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July 15, 2025

Via ePUC
Holly Anderson, Clerk
Vermont Public Utility Commission
112 State Street
Montpelier, VT 05620-2701

Re: Case No. 24-3351-INV – Investigation into the potential need for transmission system improvements identified in the 2024 Vermont Long-Range Transmission Plan

Dear Ms. Anderson:

In its May 27, 2025 Order in this case the Public Utility Commission (Commission) requested participants to respond to questions for additional information related to the 2024 Vermont Long-Range Transmission Plan (“Plan”). Vermont Electric Power Company, Inc. (VELCO) appreciates the opportunity to provide additional input regarding the Plan and respectfully submits the following responses that are applicable to VELCO’s role and responsibilities in the planning process.

- **Usefulness and limitation of locational adjustor fees**

To understand the barriers to implementing locational adjustor fees, distribution utilities and VELCO are requested to provide an assessment of the drawbacks, barriers, opportunities, and usefulness of locational adjustor fee tariffs. Distribution utilities should address whether the barriers are administrative or technical, or if a determination has been made that such a fee would not help optimize the location of distributed generation. For example, the GMP Solar Map shows significant portions of the distribution system that are served by a substation transformer with less than 10% capacity remaining; GMP should address whether these parts of the grid are candidates for adoption of a locational adjustor fee tariff.

VELCO response: Locational adjustor fees can be useful in encouraging the siting of additional generation in areas without constraints. The drawbacks, barriers and opportunities are issues best addressed by the distribution utilities.

- **Additional mechanisms to guide generation siting**

Participants, including distribution utilities and VELCO, are requested to address whether there are other mechanisms to facilitate and enable a rational distribution of generation resources across the state with respect to distribution and transmission capacity.

VELCO response: VELCO believes there are mechanisms beyond locational adjustor fees that can help guide generation development in Vermont in line with available transmission and distribution capacity. As discussed in the 2024 Plan under “Observations from the Results of the Solar PV Analysis”, one proposed strategy includes active control by distribution utilities of both their connected generation and load—including small-scale resources—that could provide a dynamic means of balancing supply and demand across the network. In addition, consideration

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should be given to streamlining the siting process for energy storage facilities and promoting the co-development of distributed energy resources with storage. VELCO also recommends applicants consult available resources such as the transmission and distribution utility interconnection maps. This step would ensure that developers are aware of system capacity to better align proposals with grid capabilities.

- **Level at which DER assets should be actively controlled**

In their comments, BED and VPPSA state that any mechanism relying on active control of distributed energy resource assets needs to occur at the distribution utility level to ensure that actions taken for statewide benefit do not lead to offsetting localized system or reliability problems or cause cost shifting among stakeholders. Participants are requested to address whether active control of distributed energy resource assets needs to occur at the distribution utility level and address the potential benefits, disadvantages, and costs of active control of these assets.

VELCO response: VELCO agrees with BED and VPPSA that any mechanism relying on active control of distributed energy resource (DER) assets needs to occur at the distribution utility level. VELCO does not seek to control distribution utility connected DER. We believe that the control of DER assets should align with the current framework used for generation resources – that control resides with the assets’ owners or operators. Similar to traditional generation resources, where VELCO has a regulatory obligation to dispatch in real-time through the associated Designated Entity supporting reliability, any DER identified as having the ability to mitigate a System Operating Limit (SOL) should likewise have an associated Designated Entity. VELCO does not wish to be a Designated Entity.

- **Benefits, costs, and reliability impacts of actively managed NTAs**

In its comments, VPPSA notes that the Plan discusses the desire to make use of non-transmission alternatives (“NTAs”) and coordinate them with distributed generation siting and raises concerns about the reliance on active control or management of NTAs, including whether the active management of NTAs have the potential to negatively affect distribution level reliability, as loads are shifted locally or in time, and may result in significant cost shifting across stakeholders. Participants are requested to address the potential benefits, disadvantages, and costs that accompany active management of distributed energy resources and NTAs, including whether and how the shifting of costs or reliability problems across stakeholders can be avoided.

VELCO response: If a NTA is selected, it must serve the transmission needs as its primary purpose. Properly designed NTAs—such as flexible load management or targeted storage—could defer or avoid transmission upgrades. Reliability impacts and costs at the distribution level must be evaluated case-by-case. The Commission’s Docket No. 7081 Order requires the implementation of a NTA only when the NTA proves more cost-effective than the transmission solution, understanding all costs such as life cycle costs and cost shifting should be included in the evaluation.

- **Additional analyses requested by Burlington Electric Department (BED)**

In its comments, BED states that the Plan could benefit from additional analyses and discussion on the following issues: (1) duration, frequency, and load profile of transformer overloads under N-1-1 conditions; (2) rate of increase in the deployment of distributed generation and other distributed energy resources; (3) rate of increase in the deployment of electric vehicles and advanced heat pumps; (4) rate of increase in the deployment of energy storage in key areas of the state; (5) whether existing rate structures, such as electric vehicle rates, could alleviate forecasted overload conditions; and (6) whether future dynamic rate structures could alleviate

forecasted overload conditions. Participants are requested to address how the Plan and state distribution and transmission planning can benefit from analysis of these issues and file any supplemental information, data, or analyses that would aid in the discussion of these issues.

VELCO response: VELCO believes the data currently collected for the Plan serves the purpose of identifying the deficiencies on the transmission system over the next 20 years. The frequency and duration of reliability violations are important for informing the NTA study process, and while the data cited in BED's comment may not need to be included directly in the Plan, it will be made available to the NTA study team at the appropriate stage. VELCO has provided such information to the NTA team in follow-up to the 2024 Plan and anticipates continuing this practice for the 2027 Plan.

