

**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 ANDREW MCMILLAN
ON BEHALF OF VERMONT ELECTRIC POWER COMPANY, INC.**

This testimony and associated exhibits have been filed in ePUC

October 30, 2023

Andrew McMillan’s testimony presents the report entitled: “Natural Resources Assessment Report St. Johnsbury Substation Project” prepared by Arrowwood Environmental, which addresses VELCO’s proposal to upgrade VELCO’s existing substation located at 397 Higgins Hill Road, St. Johnsbury (Project). Mr. McMillan also addresses the specific environmental and historic sites criteria under 30 V.S.A. § 248(b)(5).

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EXHIBITS

Exhibit Petitioner AM-1	Résumé of Andrew K. McMillan
Exhibit Petitioner AM-2	St. Johnsbury Substation Below Ground Historic Sites Memo
Exhibit Petitioner AM-3	St. Johnsbury Substation Historic Resources Survey Memo
Exhibit Petitioner AM-4	Natural Resources Assessment Report St. Johnsbury Substation Project
Exhibit Petitioner AM-5	Non-Native Invasive Species Monitoring and Control Plan
Exhibit Petitioner AM-6	VELCO's Environmental Guidance Manual (this document has been provided ePUC only)
Exhibit Petitioner AM-7	SF6 Policy
Exhibit Petitioner AM-8	Primary agricultural soil impact map

PREFILED TESTIMONY OF ANDREW MCMILLAN
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 Andrew K. McMillan. I am a Senior Environmental Specialist for
4 Vermont Electric Power Company, Inc. (together with VT Transco, LLC referred
5 to as “VELCO”) leading the environmental permitting efforts for the St. Johnsbury
6 Substation Project. My business address is Vermont Electric Power Company, Inc.,
7 366 Pinnacle Ridge Road, Rutland, VT 05701.

8

9 Q2. Please describe your education and employment background.

10 A2. In 2007, I received a Bachelor of Arts degree in Environmental Science from the
11 State University of New York College at Plattsburgh, with a study option in
12 Environmental Planning and Management and a minor in Applied Geographic
13 Information Systems. I also received a post-baccalaureate certificate in Geographic
14 Information Systems from Pennsylvania State University in December 2014 and a
15 Master’s in Business Administration from Castleton University in May 2020. I
16 began working at VELCO as an Environmental Specialist in 2009 where I have
17 worked on a variety of substation facilities and linear transmission line upgrade
18 projects. I am currently serving as the Environmental Permitting Lead for the St
19 Johnsbury Substation Project. In this role, I am responsible for scheduling and
20 managing the natural resource and above and below ground historic site

1 assessments; agency coordination and correspondence; environmental permitting;
2 and subsequently, construction and restoration oversight to ensure compliance with
3 the Project's environmental permits and commitments. Prior to employment at
4 VELCO, I was an Assistant Environmental Manager at Noble Environmental
5 Power, and a Fish & Wildlife Technician at the New York State Department of
6 Environmental Conservation. My resume is attached as Exhibit Petitioner AM-1.

7

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

10 A3. Yes, I have previously provided testimony for several projects including, Docket
11 7763 (VELCO's Bennington Substation, Docket 8385 (VELCO's Newport
12 Substation), Docket 8605 (VELCO's Connecticut River Valley Project), Case No.
13 17-3808 (VELCO's St. Albans Substation), Case No. 17-5240 (VELCO's Barre
14 Substation), Case No. 19-1812 (VELCO's Berlin Substation Project), Case No.
15 20-3506 (VELCO's Irasburg Substation), Case No. 21-2455 (VELCO's North
16 Rutland Substation), Case No. 22-4338 (VELCO Highgate Substation Upgrade
17 Project), and more recently Case No. 23-2047 (Franklin County Line Upgrade
18 Project.)

19

20 Q4. Do you hold any professional licenses or certifications?

21 A4. Yes. I am a certified Water System Operator in the State of Vermont (Operator ID#
22 OP03924) and am a Certified Professional in Erosion and Sediment Control

1 (CPESC). I also hold OSHA 40-hour certification for Hazardous Waste Operations
2 and Emergency Response (HAZWOPER) (29 CFR 1910.120).

3

4 **2. Testimony Overview**

5 Q5. What is the purpose of your testimony?

6 A5. My testimony summarizes how the Project will comply with the environmental and
7 historic sites criteria applicable to electric transmission projects under 30 V.S.A. §
8 248. As such, my testimony provides an assessment of potential impacts upon
9 above and below ground historic sites as well as presenting the report entitled:
10 “Natural Resources Assessment Report - St. Johnsbury Substation Project,”
11 prepared by Arrowwood Environmental (Arrowwood), which addresses VELCO’s
12 proposal to upgrade its existing substation located at 397 Higgins Hill Road, St.
13 Johnsbury (Project). VELCO will use an area inside the Project Assessment Area
14 (“PAA” also referred to as the “Study Area”) for its construction support (staging)
15 area. Specifically, my testimony addresses the following statutory criteria:
16 outstanding resource waters (10 V.S.A. § 1424a(d)), air pollution (10 V.S.A. §
17 6086(a)(1)), headwaters, (10 V.S.A. § 6086(a)(1)(A)), waste disposal (10 V.S.A. §
18 6086(a)(1)(B)), water conservation (10 V.S.A. § 6086(a)(1)(C)), floodways (10
19 V.S.A. § 6086(a)(1)(D)), shorelines (10 V.S.A. § 6086 (a)(1)(F)), streams (10
20 V.S.A. § 6086(a)(1)(E)), wetlands (10 V.S.A. § 6086(a)(1)(G)), water supply (10
21 V.S.A. § 6086(a)(2) and (3)), soil erosion (10 V.S.A. § 6086 (a)(4)), and threatened
22 and endangered species, rare and irreplaceable natural areas and necessary wildlife

1 habitat (10 V.S.A. § 6086(a)(8)). My testimony also addresses additional criteria
2 under 30 V.S.A. § 248(b)(5): historic sites, greenhouse gas impacts, use of natural
3 resources, and primary agricultural soils.

