

Dominion Energy's

Electric Transmission Planning

Criteria

(Version #17)

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Summary of changes

The following sections of Dominion Energy's 'Electric Transmission Planning Criteria' have been updated:

- Section C.1 Planning principles and standards
- Section C.1 Tables 1A and 1B
- Section C.2.6. Radial transmission lines
- Section C.2.9. End of life
- Section D Transmission planning, system stability criteria

Section C.1. Planning principles and standards

Updated text to describe the process by which Dominion Energy performs Branch/Breaker-to-Breaker P6 contingency analysis:

Dominion performs N-1-1 contingency analysis on transmission lines by taking a branch of a given line out of service as the first contingency. This mirrors real world conditions where after a fault takes an entire line out of service (breaker-to-breaker), branches of the line are restored through switching except for the branch that experienced the original fault. For the second contingency, breaker-to-breaker line outages are applied and analyzed.

Section C.1. Planning principles and standards

Updated Tables 1A and 1B to include the loss of multiple elements caused by a stuck breaker as a contingency within Category P4:

P4 Multiple Contingency (Fault plus stuck breaker¹⁰) [see Dominion Energy Note “E”]	Normal System	<p>Loss of multiple elements caused by a stuck breaker¹⁰ (non-Bus-tie Breaker) attempting to clear a Fault on one of the following:</p> <ol style="list-style-type: none">1. Generator2. Transmission Circuit3. Transformer⁵4. Shunt Device⁶5. Bus Section <p>6. Loss of multiple elements caused by a stuck breaker¹⁰ (Bus-tie Breaker) attempting to clear a Fault on the associated bus</p>
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Section C.2.6. Radial transmission lines

Edited to describe factors considered when evaluating 700MW-Mile Criteria:

A Radial transmission line is defined as a single line that has one transmission source, serves load, and does NOT tie to any other transmission source (line or substation). Unlike load served from a network transmission line having two sources where a downed conductor or structure can be sectionalized for load to be served before repairs are completed, load served from a single source radial transmission line cannot be reenergized until all repairs to the line are completed. Accordingly, loading on single source radial transmission lines will be limited to the following:

100 MW Maximum

700 MW-Mile Exposure (MW-Mile = Peak MW X Radial Line Length)

A factor in evaluating the load limitation on a radial transmission line is the degree to which the distribution load can be switched to circuits served from other sources and whether such capability can be reasonably added. Other factors include the ability to perform maintenance on the radial transmission line, the outage history of the radial transmission line, load density and type, tie capability, etc.

Section C.2.9. End of life criteria

Updated EOL Criteria to remove 69kV, 115kV, and 230kV lines from our FERC 715 filed planning criteria

- 500 kV transmission lines: No change and will be treated as a baseline project
- 230 kV and below transmission lines: Brought to PJM as a supplemental project through the FERC approved M3 process consistent with the majority of other TOs within PJM
- No changes to the transparency of Dominion's EOL program
- PJM will continue to be actively involved in validating and/or assessing the impacts

Electric transmission infrastructure reaches its end of life as a result of many factors. Some factors such as extreme weather and environmental conditions can shorten infrastructure life, while others such as maintenance activities can lengthen its life. Once end of life is recognized, in order to ensure continued reliability of the transmission grid, a decision must be made regarding the best way to address this end-of-life asset.

For this criterion, "end of life" is defined as the point at which infrastructure is at risk of failure, and continued maintenance and/or refurbishment of the infrastructure is no longer a valid option to extend the life of the facilities consistent with Good Utility Practice and Dominion Energy Transmission Planning Criteria. The infrastructure to be evaluated under this end-of-life criteria are all regional transmission lines operated at 500 kV and above.

Section D Transmission planning, system stability criteria

General update of this section including language expanding the stability study horizon beyond 5 years to accommodate longer term strategic projects:

Stability studies performed for the long-term horizon (above 5 years) are determined by specific long-term strategic planning projects. The scope of the long-term studies is to better understand the grid performance of the DEV transmission system in a longer time scale and prepare for challenges with the rapidly changing generation and load environment and from the adoption of new technologies. Study results of such scenarios are carefully analyzed and the findings provide important supplemental information to the development of DEV's transmission expansion plan.

Questions