

**NERC**

NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION

# Project 2010-05.3

Phase 3 of Protection Systems  
PRC-012-2 Remedial Action Schemes

Industry Webinar  
March 3, 2016

**RELIABILITY | ACCOUNTABILITY**



- Welcome and Introductions
- Administrative Items
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- Standard Drafting Team Members
- Presenters
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# Administrative Items

- It is NERC's policy and practice to obey the antitrust laws and to avoid all conduct that unreasonably restrains competition. This policy requires the avoidance of any conduct that violates, or that might appear to violate, the antitrust laws. Among other things, the antitrust laws forbid any agreement between or among competitors regarding prices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that unreasonably restrains competition. It is the responsibility of every NERC participant and employee who may in any way affect NERC's compliance with the antitrust laws to carry out this commitment.

- **Public**
  - Participants are reminded that this meeting is public. Notice of the meeting was widely distributed. Participants should keep in mind that the audience may include members of the press and representatives of various governmental authorities, in addition to the expected participation by industry stakeholders.
- **Presentation Material**
  - Wording in this presentation is used for illustrative purposes and may not reflect the exact draft of the posted standard.
- **Webinar Format**
  - Two hours
    - Presentation
    - Question and Answer Session

Member	Entity
Gene Henneberg (Chair)	NV Energy / Berkshire Hathaway Energy
Bobby Jones (Vice Chair)	Southern Company
Amos Ang	Southern California Edison
Alan Engelmann	ComEd / Exelon
Davis Erwin	Pacific Gas and Electric
Sharma Kolluri	Entergy
Charles-Eric Langlois	Hydro-Quebec TransEnergie
Robert J. O'Keefe	American Electric Power
Hari Singh	Xcel Energy

- Industry Stakeholders
  - Gene Henneberg (Drafting Team Chair)
  - Bobby Jones (Drafting Team Vice Chair)
- NERC Staff
  - Al McMeekin

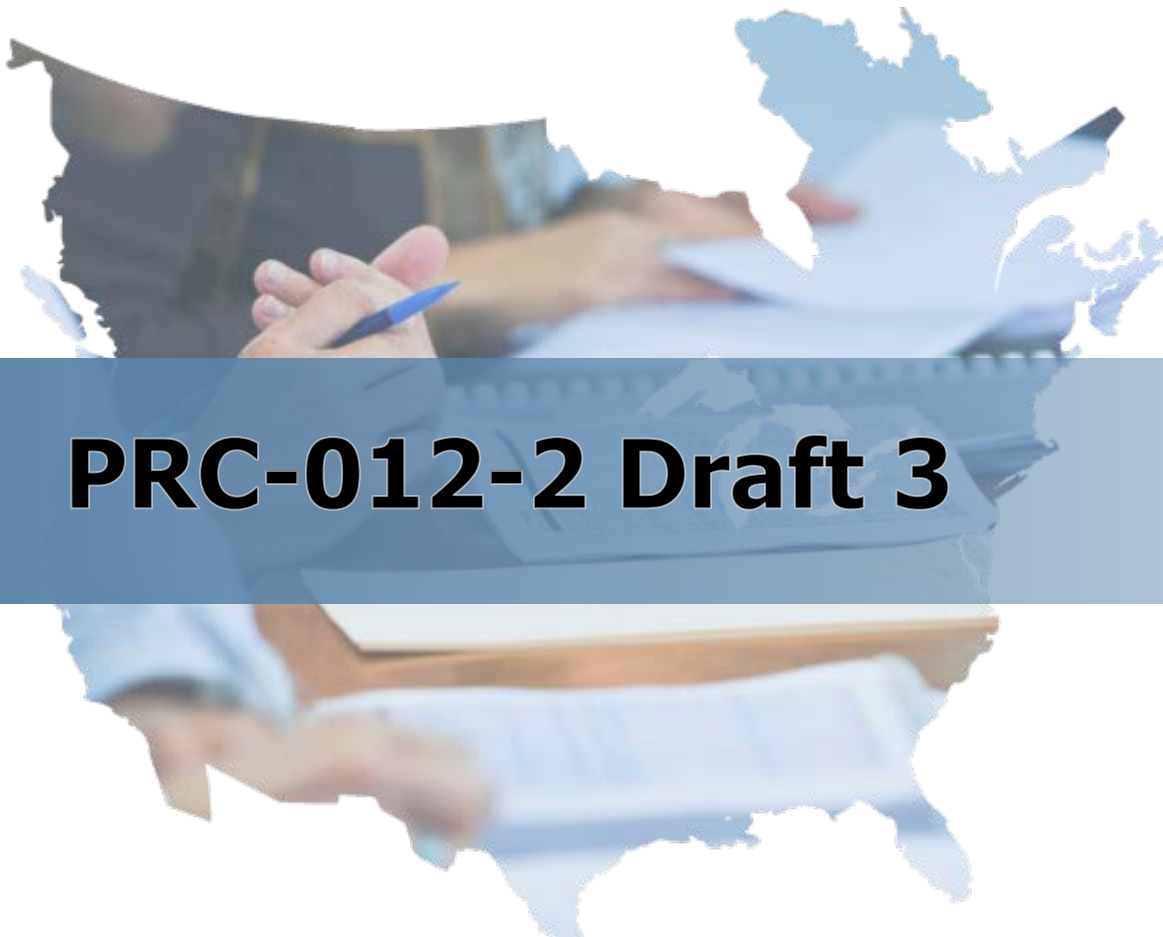
- Align the definitions of Special Protection Systems (SPS) and Remedial Action Schemes (RAS)
- Consolidate the reliability objectives of the six existing RAS/SPS-related standards into one standard – PRC-012-2 Remedial Action Schemes
  - PRC-012-1 Remedial Action Scheme Review Procedure
  - PRC-013-1 Remedial Action Scheme Database
  - PRC-014-1 Remedial Action Scheme Assessment
  - PRC-015-1 Remedial Action Scheme Data and Documentation
  - PRC-016-1 Remedial Action Scheme Misoperations
  - PRC-017-1 Remedial Action Scheme Maintenance and Testing\*

