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NORTH AMERICAN ELECTRIC
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Rules of Procedure Revisions

Member Representatives Committee Meeting
Rebecca Michael, Associate General Counsel, Corporate and Regulatory
Matters
February 8, 2012

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- Development History
- Postings in July and November 2011
- Amendments proposed
 - Sections 300, 400, 500, 600, 800, 1000 and 1400
 - Appendices 2, 4B, 4C, 5A and 5B
 - Deletion of Appendices 3C and 6

- Highlights of key changes in response to comments
 - Elimination
 - Provision for NERC to assume jurisdiction over a hearing
 - Ability of the Hearing Body to increase a penalty due to frivolous filings, dilatory tactics, etc.
 - Provision for imposition of an administrative fine for failure to provide requested information
 - Risk-based assessment references
 - Public notification list for new Appendix 4C, Section 5.11
 - Modifications to Appendix 8, at this time

Highlights of Key Provisions

- Reliability Standards Provisions, Section 300 and Appendix 3C
- Personnel Certification, Appendix 6 deleted, materials moved to Section 600
- Sanction Guidelines, Appendix 4B
- Compliance Monitoring and Enforcement Program, Section 400 and Appendix 4C
- Organization Registration and Certification, Section 500 and Appendix 5A
- Reliability Tools, Section 1002

- Board of Trustees Agenda on February 9, 2012
- File with Applicable Governmental Authorities for approval thereafter

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Event Analysis Program Status

Member Representatives Committee Meeting
Earl Shockley, Director of Reliability Risk Management
February 8, 2012

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Prior to the implementation of the event analysis (EA) field trial there was need for:

- A systematic, predictable and transparent event analysis process
- Review of bulk power system (BPS) events based on risk, significance and prioritization
- Consistent and timely reporting of event information
- Delivery and sharing of valuable lessons learned

Ultimately contributing to unnecessary risk to reliability of the BPS.

Develop a program that addresses the Problem Statement

- Consolidate and form a new Event Analysis Working Group (EAWG) to develop a draft event analysis process document
- Develop guiding principles of the program
- Conduct an event analysis field trial to vet the draft process, solicit improvement opportunities, and industry feedback
- Finalize EA process document at conclusion of field trial

Key Benefits of Implementing

- Systematic, predictable and transparent process
- Prioritization methodology (5 Category levels)
- More structured and timely communication of event information
- Quality Lessons Learned program
- Systematic and aggressive critical self analysis by registered entities

- **Brief Report** - provides concise explanation of “what happened”. Submitted in Appendix A of the Events Analysis Process
- For Category 0 and 1 events NERC and regions review apparent and root causes, and then close to trend
- 100% reporting according to the event analysis process with quality information to understand what happened

- **Event analysis reports** - Category 2 and above.
Provides data and information to understand “How it happened”, including causal factors
- 230 qualified events, 73 events were category 2 and above
- Received 88 event analysis reports
- **100% response** in delivery according to Event Analysis Process. Need to improve quality of reports

- **Lessons Learned** - not every event on the BPS has a quality “Lesson” to share
- 230 qualifying events, received 119 lessons learned “candidates”
 - 55 of these came from the Cold Snap event of 2011
- Excluding the Cold Snap event, there were 64 other events which resulted in a lesson learned being submitted for consideration
- **Over 50 publications to date**

- **Entity self assessment** - Category 2 and above.
Provides information on the entities self assessment after an event
- 73 Category 2 and above events, NERC and Regional Entities received 112 assessments from entities.
 - 62 were from the Cold Snap event
- Excluding the Cold Snap event, NERC received an additional 50 submittals from other Category 2 and above events.

