



# St. Johnsbury Substation Project

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September 8, 2023

Town of St. Johnsbury Selectboard  
Town of St. Johnsbury Planning Commission  
Northeastern Vermont Development Association  
ePUC Statutory Entities

Re: St. Johnsbury Substation Project  
Certificate of Public Good – Section 248 Permit Process  
45-Day Notice of Project Filing

Dear Statutory Entities:

This letter and the enclosed information describe the Vermont Electric Power Company Inc. and Vermont Transco LLC's (collectively "VELCO") proposed St. Johnsbury Substation Project (the Project), which includes upgrades to VELCO's existing facilities in the Town of St. Johnsbury, and generally consists of upgrading VELCO's substation located at 397 Higgins Road.

We anticipate filing our formal petition with the Vermont Public Utility Commission (Commission) on October 24, 2023, requesting a Certificate of Public Good to construct the Project. The state permitting process requires VELCO to notify the Commission, the Town of St. Johnsbury Planning Commission and selectboard, and the Regional Planning Commission at least 45 days prior to a formal filing with the Commission<sup>1</sup>. For your information, we have attached a Project overview, substation site layouts, and proposed aesthetic mitigation plans to this letter.

Before the Project is filed with the Commission, VELCO will conduct informal discussions to address concerns you may have about the Project's impact. VELCO will hold a public meeting on October 11, 2023 to share information, collect feedback, and address concerns from affected communities. You will also receive a notification of our petition when it is filed with the Commission. Please note that the Planning Commissions may make recommendations to VELCO within 40 days of the submission of this 45-day notice October 18, 2023 in this case. Additionally, Commission Rule 5.402(A) establishes that municipal and regional Planning Commissions "shall make recommendations, if any, to the [Commission] and to the petitioner at least 7 days prior to filing the petition with the [Commission]." Planning Commissions also have the right to make revised recommendations within 45 days after the date the Petition is filed with the Commission, if the Petition contains new or more detailed information that was not previously included in these plans. While Section 248(f) and Commission Rule 5.402(A) focus only on the Planning Commission comment process, VELCO welcomes feedback from the affected municipal bodies and state agencies. So that VELCO has sufficient time to incorporate your feedback prior to the October 24, 2023 anticipated filing date, VELCO is requesting that comments be submitted by October 18, 2023.

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<sup>1</sup> The process is governed by Commission Rule 5.400, which can be viewed on the Commission's website at <http://puc.vermont.gov/>.

For additional information regarding the Commission's processes, including your right to participate in the proceeding, please refer to the Commission document titled, "Public Participation and Intervention in Proceedings Before the Public Utility Commission," found on the Commission's website at <https://puc.vermont.gov/document/public-participation-and-intervention-proceedings-public-utility-commission>.

The Commission's website also includes a Section 248 procedures document found on the Commission's website at <https://puc.vermont.gov/document/section-248-procedures>.

As the Project is still in the design phase, we will continue discussions and expect to receive feedback on this Project from various stakeholders. Please note that we expect to make the formal filing with the Commission on October 24, 2023. If you are interested in a presentation on this Project, have comments, or want further information, please contact John Fiske, Project Manager, at 802-353-0920 or [jfiske@velco.com](mailto:jfiske@velco.com). Please contact us before October 18, 2023, so that we may better address any questions or concerns you may have.

**The documents that accompany this letter have been electronically filed using ePUC.**

Sincerely,



John Fiske, P.E., Project Manager  
Vermont Electric Power Company, Inc.

Enclosures:

Attachment A – Project Overview

Attachment B – St. Johnsbury Substation – Overall Ortho Plan, Vegetation Clearing and Aesthetic Mitigation



## St. Johnsbury Substation Project Overview

### Introduction

Vermont Electric Power Company Inc. (VELCO) was formed when local distribution utilities joined together to create the nation's first statewide "transmission only" company to provide access to clean hydro power and build and maintain the state's high-voltage electric transmission\* grid. VELCO constructs, owns, and operates most of this in-state, high-voltage transmission grid (essentially 115 kV and above) that connects Vermont to the regional and national electric power supply system. VELCO's network also provides the electric supply to St. Johnsbury's local distribution utility, Green Mountain Power, Inc. (GMP).

The St. Johnsbury Substation Project (the Project) is driven by the need to improve the condition of VELCO's existing facilities in the Town of St. Johnsbury and is comprised of improvements to VELCO's St. Johnsbury Substation. As is explained in this overview, we expect to file a request on October 24, 2023 with the Vermont Public Utility Commission (Commission) for permission to undertake this Project. Assuming the Commission and other approvals are granted, we currently plan for it to be constructed and in service by December 2025.

