

**STATE OF VERMONT
PUBLIC UTILITY COMMISSION**

Case No. _____

Petition of Vermont Transco LLC, and Vermont Electric Power Company, Inc. (collectively, “VELCO”), for a Certificate of Public Good pursuant to 30 V.S.A. § 248 authorizing upgrades to VELCO’s existing St. Johnsbury Substation, located in St. Johnsbury, Vermont

**PREFILED TESTIMONY OF JOHN R. FISKE
ON BEHALF OF VERMONT ELECTRIC POWER COMPANY, INC.**

This testimony and associated exhibits have been filed in ePUC other than the identified confidential document

October 30, 2023

John R. Fiske’s testimony introduces the other witnesses offering testimony in support of the so-called “St. Johnsbury Project,” provides an overview of the proposed Project’s scope, cost and schedule, and explains how the Project addresses a subset of the § 248 criteria.

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EXHIBITS

- Exhibit Petitioner JRF-1 Résumé of John R. Fiske**
- Exhibit Petitioner JRF -2 VELCO Condition Assessment Project (Filed Under Seal as
Critical Energy Infrastructure Information)**
- Exhibit Petitioner JRF -3 St. Johnsbury Vegetation Clearing Plan**
- Exhibit Petitioner JRF -4 Rock Removal Specification**
- Exhibit Petitioner JRF -5 Project Cost Estimate Summary**
- Exhibit Petitioner JRF -6 45 Day Package**
- Exhibit Petitioner JRF -7 Town and Regional Plan Excerpts**
- Exhibit Petitioner JRF -8 June 21, 2023 VSPC Meeting Minutes**

PREFILED TESTIMONY OF JOHN R. FISKE
ON BEHALF OF VERMONT ELECTRIC POWER COMPANY, INC.

1 **1. Introduction**

2 Q1. Please state your name, occupation, and business address.

3 A1. My name is John R. Fiske. I am employed by Vermont Electric Power Company,
4 Inc. (VELCO) for Project Manager Services. I am employed by JRF Engineering,
5 PC located in Rutland, Vermont 05701.

6

7 Q2. Please describe your education and employment background.

8 A2. I earned a Bachelor of Science Degree in Electrical Engineering from the
9 University of Vermont and am a Licensed Professional Engineer in the State of
10 Vermont. Prior to my current employment, I held the position of Director of
11 Engineering at Green Mountain Power, Manager of Substation Design/Relay
12 Protection, System Protection Engineer and Division Engineer at Central Vermont
13 Public Service Corporation (CVPS). I also worked as a Manager of Engineering
14 and System Protection Engineer at Vermont Electric Power Company in Rutland,
15 Vermont. My resume is included with this filing as Exhibit Petitioner JRF-1.

16

17 Q3. Have you previously provided testimony before the Vermont Public Utility
18 Commission (Commission)?

19 A3. Yes, I have provided testimony in numerous matters. Most recently, I have testified
20 in the following case: Docket Nos. 7857 (Randolph 15 Substation), 7887 (Vernon
21 Road Substation Breaker Addition), 8029 (St. Johnsbury Substation 16 Upgrade),

1 8030 (Woodstock Substation Upgrade), 8205 (Georgia Interconnection Project),
2 8308 (Waterbury/Duxbury Substation); and the 2017 GMP rate case (Case No. 17-
3 3112-INV), Airport Substation (Case No. 18-2910-PET), the B20, B22 and Lowell
4 Substation upgrade Project (Case No. 19-4464-PET), East St. Albans installation
5 of two SCADA-controlled capacitor banks and other substation upgrades (Case No.
6 20-0295-PET), North Brattleboro Substation rebuild (Case No. 20-0776-PET),
7 Castleton Substation upgrade (Case No. 20-3966-PET); Putney Substation upgrade
8 (Case No. 21-1559-PET); Pleasant Street Substation upgrade (Case No. 21-4149-
9 PET); Richmond Substation upgrade (Case No. 21-5164-PET), Rebuild 46kV
10 Transmission Line Taftsville substation to the Windsor substation, and Hydeville
11 Substation Upgrade (Case 22-4230-PET).

12

13 **2. Testimony Overview**

14 Q4. What is the purpose of your testimony?

15 A4. My testimony supports the Petition by VELCO for a Certificate of Public Good
16 (CPG) pursuant to 30 V.S.A. § 248 with respect to upgrading VELCO's existing
17 substation located at 397 Higgins Hill Road, St. Johnsbury, Vermont (Project). My
18 testimony: (1) introduces the other witnesses offering testimony in support of the
19 Project; (2) provides an overview of the proposed Project and the proposed
20 schedule for Project completion and timing of needed CPG approvals; (3) provides
21 a summary cost estimate and the expected cost treatment; and (4) explains how the
22 proposed Project addresses a subset of the criteria under Section 248.

23

1 Q5. Please identify each of the witnesses other than yourself that will submit testimony,
2 as well as the scope of their testimony.

