

Maintaining Grid Reliability

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Topics

- NERC
- 2003 Blackout
- Reliability Standards Program
- Compliance Enforcement Program
- Readiness Audit Program



What Does NERC Do?

- Set reliability standards for the grid
- Monitor & assess compliance with standards
- Readiness audits of operating organizations
- Reliability assessments & disturbance analyses
- Critical infrastructure protection
- Certification of reliability organizations & personnel
- Education & training resources for system operators



A Continental Power System



Why did the blackout happen?

- Tools



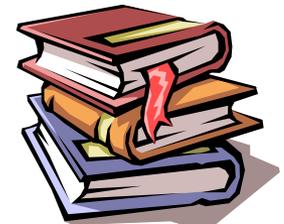
- Trees



- Training

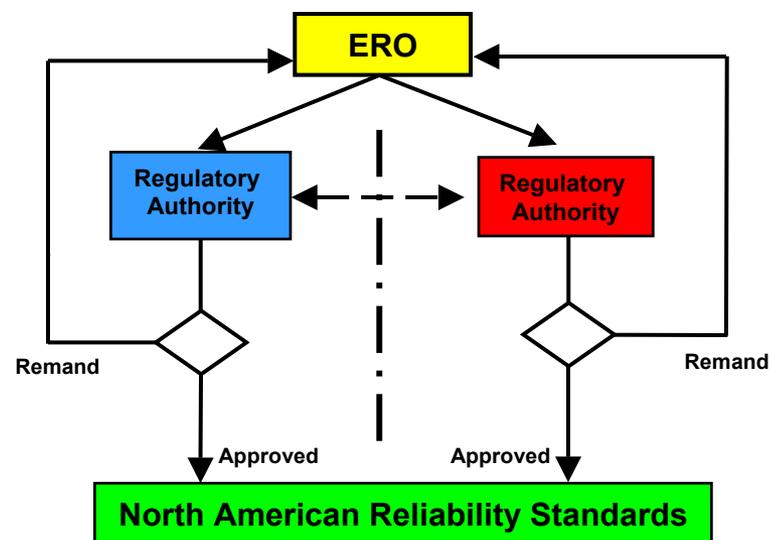


- Plus failure to follow the “rules”



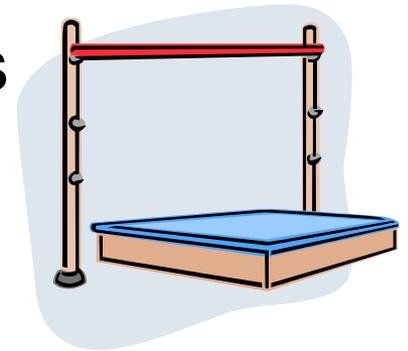
Standards Development

- NERC utilizes ANSI accredited process
 - Same process with or without legislation
- Standards
 - Pre legislation: Mandatory only to NERC and regional council members
 - Legislation: Mandatory to all
- Filed with regulators:
 - Pre legislation: for information
 - Legislation: for approval
 - FERC may remand, but not revise



Standards Transition Objectives

- Translate operating policies, planning standards, compliance templates
 - Minimize technical content changes
 - Identify Functional Model entities
 - Identify business practices
 - Make requirements clear and measurable
- Use ANSI-approved process
- Complete initial function registrations



NERC Board Actions – Feb 8, 2005

- Adopted Version 0 Reliability Standards, to be effective April 1.
- Replaced *in toto* currently effective operating policies, planning standards, and compliance templates, as of the effective date.
- All new reliability standards developed through the Reliability Standards Process.
- File Version 0 Reliability Standards for information with FERC and, as appropriate, other federal, state and provincial regulators in the United States, Canada, and Mexico.
- File updated TLR procedure



2005 Priorities

- Phase III-IV planning standards
- Cyber security standards
- Vegetation management standards
- 3 organization certification standards
- Compliance elements in reliability standards needed for 2006
- Joint NERC/NAESB TLR procedure



Active Standards Projects

- System personnel training
- Determine facilities ratings
- Operate within IROL
- Coordinate operations
- Balance resources and demand
- Resource adequacy
- Frequency response
- ***Nuclear off-site power reliability (SAR)***



Enforcement of Standards

ERO must be able to enforce standards

- NERC Compliance Enforcement Program

- Pre legislation
 - Regionally based
- Post legislation
 - Regionally based - delegation agreements with regions
 - FERC becomes backstop in U.S.; provincial regulators in Canada