4 **3. Historic Sites [30 V.S.A. § 248(b)(5)]**

5 Q6. Will this Project have an undue adverse effect on historic sites?

6 A6. No. A “historic site” is a site that has been officially included in the National
7 Register of Historic Places, the State Register of Historic Places or which is
8 established by testimony of the Vermont Advisory Council on Historic Preservation
9 as being historically significant, as defined in 10 V.S.A § 6001(9). VELCO retained
10 Northeast Archaeology Research Center, Inc. to perform an Archeological Resource
11 Assessment (ARA) and follow up Phase 1 Archaeology Survey, provided as Exhibit
12 Petitioner AM-2, as well as a Historic (architectural) Resource Survey, Exhibit
13 Petitioner AM-3, to determine the proposed Project area’s impact on historic sites.
14 The Project, as proposed, will not have an undue adverse impact on historic sites
15 and no additional archaeological work is recommended.

16
17 The historic architectural survey effort included both background research and field-
18 based reconnaissance. The Area of Potential Effects (APE) was defined as the area
19 that has the potential to be visually impacted by the proposed Project, which
20 included the substation upgrades and associated electric lines at the VELCO-owned
21 property. The APE contained one resource, a house located 0.25 miles east of the

1 St. Johnsbury Substation on Higgins Hill Road, which has been recommended
2 eligible for the State Register of Historic Places (SRHP). The proposed Project will
3 have no direct impact on the SRHP-eligible property, and given the distance and
4 topography separating this property from the VELCO St. Johnsbury Substation, the
5 proposed Project will also not indirectly impact the site. Exhibit Petitioner AM-3.
6 The historic architectural survey memo and Vermont Architectural Resource
7 Inventory (VARI) forms were previously submitted to VDHP on September 20,
8 2023.

9
10 The comprehensive historic sites evaluation also included an ARA and Phase 1B
11 survey of the APE. The ARA, submitted to VDHP on August 18, 2023, assessed the
12 entire 40.5-acre PAA, which includes the VELCO-owned parcel at 397 Higgins Hill
13 Road as well as portions of two utility line rights-of-way (ROWs) extending south
14 and southeast from the substation parcel, see Exhibit Petitioner AM-2, at 1. NEARC
15 defined five Archaeologically Sensitive Areas (ASAs) within the PAA, which are
16 all located on the VELCO-owned parcel. Archaeological Phase 1B subsurface
17 testing was conducted on two of the ASAs (1, 2a, and 2b) where ground disturbance
18 may occur for planned Project work. The remaining ASAs identified by NEARC at
19 the site are located well outside Project work and, therefore, will be avoided by the
20 proposed Project.

21

1 The Phase 1B fieldwork recovered four Euroamerican artifacts that were small
2 pieces of undecorated ceramic not considered to represent significant archaeological
3 deposits, as such items are typical of field scatter commonly identified in
4 agricultural fields throughout northern New England. Therefore, the Project will not
5 have an undue, adverse effect on historic sites. Exhibit Petitioner AM-2.

6
7 **4. Natural Environment [30 V.S.A. § 248(b)(5)]**

8 Q7. Will the proposed Project have an undue adverse effect on the applicable Section
9 248 environmental criteria?

10 A7. No. VELCO takes an iterative design approach through its Substation Condition
11 Assessment Projects whereby collecting the relative natural and cultural resource
12 information prior to finalizing the site-specific substation upgrades and associated
13 facility layout. This allows for due consideration of natural resource area impact
14 avoidance and minimization during the evaluation of substation design iterations as
15 well as thoughtful siting of construction support areas, temporary facilities, and tie
16 lines, where needed.

17
18 VELCO retained Arrowwood to perform comprehensive natural resource
19 assessments for the proposed Project. The 40.5-acre PAA assessed by Arrowwood
20 included the VELCO-owned parcel at 397 Higgins Hill Road as well as two small
21 sections of ROW directly adjacent to the parcel running south and southeast. The
22 Project footprint (also referred to as Project Area), which is the area of potential

1 impact, constitutes a much smaller land area of approximately 7.5-acres. The
2 approximately 7.5-acre Project footprint is wholly within the larger PAA. The
3 Project Area footprint includes: areas where substation improvements are planned
4 (e.g. yard expansion and associated grading), the temporary substation
5 configuration and associated access route, onsite soil disposal, distribution and
6 transmission line structures, as well as a construction support area. Exhibit
7 Petitioner AM-4.