3 A5. In support of this Petition, VELCO submits the prefiled testimony and exhibits
4 sponsored by the following witnesses:

5	<u>Witness</u>	<u>Subject</u>
6	Ed McGann	Discusses the engineering and design details for the
7		substation and addresses public health and safety
8		
9	Andrew McMillan	Provides an assessment on the environmental and
10		historic sites criteria for the Project and VELCO's
11		disposal methods
12		
13	Mike Buscher	Discusses the Project's compliance with the
14		aesthetic criterion and Commission Rule 5.800

15 Q6. Please describe the existing VELCO St. Johnsbury substation, and noteworthy
16 historical events.

17 A6. VELCO's St. Johnsbury substation is connected to the VELCO 115 kV electric
18 transmission network, Eversource's 115 kV transmission network in the St.
19 Johnsbury area, and the Green Mountain Power (GMP) sub-transmission in the St.
20 Johnsbury area. The VELCO St. Johnsbury substation was built in 1972, with
21 various modifications and improvements occurring over the subsequent fifty years
22 of service. The substation is configured as a 115 kV/34.5 kV radial substation with
23 3 radial 34.5 kV lines and includes the following major equipment (with upgrades
24 noted):

- 25 • One (1) 115/34.5 kV 30/40/50 MVA power transformer manufactured
- 26 in 1972.
- 27 • One (1) 115 kV circuit switcher manufactured in 1972.
- 28 • Two (2) 115 kV gas circuit breakers installed in 2004.

- 1 • Three (3) 34.5 kV vacuum circuit breakers; two installed in 2004 and
- 2 the other in 2019.
- 3 • One (1) 34.5 kV oil circuit breaker manufactured in 1972.

4 Please see the Exhibit Petitioner JRF-2 for the confidential assessment report for
5 more information.

6

7 Q7. Please describe the primary deficiencies of the existing St. Johnsbury substation
8 and proposed solutions.

9 A7. VELCO developed an evaluation tool that it used to conduct a condition assessment
10 of the substation. VELCO is providing the Substation Condition Assessment
11 (Assessment), under seal as CEII, as Confidential Exhibit Petitioner JRF-2. The
12 Assessment identified the need to replace some of the equipment due primarily to
13 condition, but design standards and operating practices were also taken into
14 consideration. In general, VELCO proposes to address most of the substation
15 concerns by replacing the existing control building with a larger control building,
16 replacing the existing 220 circuit switcher with a new K220 SF6 gas circuit breaker,
17 replacing the existing 34.5 kV breakers with new vacuum 34.5 kV breakers,
18 replacing the protection and control panels (P & C) with the construction of a new
19 control building, and replacing the substation fence with an expanded fence.
20 VELCO also plans to reconstruct and widen the existing driveway as well as
21 establish a location along the driveway to provide power during Project
22 construction. Below, I describe the major elements of the Assessment and
23 recommendations. Mr. McGann's testimony and exhibits include further
24 engineering and design details of the proposed substation upgrades.

1

2 Construct a New Control Building Structure (Assessment pgs. 5, and 7/8)

3 The existing control building was installed in 1972 and is 25' x 31'. The
4 Assessment revealed several deficiencies with the existing control building:

- 5 • the roof needs to be replaced;
- 6 • the original siding is showing signs of wear;
- 7 • the control building is too close to the oil containment catchment;
- 8 • the foundation has curled which causes a tripping hazard; and
- 9 • the limited physical space within the control building could not accommodate
10 planned telecommunication expansion, planned P & C panels, the desired battery
11 transfer scheme, the installation of additional/new AC distribution panels, and an
12 automatic transfer switch.

13

14 The Assessment identifies additional problems with the control building.

15

16 VELCO proposes to construct a new building of approximately 32' x 70' to
17 adequately house the P & C equipment, DC station service, AC station service,
18 telecommunication equipment, security systems and other ancillary systems.

19 VELCO would locate the new control building on the southern side of the
20 substation. Disposal of the existing control building will be done in accordance
21 with VELCO's disposal practices as further discussed in Andrew McMillan's
22 prefiled testimony under the waste disposal criterion.

23

1 *Replacement of Existing Circuit Switcher with a new Circuit Breaker (Assessment*
2 *pgs. 7 and 15)*

3 Circuit switchers can be used as part of a transformer differential scheme that will
4 isolate a transformer for various fault conditions. The circuit switcher is a technical
5 solution for transformer protection and isolation but does have drawbacks and
6 limitations. As an example, depending on the manufacturer and style, circuit
7 switchers installed on elevated structures are inherently more difficult to maintain,
8 and do not have integral current transformers that can provide overlapping zones of
9 protection. When provided the opportunity in capital project upgrades, VELCO
10 will utilize a circuit breaker instead of a circuit switcher. A circuit breaker is located
11 closer to the ground, has internal bushing current transformers, and includes other
12 miscellaneous features not found on a circuit switcher. Together, these circuit
13 breaker features make it technically superior and make it easier to maintain than a
14 circuit switcher.

15
16 The circuit switcher currently has only one trip coil and does not provide redundant
17 protection. VELCO protects its transformer with redundant protections systems.
18 Tripping a single trip coil poses a common mode of failure to the redundant
19 protection schemes, thus the transformer protection system requires the K60 and
20 K28 breaker to be tripped via their TC1 and TC2 and the circuit switcher is used as
21 a sectionalizing device.