\* PRC-012-2 addresses the testing of non-Protection System components (control components) such as programmable logic controllers (PLCs), personal computers (PCs), multi-function programmable relays, remote terminal units (RTUs), and logic processors associated with RAS/SPS and confirms the RAS operates as designed. The maintenance of Protection System components associated with RAS/SPS are addressed in PRC-005-6.



- Project 2010-05.3 Phase 3 of Protection Systems: Remedial Action Schemes (RAS)
  - PRC-012-2
    - Preliminary draft posted for 21-day informal comment period  
04/30 – 05/20/2015
    - Draft 1 posted for 45-day comment and initial ballot  
08/20 – 10/05/2015
    - Draft 2 posted for 45-day comment and additional ballot  
11/25/2015 – 01/08/2016
    - Draft 3 posted for 45-day comment and additional ballot  
02/03 – 03/18/2016

- Revised SPS definition
  - Posted for 45-day comment and initial ballot  
11/25/2015 – 01/08/2016
    - Ballot results: 92.94%
    - Effective on the later of:
      - the effective date of the applicable governmental authority's order approving the revised definition of SPS, or
      - the effective date of the revised definition of RAS: April 1, 2017.



# PRC-012-2 Draft 3

- Requirement R4:
  - Changed the periodicity of the evaluations from sixty (60) full calendar months to five (5) full calendar years.
  - Added a provision (Part 4.1.3) requiring limited impact RAS be periodically evaluated to verify the limited impact designation remains applicable.
- Requirement R6 – minor clarifying change.
- Functional modification description – minor clarifying changes.
- Measures, VSLs, and Attachments – revisions to complement the revised requirements.
- Rationale Boxes and Supplemental Material – revisions to complement the revised requirements and provide additional examples and insight.

- A limited impact RAS cannot, by inadvertent operation or failure to operate, cause or contribute to BES Cascading, uncontrolled separation, angular instability, voltage instability, voltage collapse, or unacceptably damped oscillations.
- The limited impact designation is modeled after the:
  - Local Area Protection Scheme (LAPS) classification in Western Electricity Coordinating Council (WECC)
  - Type 3 classification in Northeast Power Coordinating Council (NPCC)
- A RAS implemented prior to the effective date of PRC-012-2 that has been through the regional review processes of WECC or NPCC and classified as either a LAPS in WECC or a Type 3 in NPCC, will be recognized as a limited impact RAS upon the effective date of PRC-012-2.

- The limited impact designation is available to any RAS in any Region provided the reviewing Reliability Coordinator (RC) determines the RAS poses a low risk to BES reliability.
- The reviewing RC is the final arbiter for determining whether a RAS qualifies for the limited impact designation.
- To propose a RAS be designated as limited impact by the reviewing RC, the RAS-entity must prepare and submit the appropriate Attachment 1 information to the RC.
- Part 4.1.3 requires limited impact RAS be periodically evaluated to verify the limited impact designation remains applicable.

- Functional testing verifies RAS settings and logic of non-Protection System components.
- The inadvertent operation or failure of a RAS to operate has a higher potential to negatively impact the reliability of the BES than do most Protection System Misoperations.
- System changes that occur beyond monitored RAS components may adversely affect RAS functionality.

- **Limited Impact RAS** – included the provision (previously in footnote 1) regarding the initial consideration of WECC LAPS and NPCC Type III RAS as limited impact RAS upon the effective date of PRC-012-2.
  - A RAS implemented prior to the effective date of PRC-012-2 that has been through the regional review processes of WECC or NPCC and is classified as either a LAPS in WECC or a Type 3 in NPCC is recognized as a limited impact RAS upon the effective date of PRC-012-2 and is subject to all applicable requirements.
- **Requirements R4 and R8** – revised language for the initial performance of obligations under Requirements R4 and R8 for consistency and clarity.
- **Requirement R9** – revised the provision to clarify that the initial obligation for a RC that does not have a RAS database is to establish one (RAS database) by the effective date of PRC-012-2; i.e., during the thirty-six (36) month implementation period.





# Questions and Answers

- 45-day comment period and additional ballot end March 18, 2016
- Standard drafting team meeting scheduled the week of April 4, 2016
- Final ballot in April 2016
- Board of Trustees adoption in May 2016



# Closing Remarks

- NERC Standards Developer, Al McMeekin
  - Email at [al.mcmeekin@nerc.net](mailto:al.mcmeekin@nerc.net)
  - Telephone: 404-446-9675
  - To receive **Project 2010-05.3** announcements and updates, request to be added to the email distribution list: **SPSSDT\_Plus**
- Project 2010-05.3 website: [Project 2010-05.3 Phase 3 of Protection Systems: Remedial Action Schemes](#)