This proposed Project overview describes the following:

- Deficiencies at VELCO's St. Johnsbury Substation
- Alternatives evaluated for this Project
- The Project's description
- The Project's impacts
- The anticipated Project filing date with the Commission
- Local and Regional Planning Commissions' Rights to comment on the Project Plans

### Description of the VELCO St. Johnsbury Substation Deficiencies

Electric energy remains a cornerstone of our local and state economies, our quality of life, and our communities. Households, businesses, and public services like schools and hospitals all rely on electricity for communication, lighting, heating, ventilation, and the operation of appliances and equipment. If transmission facilities fail, large geographic areas can lose their electric service. Transmission utilities such as VELCO are required to design, operate, and maintain a transmission network according to national and regional reliability standards. In addition, VELCO continuously assesses the adequacy of its system to ensure Vermont's transmission network meets national and regional reliability criteria.

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\* Transmission refers to the part of the electric system that operates at high voltage and carries large amounts of electricity from generation plants to the lower-voltage distribution system, which supplies electricity to local areas.

The VELCO St. Johnsbury Substation is connected to VELCO's and Eversource's electric transmission network in the St. Johnsbury area. The Substation is connected to GMP's sub-transmission systems in the St. Johnsbury area. GMP distribution systems are fed from the sub-transmission system and in turn serve GMP customers.

The VELCO St. Johnsbury Substation was originally built in 1972, with various modifications and improvements occurring over the subsequent nearly fifty years of service. VELCO conducted a condition assessment of the substation and identified the need to replace some of the equipment due to condition. Deficiencies were identified in equipment such as the control building, 220 circuit switcher, 34.5 kV circuit breakers, protection and control relays, and the substation fence.

VELCO proposes to address most of the substation concerns by replacing the existing control building with a larger control building, replacing the existing 220 circuit switcher with a new K220 SF6 gas circuit breaker, replacing the existing 34.5 kV breakers with new vacuum 34.5 kV breakers, replacing the protection and control panels with the construction of a new control building, and replacing the substation fence with an expanded fence. VELCO also plans to reconstruct and widen the existing driveway as well as establish a location along the driveway to provide power during Project construction.

## Alternatives Evaluated

VELCO considered reconfiguring the substation to a ring substation, and determined that such an upgrade was not needed at this time. The current configuration is sufficient to meet current and future needs based on known load and generation projections. Further, the proposed scope of work does not preclude future substation reconfigurations if future reliability concerns are identified. Replacing and repairing deficient equipment at the St. Johnsbury Substation is the most cost-efficient way to address the condition-related concerns.

VELCO screened the Project for its potential to be resolved through non-transmission alternatives (e.g., energy efficiency or new generation) using the tool developed by the Vermont System Planning Committee (VSPC). The screening determined that the Project was not a candidate for a non-transmission solution because the proposed upgrades are being driven by the conditions of the substation equipment. Thus, non-transmission alternatives could not avoid or defer the VELCO St. Johnsbury Substation Project. The VSPC Geographic Targeting Subcommittee reviewed the screening conclusion in the June 2023 meeting.

## Project Description

The Project consists of the following primary components:

- Replace the existing 25' x 31' VELCO control building with a new, approximately 32' x 70' control building that will accommodate the protection and control system, redundant AC & DC station services, communication equipment, and security systems. The new control building will be located on the southern side of the substation.
- Replace the existing 220 circuit switcher with a new K220 SF6 gas circuit breaker that meets VELCO's design standards.



- Expand the fence to accommodate the new control building, and to improve access to equipment for maintenance. The substation fence expansion will be approximately 15 feet to the north, 15 feet to the west, and 55 feet to the south.
- Reconstruct and widen driveway to 20 feet with turn-around.
- Improve site drainage.
- Perform tree clearing to accommodate the temporary infrastructure, temporary substation/construction area support area, expanded substation yard and driveway improvements.

The Project will require VELCO to install a temporary configuration to maintain service to the GMP sub-transmission system. VELCO evaluated different options for the temporary configuration and determined that the most efficient and reliable method is to utilize the VELCO transportable 115/34.5 kV power transformer and 34.5 kV mobile substation equipment for the temporary configuration. VELCO will create a temporary substation location as well as a construction support area to the west of the existing substation. The construction support area will be utilized for a temporary driveway required to access the temporary substation and laydown area for Project materials. Additionally, VELCO will need to install a temporary 115 kV transmission line tap to supply the temporary substation.

The Project requires temporary GMP 34.5 kV lines to connect the temporary substation to the existing GMP 34.5 kV lines. These temporary lines are depicted as dashed brown line on the Attachment B. To aid in construction of the temporary substation, one of the GMP 34.5 kV lines will be permanently rerouted along the western side of the temporary substation and various GMP poles will be replaced to maintain clearance for the temporary access road and site grading. Additionally, a GMP 12.47 kV distribution line will be extended along the western edge of the existing driveway providing station service during construction. All of these assets are depicted as dashed red lines on the Attachment B. VELCO will request GMP to construct temporary and permanent GMP owned transmission lines.