22

1 VELCO proposes to install a new K220 SF6 gas circuit breaker that allows the
2 faulted transformer to be isolated from the 115 kV system without interrupting
3 continuity of the K28 and K60 transmission lines. The replacement would have
4 remote SF6 monitoring capability and be designed to allow for improved inspection
5 and maintenance without requiring a 115 kV bus outage. A circuit breaker solution
6 offers the benefits of placing the interrupting equipment at ground level for
7 improved inspection and maintenance access. In addition, the circuit breaker is
8 equipped with a current transformer compliment that allows for the overlapping
9 zones of transformer and 115 kV bus protection criteria to be improved by
10 relocating protection zone overlap around the 220 interrupting device versus where
11 it currently exists at the transformer external slip over current transformers.

12

13 VELCO will remove the existing 220 circuit switcher from the site and properly
14 dispose of it in accordance with VELCO's disposal practices as further discussed
15 in Andrew McMillan's prefiled testimony under the waste disposal criterion.

16

17 *Replace and Expand Existing Substation Fence (Assessment pgs. 6 and 14)*

18 VELCO substations must be enclosed by a chain link fence that meets the National
19 Electric Safety Code and is at least seven feet in height. VELCO's standard
20 substation fence has a chain link fabric of 7.5 feet in height above grade with one
21 foot of barbed wire on top of the fabric. When provided the opportunity, such as a
22 larger capital project, VELCO will replace or improve non-standard fence with a
23 fence that meets present design standards.

1

2 The existing substation perimeter is enclosed by a chain link fence. The fence fabric
3 varies in height and has one foot of three rows of barbed wire at the top. The
4 existing chain link fence is in fair to poor condition. The top 1-foot section of barbed
5 wire fence is less than the 7-foot above grade along most of the perimeter. The
6 majority of fence posts are 1 to 7 degrees out of plumb.

7

8 VELCO recommends replacing the existing substation fence with a new chain link
9 fence that meets its present design standards. The new fence would accommodate
10 a larger footprint of the existing substation yard to support future maintenance
11 activities and the new control building and would improve substation security.
12 Specifically, the proposed substation fence expansion would be approximately 15
13 feet to the north, 15 feet to the west, and 55 feet to the south.

14

15 To maintain safety and security of the substation during construction, VELCO will
16 replace the existing fence in stages, and possibly utilize temporary fence. VELCO
17 will remove the existing fence from the site and properly dispose of it in accordance
18 with VELCO's disposal methods as further discussed in Andrew McMillan's
19 prefiled testimony under the waste disposal criterion.

20

21 Construction Sequence

22 The Project will require VELCO to install a temporary configuration to maintain
23 service to the GMP sub-transmission system. VELCO presented the use of the

1 feeder backup in lieu of the temporary substation to GMP. Ultimately, GMP
2 selected the temporary substation for reliability to the radially feed St. Johnsbury
3 area for the estimated two to three months when the VELCO St. Johnsbury 34.5 kV
4 source would be removed from service because of the Project.

5
6 VELCO evaluated different options for the temporary configuration and
7 determined that the most efficient and reliable method is to use the VELCO
8 transportable 115/34.5 kV power transformer and 34.5 kV mobile substation
9 equipment for the temporary substation. VELCO will create a temporary substation
10 location as well as a construction support area to the west of the existing substation.
11 VELCO will need to install an electric ground grid for the temporary substation
12 approximately 18 inches below grade, and will leave the ground grid in place
13 permanently.

14
15 VELCO will also install a temporary driveway that is required to access the
16 construction support area and temporary substation area. Additionally, VELCO
17 will need to install a temporary 115 kV transmission line tap to supply the
18 temporary substation. Exhibit Petitioner EJM-5 identifies the temporary
19 substation, construction support area, and temporary driveway. VELCO will
20 remove the temporary substation components and the temporary 115 kV lines
21 within twelve months after commissioning the permanent substation. The
22 temporary substation area, construction support area, and the temporary driveway

1 will be layered with the native topsoil removed, seeded, and mulched. VELCO will
2 leave the ground grid in place that it installs for the temporary substation.

3
4 GMP will need to install temporary and permanent components. The Project
5 requires temporary GMP 34.5 kV lines to connect the temporary substation to the
6 existing GMP 34.5 kV lines. These temporary lines are depicted as a dashed orange
7 line on Exhibit Petitioner EJM-5. To aid in construction of the temporary
8 substation, one of the GMP 34.5 kV lines will be permanently rerouted along the
9 western side of the temporary substation and various GMP poles will be replaced
10 to maintain clearance for the temporary access road and site grading. Additionally,
11 a GMP 12.47 kV distribution line will be permanently extended along the western
12 edge of the existing driveway providing station service during construction. This
13 extension consists of two poles and associated wire. Exhibit Petitioner EJM-5
14 depicts these assets as a dashed red line. VELCO will request GMP to construct
15 temporary and permanent GMP owned transmission lines. The temporary GMP
16 electric lines will be removed within one year of commissioning the permanent
17 substation.

18
19 While the Project is constructed, VELCO will take advantage of the opportunity to
20 perform regular condition-based maintenance and in-kind replacements at the
21 substation. This opportunity work is not part of the Project, and includes, but is not
22 limited to: reconstruct stone berm around oil containment for the existing power
23 transformer, installation of station service transformer and 34.5 kV circuit breakers.