8
9 Much of the proposed substation upgrades will occur within the substation fence
10 atop the existing gravel substation yard material or directly adjacent to areas of
11 previous disturbance. VELCO has limited the vegetation clearing at the site to the
12 extent possible and also considered the surrounding natural resources, including but
13 not limited to wetlands, streams, deer wintering areas, and primary agricultural
14 soils, in the siting and design of the proposed substation improvements. The
15 approximately 0.82-acres of vegetation clearing that will occur as part of the Project
16 are shown in the vegetation clearing plans within Exhibit Petitioner JRF-3. Tree
17 clearing is necessary to accomplish the proposed yard expansion and associated
18 drainage improvements; driveway widening; culvert replacement activities; and
19 distribution and transmission line structure modifications.

20 VELCO will perform work in regulated resources (e.g., wetlands) in accordance
21 with the Project specific permits issued from the Vermont Department of

1 Environmental Conservation (VT DEC) and the United States Army Corps of
2 Engineers (USACE). VELCO will also follow a VT DEC-approved project-
3 specific Non-Native and Invasive Species (NNIS) Monitoring and Control Plan,
4 which is included as Exhibit Petitioner AM-5. In addition, VELCO will perform
5 all Project work in accordance with the VELCO Environmental Guidance Manual
6 (VEGM), attached as Exhibit Petitioner AM-6. As such, the Project will not result
7 in any undue, adverse effects on the natural environment.

8
9 **5. Outstanding Resource Waters [10 V.S.A. § 1424a(d) & 30 V.S.A. § 248(b)(8)]**

10 Q8. Will the Project result in an undue adverse effect on any Outstanding Resource
11 Waters?

12 A8. No. There are no Outstanding Resource Waters within or in the vicinity of the PAA
13 or Project Area. Therefore, the proposed Project will have no undue, adverse effect
14 on Outstanding Resource Waters. Exhibit Petitioner AM-4, at 7.

15
16 **6. Water and Air Pollution [10 V.S.A. § 6086(a)(1)]**

17 Q9. Will the Project result in an undue adverse effect on air quality?

18 A9. No. Work during the Project's construction phase will result in minor air emissions.
19 There will be vehicle emissions at the site from the use of diesel and gasoline
20 powered vehicles and equipment. There may also be brief releases of dust generated
21 during equipment and material transport, earthmoving, and general construction
22 activities; however, VELCO will manage dust resulting from construction activities

1 in accordance with the Vermont Standards and Specification for Erosion Prevention
2 and Sediment Control (EPSC) and the VEGM. Furthermore, Project operation,
3 upon completion of the construction phase, will not produce any regulated air
4 emissions. Therefore, the Project will not have an undue, adverse effect on air
5 quality. Exhibit Petitioner AM-4, at 7-8.

6
7 Q10. Will the Project result in undue adverse water quality conditions?

8 A10. No. As the proposed Project will involve more than one acre of earth disturbance,
9 the Project will require and VELCO will obtain a VT DEC Construction
10 Stormwater Discharge Permit. VELCO will perform all earth disturbing activities
11 in accordance with the Construction Stormwater Discharge Permit, the Vermont
12 Standards and Specifications for EPSC, and the VEGM. The St. Johnsbury
13 Substation is included in VELCO's *Spill Prevention, Control, and Countermeasure*
14 *(SPCC) Plan*, which addresses the operational oil-filled equipment at the substation
15 to prevent a discharge of oil into navigable waters. VELCO will adhere to its SPCC
16 Plan, which includes site-specific drainage pathways and detailed information on
17 spill response measures to ensure protection of waters adjacent to the substation in
18 the event of a release of oil or hazardous material into the environment.
19 Implementation and adherence to the EPSC Plan, VEGM, SPCC Plan, and
20 environmental compliance oversight inspections will ensure the protection of water
21 quality during Project construction activities.

22

1 If a release of a hazardous material were to occur during the Project's construction
2 phase, VELCO would take appropriate steps to contain it; report the release to the
3 VT DEC (as necessary); remove the contaminated material from the site for proper
4 disposal; and restore the area in accordance with the VEGM (Exhibit Petitioner
5 AM-6) and applicable State and Federal Regulations. Obtaining and complying
6 with the Construction Stormwater Discharge Permit, the VEGM, and applicable
7 regulations will maintain existing water quality at the Project site. As such, there
8 will be no undue adverse effect to water quality. Exhibit Petitioner AM-4, at 7-8.

9
10 **7. Headwaters [10 V.S.A. § 6086(a)(1)(A)]**

11 Q11. Will the Project result in undue adverse effects to headwaters?

12 A11. No, because the Project is not located on any lands that meet the criteria of 10
13 V.S.A. § 6086(a)(1)(A). For the headwaters criteria to be met, the Project must
14 demonstrate compliance with any applicable health and environmental regulations
15 regarding the reduction of the quality of the ground or surface waters flowing
16 through or upon lands which are not devoted to intensive development. These areas
17 are defined as: 1) headwaters or watersheds characterized by steep slopes and
18 shallow soils; 2) drainage areas of 20 square miles or less; 3) above 1,500 feet
19 elevation; 4) watersheds of public water supplies designated by the Vermont
20 Agency of Natural Resources (ANR); or 5) areas supplying significant amounts of
21 recharge waters to aquifers.

