



PRC-023

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Planning Committee
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- Transmission Relay Loadability
- Purpose of the standard
 - Ensure that protective relay settings will not limit transmission line loadability
 - Ensure that protective relays do not interfere with their ability to take remedial action to protect the system
 - Ensure that protective relays are set to detect all fault conditions

- Standard was approved by the NERC Board in February 2008
- Standard approved by FERC in May 2009
- Planning Coordinator must be compliant with the standard 18 months after regulatory approval
- Standard was discussed most recently at the July 09 PC meeting

- **Applicability of Approved Standard**
 - Transmission lines operated at 200 kV and above
 - Transformers with low voltage windings connected at 200 kV and above
 - Transmission lines operated at 100 kV to 200 kV that are designated by the Planning Coordinator as critical to the BES
 - Transformers with low voltage windings connected at 100 kV to 200 kV that are designated by the Planning Coordinator as critical to the BES
 - Generators with load-responsive phase protection systems
 - Distribution providers with load responsive phase protection provided the facility has bi-directional flow capabilities

- Requirements for TO, GO and Distribution Provider
 - In general - set relays so that they don't operate when they are not supposed to. Prevent potential for cascading trippings
- Requirements for Planning Coordinator
 - Determine which facilities between 100 kV and 200 kV are critical to the reliability of the BES
 - Need to have a process to determine critical facilities
 - Need to consider input from adjacent Planning Coordinators
 - Maintain a list of critical facilities
 - Provide the list to TO, GO, Distribution Provider, adjacent Planning Coordinators and Reliability Coordinators

- Only applicable to “critical” 100 kV to 200 kV facilities
- Previous Ideas
 1. Use load deliverability test to determine all facilities with greater than a 5% dfax cutoff
 2. Include all tie lines between transmission owner zone
 3. Include all off-site start-up sources to nuclear plants
 4. Solicit Operations feedback
 5. Identify 100 kV to 200 kV facilities loaded at XX% of rate B for any N-2 outage of 200 kV and above facilities
- New Suggestions
 - Combine method 1 and method 5 – this would eliminate lightly loaded responsive circuits and heavily loaded un-responsive circuits.
 - Identify 100 kV to 200 kV facilities that impact higher voltage facilities (i.e. outage dfax exceeds some threshold)

- Seeking stakeholder feedback on the methods on the previous page
- See the lists of facilities posted with these materials
- Method 1 included very few facilities
- Method 5 identified more facilities
 - Would need to determine an appropriate percentage
- Method 5 consistent with the intent of the standard
- Other ideas?