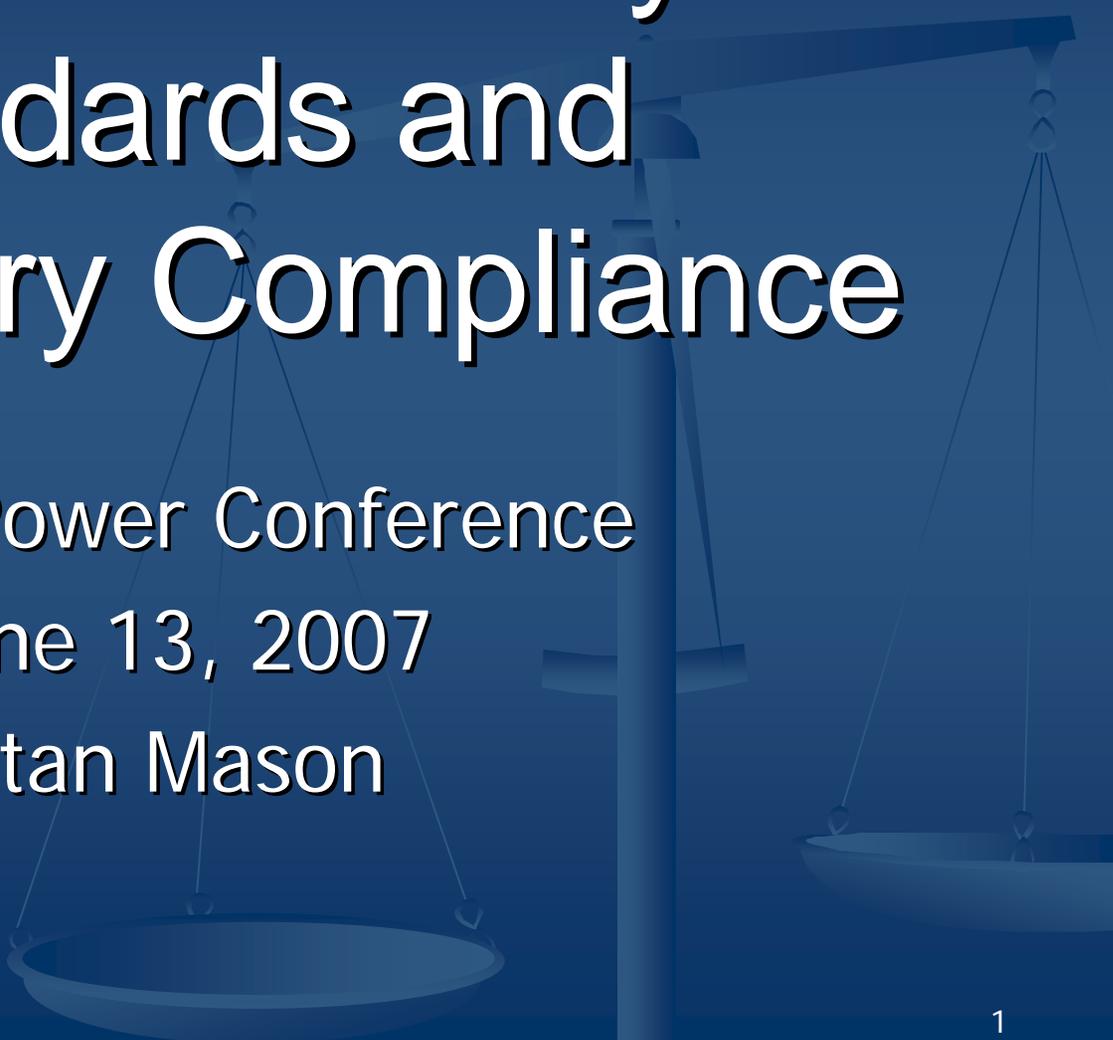


NERC Reliability Standards and Mandatory Compliance



Hydro-Power Conference

June 13, 2007

Stan Mason

EPACT 2005

- Congress approved the related legislation in August 2005
- It required creation of an Electric Reliability Organization (ERO) to be approved by the Federal Energy Regulatory Commission (FERC)
- It mandated Standards that would be approved by FERC with financial sanctions for non-compliance