While the Project is constructed, VELCO will take advantage of the opportunity to perform regular condition-based maintenance and in-kind replacements at the substation. This opportunity work is not associated with the Project, and includes, but is not limited to: reconstruct stone berm around oil containment for the existing power transformer, replacement of disconnect switches and bus work, replacement of the protection and control system, replacement of redundant AC & DC station services, replacement of telecommunication equipment, installation of power transformer and circuit breaker monitoring systems, and improvements to security systems.

Assuming regulatory approval, construction is expected to start in July 2024 with a targeted completion of December 2025.

Although the engineering for the St. Johnsbury Project is not yet complete, Attachment B depicts a preliminary design layout for the substation.

## **Project's Impacts**

### **Aesthetics - Commission Rule 5.804**

Both the Vermont Natural Resources Board and the Commission utilize the so-called Quechee Lakes standard [set forth in the decision Quechee Lakes Corporation, #3EW0411-EB and #3O439- EB (1986)] to guide their aesthetics analysis. According to the Quechee Lakes standard, regulators must first determine whether a project will have an adverse impact on aesthetics and scenic and natural beauty. A project has an adverse impact if it is out of character with its surroundings. Specific factors that regulators use to make this evaluation include the nature of the project surroundings, the compatibility of the project design with those surroundings, the suitability of the project colors and materials with the immediate environment, the visibility of the project, and the impact of the project on open space. If regulators conclude that a project will have an adverse effect, the next step in the two-part test is to determine whether the adverse effect of the project is “undue.” The adverse effect is considered undue when regulators find that any one of the following questions is answered yes: (1) Does the project violate a clear, written community standard intended to preserve the aesthetics or scenic beauty of the area? (2) Have the applicants failed to take generally available mitigating steps which a reasonable person would take to improve the harmony of the project with its surroundings? (3) Does the project offend the sensibilities of the average person? Is it offensive or shocking because it is out of character with its surroundings, or because it significantly diminishes the scenic qualities of the area? For transmission upgrades, the Commission’s aesthetic analysis, however, does not end with the results of the Quechee test. In addition, the Commission’s aesthetic assessment is “significantly informed by overall societal benefits of the project.” Public Service Board Docket No. 6860, Order of 1/28/05 (footnotes omitted)<sup>†</sup>.

VELCO’s aesthetic consultant, T. J. Boyle Associates, LLC (TJB), a landscape architecture and planning firm, has reviewed the preliminary design plans and performed a visual analysis of the areas of the proposed Project upgrades. TJB’s preliminary analysis indicates that the Project will not result in an undue adverse impact on aesthetics and scenic and natural beauty of the area. The St. Johnsbury Substation is located at the northern side of Higgins Hill Road, which is accessed from Route 2 to the east. The area near the Substation contains a mix of uses, including existing electrical transmission and distribution infrastructure, roads including Interstate 93 to the south, and residential structures located within a mix of open agricultural fields and wooded areas. Vegetation and landform significantly screen visibility of the existing substation from the surrounding area. Proposed improvements will require vegetation clearing, shown on Attachment B, Overall Site Ortho, which to a limited extent will increase visibility of the substation and proposed improvements from the surrounding area. TJB recommends landscape mitigation to further improve screening of the substation in this area. As required by Commission Rule 5.804(B), we have included preliminary areas for proposed landscape mitigation plantings, shown on Attachment B. VELCO’s Petition to be filed in October 2023 shall address any comments received on the proposed plan and will include a full analysis of potential aesthetic impacts and proposed landscape mitigation measures.

## Transportation

The Project poses no long-term traffic impacts in St. Johnsbury. The Petitioners anticipates only minor, short duration traffic impacts, if any, due to deliveries of equipment and material to the substation site during the construction period (expected to be from July 2024 to December 2025). Such deliveries will use

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<sup>†</sup> The Public Utility Commission was formerly called the Public Service Board.

existing roads with vehicles that are commonly used on public roads. During delivery of any large equipment, Petitioner will employ the services of traffic control personnel to manage traffic flow.

