

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Industry Webinar

Project 2015-10 Single Points of Failure

March 22, 2018

RELIABILITY | ACCOUNTABILITY



- Presenters
 - Standard Drafting Team
 - Chair, Jonathan Hayes, SPP
 - Vice Chair, Delyn Kilpack, LGE-KU
 - Member, Chris Colson, WAPA
 - NERC Staff
 - Latrice Harkness
- Administrative Items
- Project 2015-10 Status
- FERC Order No. 754 and Order No. 786
- Implementation Plan
- Next Steps
- Questions and Answers

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- **For the official record**
 - This presentation is not a part of the official project record.
 - Comments must be submitted during the formal posting.

Name	Organization/ Company
Jonathan Hayes (Chair)	Southwest Power Pool
Delyn Kilpack (Vice Chair)	Louisville Gas & Electric and Kentucky Utilities
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Ruth Kloecker	ITC Holdings
Latrice Harkness	North American Reliability Corporation
Lauren Perotti, Counsel	North American Reliability Corporation

- Project 2015-10 - TPL-001-5 – Single Points of Failure (SPF)
- This is the third posting
 - One informal posting
 - One formal posting
- TPL-001-5 addresses:
 - FERC Order 754 (SPF)
 - FERC Order 786 (Maintenance Outages in the Near Term Transmission Planning Horizon; stability analysis for loss of long lead time equipment)
- Separate ballot for standard and implementation plan

- Changes to TPL-001-5:
 - “Revision to Table 1 – Steady State and Stability Performance Planning Events”
 - Modified Category P5 event to include SPF
 - Added a new Category P8 planning event
 - Footnote 13 – describes the non-redundant Protection System components considered for Category P5 and new Category P8 events
 - Table 1:
 - Performance requirements for new Category P8
 - System shall remain stable, no cascading or uncontrolled islanding, for a 3-phase fault and failure of a non-redundant component of a Protection System.
 - *When analysis indicates an inability to meet Performance Criteria, assessment must include Corrective Action Plan (CAP).*

- New P8 planning event defined for SPF to include a 3-phase fault and failure of a non-redundant component of a Protection System.
- Maintains the “Bright Line” distinction between Planning and Extreme events.
- SPF P8 Planning Event:
 - 3-phase fault are low probability – single phase not properly cleared often evolves to a 3-phase fault.
 - The specific locations of SPF are known.
 - SPF role in system disturbances – Section 1600 data request results – System Protection Control Subcommittee (SPCS)/System Analysis and Modeling Subcommittee (SAMS) recommendation
 - Lower probability event is reflected in the P8 performance requirement.

- Changes to Requirement R1 is not a prescriptive, continent-wide procedure
- Entity must have a process and procedure that conform with a technical rationale which must be made available
 - Consistent with other requirements in TPL-001-4, such as Voltage Criteria, Low Voltage Ride Through, etc.
- Removed the six-month time horizon for significant outages occurring within the period of the Near-Term Assessment studies (Year 1 or 2 and Year 5)

- Categories P3 and P6 do not sufficiently cover planned maintenance outages
- Proposed revisions to Requirement R2 also include stability studies for long lead equipment that does not have a spare equipment strategy

- The issue is “raising the bar” on a continent-wide basis
 - Closer coordination between Protection and Planning
 - Worst case: some entities may require coordination efforts that involve multiple substation outages to affect SPF corrective actions.
- “Raising the bar” issue was addressed in TPL-001-4 by:
 - Five-year time period for those requirements that “raised the bar”
 - Providing temporary relief from the performance requirements by permitting Operating Procedures during the phase in period to include Non-Consequential load loss and curtailment of Firm Transmission Service that would not otherwise be permitted by the requirements of TPL-001-4

- The implementation plan is being balloted separately and contains:
 - 3 year study period to perform the “raising the bar” events in P5 and P8
 - 2 year period to identify CAPs
- The relief provided in TPL-001-4 is not portable to TPL-001-5
 - In TPL-001-4, a P5 (non-redundant relay failure) event which does not meet performance requirements must have Operating Procedure until the redundant relay is installed.
 - Options provided in bullets under Requirement 2 Part 2.7.1 may cause a BES reliability issue that is more severe than a low probability P5 event.
 - There is not time to install the added redundancy of the protection system for P5 or the added P8.

- The failure to meet system performance requirements presented during dynamic simulations of Categories P5 and P8 events is more difficult to mitigate.
- The solution to a relay issue is often to add a redundant relay.
 - *“For CAPs developed to address failures to meet Table 1 performance requirements for P5 or P8 events only, Transmission Planners and Planning Coordinators shall not be required to comply with the section of Requirement R2, Part 2.7 that states: ‘Revisions to the Corrective Action Plan(s) are allowed in subsequent Planning Assessments but the planned System shall continue to meet the performance requirements in Table 1’, until 96 months after the effective date of Reliability Standard TPL-001-5.”*

- Comment period
 - [Project 2015-10 page](#)
 - 45-Days – February 23– April 23, 2018
 - Ballot – April 13 – April 23, 2018
- Respond to Comments
 - May 2018
- Point of contact
 - Latrice Harkness, Senior Standards Developer
 - Latrice.Harkness@nerc.net or call 404-446-9689
- Webinar posting
 - 48-72 hours
 - Standards Bulletin

- Informal discussion
 - Via the Q&A feature
 - Chat only goes to the host, not panelists
 - Respond to stakeholder questions
- Other
 - Some questions may require future team consideration
 - Please reference slide number, standard section, etc., if applicable
 - Team will address as many questions as possible
 - Webinar and chat comments are not a part of the official project record



Questions and Answers

A map of North America is shown in the background, with the United States and Canada in a light blue color and Mexico in a light gray color. A dark blue horizontal band runs across the middle of the map, containing the text.

Webinar has ended - Thank you