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January 31, 2025

Holly R. Anderson, Clerk
Vermont Public Utility Commission
112 State Street
Montpelier, VT 05620

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

Dear Ms. Anderson,

In its December 27, 2024 Order, the Public Utility Commission (PUC) requested participants to file comments and recommendations regarding the Vermont Long-Range Transmission Plan's conclusion that enhanced statewide coordination and planning are necessary to address how distributed generation (DG) growth can be optimally managed and coordinated, as well as any further processes required for this investigation.

VELCO appreciates the opportunity to provide additional input regarding the Plan, and offers the following:

Coordinated statewide planning is needed to integrate distributed generation

Vermont's public policies have successfully encouraged investment in small-scale distributed generation, particularly solar photovoltaic (PV) systems. Based on data provided by distribution utilities to ISO New England (ISO-NE), approximately 500 MW of solar PV capacity and 90 MW of other DG technologies were installed as of December 2023. While these investments have numerous benefits, the proliferation of DG is increasingly straining certain parts of the transmission system and contributing to curtailment of larger, ISO-NE-controllable renewable generators. VELCO's analyses indicate that continued DG deployment in its current siting patterns will exceed transmission capacity, requiring significant grid reinforcements or result in additional curtailments.

VELCO's generation hosting analyses, conducted as part of the 2018, 2021, and 2024 Long-Range Transmission Plans, consistently reveal that strategic siting of distributed generation is critical. Southern Vermont offers greater hosting capacity, whereas northern Vermont presents challenges due to nearly constrained transmission infrastructure from existing generation resources. We continue to see the historical siting pattern of DG interconnecting in the parts of the state where the grid is already saturated with DG.

VELCO has advocated for stronger policies and programs to achieve optimized DG integration in our 2018, 2021 and 2024 Long-Range Plans using a combination of the following tools:

- Incentives/disincentives for distributed generation siting
- Deployment of energy storage solutions to maximize DG benefits
- Flexible load management practices
- Energy production curtailment strategies
- Demand response programs
- Targeted transmission and subtransmission system upgrades

In addition, VELCO recommends employing advanced grid modeling tools to assess the impacts of DG on the transmission system under various scenarios to enable proactive planning and optimized DG siting. In 2018, VELCO developed a static map illustrating regional hosting capacity, demonstrating that transmission

constraints can be minimized and significant transmission upgrades can be avoided by adhering to zonal limits. This map was helpful but did not provide enough information for renewable energy developers to fully understand the impact of their siting decisions on the transmission system.

In response to FERC Order 2023¹, VELCO is currently developing a more dynamic heat map to visualize real-time transmission capacity availability at each bus on VELCO's system. While FERC's order primarily targets regional transmission providers, VELCO has proactively undertaken this initiative to provide accurate and actionable data specific to Vermont's grid. The heat map will enhance planning efforts by illustrating available capacity at potential points of interconnection, and allowing users to input their desired MW injection to see potential impacts, thereby enabling more strategic DG deployment. The map is currently under development and scheduled to go live in Q1 2025.

Further process recommendations

VELCO does not have specific recommendations for additional processes at this time. However, we will continue to facilitate discussions through the Vermont System Planning Committee (VSPC); support distribution utilities during the non-transmission alternatives (NTA) process; and provide the PUC with any necessary information to address questions during the investigation.

We remain committed to collaborating with Vermont's energy stakeholders and regulators to ensure Vermont's grid remains safe, reliable, affordable, and capable of accommodating the state's renewable energy goals.

Respectfully submitted,

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

Shana Louiselle
Communications Manager

¹ In July 2023, the Federal Energy Regulatory Commission (FERC) issued a FERC Order 2023 to reform procedures and agreements that electric transmission providers use to integrate new generation facilities into the existing transmission system. Further details are available at <https://www.ferc.gov/explainer-interconnection-final-rule>.