



Summary of Western RI Area ASO Study Results

June 12, 2020

On May 19, 2020, the NEPOOL Reliability Committee recommended New England Power Company's (NEP) Proposed Plan Applications that are associated with projects included in the Western RI Area ASO Study (the Study) to the ISO-NE for approval. The Study consisted of 228MW of distributed generation submitted to Narragansett Electric Company (the Company) for interconnection to its electric distribution system. The primary objective of the Study was to determine if interconnecting the 228 MW of proposed Distributed Energy Resources (DER) created any adverse impacts on the reliability, stability, and operating characteristic of the New England Power transmission facilities, the facilities of any other transmission owner, or the system of any market participants.

A summary of the Study follows:

The Study assessed the impact of approximately 228 MW of DER that have applied to interconnect to the Company's distribution system in Western Rhode Island.

The Study evaluated DER projects grouped into Part 1, Part 2, Group 2, and Group 4:

Part 1: An aggregate of 108 MW comprised of 14 generating facilities will be connected to the new Wickford Junction Substation in North Kingston, Rhode Island. See Figure 1 for reference. The Wickford Junction Substation will be a 115 kV 4-breaker-ring bus with two (2) 33/44/55 MVA, 115kV/34.5kV transformers and three (3) 34.5kV breakers on the 34.5kV side of the transformers. Additional/modified protection equipment at the remote 115 kV terminals will be required for this interconnection.

Part 2: An additional 69 MW of aggregate projects over 5 MW will be connected to sub-transmission and distribution feeders in the Washington and Kent Counties in Western RI.

Group 2: 16 MW of individual projects between 1 MW and 5 MW will be connected to sub-transmission and distribution feeders in the Kent and Providence Counties in Western RI.

Group 4: 34 MW of individual projects between 1 MW and 5 MW will be connected to sub-transmission and distribution feeders in the Kent and Washington Counties in Western RI.

The transmission system geographic map in Figure 1 shows the area within the Study in which the Study participants plan to inject DER into the transmission system. This is the area between West Farnum and Chase Hill Substations.

Figure 1 DER Injection Area Geographic Map





There were three components of the Study: steady state, short circuit, and stability. The results of the WRI DER Study components are summarized in Table 1.

Table 1: Results of the Study Components

Study Part	Adverse Impacts
Steady State Analysis	Adverse impacts were identified
Short Circuit Analysis	No adverse impacts found
Stability Analysis	No adverse impacts found

The steady state analysis determined that 132 MW of the DER projects studied can connect to the transmission system without triggering any transmission system modifications and that 96MW of DER that seek to connect south of Drumrock Substation require transmission system modifications.

Steady State Analysis

- The proposed interconnection of the 96 MW of DER projects resulted in observed overloads
- The mitigation required to address these overloads is to reconductor the G-185N Line and to increase the K-189 Line ground clearances.

Note: Customer costs for the required transmission system modifications will be calculated and allocated according to the cost causation principle.

Next Steps

The Company’s Customer Energy Integration (CEI) team will be providing redacted versions of the WRI DER Study to all Study participants along with their Distribution System Impact Study (DSIS) report in final form during the second week of June and/or as soon as the DSIS is in final form if awaiting customer revisions. Interconnection Service Agreements will then follow in an effort to progress all projects involved as soon as possible.

Also, a DG webinar has been scheduled for June 30, 2020 where the Study results will be reviewed.

This Summary of the WRI DER Study results will be posted on the Company’s RI DG ASO Study Update webpage: <https://ngus.force.com/s/article/RI-DG-Group-Transmission-Study-Update>.