

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Projects 2007-06.2

System Protection Coordination
Revisions to Draft 1 of TOP-009-1

Industry Webinar
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RELIABILITY | ACCOUNTABILITY



- Presenters
 - Standard drafting team (SDT)
 - Member, Scott Hayes, Pacific Gas & Electric
 - Member, Scott Watts, Duke Energy Carolinas
 - NERC
 - Scott Barfield-McGinnis, Standards Developer
- Administrative Items
- TOP-009-1 Revisions
- Closing Remarks
- Questions and Answers



Administrative Items

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- **Presentation Material**
 - Wording in this presentation is used for presentation purposes and may not reflect the official posted drafts of requirements or other language
- **For the official record**
 - Conference presentation is not a part of the official project record
 - Comments must be submitted via the project web page during posting

Member	Entity
Mark Peterson, chair	Great River Energy
Michael Cruz-Montes, vice-chair	CenterPoint Energy Houston Electric, LLC
Po Bun Ear	Hydro-Québec TransÉnergie
Scott Hayes	Pacific Gas & Electric
Mark Kuras	PJM Interconnection, LLC
Sam Mannan	Los Angeles Dept. of Water and Power (LADWP)
Yubaraj Sharma	Luminant Generation Company, LLC
Rui Da Shu	Northeast Power Coordinating Council
Scott Watts	Duke Energy Carolinas



TOP-009-1 Revisions

- Suggestions that TOP-009-1 should be a Personnel (“PER”) standard
- Knowledge
- Balancing Authority/Transmission Operator Area not clear
- Measures and Reliability Standards Audit Worksheet (RSAW)
 - Training, interviews, etc.
- Concerns Generator Operator cannot know effects on BES
- Suggestions to include Reliability Coordinator
- Violation Risk Factors (VRF) too “high”
- Violation Severity Level (VSL) too “severe”
- Implementation period too short

- NERC Glossary term “Composite Protection System”
 - “The total complement of Protection System(s) that function collectively to protect an Element. Backup protection provided by a different Element’s Protection System(s) is excluded.”
 - Individual Protection System functionality is not intended in TOP-009-1
- Knowledge of Composite Protection System
 - May be demonstrated through training (including the effects on the BES), operating guides, manuals, procedures, output of operational tools (e.g., databases or analysis programs), or outcomes of analyses, monitoring, and assessments that identify the impacts on the BES
- SDT determined that knowledge should also extend to “Remedial Action Scheme” (RAS)
 - Ensures full coverage

- TOP-009-1 (*Knowledge of Composite Protection Systems and Remedial Action Schemes and Their Effects*)
- Purpose
 - To ensure operating entities have the requisite knowledge of Composite Protection Systems and Remedial Action Schemes (RAS), and their effects, in order to operate and maintain the reliability of the Bulk Electric System (BES)
- Applicability
 - Transmission Operator
 - Balancing Authority
 - Generator Operator
- Clarifies which Composite Protection Systems are important
- Addresses the operational functionality and effects

- Each Transmission Operator shall ensure its personnel (responsible for Reliable Operation of its Transmission Operator Area) have knowledge of operational functionality and effects of Composite Protection Systems and RAS that are necessary to perform its Operational Planning Analysis (OPA), Real-time monitoring (RTM), and Real-time assessments (RTA)
- Personnel must have knowledge of those protective systems that the Transmission Operator receives notification of current status of degradation necessary to perform its OPA, RTM, and RTA
 - Refer to TOP-003-3 (*Operational Reliability Data*) for more information

- Each Balancing Authority shall ensure its personnel (responsible for Reliable Operation of its Balancing Authority Area) have knowledge of operational functionality and effects of Composite Protection Systems and RAS that are necessary to perform its Real-time monitoring (RTM) in order to maintain generation, Load, and Interchange balance
- Personnel must have knowledge of those protective systems that the Transmission Operator receives notification of current status of degradation necessary to perform its OPA, RTM, and RTA
 - Refer to TOP-003-3 (*Operational Reliability Data*) for more information

- From Draft 1
 - Each Generator Operator shall ensure its personnel responsible for Reliable Operation of its generating Facilities have knowledge of operational functionality and effects of Composite Protection Systems and Remedial Action Schemes that impact its generating Facilities.
- Proposed revision
 - Each Generator Operator shall ensure personnel responsible for Real-time control of a Facility have knowledge of operational functionality of Composite Protection Systems and Remedial Action Schemes **that affect output of the Facility**.
- More accurately
 - Identifies the Generator Operator personnel
 - Reflects what a Generator Operator should know

- Each (applicable entity) shall have evidence that demonstrates the knowledge according to Requirement R3. Evidence may include, but is not limited to, the following: training (including the effects on the generating Facilities), operating guides, manuals, procedures, interconnection agreements or studies, or access to third-party documentation.
- Each (applicable entity) shall **provide** evidence **to** demonstrate **the method(s) used to ensure its personnel have** knowledge according to Requirement R1. Evidence may include...(same)



Closing Remarks

- Best aligns the reliability activity in the TOP family of Reliability Standards
- Focuses knowledge on specific schemes (e.g., TOP-003-3)
- Clarifies personnel responsible
- Improves Measure clarity
- Clarifies GOP expectations
- Enhances Application Guidelines
- Gradates VSLs to be proportionate with risk
- Increases implementation period

- TOP-009-1 will be posted for formal comment and ballot
 - Additional comment period: Early October 2015
 - Additional ballot: Before the Thanksgiving holiday
- Draft RSAW to be posted for feedback
 - Two weeks after posting of the standard
- SDT in-person meeting to respond to comments
 - Early December 2015
- Final ballot
 - December 2015
- Anticipated NERC Board of Trustees adoption
 - February 2016



Questions and Answers

- Encourage working through forums or trades
 - To become aware of industry direction on topics
 - Develop consolidated comments informally or during postings
- NERC Standards Developer
 - Project 2007-06.2, Scott.Barfield@nerc.net, 404-446-9689
- SDT members and NERC staff are available to address other groups (e.g., Regional working groups, trades, etc.)
 - Contact the Standards Developer to arrange