15 self-reports were submitted

- *75% of event analysis reports stop at the mode*
 - *Failure Mode:*
The manner whereby the failure is observed
 - *Failure Mechanism:*
Physical, chemical or other processes that led to the failure
 - *Error Mode:*
The manner whereby the error is observed
 - *Error Mechanism:*
Human actions along the skills, rules, knowledge continuum

- Trending analysis of bulk power system events identified approximately 15 occurrences where equipment was inadvertently left in an abnormal state following maintenance
- Extent of conditions was conducted by impacted entities, they discovered many more inadvertent abnormal configurations
- NERC Alert was issued “Reducing Human Performance Errors by the Use of Configuration Control Practices”

- Trending analysis of bulk power system events identified 27 Category 2b events (over the past 15 months) where a complete loss of SCADA/EMS lasted for more than 30 minutes.
- Current analysis of these events:
 - Software failure is a major contributing factor in 60% of the events.
 - Individual operator error has attributed less than 10% of the events

- Testing of the equipment has been shown to be a factor in over 50% of the failures:
 - Test environment did not match the production environment
 - Product design (Less than Adequate)
- Change Management had an impact in over 50% of the failures:
 - Risk and consequences associated with change not properly managed
 - Identified changes not implemented in a timely manner

NERC is currently drafting an industry alert

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Update on Registration and Applicable Standards - Generator Owners and Generator Operators that Own and Operate Transmission Facilities

Member Representatives Committee Meeting
February 8, 2012

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- In 2011, NERC proposed a draft registration guidance
 - Included an associated Memorandum of Understanding
 - Limited set of standards
 - Interim measure to close the reliability gap
 - Presented at the North American Generator Forum meeting/webinar on October 18, 2011
 - Posted on NERC's website for industry comment November 11-18, 2011

- NERC and FERC upheld registrations of:
 - New Harquahala
 - Cedar Creek
 - Milford Wind
- Three important outcomes:
 - Registration eliminates a reliability gap
 - Orders were limited and did not find that all GOs/GOPs should be registered as TO and/or TOPs
 - A limited set of applicable Reliability Standards may be appropriate based on facts and circumstances

- Respondents expressed concerns that it was not clear:
 - What the effect would be on registration, and
 - Whether a limited set of standards would apply
- General consensus was the:
 - Directive conflicted with efforts of Project 2010-07 SDT Generator Requirements at the Interconnection
 - NERC should direct Regional Entities to stop registering GOs/GOPs as TOs/TOPs

- In response to comments, work has ceased on the draft directive
- The ERO will continue to operate under current registry criteria and rules of the registration program

A decision to resume work on compliance guidance will be based on:

- Further input and perspective from industry and MRC
- The SDT's consideration for additional standards
- NERC Board of Trustees action on the proposed revision of FAC-001, FAC-003 and PRC-004 (Standards Project 2010-07)
- FERC approval of NERC compliance filing for Cedar Creek and Milford Wind

A large, light blue map of North America (including the United States, Canada, and Mexico) serves as the background. Overlaid on the southern part of the map is a photograph of a nuclear power plant, showing two large cooling towers and a containment dome. A horizontal, semi-transparent dark blue band crosses the middle of the map, containing the text.

Discussion/Questions?

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Definition of Adequate Level of Reliability (ALR)

Member Representatives Committee Meeting
Allen Mosher, ALR Task Force Chair
February 8, 2012

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- Adequate Level of Reliability Task Force (ALRTF) charged with:
 - Reviewing current definition of ALRTF (filed for information with FERC in 2008)
 - Determining if existing definition and characteristics need enhancement in coordination with the MRC's Bulk Electric system (BES)/ALR Policy Group
- Task Force includes representatives from each of the Standing Committees (Standards Committee, Compliance and Certification Committee, Operating Committee, Planning Committee, Critical Infrastructure Protection Committee)

- Goal
 - Develop definition that encompasses NERC's responsibility to ensure reliability
 - Define objectives and characteristics that are measurable
 - Enable the ERO enterprise to focus on and align its activities with specific characteristics of ALR that have the greatest impact on BES reliability
- Definition must be:
 - Concise, yet self-contained
 - Self-explanatory to BES planners and operators
 - Meaningful to policymakers; placing a premium on translation in the ALRTF Report

- Input from MRC's BES/ALR Policy Group directed group to consider:
 - Cost/benefit
 - Load loss distinctions
 - Definition of cascading

- Seven reliability objectives
- Associated expected performance outcomes
 - Addressed in four time frames
- Associated disturbances
 - Both predefined and beyond the scope of predefined disturbances

1. The BES is free from instability, uncontrolled separation, cascading, and voltage collapse under normal operating conditions and when subject to predefined disturbances
2. BES frequency is maintained within defined parameters under normal operating conditions and when subject to predefined disturbances
3. BES voltage is maintained within defined parameters during normal operating conditions and when subject to predefined disturbances

