

***Comment 1: On text page #1 Section 1.1, (and pages 18 and 141), the linear process of back casting is generally referred to as “regression analysis” not “extrapolation”. The middle sentence of the third paragraph might be;” These violations are seen in today’s system and on linear regression based on the 2015 and 2020 loadings seen in the updated needs analysis, the first violations would be in 2003-2004<sup>[1]</sup> “. A further re-phrasing in the next paragraph might re-insert the reference to “linear extrapolation”.***

ISO Response: Although there are many similarities between ‘linear regression analysis’, ‘linear extrapolation’, and ‘linear interpolation’, the approach used as part of this study (a straight line developed from only two data points) is probably best described as ‘linear extrapolation’.

***Comment 2: On text page #6 (and page 69), the Option A-2 graphics should show that the proposed Sherman Road reconstruction is as a GIS station.***

ISO Response: The Sherman Road station will be identified as a GIS station in the two figures.

***Comment 3: On text page #10 under A-2, is the cost for the generator lead rebuild also included in the alternative costs listed?***

ISO Response: Yes, the cost for option A-2 includes the \$1M cost associated with the rebuild of the 0.2 mi. section from Sherman Road to Ocean State Power. This is consistent with ISO tariff where overall cost of a transmission project (including PTF and non-PTF costs) is used to compare alternatives.

***Comment 4: On text page #14, please clarify phraseology “increase in interfaces”.***

ISO Response: The phraseology “increase in interfaces” was not found in the mentioned page but an assumption was made that the comment referred to the comparison of the import capabilities on the different interfaces tested. In the section comparing the import capabilities, the post-project range of import capability is compared with the lower limit of the pre-project range of import capability. The comparison is only done with the lower limit of the pre-project range of import capability.

As an example, the N-1 range of western New England import limit in the base case was 3,400 to 3,950. All comparisons post-project were made with the lower limit of 3,400 MW. Post option A-1 the range of western New England import capability went up

---

<sup>[1]</sup> The year of need if at load levels less than the 2010 forecast is calculated based on historic forecasted 90/10 peaks.

to 4,150 to 5,050. Hence the lower end of the limit went up from 3,400 to 4,150, an increase of 750 MW. The upper limit of the range is 5,050 and when compared to the pre-project lower limit of 3400, there is an increase of 1,650 MW. Hence the increase is determined to be 750 MW to 1,650 MW.

***Comment 5: On text page #16, Figure 2.1 needs the addition of the location of the existing Berkshire Power Plant in Agawam, MA. It might also need the addition of the future PVEC Combined Cycle plant in Westfield MA.***

ISO Response: The figure 2.1 will be modified to include Berkshire Power. Since the PVEC combined cycle plant has not cleared in the Forward Capacity Auctions 1-5, and was not included in the analysis, it will not be included in the figure.

***Comment 6: On text page #21, does the proposed Northfield Mountain 345/115kV transformer installation have any impact upon this overload condition of line B128? Which way?***

ISO Response: The line section from Cabot Tap to Montague was identified as overloaded during the Pittsfield/Greenfield needs assessment. As a part of the Pittsfield/Greenfield solution, that section of line will be moved from the B128 to the A127 and then the A127 sections from Montague to Cabot Tap to Erving will be re-conducted to a higher LTE rating sufficient for the local area concerns which are higher than any loading seen during the NEEWS solutions study transfer analysis.

***Comment 7: On text pages 30 to 33, Tables 3-5, 3-9 and 3-11 have two columns of numbers for line-in vs. line-out conditions that are identical for each row of numbers, is this correct?***

ISO Response: Yes, it is correct. The only possible action between the first and the second contingencies was the cutting of exports to other areas. We have dispatched the available quick starts in the base case and hence those are not available to be turned on after the first contingency.

Since the case with a Western New England and Connecticut stress has exports to LI on Cross Sound and the NNC cables, those exports are reduced to zero after the first contingency and hence the difference in the interface levels for these two stresses.

For the dispatch in eastern New England, since there are no exports scheduled from eastern New England, no action is available after the first contingency and hence the interface levels remain the same for all-lines-in and line-out conditions.

***Comment 8: On text page #55, why was the Ludlow 19S Substation not included in the list of Substations analyzed in the EC testing, particularly where the SB #5 and SB #8 of these substations appear to set transfer limits later in the report? (See pages 94 and 104.)***

ISO Response: The EC testing was meant to be a screening analysis for potential major impacts of the Interstate Reliability Project. The Manchester station was selected as one of the stations to be tested and since the results did not show a major impact, other stations were not included in the EC screening analysis. A detailed analysis of the extreme contingencies will be performed as a part of the NEEWS Interstate Proposed Plan Application (PPA) analysis.

