

Affected System Operator (ASO) Studies – Level 0/1 ASO Projects

March Update

This is Eversource's monthly report to customers who have ASO projects undergoing transmission studies that were announced on October 24, 2019. This month's update includes projects that were in the Level 0/1 ASO study that was underway and completed on February 17th. The table below provides the schedule for upcoming monthly reports for studies underway moving forward for the rest of the year:

Report #	Date
1	02-28-20
2	03-27-20
3	04-24-20
4	05-29-20
5	06-26-20
6	07-31-20
7	08-28-20
8	09-25-20
9	10-30-20
10	11-20-20
11	12-18-20

The electric distribution company (EDC) has shared the study results from these Level 0/1 projects with the applicant(s) at the February 24th stakeholder meeting held at Eversource's Westwood, MA office.

The outcome of the Level 0/1 transmission studies is that no transmission upgrades are required for these projects. Additionally, there were no projects that were upgraded to a Level 3 study. All projects in this Level 0/1 study had their PPAs submitted to ISO-NE and were approved at the March 17th Reliability Committee (RC) meeting and have secured the project's capacity on the system. Any Level 0/1 project whose distribution impact study has been completed will receive their Interconnection Service Agreement (ISA).

Customers impacted by these Level 0/1 ASO studies were notified via email of the need for a transmission study and their study level, back in November 2019, after there was mutual agreement on study levels by project between ISO-NE and Eversource.

These reports are emailed monthly and can be found on the ASO website:

<https://www.eversource.com/content/ema-c/about/about-us/doing-business-with-us/builders-contractors/interconnections/massachusetts/affected-system-operator-studies>

Throughout the study process, please direct questions to the ASO mailbox at ASOStudyInquiry@Eversource.com so that they may be directed to the appropriate party for response and if applicable added to the ASO Website's FAQ section for others to review.

1. What is the scope and process for projects in the Level 0/1 ASO study?

ASO transmission studies are required when a DG applicant's project has the potential to impact existing saturation levels at a substation in Eversource's territory that may have implications to Eversource's transmission system or to other transmission companies or bulk power operators. The primary affected parties in Eversource's Massachusetts territories are: ISO-New England, National Grid, Until and various municipalities.

Level 0/1 Studies

From a process perspective, for projects that are not automatically triggering a Level 3 transmission study (projects $\geq 5\text{MW}$), Eversource's Transmission Planning and Transmission Interconnections teams submit pre-screening forms to ISO-NE for concurrence. ISO-NE reviews the screening technical justification and typically will provide a response on concurrence within 2-3 weeks; Eversource's Transmission team checks in for updates on ISO-NE's decision on a weekly basis. When concurrence is received from ISO-NE, Eversource Transmission submits the Level 0 I.3.9 proposed plan application (PPA) package to the New England Power Pool (NEPOOL) Reliability Committee (RC) for inclusion on the upcoming agenda. Some of these projects may necessitate transfer limit analysis to ensure no degradation of interface limits. If adverse impacts are found, a Level 3 transmission study will be required.

Level 3 Studies

For projects that trigger a Level 3 analysis, there is a two-step process. When concurrence is received from ISO-NE on the study level, Eversource Transmission Planning prepares the study scope and assumptions which are also reviewed by ISO-NE. Generally, Level 3 transmission study scopes include thermal and voltage steady state analysis, as well as short circuit and stability analyses. Once the study scope is finalized, the study is performed and the Eversource Transmission Interconnections team attaches the study results to the I.3.9 PPA package to the NEPOOL RC for inclusion on the upcoming agenda.

Once Eversource's Transmission Interconnections team receives the approval letter from ISO-NE, which are usually sent out prior to the next month's RC meeting, they work with Account Executives to notify the customer of final project approval.

2. What are the roles and responsibilities of all parties involved in executing the Level 0/1 ASO study?

Eversource Transmission Planning and Transmission Interconnections teams work closely with ISO-NE to ensure ASO studies are performed acceptably. Eversource is the electric distribution and transmission company providing ISO-NE with the applicant's project information and transmission analysis results for review and approval. ISO-NE is the bulk power system operator

for New England who reviews and concurs or rejects Eversource Transmission Planning teams' proposed transmission study level and results. The NEPOOL Reliability Committee reviews the PPAs at their monthly meetings and provides an advisory recommendation (approve or reject) to ISO-NE on each application. The interconnecting customer is required to provide inputs to Eversource, such as PSCAD models and project details like mechanical completion date, to complete the I.3.9 PPA package.