1 Although these maintenance items are the replacement of existing facilities with
2 equivalents in the ordinary course of business and are not part of the Project, we
3 thought it prudent to let the Commission know some maintenance work will be
4 performed contemporaneously with the Project work.

5

6 Q8. In summary, please describe the Project's major substation components.

7 A8. To address the noted deficiencies at the St. Johnsbury substation, VELCO proposes
8 to construct and operate the following major components:

- 9 • Replace the existing 25' x 31' VELCO control building with a new,
10 approximately 32' x 70' control building that will accommodate the P & C
11 system, redundant AC & DC station services, communication equipment, and
12 security systems. The new control building will be located on the southern
13 side of the substation.
- 14 • Replace the existing 220 circuit switcher with a new K220 SF6 gas circuit
15 breaker that meets VELCO's design standards.
- 16 • Expand the fence to accommodate the new control building, and to improve
17 access to equipment for maintenance. The substation fence expansion will be
18 approximately 15 feet to the north, 15 feet to the west, and 55 feet to the
19 south.
- 20 • Reconstruct and widen driveway to 20 feet with turn-around.
- 21 • Improve site drainage.

- 1 • Perform tree clearing to accommodate the temporary infrastructure, temporary
2 substation/construction support area, expanded substation yard and driveway
3 improvements.
- 4 • Install landscape mitigation.
- 5 • Install a temporary substation and associated temporary driveway, poles and
6 conductors, to maintain electrical transmission for the Project's duration.

7

8 The Project does not require the installation of any noticeable sound producing
9 equipment and VELCO can continue to use the existing transformer. Mr.
10 McGann's testimony includes exhibits detailing further engineering and design
11 details of the substation upgrades.

12

13 Q9. Please describe the proposed vegetation clearing plan for the Project.

14 A9. VELCO will need to remove approximately 0.86 acres of vegetation to construct
15 the Project. This includes the need to remove some trees on the substation's
16 southern end for grading that is necessary to expand the substation yard in the
17 southerly direction. Please see Exhibit Petitioner JRF-3 (St. Johnsbury Vegetation
18 Clearing Plan). The planting plans for aesthetic mitigation are detailed in the
19 testimony and attachments provided by Mike Buscher.

20

21 Q10. Will the Project require any blasting?

22 A10. No, VELCO does not anticipate that the Project will require blasting based upon
23 soil boring results. If the need for blasting occurs, VELCO will follow its rock

1 removal specification, as well as the VT DEC best management practices (BMPs)
2 for blasting. Please see Exhibit Petitioner JRF-4 Rock Removal Specification.
3 VELCO will provide this rock removal specification, which includes the Agency
4 of Natural Resources' (ANR) BMPs, to contractors. If and when the ANR updates
5 its BMPs, VELCO will update its rock removal specification.

6

7 Q11. Please describe the approach for developing the Project's cost estimate.

8 A11. The first step was to identify the resources required to plan, design, and construct
9 the Project. VELCO developed the cost estimate utilizing seven categories to
10 establish the total cost for each Project element. The seven resource categories are
11 as follows:

- 12 • Material
- 13 • Labor
- 14 • Equipment
- 15 • Indirects
- 16 • Escalation
- 17 • Capital Interest
- 18 • Contingency

19

20 Q12. Please summarize the process used to develop the direct and indirect costs.

21 A12. VELCO developed the Direct Costs using cost data from projects VELCO recently
22 completed or which are in progress. Specifically, VELCO used cost data associated
23 with recent VELCO substation and line projects to develop the material, labor and
24 equipment costs. VELCO utilized vendor cost data for portions of the Project scope
25 for which VELCO did not have recent actual cost data from its prior projects.

26

1 VELCO estimated labor and equipment costs using preliminary detailed designs.
2 The detailed line items for each Project element were estimated into sub-categories
3 following the Federal Energy Regulatory Commission (“FERC”) system of
4 accounts. Developing the cost estimates by FERC accounts enhances VELCO’s
5 ability to track costs in a manner consistent with the reporting format of actual costs
6 as required by FERC. Also, escalation costs can be more accurately calculated by
7 applying the Handy-Whitman cost index to the estimated costs by FERC account.

8
9 The Project team also developed the estimated costs for Indirects, Escalation,
10 Capital Interest and Contingency.

11
12 VELCO estimated the Indirect Costs based on the resources required to support the
13 Project completion by resource category. Resource categories included in the
14 Indirect estimated costs include: Engineering and Design; Operations; Planning;
15 Communications; Environmental Engineering; Archeological Studies; Field
16 Surveys; Impact Mitigation; Aesthetic Impact; Legal Expenses; Regulatory
17 Permitting and Filings; Administrative Overhead; Mobilization and
18 Demobilization; Project Management; Construction Supervision; and Project
19 Administration.

20
21 The Indirect estimated Project costs support services are based on the number of
22 people/hours (Level of Effort or LOE) required to support the particular function

1 as well as outsourced consulting services for each resource category (e.g.
2 archaeology studies, engineering, and surveying, etc.).

3
4 VELCO Project Controls developed escalation costs by using an anticipated 2023-
5 2025 spending plan and projected Handy-Whitman cost index and consumer price
6 index (CPI).