22

1 There are no headwater streams located within the PAA, and there are no seep
2 wetlands on steep slopes that could drain into headwater streams. The PAA is
3 located within the watershed of the Moose River with an area of greater than 100
4 square miles at the PAA. The PAA is situated below 1,500 feet and is not
5 characterized by steep slopes and shallow soils. Based on a review of the ANR
6 Atlas, there are no public water supplies or associated source protection areas (SPA)
7 within the PAA. The closest SPA is the St. Johnsbury Water System surface water
8 SPA approximately 1.5 miles to the southeast. The Project, therefore, is not located
9 in a headwater area and will not result in a reduction of the quality of ground or
10 surface waters in the area and will have no undue, adverse impact on headwater
11 areas. Exhibit Petitioner AM-4, at 8.

12

13 **8. Waste Disposal [10 V.S.A. § 6086(a)(1)(B)]**

14 Q12. Please discuss VELCO's plans regarding waste disposal.

15 A12. The Project will not require nor involve the injection of any waste materials or any
16 harmful or toxic substances into ground water or wells. VELCO will handle and
17 dispose of solid waste, construction debris, and waste that cannot be reused or
18 recycled in accordance with the applicable state and federal regulations and best
19 management practices (BMPs).

20

21 Metal equipment such as structural steel, chain link fence, disconnect switches, and
22 the control building envelope will be recycled as scrap metal. VELCO will dispose

1 of porcelain insulators as solid waste in an onsite dumpster for transport to a solid
2 waste landfill. VELCO will take the wire and cables (copper and aluminum) and
3 metal enclosures to a scrap metal facility for recycling. The protection and control
4 (P&C) systems generally consist of microprocessor, solid state, or electric
5 mechanical relays, which constitute recyclable material and/or e-waste. VELCO
6 will properly dispose of any replaced or decommissioned relays according to their
7 material makeup in compliance with the applicable waste disposal rules and
8 regulations. Smaller oil-filled equipment, such as instrument voltage transformers
9 and bushings, will be handled and disposed of by a licensed commercial entity,
10 whereby the oil is tested and recycled according to federal regulations and metal is
11 recycled as scrap metal. The Project will involve limited hazardous material storage
12 for equipment refueling during construction and will comply with all state and
13 federal regulations regarding the handling and disposal of hazardous materials.

14
15 VELCO will stockpile and dispose of clean wood products that are brought onsite
16 during Project construction as part of material deliveries (e.g., pallets) in
17 accordance with Act 148, the Universal Recycling and Composting Law. VELCO
18 and GMP will perform utility pole removal and replacement activities in
19 accordance with the Penta BMPs identified in Docket 8310, which will be a
20 component of onsite training for any personnel that handle penta-treated poles,
21 including GMP.

22

1 The Project requires VELCO to remove woody vegetation in areas to construct the
2 proposed substation expansion and complete associated Project support activities.
3 VELCO will either chip the woody debris onsite and use them for EPSC purposes
4 or transport the material offsite for disposal.

5
6 The sanitary facilities installed as part of the proposed Project will use VELCO's
7 existing onsite wastewater system. A wastewater permit amendment will be
8 obtained, if necessary, for the interconnection, which VELCO will obtain from VT
9 DEC prior to work starting. VELCO will also dispose of sanitary waste during
10 construction by obtaining and using portable toilet(s).

11
12 As the proposed Project includes the replacement of the existing VELCO control
13 building at the substation, VELCO contracted Stone Environmental, Inc. to perform
14 an asbestos and lead-based paint survey of its control building to determine the
15 presence/absence of these hazardous materials and the associated disposal
16 requirements. The survey and associated laboratory results indicated that the
17 building does not contain lead-based paint nor asbestos and that decommissioned
18 materials from the building can be disposed of as standard construction and
19 demolition debris.

20
21 As part of a pre-characterization assessment and in accordance with previous
22 Substation Condition Assessment Project consultations with the Vermont DEC

1 Waste Management and Prevention Division, VELCO contracted Stone
2 Environmental to also evaluate the existing substation soils and concrete to
3 determine the potential for contaminants. Following the 2017 soil testing and
4 limited cleanup activities around the transformer that was conducted as part of 2017
5 maintenance work, pre-characterization assessment activities conducted on May
6 12, 2023, for the Project found soils and concrete within the substation yard to be
7 free of contamination.

8
9 The Project does not require an operational stormwater permit because the limited
10 expansion of total impervious area associated with the Project is less than one acre.

11
12 VELCO will retain the passive secondary containment system for the single
13 transformer that is to remain onsite as part of the proposed Project activities.
14 VELCO will update the St. Johnsbury Substation section of its systemwide SPCC
15 Plan to reflect site grading and drainage improvements, as applicable.

16
17 The implementation and adherence to the items listed above will ensure that proper
18 waste disposal practices are performed during Project construction and operation.
19 Therefore, the Project will not have an undue, adverse effect on waste disposal.
20 Exhibit Petitioner AM-4, at 8-9.

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9. Water Conservation & Supply [10 V.S.A. § 6086(a)(1)(C) & (a)(2)&(3)]

Q13. Please describe water conservation measures associated with the Project.

A13. The Project will, where technically and economically feasible, incorporate measures to conserve water use, recycle water, and maintain the efficient operation of any such measures. VELCO will incorporate water conservation measures, such as low-flow toilets and other fixtures at the Project site, where practically feasible. There is the potential that the Project will need water for various construction phase activities, such as, but not limited to dust control and to help establish onsite vegetation (i.e. for restoration and/or aesthetic mitigation plantings); however, the amount of water used for these temporary, construction-phase activities will be limited in duration and will only be utilized if needed. VELCO will limit water demand post-construction as the substation facilities are not staffed on a regular basis, and only intermittently visited by maintenance personnel. Exhibit Petitioner AM-4, at 9.