### **Right of the Local and Regional Planning Commissions to Comment on the Project Plans**

Section 248(f) of Title 30 of the Vermont Statutes Annotated provides that municipal and regional Planning Commissions are entitled to receive notice of projects proposed under the Section 248 statute and to make recommendations to the Commission and to the petitioner. More specifically, municipal and regional Planning Commissions may make recommendations regarding the Project as follows: First, 30 V.S.A. § 248(f)(1)(C), states local and regional Planning Commissions may make recommendations to the petitioner [VELCO] within 40 days of the petitioner’s submittal to the planning commission under this subsection.” Forty days from the date that this letter and Attachment will be provided to municipal and regional Planning Commissions is October 18, 2023. Second, Section 248(f)(1)(D) states that, once the petition is filed with the Commission, such local and regional Planning Commissions may make recommendations to the Commission “by the deadline for submitting comments or testimony set forth in the applicable provision of this section, Commission rule, or scheduling order issued by the Commission.” Relatedly, Commission Rule 5.402(A) establishes that municipal and regional Planning Commissions “shall make recommendations, if any, to the [Commission] and to the petitioner at least 7 days prior to filing the petition with the [Commission].” Third, as stated in Commission Rule 5.402(A)(2), local and regional Planning Commissions also have the opportunity to “provide revised recommendations within 45 days of the date on which petitioner has filed a petition with the Commission if the petition contains new or more detailed information that was not previously included in the petitioner’s filing with the municipal and Regional Planning commissions.” Recommendations made to the Commission under Section 248(f), or the lack of such recommendations, do not preclude municipal and regional Planning Commissions from presenting evidence during technical hearings if they exercise their right to appear as a party.

For additional information regarding the Commission’s processes, including your right to participate in the proceeding, please refer to a Commission document titled, “Public Participation and Intervention in Proceedings Before the Public Utility Commission,” found on the Commission’s website at <https://puc.vermont.gov/document/public-participation-andintervention-proceedings-public-utility-commission>.

The Commission’s website also includes a Section 248 procedures document found on the Commission’s website at <https://puc.vermont.gov/document/section-248-procedures>.

As the Project is still in the design phase, we will continue discussions and expect to receive feedback on this Project from various stakeholders. Please note that the Commission Petition and filing anticipated for October 24, 2023 as well as other pertinent Project updates, will be posted on VELCO’s website at: <http://www.velco.com/St.Johnsbury>. Those interested in a presentation on this Project, have comments or request further information, please contact John Fiske, Project Manager, at 802-353-0920 or [jfiske@velco.com](mailto:jfiske@velco.com).





**LEGEND**

---	APPROXIMATE BOUNDARY LINE
---	APPROXIMATE RIGHT-OF-WAY LINE
○	SUBSTATION FENCE

**COLOR KEY**

—	EXISTING INFRASTRUCTURE TO REMAIN
—	EXISTING INFRASTRUCTURE TO BE REMOVED
—	EXISTING INFRASTRUCTURE TO BE REMOVED (GMP)
—	PROPOSED OR RELOCATED INFRASTRUCTURE
—	PROPOSED OR RELOCATED INFRASTRUCTURE (GMP)
—	TEMPORARY INFRASTRUCTURE
—	TEMPORARY INFRASTRUCTURE (GMP)

	PROPOSED VEGETATION REMOVAL (SEE NOTE 3)
	POTENTIAL LANDSCAPE MITIGATION PLANTING AREA
	TEMPORARY SUBSTATION/CONSTRUCTION SUPPORT AREA
	WETLAND (SEE NOTE 4)

- NOTES:**
1. ORTHOIMAGERY OBTAINED FROM VERMONT CENTER FOR GEOGRAPHIC INFORMATION, ACQUIRED IN 2021.
  2. RIGHT-OF-WAY AND BOUNDARY LINES DERIVED FROM GIS DATA SOURCES, THIS PLAN DOES NOT CONSTITUTE A BOUNDARY SURVEY.
  3. VEGETATION REMOVAL AREAS PRODUCED USING VERMONT TREE CANOPY LAND COVER DATA CREATED IN 2016. DATA OBTAINED FROM THE VERMONT OPEN GEODATA PORTAL.
  4. WETLAND DELINEATION DATA SHOWN HEREIN IS PRELIMINARY (PENDING VTANR AND USACE VERIFICATION AND CLASSIFICATION). AS SUCH, WETLAND BUFFERS ARE NOT INCLUDED.



				<b>VELCO</b>		VERMONT ELECTRIC POWER CO., INC. RUTLAND, VERMONT	
				ST. JOHNSBURY SUBSTATION			
				OVERALL SITE ORTHO 115/ 34.5 kV YARD			
0D	9/7/23	JJO	JWK	ISSUED FOR 45-DAY NOTICE	SCALE: AS SHOWN	DRAWN BY: JJO	APPROVED BY:
0C	9/8/23	JJO	JWK	DRAFT	DATE: 8/21/23	CHECKED BY: JWK	DATE
0B	8/29/23	JJO	JWK	DRAFT			
0A	8/21/23	JJO	JWK	DRAFT			
REV	DATE	DR	CK	DESCRIPTION	SHEET NUMBER: 227-ORTHO		FILE: REV.