Rates of growth in distributed generation, electric vehicles, heat pumps, and energy storage as received from the VSPC Load Forecasting Subcommittee are incorporated into the load forecast report available on the Vermont System Planning Committee website¹ and referenced in the Plan. It is important to note, however, that the accuracy and usefulness of this analysis are inherently linked to the quality and completeness of the data provided.

- **Issues raised by Efficiency Vermont**

In its comments, Efficiency Vermont identifies some additional analysis and considerations: (1) What are the parameters and sensitivities to electrification and load growth in the state? What assumptions about growth and load profiles are being utilized in the Plan's forecast that might be instructive to a potential solution? What metrics should be tracked to determine if this forecast is likely to materialize? (2) What attributes of the growth of distributed generation and time of generation throughout the state should be understood? (3) How can the use of flexible load resources serve as a potential mitigating solution to overload conditions and/or absorption of excess renewables? (4) What are the avoided costs that should be used as a basis for deciding whether NTA investments are cost-effective? (5) How should stakeholders identify the time for planning, implementation, and measuring results? Participants are requested to address these issues along with the issues identified by BED.

VELCO acknowledges the value of the issues raised by Efficiency Vermont and offers the following perspectives. Items (1) and (2), concerning electrification sensitivities, load growth parameters, and distributed generation characteristics, are addressed in detail within the 2024 Plan and its accompanying load forecast report.

Regarding item (3), the role of flexible load resources in mitigating overload conditions and absorbing excess renewable generation is discussed in the load management section of the 2024 Plan. Flexible loads, such as electric vehicle charging and controlled heating and cooling systems, can help distribution utilities manage peak demand and system variability.

Items (4) and (5), which concern the avoided cost basis for non-transmission alternatives (NTAs) and the timing of planning and evaluation, are more appropriately addressed during the NTA study and implementation phases. These topics are governed by established processes under Docket No. 7081 and are evaluated in collaboration with stakeholders and experts best positioned to assess cost-effectiveness and deployment timelines. The timeframe for developing, permitting and constructing a transmission solution is approximately five years,

¹ https://www.vermontspc.com/sites/default/files/2024-07/VELCo_FcstRpt_2023_FinalReport_VSPCwebsite.pdf

therefore the alternative must be determined in a manner that provides sufficient time to implement a transmission solution if preferred.

- **Coordination of statewide distribution and transmission planning**

As identified in the Department's comments, participants are requested to address the present condition of coordination of statewide distribution and transmission planning work, including strengths and weaknesses, and what steps are needed to ensure that NTAs are given full, fair and timely consideration as envisioned by Docket 7081. Responses should include a step-by-step recitation of how: (1) effective data and information gathering and collaboration will occur; (2) load growth, load controllability, and other key assumptions will be collectively determined; and (3) grid cost and resiliency factors can be better reflected in distributed generation siting and utility infrastructure investment decisions moving forward and incorporated in the next iteration of the Plan. Responses should also address: (1) any recommendations for changes to the Docket 7081 process to ensure NTAs are given full consideration; and (2) any recommendations for which entities are responsible for paying for transmission level upgrades that become necessary because of distributed generation growth, rather than load growth.

VELCO response: We believe NTAs are given full consideration within the existing 2007 planning framework. However, Vermont's electric system has become significantly more complex since the establishment of Docket 7081. Currently VELCO works closely with the VSPC Load Forecasting Subcommittee to collect load data and produce the statewide forecast that anchors each Long-Range Transmission Plan. Draft Plans are circulated early so utilities and VSPC members can validate assumptions on load growth, electrification, and controllability and provide feedback that strengthens transparency and accuracy of the final plan.

VELCO supports an evaluation of the existing planning framework with the goal of modernizing it where appropriate. As part of this effort, VELCO welcomes the opportunity to explore enhancements that improve an evaluation of the overall robustness of the solution, including resiliency and the expected duration in the NTA analysis, and apply a clear, consistent set of evaluation criteria—including reliability, availability, and cost. These improvements are essential to ensuring that NTAs and transmission solutions are assessed on an equal and objective basis and further ensures the most beneficial alternative is selected.

- **VELCO Point-of-Interconnection Heat Map**

VELCO announced its enhanced Point of Interconnection Heat Map – a publicly accessible, interactive tool designed to improve transparency regarding available capacity on VELCO's transmission system. This tool is intended to assist in the optimized siting of distributed generation resources across the state. Participants are requested to address how this tool can be used in coordination of statewide distribution and transmission planning work.

VELCO response: VELCO developed and published its Point-of-Interconnection Heat Map² in April 2025 to provide a publicly accessible, visual representation of available transmission headroom at each substation, allowing developers and distribution utilities to identify high-capacity locations in the earliest stages of project development. VELCO recommends updating interconnection request forms to encourage applicants to review both the VELCO and distribution utility interconnection maps. This step will help ensure that developers are informed about available system capacity and can align their project proposals with existing grid

² <https://www.velco.com/heatmap/>

capabilities. While tools such as the VELCO Heat Map offer a valuable starting point for identifying suitable locations, it is important to emphasize that all interconnection proposals remain subject to comprehensive review and approval by the interconnecting distribution utility, and by ISO-NE. In addition, generation owners are subject to compliance with applicable NERC reliability standards.

VELCO remains committed to transparent, collaborative transmission planning and to the consideration of non-transmission alternatives that deliver cost-effective, reliable outcomes for Vermonters, while also recognizing the value of transmission solutions. We appreciate the Commission's questions and stand ready to assist further.

Sincerely,

A handwritten signature in cursive script that reads "Shana Louiselle".

Shana Louiselle
Communications Manager
Vermont Electric Power Company