Q14. Will the Project have an undue adverse effect on water conservation?

A14. No, for the reasons set forth above. Further, the operation of the proposed facility will not require the use of water beyond the intermittent use of a single bathroom by maintenance personnel. As such, the proposed Project will not have an undue adverse effect on water conservation. Exhibit Petitioner AM-4, at 9.

1

2

3 Q15. Will the Project burden existing water supplies?

4 A15. No. The VELCO St. Johnsbury Substation is served by a Town of St. Johnsbury
5 municipal water supply connection. Project plans include rebuilding the control
6 building, which will require modifications to the service line connection and, as
7 such, VELCO will obtain the necessary VT DEC administered Wastewater
8 System and Potable Water Supply Permit for the substation control building's
9 water/wastewater connections, as applicable. The substation facility will have a
10 limited demand for water post-construction, as the substation facilities are not
11 regularly staffed, and only intermittently visited by operation and maintenance
12 personnel. Water usage onsite is expected to increase temporarily during
13 construction; however, water use at the site post construction will remain
14 consistent with pre-project upgrade quantities and will only be used on an as-
15 needed basis as described above. As such, the proposed Project will not burden
16 the existing water supplies. Exhibit Petitioner AM-4, at 13.

17

18 **10. Floodways [10 V.S.A. § 6086(a)(1)(D)]**

19 Q16. Is any part of the Project located within a 100-year flood boundary or floodplain?

20 A16. No. Per 10 V.S.A. § 6001(6), a “flood hazard area” is “the land in the flood plain
21 within a community subject to a 1 percent or greater chance of flooding in any given
22 year” (44 CFR § 59.1), where a one percent chance of flooding is synonymous with

1 the 100-year floodplain. Arrowwood analyzed the available Federal Emergency
2 Management Agency (FEMA) Digital Flood Insurance Rate Maps and ANR's
3 Flood Ready Atlas and river corridor data layer and determined that a small section
4 of the northwestern extent of the PAA is located within a 100-year Floodplain (zone
5 A2) and river corridor. The closest Project work is approximately 600 feet away
6 from and over 100 feet in elevation higher than the mapped floodplain. The mapped
7 river corridor for the Moose River in the northwestern extent of the PAA is
8 generally coincident with the floodplain and will also be avoided by the Project
9 activities by more than 600 feet. Because VELCO has sited the proposed Project to
10 avoid the adjacent 100-year floodplain and river corridor associated with the Moose
11 River, the Project will not restrict or divert the flow of floodwaters or significantly
12 increase peak discharge of a river or stream within or downstream of the Project
13 development. As such, the Project will not have an undue, adverse effect on
14 floodways. Exhibit Petitioner AM-4, at 9-10.

15

16 **11. Streams [10 V.S.A. § 6086(a)(1)(E)]**

17 Q17. Describe any streams in the Project's vicinity.

18 A17. Arrowwood identified and mapped several stream sections within an overall stream
19 network in the PAA that flows northerly to the Moose River. One stream (S-SJ-1)
20 is within the Project footprint and is associated with a Class II wetland (W-SJ-4)
21 that lies south of the substation and wraps southwest toward the access drive. S-SJ-
22 1 is an intermittent stream with a contributing drainage basin of approximately 60

1 acres. The ANR River’s Program confirmed the intermittent flow regime of stream
2 S-SJ-1 via email correspondence on October 6, 2023; therefore, the Project will not
3 require a Stream Alteration Permit. Exhibit Petitioner AM-4, at 10-1.

4
5 The only access drive to the substation currently crosses over stream S-SJ-1, which
6 passes through a 24-inch diameter culvert that is in moderately poor condition. The
7 Project requires work within and adjacent to the intermittent stream S-SJ-1 and the
8 associated Class II wetland. Work in these areas includes a driveway expansion
9 from a 12-foot width to a 20-foot width with an improved shoulder and culvert
10 replacement. The driveway expansion is necessary to accommodate larger
11 substation construction and maintenance equipment, such as but not limited to
12 transformers. The existing culvert is perched at the outlet, rusting, and showing
13 signs of poor condition in several places and this requires replacement. The
14 replacement culvert will be sized appropriately for the stream and drainage area and
15 will be designed and installed to enable aquatic organism passage in accordance
16 with BMPs and as outlined in the VEGM. VELCO will include the culvert
17 replacement, fill necessary for the driveway widening, and associated wetland
18 impacts in the Project’s USACE and VTDEC wetland permit applications, as
19 applicable. Potential for construction stormwater discharges to the stream will be
20 managed and avoided by implementation and adherence to a site-specific EPSC
21 Plan and the associated Construction Stormwater Discharge Permit that will be
22 obtained for the Project.

1

2 VELCO will avoid or mitigate adverse impacts to streams and riparian buffers
3 through permit-specific mitigation plantings within and adjacent to the wetland
4 impact areas as shown in Exhibit Petitioner MJB-2 (Appendix C, Landscape
5 Mitigation Plan), in addition to the implementation and maintenance of EPSC
6 measures during Project construction. Therefore, the Project will have no undue,
7 adverse effects on streams. Exhibit Petitioner AM-4, 10-11.

