

New England States  
Committee on Electricity

**To:** Vamsi Chadalavada, ISO New England  
**From:** NESCOE (contact Dorothy Capra)  
**Date:** November 9, 2012  
**Subject:** Transmission Planning Concerns

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Thank you and others at ISO-NE very much for meeting with us last month to discuss the draft Transmission Planning Manual and other transmission planning topics. NESCOE and the New England States appreciate the effort that ISO-NE has put into the drafting of the Transmission Planning Manual and the time it has spent meeting with us to discuss our interests and concerns. This memorandum memorializes some of the issues we believe to be fundamentally important in the context of the Planning Manual.

Through the development and review of the ISO-NE Transmission Planning Manual and Process, ISO-NE, NESCOE and the States have identified and begun to discuss significant issues relating to transmission planning. The current dialogue is an opportunity to explore transmission planning issues that have surfaced in a number of state siting proceedings. These issues have been difficult to explore adequately in the siting process because of the significant discovery and modeling burdens that routinely occur in time-sensitive state siting cases -- often long after ISO-NE transmission planning has identified project needs and developed potential solutions. Through this process, we hope that exploring and, as appropriate, revising and/or clarifying certain aspects of the transmission planning process will yield better, more consistent, efficient, and timely results throughout the region. We are suggesting some modifications to the ISO-NE transmission planning process that could provide state siting authorities, regulators and stakeholders with greater confidence in the planning process and its outputs. NESCOE has particular interest in the following areas:

1. **Base Case Development and Assumptions.** NERC/NPCC reliability standards require modeling of N-1 and N-1-1 scenarios. They also allow ISO-NE discretion in the selection of the "base case" (or cases) that underlie those set contingency analyses. However, the information upon which ISO-NE relies to inform its judgment is not always transparent. Similarly, how ISO-

NE weighs that information in selecting assumptions for the base case is not always evident.

NESCOE's concerns regarding generator dispatch assumptions in the draft transmission manual focus on whether the assumptions, when viewed with other base case assumptions, reflect a reasonably stressed system. Specifically, NESCOE questions whether the two (or more) generators out in the base case reflect conditions that are reasonably likely to occur under stressed system conditions, or whether a base case including two generators out represents a fair proxy for "reasonable" stress. Considering the historic availability of specific generators in a given area may provide a better indicator of potential conditions than a standard assumption of two generators out. While NESCOE understands that ISO-NE cannot model each possible condition that could occur, something more than engineering judgment is required to explain how using a two-generator-out protocol produces reasonable stress when combined with other conservative assumptions such as the 90/10 load forecast.

Similarly, NESCOE is concerned with some other dispatch assumptions, for example the use of 10% of the qualified capacity of hydro generators (which ISO-NE notes should be nameplate) rather than historic capability. NESCOE has similar concerns about the modeling of on-shore wind generation at only 5% of nameplate. ISO-NE should consider using more recent historical data concerning availability during a likely peak period. ISO-NE should further justify, or modify as appropriate, the practice of de-rating fast start units by 20%. Here too it may be useful to look at historical performance of the units in question.

Finally, ISO-NE has asserted that it has discretion in which contingencies it uses for the N-1 and N-1-1 analysis, specifically whether to use single element contingencies or multiple element contingencies. ISO-NE should establish a methodology for determining which type of contingency is appropriate in specific situations.

2. **Sensitivity Analysis.** Since ISO-NE uses discretion in establishing the base case, it would be beneficial for ISO-NE to present and evaluate modeling of multiple cases as a sensitivity analysis of the need for significant transmission proposals. As relevant, the various individual cases or sensitivities may vary with respect to:
  - Forecasts of load growth
  - Generator out assumptions and other dispatch scenarios
  - Weather conditions
  - Future retirements/additions/modifications of generation and transmission/distribution assets
  - De-rating of generation or demand-response resources

- Expected external transfers (to/from other ISO regions)
- Duration and timing of known transmission outages

With respect to the sensitivity analyses, it would be helpful for ISO-NE to describe as fully as possible the rationale for each of the multiple cases or sensitivities, including a discussion of the general conditions represented by the sensitivity cases, the overall likelihood that the general events or conditions may ensue over the planning horizon, and any historic conditions that such cases are intended to represent. Illustrative quantitative probability estimates supporting ISO's discussion would be helpful, to the extent practicable.

States would have more confidence in ISO-NE's determination of need if such determination were made only after the multiple sensitivity cases are modeled and the results evaluated. Similarly, the States would have greater confidence in the determination of need if the selection of those assumptions that constitutes "reasonably stressed" conditions were linked directly to the likelihood of those stresses actually occurring.

3. **Cost/Benefit.** ISO-NE should evaluate reliability need for transmission through the prism of a cost/benefit analysis. Cost/benefit analysis is not precluded by NERC/NPCC requirements. Potential project costs should inform judgment on whether a particular project intended to reduce or eliminate the risk of an unacceptably high frequency, duration, or scope of customer outages or damage to existing facilities should be undertaken. As part of this evaluation, ISO-NE should finalize its Load Interruption Guidelines taking into account the cost/benefit analysis.
4. **Transfer Limits.** The states would have greater confidence in determinations of need if ISO-NE selected dispatches on the basis of the reasonableness of generator availability, rather than pushing generator dispatches to cause transfers to reach or exceed pre-selected values. Transfer limit capabilities appear to be already built into the model as a constraint and may not need to be used as an additional "stress" factor.