ERO rules must provide due process

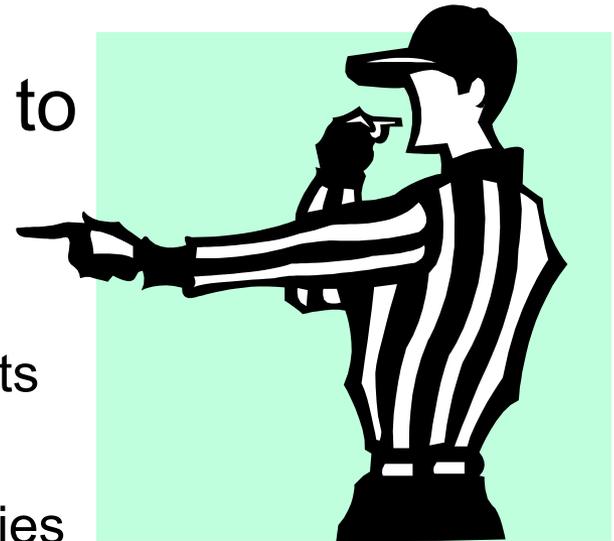
- Rules of procedure exist within regional programs



Enforcement of Standards

ERO may assess penalties (\$\$) and sanctions

- Enforcement may be delegated to regions
 - Pre Legislation
 - Public disclosure of compliance results
 - Names of violators disclosed
 - Contract-based programs with penalties in some regions
 - With Legislation
 - Penalties and sanctions take effect only after filing with FERC in US



Readiness Audit Program

- **August 14 blackout**
 - **Deficiencies in control area and reliability coordinator capabilities**
- **Standards present a threshold, not a target for excellence in performance**
- **Reliability coordinators and control areas must**
 - **Be ready to perform - Under emergency conditions**
 - **Strive for excellence in their assigned reliability functions and responsibilities**



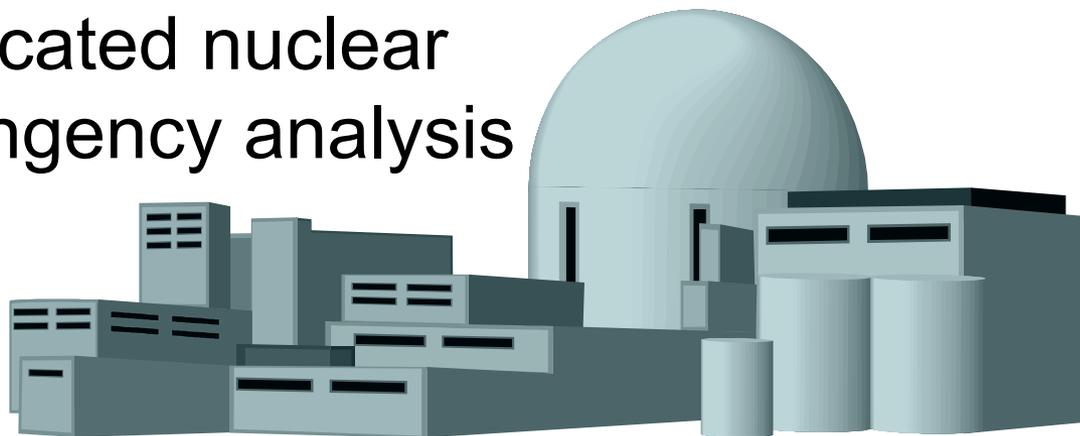
Readiness Audit Program

- **Purpose of the audit**
 - Provide an independent review of control area and reliability coordinator operations
 - Assure preparedness to meet reliability responsibilities
 - Identify areas for improvement
 - Share best reliability practices
 - Constructive
 - Help operators achieve excellence
 - Transparent – Audit reports posted
- **Not Compliance Audits**
 - Complementary to existing Compliance & Enforcement Program initiatives
- **Same with or without legislation**



Nuclear Plant Requirements

- Include review of grid operator interface with plant
- Noteworthy practices identified
 - FPL, Duke, Ameren, TVA, Southern Company, MECS sub-entities
 - Service level agreements with plants document expectations
 - AEP - dedicated nuclear plant contingency analysis program



NERC - Well On The Way

- Independent board of trustees
 - Elected by stakeholders
- Open, balanced, inclusive committees
- Open, balanced, inclusive standards development process
- Fair procedures at NERC and regional council level for assessing compliance
- *Legislation necessary to make compliance with standards mandatory and enforceable*