8

9 **12. Shorelines [10 V.S.A. § 6086(a)(1)(F)]**

10 Q18. Does the Project affect any shorelines?

11 A18. No. The PAA contains a shoreline associated with the Moose River. However, as
12 with the Moose River floodplain and mapped river corridor, VELCO has sited the
13 Project to avoid this portion of the larger PAA. The Moose River and its associated
14 shoreline forms the northern boundary of the PAA, which lies several hundred feet
15 away from the closest Project element. As the Project is not located within a
16 shoreline and proposed Project activities will not affect the pre-existing condition
17 of the Moose River's shoreline, the Project will not have an undue adverse effect
18 on shorelines. Exhibit Petitioner AM-4, at 11.

19

20 **13. Wetlands [10 V.S.A. § 6086(a)(1)(G)]**

21 Q19. Will the Project result in undue, adverse effects to wetlands?

1 A19. No. There were no potential vernal pools in the PAA. Of the five wetlands
2 identified and mapped within the PAA, two wetlands are within the Project
3 footprint and adjacent to the existing substation: W-SJ-5, a Class III wetland to
4 the north of the substation, and W-SJ-4, a Class II wetland to the south of the
5 substation (see Exhibit Petitioner AM-4, at Attachment 1). VELCO has sited the
6 Project to avoid W-SJ-5 completely and as such, there will be no permanent or
7 temporary impacts to this isolated wetland feature.

8
9 VELCO proposes to expand the substation perimeter fence in the direction of
10 wetland W-SJ-4 for the new control building. W-SJ-4 is approximately 69 feet
11 from the existing substation's southern fence line. The preferred siting location
12 for the new control building on the expanded south side of the substation would
13 include necessary site drainage improvements which result in unavoidable, direct
14 impacts to wetland W-SJ-4. Wetland W-SJ-4 and its 50' regulated buffer will
15 also be impacted by the proposed substation driveway widening (from 12 feet to
16 20 feet) that is necessary for substation construction and maintenance equipment
17 access to the site.

18
19 VELCO met with the VT DEC and the USACE onsite on September 21, 2023, to
20 review the wetland delineation boundaries, proposed wetland classifications, and
21 the Project's anticipated wetland and wetland buffer impacts. The USACE and
22 VT DEC reviewed and approved the wetland delineations and classifications

1 during the site visit. Onsite consultation with the VT DEC Wetlands Program
2 confirmed that a permit could be issued for the Project, as the proposed impacts to
3 the adjacent wetland and wetland buffer are unavoidable and VELCO has taken
4 the necessary steps to minimize impacts as part of the design. VELCO will seek
5 the necessary authorizations from the VT DEC Wetlands Program and the
6 USACE for its proposed impacts to jurisdictional wetlands (and buffers) and will
7 adhere to its Construction Stormwater Discharge permit, Project-specific EPSC
8 plan, and the VEGM to minimize the Project's potential impacts to wetlands
9 during construction. Additionally, VELCO will implement onsite mitigation in
10 coordination with its landscape architect, TJ Boyle Associates, through a robust
11 tree and/or shrub plantings plan that includes hydric (wetland) soil compatible
12 woody species within and adjacent to the wetland that the Project would impact as
13 shown in Exhibit Petitioner MJB-2 (Appendix C, Landscape Mitigation Plan).
14 Therefore, the Project will not have an undue adverse effect on wetlands. Exhibit
15 Petitioner AM-4, at 11-12.

16

17 **14. Soil Erosion [10 V.S.A. § 6086(a)(4)]**

18 Q20. Will the Project result in undue, adverse effects on soil erosion?

19 A20. No. The proposed Project will require a VT DEC Construction Stormwater
20 Discharge Permit, as the construction activities will involve more than one acre of
21 earth disturbance. VELCO will develop and adhere to a detailed EPSC plan for the
22 Project to facilitate compliance and proper implementation of stormwater BMPs

1 that VELCO can implement to avoid and minimize soil erosion during
2 construction.

3 VELCO will perform all earth-disturbing activities in accordance with a site-
4 specific EPSC Plan, the Construction Stormwater Permit conditions, *The Vermont*
5 *Standards and Specifications for Erosion Protection and Sediment Control*, and
6 the VEGM. With the adherence to these conditions and BMPs, the proposed
7 construction activities will not cause undue, adverse effects on soil erosion or
8 cause a reduction in the capacity of the land to hold water. Exhibit Petitioner
9 AM-4, at 14-15.

10

1 **15. Rare and Irreplaceable Natural Areas, Necessary Wildlife Habitat,**
2 **Endangered Species [10 V.S.A. § 6086(a)(8)]**

3 Q21. Will the Project have an undue adverse effect on rare and irreplaceable natural
4 areas, necessary wildlife habitat, or threatened or endangered species?

5 A21. No. Arrowwood performed an assessment for Rare and Irreplaceable Natural Areas
6 (RINA), Necessary Wildlife Habitat, and Rare Threatened and Endangered (RTE)
7 Species for the entire 40.5-acre PAA in May and June 2023. There are no Wildlife
8 National Heritage Inventory (NHI) documented significant natural communities
9 located within 2000 feet of the PAA. Field surveys determined that none of the
10 upland or wetland natural communities meet the criteria for state-significant natural
11 communities or RINA.