7
8 VELCO applied Capital Interest (interest cost during construction), and followed
9 the Project spending plan as applied to the escalation cost calculation. The Capital
10 Interest rate is typically based on the company's credit rating and is subject to
11 change based on the financial market conditions.

12
13 Finally, the Project cost estimate also accounts for a contingency of twenty percent
14 (20%) due to the preliminary detailed designs and the uncertainty and risk
15 associated with the Project level of definition.

16
17 Q13. What is the total cost estimate for the VELCO Components based on the various
18 cost elements and resource categories described?

19 A13. The total cost of the Project is estimated at \$18,437,234. The total cost estimate is
20 comprised of \$8,143,842 of Direct Costs (encompassing Material, Labor and
21 Equipment), \$5,829,354 of Indirect Costs, \$599,150 in Escalation, \$861,093 in
22 Capital Interest, and \$3,003,795 in Contingency. Please refer to Exhibit Petitioner
23 JRF-5 for a cost summary by resource category and Project elements.

1

2 Q14. What is the design basis for the substation's Direct cost estimate?

3 A14. The Direct cost estimate is based on the General Arrangement Plans and the One-
4 Line Diagram as presented in Mr. McGann's testimony and exhibits.

5

6 Q15. What risk elements did VELCO consider when developing the cost estimate and
7 how were the risks addressed in the cost estimate?

8 A15. Risk elements considered are the Project duration, level of certainty regarding
9 ground condition for below grade work, required aesthetic and environmental
10 mitigation measures, volatility regarding escalation rates, temporary configurations
11 necessary to support construction and potential resource constraints at the
12 anticipated time of construction. Per standard project management practices widely
13 recognized by organizations such as the Project Management Institute, VELCO
14 applied contingency to the estimate to account for these risks.

15

16 As described in my testimony, VELCO applied a contingency of 20% to the total
17 estimated cost based on the current level of Project definition.

18

19 Q16. Are any portions of the Project upgrades expected to be eligible for Pool
20 Transmission Facilities (PTF) regionalized cost recovery?

21 A16. Yes. Please see Exhibit Petitioner JRF-5. The VELCO 115 kV assets on the K60
22 and K28 lines and 115 kV bus receive PTF treatment. VELCO's 220 circuit
23 switcher, power transformer, X22 Vacuum Breaker, and associated 115kV and

1 34.5kV bus, are non-PTF common facilities. GMP owns exclusive facilities: the
2 X14, X15, and X16 breakers and other associated 34.5 kV line equipment at the
3 substation. The majority of the 115kV assets receive PTF treatment. However,
4 this does not include the 115kV K220 circuit breaker and associated disconnect
5 switches that VELCO proposes for replacement of the 115kV 220 circuit switcher
6 on the non-PTF power transformer. Please see Confidential Exhibit Petitioner JRF-
7 2, page 4 for a diagram that shows the various facility assets of the existing
8 substation. No changes are being proposed to the classification of the substation
9 assets. If necessary, and in accordance with ISO-NE requirements for asset
10 condition projects, a Transmission Cost Allocation request will be developed and
11 submitted for the PTF costs.

12
13 Q17. What is the Project schedule?

14 A17. We propose to begin Project construction as soon as possible after receiving the
15 required permits and approvals. Currently, the estimated construction schedule is
16 from August 2024 with a targeted completion date of December 2025. This
17 assumes receipt of a CPG by the end of July 2024. A failure to achieve this schedule
18 will likely have adverse impacts on Project execution and overall Project cost.

19
20 Construction would take place between the hours of 7:00 A.M. and 7:00 P.M.
21 Monday through Friday, and between 8:00 A.M. and 5:00 P.M. on Saturdays. No
22 construction will take place on Sundays, or state or federal holidays, although
23 VELCO seeks to conduct activities on Bennington Battle Day given the short

1 summer construction season, and the holiday is not widely granted as a paid day
2 off for many of the workers likely to be working on the Project. VELCO requests,
3 however, that these restrictions do not apply to: 1) construction activities that
4 VELCO must perform during any required outages that may be needed to maintain
5 system reliability and 2) work that VELCO must perform related to filling the
6 power transformer with oil.

7
8 VELCO also requests permission to commence construction without having first
9 obtained the required Wastewater System and Potable Water Supply Permit and the
10 Division of Fire Safety Permit (if applicable). VELCO seeks exemption from the
11 standard condition that requires acquisition of all state and federal permits prior to
12 the start of construction. Although VELCO anticipates the receipt of the
13 Wastewater System and Potable Water Supply Permit and Division of Fire Safety
14 Permit prior to the start of construction, the acquisition of these two permits may
15 not occur prior to when VELCO is prepared to begin site preparation and
16 construction activities that are not subject to these two permits. Specifically,
17 VELCO would like to begin the following activities upon receipt of a final order
18 and CPG: yard expansion, vegetation clearing, site grading, building and
19 installation of temporary equipment.

20
21 **3. Criteria on Public Outreach [Docket No. 7081]**

22 Q18. Has the Project development conformed to the transmission planning requirements
23 approved in the Memorandum of Understanding (MOU) of Docket No. 7081?