EPACT 2005

- For Reliability Standards and Compliance, it included Federal and State agencies – “FERC shall have jurisdiction on all users, owners, and operators of bulk power system”

NERC approved as ERO

- July 20, 2006 FERC approved NERC as the ERO
- October 20, 2006 FERC issued NOPR on filed Standards and in March 2007, approved 83 Standards and directed improvement of 56 of these, while 27 approved as they are. FERC is designating 24 additional Standards as Pending. (Included in this group are the Standards related to Cyber Assets (CIP-002 thru CIP-009). **Over 1500 Requirements**)

NERC Functional Model

- Users of the system must register as the Responsible Entity for those functions they perform:

Balancing Authority

Distribution Provider
Generator Operator
Interchange Authority
Market Operator
Planning Coordinator
Regional Reliability Org
Standards Developer

Transmission Owner

Transmission Service Provider

Compliance Monitor
Distribution Provider
Generator Owner

Load-Serving Entity

Reliability Coordinator

Purchasing-Selling Entity

Resource Planner

Transmission Operator

Transmission Planner

(denotes Southwestern registration as Responsible Entity)

Functional Registration

- In February and March 2007, the Southwest Power Pool Compliance function received registration by various entities identifying themselves and the various roles they serve
- If SPP determined a user had not registered, the SPP staff registered that entity with NERC

Functional Registration

- SPP filed a registration for the Corps as a Generator Owner, Generator Operator, and Transmission Owner. Initially, SPP reported they had registered only one point of contact (Mark Dixson). After coordination with NERC and other Regions, SPP has completed the registration with NERC to include 4 Districts (KCD, LRD, MVS, and TD).

Functional Registration

- Points of Contact in each District
- KCD – Pete Henschel
- LRD – Mark Dixson
- MVS – Dennis Foss
- TD – Dan McPherson

Self-Certification of Compliance

- By June 18, entities should submit any areas of non-compliance with a corrective action plan to SPP. If they file a response that they are not in compliance with any Standard **AND** file a Mitigation Plan describing **HOW** and **WHEN** they will reach compliant status, sanctions are likely to be put in abeyance until the deadline in the plan

Self-Certification of Compliance

- Registered entities may notify SPP that they are compliant with all requirements or not respond at all. No response will be interpreted by SPP as stating an entity is in full compliance
- Southwestern has been working on the documentation required to be compliant with all FERC approved Standards and will begin the task of gathering documentation for the 24 Standards still pending FERC Approval

Violation Risk Factors

- NERC filed suggested Violation Risk Factors on each requirement of a Standard
- May 18, FERC issued an Order approving over 700 Violation Risk Factors but required NERC to file amended levels for 28 Requirements. In each of these 28 amended levels, FERC increased the level of risk for that Standard

Violation Risk Factors

- FERC changed 28 factors:
- 3 were increased from Lower to High
- 13 were increased from Lower to Medium
- 12 were increased from Medium to High
- NONE were reduced

Violation Risk Factors

- LOWER – is administrative in nature and that, if violated, is not expected to affect the state of the Bulk Power System or the ability to monitor, control, or restore the system

Violation Risk Factors

- Medium – is a requirement that, if violated, could directly affect the electrical state or the capability of the Bulk Power System or the ability to effectively monitor, control, or restore the system – BUT does not result in instability, separation, or cascading failures

Violation Risk Factors

- High – is a requirement that, if violated, could directly cause or contribute to Bulk Power System instability, separation, cascading failures, or hinder restoration efforts

Violation Severity Levels

- There are four Violation Severity Levels listed as Lower, Moderate, High, Severe
- In all Standards there are four levels of Non-compliance (listed as Level 1-4)
- This can be linked to the four levels on the matrix for Violation Severity Level

Penalty Table

NORTH AMERICAN ELECTRIC RELIABILITY COUNCIL

Base Penalty Amount Table (Proposed)

Violation Risk Factor	Violation Severity Level							
	Lower		Moderate		High		Severe	
	Range Limits		Range Limits		Range Limits		Range Limits	
	Low	High	Low	High	Low	High	Low	High
Lower	\$1,000	\$3,000	\$2,000	\$7,500	\$3,000	\$15,000	\$5,000	\$25,000
Medium	\$2,000	\$30,000	\$4,000	\$100,000	\$6,000	\$200,000	\$10,000	\$335,000
High	\$4,000	\$125,000	\$8,000	\$300,000	\$12,000	\$625,000	\$20,000	\$1,000,000

Note: Amounts listed in the Table are generally “per incident”; however, in the US NERC is authorized to assess them on a “per day” basis where warranted.



