
PH 703.907.5817
FX 703.907.5517
CELL 571.334.8890
patti.metro@nreca.coop

18