1 A18. Yes.

2

3 Q19. Please describe VELCO's public outreach efforts related to this Project.

4 A19. VELCO designed the public outreach efforts to meet the requirements of the MOU
5 in Docket No. 7081. VELCO specifically reached out to the Town of St. Johnsbury.
6 Once the Project's need and site details were further refined, VELCO issued a 45-
7 day advance notice describing the Project to the abutting landowners, the St.
8 Johnsbury Selectboard, the St. Johnsbury Planning Commission, the Northeastern
9 Vermont Development Association, Department of Public Service (DPS), Agency
10 of Natural Resources, and Vermont Division of Historic Preservation. All abutting
11 landowners were invited to a public meeting to provide "face-to-face" interaction
12 for questions and feedback. The public meeting was scheduled for the convenience
13 of interested persons and no members of the public attended. The public has been
14 offered other means of communicating with VELCO including phone and email
15 transmittals. The VELCO website also provides constant availability for those with
16 internet access to Project information and provides a means of submitting requests
17 for information via an on-line contact form. VELCO received no comments from
18 the public. Please see Exhibit Petitioner JRF-6 (45-day Package).

19

20 **4. Orderly Development [30 V.S.A. § 248(b)(1)]**

21 Q20. Will the Project unduly interfere with the orderly development of the region?

22 A20. No. The Project will have a favorable impact on the orderly development of the
23 region in that it will improve the reliability of the region's existing electrical supply

1 while not adversely impacting the environment or aesthetics. The proposed Project
2 is consistent with the 2017 Town of St. Johnsbury Town Plan (with an enhanced
3 energy plan adopted on August 9, 2021) (Town Plan). The Town Plan contains no
4 land conservation measures relating to substations or transmission lines for
5 reliability purposes. The Town Plan contains a general goal to “Protect the
6 buildings, waterways, wetlands, valleys, hillsides, and historic sites that represent
7 our natural resources, history, heritage, and scenic beauty.” Exhibit Petitioner JRF-
8 7 (Town Plan at 19-20). The Project complies with these general goals because
9 VELCO will perform all work at an existing substation site, and as explained in the
10 prefiled testimony of Andrew McMillan, the Project has no undue adverse impact
11 on historic sites or natural resources. The Project would impact wetlands because
12 there are no other reasonable alternatives, and VELCO will apply for and obtain a
13 Vermont wetland permit and implement the required mitigation as discussed in
14 Andrew McMillian’s prefiled testimony. The Project thus complies with the Town
15 Plan.

16
17 VELCO also examined the Northeastern Vermont Development Association (RPC)
18 2018 Regional Plan (adopted August 27, 2015 and readopted in August 2023,
19 amended with a regional energy plan on April 26, 2018 and update on June 20,
20 2023) (RPC Plan). The RPC Plan does not provide land conservation measures
21 regarding the particular parcel where the Project occurs. The RPC Plan contains a
22 general energy goal to “Support the upgrade of regional transmission systems to
23 continue to reduce constraints,” and this Project will upgrade the transmission

1 system. Exhibit Petitioner JRF-7 (RPC Plan at 69). The RPC Plan also contains a
2 general action goal to “Support in-place upgrades of existing facilities, including
3 existing renewable energy generation, storage, transmission lines, distribution lines
4 and substations as needed to reliably serve municipalities and the region.” Exhibit
5 Petitioner JRF-7 (June 20, 2023 RPC Plan Update and Readoption Memo at 20).
6 Because the RPC Plan did not contain any applicable land conservation measures,
7 and proposes to expand an existing substation, the Project is consistent with the
8 RPC Plan.

9
10 Q21. Did VELCO receive comments in response to its 45-day advance notice? If so,
11 please explain.

12 A21. No, VELCO received no comments in response to its 45-day notice.

13

14 **5. Need for Present and Future Demand for Service [30 V.S.A. § 248(b)(2)]**

15 Q22. Is the Project required to meet the need for present and future demand for service
16 which could not otherwise be provided in a more cost-effective manner through
17 energy conservation programs and measures and energy efficiency and load
18 management?

19 A22. Yes. The VELCO St. Johnsbury substation’s condition as discussed above drives
20 the need for the proposed Project. Energy efficiency and load management actions
21 could not resolve these problems.

22

1 VELCO presented the proposed Project to the Vermont System Planning
2 Committee (VSPC) Geographic Targeting Subcommittee. The Geographic
3 Targeting Subcommittee concluded that the Project screened out of the VSPC's test
4 for Non-Transmission Alternative (NTA) analysis. Thus, VELCO did not perform
5 an NTA analysis. Please see Exhibit Petitioner JRF-8 June 21, 2023 VSPC Final
6 Meeting Minutes. VELCO presented the Project and NTA screening form at the
7 meeting, which does not require specific project design details and cost
8 information.

9
10 Q23. Could the same benefits be achieved by transmission alternatives?

11 A23. No. Because the need for the Project is based on the condition of an existing
12 substation, VELCO did not perform a Transmission Alternatives analysis.

13

14 Q24. Has VELCO considered and assessed whether the proposed Project represents the
15 least-cost alternative to resolving the deficiencies discussed above?