***Comment 9: On text page #87, Table 6-1 indicates that line E205E is carrying over 90% of its capability yet the Bear Swamp facility connected to this line is only dispatched to be running at 50% of maximum output. Isn't this an indication of a potential thermal problem on this 230kV line or a reliability problem of locked-in generation that is otherwise being held for operating reserves?***

ISO Response: The condition under which the E205 shows up as “highly loaded” is when the first contingency is the 3520 line (West Medway to ANP Bellingham) and the second contingency is the breaker failure at the Harriman station that takes out the E131 line. With the loss of 3520, the two ANP Bellingham units are also lost. As a result, there is a need for about 470 MW of generation to make up for the loss of the two ANP Bellingham units. For this case the available reserves of the pumped hydro units are called upon and they are dispatched to make up for the difference. Hence the overload of over 90% on the line is under a dispatch that has both Bear Swamp units on-line at full output.

However, the language in section 3.2.9 will be modified to reflect that for the eastern New England stress dispatches, some of the pumped hydro units were turned on-line to meet load in New England.

***Comment 10: On text page #99, Tables 6-20 and 6-21 each have a listed contingency as “Base Case”. Is this just another way of saying there is an “N-0” issue? (Also Tables 6-34, 6-35).***

ISO Response: Yes.

***Comment 11: On text page #102, Table 6-27, there is a typo in the voltage column for circuit 1775, it should be 115kV.***

ISO Response: This will be corrected in the final report.

***Comment 12: On text page #103, Table 6-28, could you explain to me the meaning of the extraordinary low minimum WNE import levels associated with the first five listed circuits!***

ISO Response: The first 5 listed circuits are all elements within the Greater Hartford and Central Connecticut (GHCC) area. These overloads will be investigated by the GHCC working group in its needs analysis. The GHCC study assumes the Interstate Reliability Project to be in-service for its analysis and the cause for these overloads will be clarified in the GHCC needs assessment.

From a NEEWS Interstate perspective, the violations seem to be driven by load in the Hartford area coupled with high western CT import. They are issues that will not be resolved by the addition of CT import capability and hence were disregarded in determining CT import limits and western NE import limits for the comparison of the Interstate alternatives.

***Comment 13: On text page #113, why wasn't Ludlow 19S tested in the EC analysis?***

ISO Response: Please refer to response to Comment 8.

***Comment 14: On text page #114, again I note the absence of the Ludlow 19S Substation from these investigations.***

ISO Response: The Manchester station and the Carpenter Hill station were included in the short circuit screening analysis and are electrically close to the Ludlow station. The smallest breakers at Manchester and Carpenter Hill are 40 kA whereas post GSRP the breakers at Ludlow 345 kV will all be 50 kA breakers. Since the study did not identify the Manchester and Carpenter Hill breakers to be over 40 kA, it was reasonably assumed that the Ludlow breakers would not exceed their 50 kA capability.

The original NEEWS PPA analysis had indicated that the Manchester 345 kV breakers were above 90% duty with the project. In the same analysis the Ludlow 345 kV breakers were all below 65 % of their duty. Additionally the 115 kV breakers at Ludlow 115 kV and the adjacent Stony Brook 115 kV station were below 75 % and 55 % respectively. Since these breakers were not close to being over-dutied in the original NEEWS PPA analysis they were excluded from the short circuit screening analysis. However, the breakers at Ludlow and Stony Brook will be evaluated in the ongoing NEEWS Interstate PPA analysis.

**Comment 15: On text page #141, fix as above on page 1.**

ISO Response: Please refer to response to Comment 1.

**Comment 16: I note with some concern the rampant utilization of the procedure, throughout the Section 6.2 comparison pages 91 to 112, of allocating so many observed issues into the “limbo” of associated area’s “ongoing” studies for solutions and resolution. This may be a reasonable shortcut for the comparisons of the increases in transfer capability between the alternatives, but now that we have a selected solution, what are the next steps for handling the “element/contingency” pairs that were listed in Tables 6-6, 6-13, 6-20, 6-27, 6-34 and 6-41? How will these disregarded contingency issues really affect the ultimate transfer capability being computed for these proposed infrastructure improvements?**

ISO Response: As with virtually all interfaces, transfer capability is highly dependent upon system conditions and is usually significantly influenced by the assumed generation pattern. The testing which was performed in order to make comparisons between the various alternatives deviated from the dispatches which were used to establish the need since all of the proposed alternatives met the need and there needed to be a means of comparison. While this project fully addresses the conditions which demonstrated the need, there are system limitations which may prevent utilization of the same transfer limit under other dispatches until further modifications to the system are made.

The ISO recognizes that a number of issues that were identified in this analysis were not resolved by the preferred solution identified. This is one of the direct impacts of dividing a region into smaller study areas and analyzing these smaller areas. However, there is good coordination between the various study groups and information is exchanged by the study groups to ensure that all issues seen are addressed. In the case of NEEWS Interstate, other study groups are taking into consideration these element/contingency pairs. As an example the GHCC working group will investigate the element/contingency pairs in the Hartford area. The respective needs assessments will identify the reliability violations and the subsequent solution will resolve the needs.