



Transmission Planning Technical Guide

*Guide Reorganization
Template and Style Guide Updates
Probabilistic Methods Addition*

Steven Judd, PE

LEAD ENGINEER | SYSTEM PLANNING



Purpose

- Discuss proposed changes to the Transmission Planning Technical Guide
 - Reorganization of entire guide to more logical flow of information and allow for ease of adding new information in the future
 - Update of the guide to the newest ISO report template and style guide
 - Addition of probabilistic methods for creation of base case dispatches used in transmission Needs Assessments and Solutions Studies

Technical Guide Reorganization

- As discussed in the Transmission Planning Assumptions presentation at the March 2017 PAC meeting, the new probabilistic methods were going to be added to the Technical Guide and presented in late Spring
- During the process of adding the new sections, due to the existing organization of sections, it was difficult to pinpoint the proper section to add the new information
- Since the inception of the Technical Guide in 2013, as new information was added, a new section was added to the end of the document
- Over time, this led to the creation of 26 sections by the March 2017 version of the guide that were in no cohesive order

Technical Guide Reorganization, cont.

- With the probabilistic methods changing multiple sections within the document, it identified the need to review the overall organization of the guide
- The new version of the guide has four (4) main sections organized in a similar fashion to a transmission Needs Assessment or Solutions Study Report
 - **Section 1: Introduction** - Describes purpose, source of the standards, and a description of various types of studies that are conducted
 - **Section 2: Modeling Assumptions** – Describes the various assumptions used to create network representations used in studies
 - **Section 3: Reliability Criteria and Guidelines** – Describes how standards and criteria are applied to establish acceptable system performance
 - **Section 4: Analysis Methodology** – Defines the methodologies used to conduct various system planning studies

Technical Guide Reorganization, cont.

- All existing language was first moved from the old sections into the new sections **without** red lines
- Any language changes to the March 24, 2017 version of the guide were then marked with red lines including new content
- After this round of updates are completed, a deeper review of the content will be done by the ISO to match the latest practices and processes
 - This second round of updates will be presented to PAC in Q4 2017

Report Template and Format Update

- In addition to the content reorganization, a newer ISO report template was available and the guide was converted to the new template
- The content was also updated for consistent formatting based on the ISO Style Guide including the following items:
 - Grammar
 - General Word Usage
 - Capitalization
 - Spelling, Compounding, and Hyphenation
 - Punctuation
 - Abbreviations and Acronyms
 - Numbers, Numerals, and Units of Measurement
 - References

Probabilistic Method Additions

- The final update to the technical guide in this round was the addition of probabilistic methods used in base case dispatch creation for studies
 - **Section 2.2.2: Load Levels Tested** – Added language to describe probabilistic curves used for system load levels
 - **Section 2.3.5: Generator Unavailability Probability** – New section describing the outages rates used for generation to create cumulative probabilistic distributions
 - **Section 2.3.12: Behind the Meter Mill Generation** – New section added to define this type of resource that is referenced in the new generation unavailability probability section
 - **Section 3.1.3: Probabilistic Threshold Guideline** – New section to describe the derivation of the transmission security probabilistic threshold value
 - **Section 4.1.1: Base Case Generation Dispatch** – New section to describe the methodology used to create base case dispatches for system planning studies

Probabilistic Method Additions, cont.

- In coordination with the new probabilistic methods, the existing sections were removed from the new guide
 - **Section 10: Generators Out of Service in Base Case** – This section described the basis for the two generators out of service in the base case dispatch of Needs Assessments and Solutions Studies
 - **Appendix B: Fast Start Units** – This outdated appendix listed the fast start units as of FCA 8.
- Another change was made in this round of updates due to the reorganization
 - **Appendix D: Damping Criteria** – This appendix was retired and the small amount of content was moved to new Section 3.3.3 in the guide

Next Steps

- Proposed revisions to the Transmission Planning Technical Guide are posted to the PAC website
- Stakeholders can provide comments by September 20 to PACMatters@iso-ne.com
- Comments will be responded to and an updated guide is targeted for October 2017
- A second round of deeper content review will begin after this first round is completed and is targeted to be presented to PAC in Q4 2017

Questions