16 A24. Yes, VELCO considered reconfiguring the substation to a ring substation or
17 breaker-and-a-half configuration, and determined that such an upgrade was not
18 needed at this time. The current configuration is sufficient to meet current and
19 future needs based on several factors, such as: cost, St. Johnsbury's relatively small
20 load, lack of reliability concerns, and other existing options for feeder back up on
21 the subtransmission system. Further, the proposed scope of work does not preclude
22 future substation reconfigurations if future reliability concerns are identified.

1 Replacing and repairing deficient equipment at the St. Johnsbury Substation is the
2 most cost-efficient way to address the condition-related concerns.

3
4 Please see Confidential Exhibit Petitioner JRF-2. Furthermore, VELCO followed
5 the MOU with the DPS under Docket No. 8385, which included the preliminary
6 review of Project alternatives with DPS staff.

7

8 **6. System Stability and Reliability [30 V.S.A. § 248(b)(3)]**

9 Q25. What impact will this upgrade have on system stability and reliability?

10 A25. The Project will have no adverse impact on the stability and reliability of VELCO's
11 transmission system. In fact, the Project will improve system safety and reliability
12 by replacing equipment of less than adequate condition.

13

14 **7. Economic Benefit to the State [30 V.S.A. § 248(b)(4)]**

15 Q26. Will the Project result in an economic benefit to the State?

16 A26. Yes. The Project will create economic and safety benefits to the citizens of
17 Vermont. The Project will increase property tax revenues based on the capital
18 investment required for the upgrades. Additionally, there will be some local
19 economic benefits associated with engaging local businesses and contractors during
20 the Project's construction phase.

21

22

23

1 **8. Public Health and Safety [30 V.S.A. § 248(b)(5)]**

2 Q27. Will the Project have any adverse effects on the health, safety, or welfare of the
3 public or adjoining landowners?

4 A27. No. The Company will adhere to prudent utility construction practices throughout
5 the construction phase, and the Project will not endanger the public or adjoining
6 landowners. Please see the prefiled testimony of Ed McGann for further
7 information.

8

9 **9. Transportation Systems/Traffic [10 V.S.A. § 6086(a)(5)]**

10 Q28. Please describe the Project’s potential impacts with respect to use of public roads.

11 A28. The Project poses no long-term traffic impacts in St. Johnsbury. VELCO
12 anticipates only minor, short duration traffic impacts, if any, due to deliveries of
13 equipment and material to the substation site during the construction period
14 (expected to be from July 2024 to December 2025). Such deliveries will use
15 existing roads with vehicles that are commonly used on public roads. During
16 delivery of any large equipment, VELCO will employ the services of traffic control
17 personnel to manage traffic flow. VELCO will obtain all required highway permits
18 associated with the work and deliveries.

19

20 Q29. Will the Project affect railway transportation?

21 A29. No. VELCO does not anticipate that the Project will impact railway transportation.

22

23

1 Q30. Where will VELCO store equipment during construction?

2 A30. VELCO will use the existing VELCO substation parcels to stage any material
3 needed during construction. These staging areas are within the Project area that
4 VELCO studied for impacts to environmental criteria.

5

6 **10. Educational & Municipal Service [10 V.S.A. § 6086(a)(6)&(7)]**

7 Q31. What impact will the Project have on educational and municipal services?

8 A31. The Project will not have any impact on educational or municipal services. With
9 respect to educational services, the Project will not add any new students to the
10 affected municipality. Thus, the Project will not place an unreasonable burden on
11 the ability of a municipality to provide educational services because the Project will
12 not require or affect educational services.

13

14 With respect to municipal services, the Project does not require any fire or police
15 services beyond those typically required of other businesses, and what is currently
16 required for the St. Johnsbury substation. Andrew McMillan's prefiled testimony
17 discusses VELCO's plans regarding limited disposal of sanitary waste.

18

19 **11. Development Affecting Public Investments [10 V.S.A. § 6086(a)(9)(K)]**

20 Q32. What impact will the Project have on public investment in a public resource?

21 A32. The Project will not unnecessarily or unreasonably endanger any public or quasi-
22 public investment in any facility, service, or lands, or materially jeopardize or
23 interfere with the function, efficiency, or safety of, or the public's use or enjoyment

1 of or access to any facility, service, or lands. Other than the limited impacts on
2 nearby roads as discussed above under the transportation criterion, no other public
3 investments will be affected by the Project.

4
5 **12. Compliance with Integrated Resource Plan [30 V.S.A. § 248(b)(6)]**

6 Q33. Is the Project consistent with VELCO's least cost Integrated Resource Plan?

7 A33. VELCO does not have an integrated resource plan. As a transmission-only
8 company, VELCO periodically produces transmission studies. Specifically,
9 VELCO issued a 2021 Vermont Long-Range Transmission Plan. The 2021 Plan
10 explains that:

11 The transmission plan requirements are not meant to include those asset condition
12 or routine projects that are undertaken to maintain existing infrastructure in
13 acceptable working condition. Sometimes these activities require significant
14 projects, such as the refurbishment of substation equipment and the replacement of
15 a relatively large number of transmission structures to replace aging equipment or
16 maintain acceptable ground clearances. Although the plan requirements do not
17 apply to these types of projects, VELCO is listing these projects for the sake of
18 information. These projects are needed to maintain the existing system, not to
19 address system issues resulting from load growth, and VELCO routinely shares
20 plans for many of these projects with the VSPC as part of its non-transmission
21 alternatives (NTA) project screening process.