3. What are the standards and jurisdiction of this ASO study?

The ASO study is subject to tariffs and agreements under the jurisdiction of the Federal Energy Regulatory Commission. When required, transmission impact studies are governed primarily by ISO-NE tariff Section I.3.9 and ISO-NE Planning Procedures PP5-1 and PP5-3. Some of the reliability standards applicable to these studies, as referenced in PP5-3, are contained in ISO-NE Planning Procedure 3, but others exist as well. For example, elements of NERC's PRC-006-NPCC-1 underfrequency protection criteria and IEEE 1547 are often used to model resources in stability analyses.

FERC certified The North American Electric Reliability Corporation (NERC) as the Electric Reliability Organization (ERO) in 2006. The ERO is responsible for developing and enforcing reliability standards within the United States. In executing part of its responsibilities, NERC delegates authority to Regional Entities to perform certain functions through delegation agreements. Ensuring the reliability of the bulk power system for New York and the six New England States was delegated from NERC to the Northeast Power Coordinating Council (NPCC). Using the reliability standards developed by these entities, the objective of the ASO studies is to demonstrate that the projects under study have no significant adverse effect on the interconnected system.

Also, the New England Participating Transmission Owners (PTOs), including Eversource's operating companies, executed the Transmission Operating Agreement with ISO-NE in 2005. TOA Section 3.03(b) establishes the obligation for the PTOs to notify ISO-NE when multiple distributed generators may have cumulative impacts affecting the transmission system and consult with ISO-NE in its performance of impact studies.

4. What are the estimated timelines for completion of the ASO study for Level 0/1 projects?

The Level 0/1 ASO studies were completed on February 17, 2020. The projects in these studies were approved at the following RC agenda in March.

5. What are the estimated necessary system modifications and associated costs?

No system modifications were identified in the Level 0/1 ASO transmission analysis. There will be no associated transmission upgrade costs for these projects.

6. What prioritization system has the EDC developed to determine which of the affected DG applications would be eligible to interconnect first if capacity became available?

The EDC would prioritize applications to interconnect if the capacity became available in the order of the dates the applications were deemed complete e.g. first come, first served. It is unlikely that Eversource would allow applications to “jump” the queue in front of other projects, simply based on capacity differences, to ensure a fair methodical approach to all projects in the queue.

Separately, Eversource is continuing to proceed with distribution-level studies while Level 0/1 and Level 3 ASO transmission-level studies are being conducted. This is being done to reduce the distribution-level study wait time and increase value to customers. Eversource is also continuing to perform distribution group studies where the same customer has multiple projects in sequence on a single circuit.

Projects that had ISAs prior to the larger ASO study announcement on Oct. 24, 2019 that required transmission studies have continued with their separate transmission studies outside of the five ASO group studies. There were 54 post ISA projects in this category.

7. Are there any proposed resolutions that the EDC is exploring to enable some affected DG applicants to proceed with the interconnection process prior to completion of the ASO study?

Eversource is continuing to proceed with distribution level studies while both post ISA ASO transmission studies and the Level 0/1 studies are being conducted. This is being done to reduce the distribution-level study wait time and increase value to customers. Eversource is also continuing to perform distribution group studies where the same customer has multiple projects in sequence on a single circuit.

8. Are the study results available at this time for Level 0/1 ASO projects?

Yes, there are no system modifications that were identified in the Level 0/1 transmission analysis and therefore no associated transmission upgrade costs for these projects.

The next steps for all Level 0/1 projects since the ISO-NE RC approval is as follows:

- Eversource Transmission Interconnections team provides the RC approval letter, once received, to the EDC to provide to the customer
- The distribution study is completed and any necessary upgrades and associated costs are identified
- The EDC will provide an ISA to the customer with the distribution study upgrade costs

Regarding Interim Guidance 10, applicants should continue directing questions and correspondence to ASOStudyInquiry@eversource.com so that they can be directed in a timely manner to the appropriate

party for a response. The Company also utilizes the questions that come in to the ASO mailbox to update its FAQs list on the ASO website.