12
13 Arrowwood also assessed the PAA for Necessary Wildlife Habitat, including Deer
14 Wintering Areas (DWAs), Black Bear Habitat and Grassland bird habitat. There
15 are no mapped VT Fish and Wildlife Department (VFWD) DWAs within
16 approximately 2.5 miles of the PAA; however, based on field surveys, the conifer
17 forest in the northern portion of the PAA was determined to contain potential DWA
18 due to the presence of multiple hemlock with historic barking (winter feeding sign)
19 greater than five years old. The DWA assessed and mapped by Arrowwood was
20 reviewed and confirmed by VTFWD during a site visit on September 21, 2023.
21 The closest Project work to the DWA consists of the onsite soil disposal area and

1 associated temporary substation configuration and construction support area. The
2 proposed Project is not expected to result in any direct or indirect impacts to the
3 identified DWA at the site, as there is an adequate buffer distance both horizontally
4 and vertically between the Project activities and DWA. Exhibit Petitioner AM-4, at
5 16.

6

7 There is no VFWD mapped bear habitat within the PAA, and no observations of
8 bear feeding or scarring were made during Arrowwood's field inventories. As the
9 site lacks significant beech and oak tree stands, the PAA does not constitute
10 necessary black bear habitat.

11

12 The VFWD considers grassland bird habitat to be 22 acres or larger grasslands with
13 little or no woody vegetation with a core breeding/nesting area of 15 acres.
14 Contiguous area of open field within the PAA is approximately 3.5 acres; as such,
15 there is no suitable grassland bird habitat within the PAA. The Project will have no
16 undue adverse impact on necessary wildlife habitat. Exhibit Petitioner AM-4, at 17.

17

18 There are no NHI listed RTE elemental occurrences of RTE animal species within
19 2,000 feet of the PAA. The Project is not in an area that potentially provides
20 summer roosting habitat for Indiana bat. The Northern Long Eared Bat (NLEB) is
21 a federally listed endangered species in Vermont potentially occurring in this area.

22

There is no critical habitat within the PAA. The VFWD has issued guidance that

1 clearing for a project constituting greater than 1% of the total forested area within
2 a 1 square mile radius of a project triggers review for habitat loss of the NLEB. The
3 tree clearing for this Project constitutes approximately 0.82 acres, which is
4 significantly less than 1% of the total forested area within a 1 square mile radius of
5 the Project. The Project involves a Federal nexus with the Section 404 USACE
6 permit. As such, VELCO will develop appropriate avoidance, minimization, or
7 mitigation measures during the USACE wetland permitting process, as necessary,
8 to avoid and/or mitigate potential adverse impacts to NLEB.

9
10 There are no known occurrences of RTE or uncommon plant species within the
11 PAA listed in the NHI. An RTE plant survey, conducted by Arrowwood on June
12 16, 2023, yielded no RTE species. As such, the Project will have no undue adverse
13 effect on RINA, Necessary Wildlife Habitat, or RTE Species. Exhibit Petitioner
14 AM-4, at 17.

15
16 **16. Greenhouse Gas Impacts [30 V.S.A. § 248(b)(5)]**

17 Q22. Will the proposed VELCO work have any significant greenhouse gas impacts?

18 A22. No. VELCO's proposed construction activities will result in the release of minor
19 emissions associated with the operation of gasoline- and diesel-powered engines and
20 equipment. These activities, however, will be limited in nature and duration.
21 Moreover, there will be no sustained releases of greenhouses gases associated with
22 the operation of the facilities.

1

2 The Project will involve the replacement of an existing 220 circuit switcher with a
3 115 kV sulfur hexafluoride (SF6) circuit breaker. The new breaker will utilize a
4 temperature compensated gas pressure gauge similar to those currently installed at
5 numerous other VELCO substations and is a sealed unit that does not emit SF6 gas
6 as part of its normal operation. The SF6 gas breaker will also be equipped with a
7 real-time monitoring device that measures SF6 density and SF6 moisture dew point,
8 in addition to several other non-SF6 related functions. Currently, the St. Johnsbury
9 Substation contains approximately 98 pounds, in total, of SF6 gas within the various
10 gas-insulated equipment on site. Following completion of the proposed Project, the
11 St. Johnsbury substation will contain approximately 159.2 pounds, in total, of SF6
12 gas. VELCO's total nameplate capacity of SF6 gas containing equipment on its
13 entire transmission system will be approximately 31,459.8 pounds following the
14 Project's net increase of 61.2 pounds of SF6. This net increase is the result of
15 replacing the existing 220 circuit switcher with a 115 kV circuit breaker.

16

17 VELCO will ensure proper handling and recycling of SF6 gas containing equipment
18 during the Project through implementation and adherence to its SF6 Policy, which
19 has been reviewed and approved by VT ANR Air Quality and Climate Division as
20 part of previous collaborative review meetings for these iterative VELCO substation
21 upgrade projects. In compliance with the US Environmental Protection Agency
22 (EPA) Greenhouse Gas Reporting Program, VELCO will report its SF6 leakage

1 quantities to the EPA on an annual basis. VELCO provides this same SF6 leakage
2 quantity information to VT ANR as a result of previous agreements. As such, there
3 will be no undue, adverse effect associated with greenhouse gas emissions
4 associated with the proposed Project. Exhibit Petitioner AM-4, at 7.