22
23
24 2021 VELCO Plan, at page 9. The Project complies with the 2021 VELCO Plan
25 because it is a routine refurbishment project as contemplated therein.

26
27
28
29

1 **13. Compliance with Vermont Electric Energy Plan [30 V.S.A. § 248(b)(7)]**

2 Q34. Is the Project consistent with the 2022 Comprehensive Energy Plan?

3 A34. Yes. Vermont’s Comprehensive Energy Plan identifies objectives that utilities
4 must meet in serving the public interest, such as serving its customers at the lowest
5 life-cycle costs, including environmental and economic costs, and reducing
6 greenhouse gas emissions. The CEP “balances the principles articulated in 30
7 V.S.A. § 202a of energy adequacy, reliability, security, and affordability, which are
8 all essential for a vibrant, resilient, and robust economy and for the health and well-
9 being of all Vermonters.” CEP executive summary at 1. The CEP also
10 acknowledges that the “grid needs to continue to perform — to reliably deliver the
11 required energy to customers, every hour of the year, to and from resources that are
12 exponentially more distributed, diverse, and variable, under increasing pressure
13 from severe weather events and cyberattacks, while weaning off fossil resources
14 and staying affordable. CEP at ES-24. The CEP states that Vermont’s overarching
15 goal for the grid should be “A secure and affordable grid that can efficiently
16 integrate, use, and optimize high penetrations of distributed energy resources to
17 enhance resilience and reduce greenhouse gas emissions.” CEP at page 60. The
18 Project strikes the proper balance between these objectives. Specifically, VELCO
19 has proposed a Project that restores and maintains system reliability and safety.
20 Moreover, VELCO’s proposal to perform the Project in an area that already hosts
21 other electric infrastructure limits the environmental impact. VELCO’s analysis
22 above demonstrates that the Project is the least-cost option. VELCO has asked the

1 Department for a determination under 30 V.S.A. § 202(f) that the Project is
2 consistent with the 20-Year Plan.

3

4 **14. Impact on Vermont Utilities and Customers [30 V.S.A. §248(b)(10)]**

5 Q35. Can existing or planned transmission facilities serve the Project without creating an
6 undue adverse effect on Vermont utilities, customers, or existing transmission
7 facilities?

8 A35. Yes. Existing transmission facilities can serve the Project without creating an
9 undue adverse effect on Vermont utilities and customers. The proposed Project
10 consists of upgrades at an existing substation which are designed to enhance the
11 existing utility system and to improve service to customers. VELCO has, and will
12 continue to, coordinate the work with GMP to minimize impacts during
13 construction and ensure worker safety.

14

15 **15. Commission Rule 5.800—Aesthetic Mitigation**

16 Q36. Does VELCO seek a waiver from Commission Rule 5.805? If so, please explain
17 why.

18 A36. Yes. Commission Rule 5.805 establishes deadlines for VELCO to install
19 aesthetic mitigation plantings:

20 (A) Implementation of final aesthetic mitigation plan. The CPG holder shall fully
21 implement the final aesthetic mitigation plan as soon as reasonably possible, and
22 in no case more than 90 days following the completion of construction, unless
23 such timing would require implementation between October 15 and April 15, in
24 which case the plan shall be fully implemented within 30 days of the following
25 April 15.

26

1 VELCO understands that this rule requires VELCO to install aesthetic mitigation
2 within 30 days of April 15 if the Project is commissioned between October 15-April
3 15. This Project would likely be commissioned during this time-period if the PUC
4 grants a CPG, leaving VELCO between April 15-May 15 to install landscape
5 mitigation.

6
7 VELCO seeks a waiver of this deadline and permission to install landscape
8 mitigation by July 1 for various reasons, as waivers are allowed under Commission
9 Rule 5.806. VELCO has experienced challenges in accessing trees/shrubs from
10 nurseries in early spring (April-May) as some may still be snow covered or
11 inaccessible due to mud. VELCO may also experience challenges accessing the
12 substation site in the springtime given wet ground and mud conditions. These spring
13 conditions also may prevent VELCO from using Town roads to transport the
14 plantings as some Town roads are closed in certain spring conditions. The requested
15 July 1 date will provide VELCO with a reasonable time to obtain the plantings from
16 a nursery and install them in drier ground conditions.

17
18 **16. Conclusion**

19 Q37. Does this conclude your testimony at this time?

20 A37. Yes, it does.

21

DECLARATION OF JOHN R. FISKE

I, John R. Fiske, over 18 years of age, and competent to testify on these matters, declare that on behalf of Vermont Electric Power Company, Inc., I prepared my direct prefiled testimony and exhibits in the above captioned matter and I have the necessary expertise to testify to the same information. I declare that my testimony and exhibits are true and accurate to the best of my knowledge and belief. I understand that if such information is false, I may be subject to sanctions by the Commission pursuant to 30 V.S.A. § 30.

Dated at Rutland, Vermont, this 26th day of October, 2023

A handwritten signature in cursive script that reads "John R. Fiske, P.E.".

John R. Fiske
Affiant