4. Sufficient transfer capability of the BES transmission system is provided and maintained to meet required BES demands during normal operating conditions and when subject to predefined disturbances
5. Sufficient resource capability on the BES is provided and maintained to meet required BES demands during normal operating conditions and when subject to predefined disturbances

6. Adverse reliability impacts on the BES resulting from conditions beyond the scope of predefined disturbances (e.g., multiple contingences, unplanned and uncontrolled outages, cyber security events, malicious acts) are minimized
7. The system has the ability to recover from major system disturbances, such as blackouts and widespread outages, by restoring BES facilities in a controlled manner that rebuilds BES integrity and restores supply to load

- Introduction
- Overview of ALR definition structure
- Performance outcomes
- Disturbances
- Means to meet reliability objectives
- Comparison with current ALR definition and NERC Reliability Principles

- White Paper on Social Impacts: Managing Risk and Socioeconomic Impacts of Reliable BES Operations
- Accompanying report focusing on process, policy considerations, metrics, implementation, and follow-on work

- **January 31, 2012:** Draft definition—completed
- **February 10, 2012:** Technical document—to be completed
- **February 15, 2012:** ALRTF conference call
- **February 2012:** Present draft documents to SCCG for review
- **March 2012:** Discussion at standing committee meetings; post for industry comment
- **November 2012:** Final presentation to Board of Trustees for approval

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Reliability Standards

Definition of Bulk Electric System and Supporting Rules of Procedure

Member Representatives Committee Meeting
Herb Schrayshuen, NERC and Peter Heidrich, FRCC
February 8, 2012

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- Project update
 - Modifications made to the work product produced by the Rules of Procedure team prior to adoption by the Board of Trustees
 - The Board of Trustees approved the Definition and Rules of Procedure changes on January 18, 2012
 - The petition was filed with FERC on January 25, 2012

Thanks!!!!

- Phase 2 of the project is being initiated to:
 - Develop appropriate technical justification to support refinements to the definition that were suggested by stakeholders during Phase 1
 - Refine the definition as technically justified

- Phase 1
 - Development of Guidance Document
- Phase 2
 - Finalize SAR
 - Develop Project Schedule
 - Development of “Technical Justification Project Plan”
 - Clarification issues identified in Phase 1

- SDT Activities
 - January 2012–Initiated development of Guidance Document
 - February 2012–Process comments on initial Phase 2 SAR and develop project schedule
- SDT and NERC Technical Committee Leadership meetings
 - February 2012–Initiate development of Technical Justification Project Plan



Question & Answer

Website: http://www.nerc.com/filez/standards/Project2010-17_BES.html

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GMDTF Interim Report

Member Representatives Committee Meeting
Mark Lauby, Vice President and Director, Reliability Assessments and
Performance Analysis
February 8, 2012

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Preliminary Results – Not for Citation

**Major
Conclusion**

- Highest likelihood is loss of reactive power, not large number of damaged transformers

**Major
Conclusion**

- System operators will be challenged to maintain supply of reactive power for reliability

**Major
Conclusion**

- Some transformer types may be damaged or loss of remaining life

Preliminary Results – Not for Citation

- Refine GMD wave front models for 1 in 100 year and worst case storm events
- Create source tools for modeling, simulation, and system operations to measure and respond
- Categorize system vulnerability through simulation
- Require NERC Certified System Operators training to include focus on GMD
- Review NERC Reliability Standards for enhancement

- Deploy actions/recommendations
- Accelerate industry collaborative research effort
 - NERC and EPRI effort with industry
 - In partnership with US and Canadian Government Agencies (FERC, NASA, NOAA, DOE, USGS, and NRCan)
- Engage Interconnection Modeling Groups
 - Industry modeling expertise to categorize local impacts
 - Enhance interconnection-wide models to for GMD
- Launch Phase 2 in Q2 2012

- The draft interim report approval schedule:
 - January 23, 2012 – Draft Released to OC, PC, CIPC, ESCC
 - February 6, 2012 – OC/PC Review and Approval
 - February 23, 2012 – NERC Board of Trustees Review and Approval