5 **17. Use of Natural Resources [30 V.S.A. § 248(b)(5)]**

6 Q23. Will the Project work use natural resources?

7 A23. VELCO will construct this Project while minimizing the use of natural resources.
8 VELCO expects to use a minor amount of natural resources to complete the Project,
9 which will be mainly limited to the clearing of vegetation, the use of stone to surface
10 the substation yard, and the utilization of petroleum based fuels and lubricants
11 associated with the operation of gasoline and diesel powered vehicles and
12 equipment. Additionally, VELCO is planning to reuse cut material from the
13 substation expansion onsite to limit trips offsite to dispose of the waste material
14 while also limiting fill necessary to create level areas for the temporary transformer
15 and staging area. As such, there will be no undue adverse use of natural resources.

16

17 **18. Primary Agricultural Soils [30 V.S.A. § 248(b)(5)]**

18 Q24. Does the Project have an undue adverse effect on primary agricultural soils as
19 defined by 10 V.S.A. § 6001(15)?

20 A24. No. As depicted on Primary Agricultural Soils Map included as Figure 6 of the
21 Natural Resources Report (Exhibit Petitioner AM-4, at 18), and the Primary

1 Agricultural Soil Impact Map (Exhibit Petitioner AM-8) there are Statewide (b)
2 Primary Agricultural Soils (PAS) within the PAA and the Project footprint. There
3 are no areas within the mapped PAS currently used for agriculture, and the
4 surrounding slope and proximity to dense utility infrastructure largely precludes
5 agricultural use of the land.

6
7 Within the NRCS-mapped PAS are existing previous developments, such as the
8 substation and associated substation driveway, and areas unsuitable for farming
9 such as steep slopes (greater than 15% slope) and a State Significant Wetland (W-
10 SJ-4) and its buffer. Of the NRCS-mapped PAS, only approximately 2 acres are
11 viable PAS (not previously impacted, wetlands, or steep slope). The Project has
12 been designed to minimize impacts to the extent possible, but because of terrain-
13 driven constraints (a level area is necessary for both the temporary substation
14 configuration and construction support area and most areas within close proximity
15 to the substation, where the majority of the work will be taking place, would require
16 significant cut and fill to level) there will be both temporary and permanent impacts
17 to PAS as a result of the Project. Of that approximately 2 viable PAS acreage,
18 Project construction will result in approximately 1.10 acres of temporary impacts

1 and 0.50 acres of permanent impacts to the intact, viable 2 acres of PAS within the
2 Project Area (Exhibit Petitioner AM-8).

3

4 Temporary impacts to intact PAS at the site include the temporary construction
5 support area, construction of an access driveway to the temporary substation
6 configuration and construction support area, and Project activities temporary in
7 nature, such as minor trenching that will be backfilled and/or stabilized within a
8 short timeframe. Before any Project-related ground disturbance takes place, the
9 topsoil of the areas to be substantially graded (temporary substation and
10 construction support area and associated access route) will be stripped, windrowed,
11 and stabilized for the Project's duration. During construction, VELCO will place
12 fill from the substation expansion area in the temporary construction area and the
13 temporary substation area. Post-construction, VELCO will redeploy the windrowed
14 topsoil over disturbed soil within these temporary work areas, which it will then
15 seed and mulch, as applicable. VELCO will follow BMPs listed in the VEGM to
16 stabilize the site with a vegetative cover, as required by the Project's stormwater
17 permit.

18

19 Unavoidable permanent impacts to intact PAS at the site include the temporary
20 substation yard and some site grading that will establish slopes at or in excess of
21 15%. VELCO has intentionally steepened the side slopes at the temporary
22 substation and construction support area to mitigate other natural resource impacts

1 that would result from extending these slopes with a more gradual taper.
2 Specifically, a riparian buffer, class 3 wetland and the forested area northwest of
3 the Project were used as the general natural resource bounding limits for proposed
4 grading during the initial site layout process. VELCO will place a ground grid under
5 the temporary substation to properly ground equipment in that area during Project
6 construction; post-construction, VELCO will connect the ground grid to the St.
7 Johnsbury Substation's ground grid and leave it there permanently to better ground
8 the substation. The temporary substation area will be top soiled, seeded, and
9 mulched.

10

11 The Project would also impact areas of non-intact PAS at the site. Non-intact PAS
12 are those that do not provide viable farmland due to proximity to existing site
13 improvements and/or their position within and adjacent to steep slopes, wetlands,
14 and existing site improvements. The Project will affect a total of approximately
15 0.27 acres of non-intact PAS at the site. The majority (approximately 89%) of non-
16 intact PAS to be affected by the Project are attributed to non-temporary impacts in
17 the yard expansion and grading areas immediately surrounding the existing
18 substation footprint that are coincident with small, isolated (non-intact) areas of
19 mapped PAS. A small fraction (approximately 0.04 acres) of temporary impacts to
20 non-intact PAS would result from the overhead and underground Project activities

1 where prevailing slope characteristics leave only isolated (non-intact) pockets of
2 mapped PAS (shown in Exhibit Petitioner AM-8).

3

4 The Agency of Agriculture Food and Markets (AAFM) generally requires
5 mitigation for permanent impacts to PAS when mitigation totals exceed two acres.

6 VELCO will coordinate with AAFM to implement any necessary mitigation for
7 proposed impacts to intact PAS at the site. As such, there will be no undue adverse

8 impacts to mapped PAS from the Project. Exhibit Petitioner AM-4, at 18-19.

9

10 **19. Conclusion**

11 Q25. Does this conclude your testimony at this time?

12 A25. Yes, it does.

13

14

DECLARATION OF ANDREW MCMILLAN

I, Andrew McMillan, 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



Andrew McMillan
Affiant