Types of Compliance Monitoring

- Self-Certification (Quarterly)
- On-site Compliance Audit (once every three years) for registered functions. NERC will also continue the “Readiness Assessment” visits once every three years (to date these have been performed on BA/TOP/RC – however there has been discussion of including IPPs which is another term for GO/GOP).
- New Type - “Table Top” – means that at any time, SPP (Compliance Monitor) may call and request all documentation for a specific Standard(s) – and the responsible entity has 48 hours to get the documentation to SPP

Corps Registration and Applicable Standards

- With SPP's registration of the Corps as a Generator Owner, Generator Operator, and Transmission Owner there are several requirements that pertain to those functional areas

Generator Owner

- There are 74 Requirements in the FERC approved Standards that apply to Generator owners
- There are 173 requirements in the pending CIP Standards that apply to Generator Owners
- There are 6 requirements in other pending Standards that apply to Generator Owners

Generator Owner

- Provide normal/emergency ratings and operating limits
- Supply necessary information for planning and operating studies for steady state, short circuit, or dynamic studies
- Documentation of the methodology for establishing facility rating
- Documentation that provides evidence the methodology for establishing ratings was used

Generator Owner

- Equipment characteristics – again for various studies and simulator data
- Generator protection testing and maintenance
- Info on Special Protection Schemes and/or Disturbance Monitoring Equipment
- Generator step-up transformer taps, ranges, impedance, voltage range, etc

Generator Operator

- There are 41 Requirements in the FERC approved Standards that apply to Generator Operators
- There are 173 requirements in the pending CIP Standards that apply to Generator Operators
- There are no requirements in other pending Standards that apply to Generator Operators

Generator Operator

- All generation inside a balancing area
- Procedures to assist employees in recognition of sabotage events, and communication procedures for sharing this info
- Voice and data links with BA and TOP
- Notification of BA/TOP of disturbances
- Provide written reports for disturbance events

Generator Operator

- Documentation of testing of Blackstart units such as dates, duration, whether tests meet Regional requirements
- Comply with RC directives
- Supply all info needed for system studies
- Generator relay protection coordination, changes, or any change that causes relay changes for others
- Shall render available emergency assistance

Generator Operator

- Not to remove equipment from service if it creates a burden on others
- Coordinate current, next day, and seasonal operation with BA/TOP
- Perform generator real and reactive capability testing and provide documentation
- Notify appropriate entities in changing operational state
- Planned outage coordination
- Operate voltage regulator in automatic AND voltage control mode at all times with documentation to prove it

Transmission Owner

- There are **128** Requirements in the FERC approved Standards that apply to Transmission Owners (64 of these do not also apply to GO/GOP)
- There are **174** requirements in the pending CIP Standards that apply to Transmission Owners
- There are **4** requirements in other pending Standards that apply to Transmission Owners

Transmission Owner

- Similar requirements to Generator Owner to provide all relative information about equipment and operating characteristics
- ONE NOTABLE ADDITION...
- **Vegetation Management Plan**

General Comments on Issues with High Visibility

- Equipment testing such as relay maintenance and testing
- Black-start/Real/Reactive Power testing
- Documentation that we do what we say we will do
- Operating Plans (normal and emergency) including voltage control and voltage schedules
- Operating voltage regulators on Auto AND in Voltage Control Mode
- *Vegetation Management*
- *System Operator Certification*

Points of Contact

- Ron Ciesiel and Kevin Goolsby at SPP
rciesiel@spp.org 501-614-3265
kgoolsby@spp.org 501-614-3275
- At Southwestern
- smason@swpa.gov 417-891-2612
- rbeck@swpa.gov (Ron) 417-891-2639
- mwech@swpa.gov (Mike) 417-891-2626

NERC Auditor's Worksheets

- NERC has posted Auditor Worksheets, while there are not sheets for every Standard yet, it is a place to get information on what the auditors will be looking for
- http://www.nerc.com/%7Ecomply/auditor_resources.html



Questions – Comments???