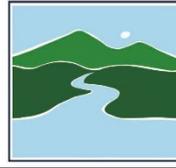


Water Quality Certification #2016-001

Under 33 U.S.C. § 1341

For Vermont Transco, LLC

PV-20 Submarine Cable Replacement



VERMONT DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

WATERSHED
MANAGEMENT DIVISION

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I. INTRODUCTION

Pursuant to Section 13.11 of the Vermont Water Pollution Control Permit Regulations (February 26, 1974) (VWPCPR) and the Agency of Natural Resources' Section 401 Water Quality Certification Practice (October 22, 2014), the Secretary (Secretary) of the Vermont Agency of Natural Resources (Agency) has reviewed a Water Quality Certification (WQC) application submitted April 22, 2016 filed by VHB, Inc. on behalf of the Vermont Transco, LLC (Applicant), for the Vermont Transco, LLC (VELCO) PV-20 Submarine Cable Replacement (Project). A WQC is required by the federal Clean Water Act Individual Section 404/Section 10 Permit for applications filed with the U.S. Army Corps of Engineers. The applicant submitted Individual Section 404/Section 10 Permit applications (File #NAE-2014-1674). It also submitted application for coverage under the Vermont Statutes Annotated (V.S.A.) Title 29, Chapter 11 Management of Lakes and Ponds (29 V.S.A. 11) and the Construction Stormwater Discharge General Permit (GP 3-9020) for Moderate Risk activities. Collectively, these materials are referred to as the "application."

II. FINDINGS

A. Project Summary and Resource Description

1. Project Summary

The proposed PV-20 Project will replace a segment of the existing 115 kV K20 circuit that extends west-to-east between the New York Power Authority (NYPA) Cumberland Head terminal station in Plattsburgh, New York and VELCO's Grand Isle terminal station in Grand Isle, Vermont – a distance of 1.8 miles. This segment of the existing circuit consists of seven oil-filled cables that are buried along the land portions and within the shallows of Lake Champlain (the Lake) and directly laid along the bottom in the deeper portions of the Lake. These cables were installed in two phases, in 1958 and 1970, and recent inspections have indicated that all seven cables are nearing the end of their services lives. This interconnection is critical to maintain consistent electrical transmission service to Vermont.

During the Project development phase a number of alternatives were evaluated, including alternative locations or methods of crossing the Lake or entirely land-based interconnections. The Project, as proposed, was found be the most practicable option, while meeting its purpose and resulting in the least amount of impacts to regulated resources. Alternatives were considered, but were ultimately found deficient for a number of reasons including failure to meet the Project purpose, increasing impacts to regulated resources, failing to meet certain practicability standards by requiring the acquisition of additional rights-of-way easements, and substantially increasing construction costs. For these reasons, the Project as proposed, satisfies the requirements of Section 404 (b)(1) of the CWA as the least environmentally damaging practicable alternative.

Specifically, the project involves the removal of the seven existing transmission line cables extending between the two terminal stations. The transmission line located in Vermont runs along the Lake bottom for approximately 0.66 miles. The existing cables are an oil-filled design with gravity-fed oil reservoirs at each substation/ terminal station. In addition to the oil reservoirs, the existing VELCO terminal station consists of an approximate 40 by 50-foot gravel pad, which supports the structures and concrete foundations associated the equipment for the submarine cable and overhead electric line. A small (approximately 10 by 12-foot) building is located within the terminal station yard.

The proposed project involves the installation of four new, extruded dielectric (oil-free) submarine cables within an approximately 500-foot-wide corridor starting approximately 30 feet north of the northernmost existing cable and extending northward then westward within the Lake. Three cables will be operational to support the three phase circuit with the fourth cable being installed as a spare in the event of a failure. The new cables are estimated to be between 5 and 6 inches in diameter and weigh approximately 27 pounds per foot. The cables will have a load capacity of 230 kV, but will be operated at 115 kV, as restricted by the existing capacity of the K20 circuit. The 230 kV capacity cables are proposed in order to accommodate potential future upgrades to the remainder of the K-20 circuit. Each cable will be supplied and installed as a continuous length. The Project is designed to attain a minimum service life of 40 years.

2. Wetland Resources

There are no wetland resources impacted by the project.

3. Stream Resources

There are no stream resources impacted by the project.

4. Lake Resources

Lake Champlain is approximately 120 miles long and 12 miles wide at its greatest width, and flows from Whitehall, New York north across the U.S. Canadian border to the Richelieu River in Quebec, Canada. Lake

Champlain covers an area of approximately 435 square miles, which includes surface area in Vermont, New York, and Quebec. Lake Champlain is approximately 400 feet in depth at its deepest point, located in the area between Charlotte, Vermont and Essex, New York.

Monitoring on Lake Champlain is conducted annually from April through October by the Agency. The monitoring is focused on water quality parameters and aquatic invasive species. Lake Champlain has been sampled annually by the Agency, in conjunction with the New York Department of Environmental Conservation, since 1992. Currently, there are 15 open water stations monitored at approximately two-week intervals for multiple parameters, which include total phosphorus, dissolved phosphorus, total suspended solids (TSS), temperature, pH, temperature, conductivity, dissolved oxygen, pH, and chlorophyll-a. In addition, the stations are monitored for aquatic species – both native and invasive species. Monitoring staff also record notable cyanobacteria blooms when present. Lake Champlain’s macroinvertebrate community has been sampled by the Agency, and although there are notable areas of considerable water quality stress and concern, the overall benthic fauna was found to be incredibly rich and diverse.

Lake Champlain is impaired for phosphorus. On June 17, 2016, the Environmental Protection Agency (EPA) established new phosphorus TMDLs for the twelve Vermont segments of Lake Champlain. Lake Champlain is also impaired for mercury, and EPA approved a regional mercury TMDL for the Lake on December 20, 2007. Lake Champlain and the lower reaches of its larger tributaries are also listed as impaired on the State 303(d) list of impaired waters - Part A for fish consumption due to high levels of PCBs. Finally, sections of Lake Champlain are listed on the Part E list of Surface Waters Altered by Invasive Aquatic Species as infested by Eurasian watermilfoil, zebra mussels, and water chestnuts.

5. Physical, Chemical, and Biological Water Conditions

In accordance with 10 V.S.A. Chapter 47, through Vermont’s Water Quality Standards (VWQS) the Agency established classification of all Vermont waters, and those waters are managed by the Agency in order to obtain and maintain these classifications. The VWQS apply to all “waters of the United States” as defined in 40 C.F.R. § 122.2 (1995). The project will affect Class B water (VWQS § 4). Generally, Class B waters must be managed to achieve and maintain a level of water quality that fully supports a range of uses, including aquatic biota, wildlife, and aquatic habitat; aesthetics; public water supplies; irrigation of crops and other agricultural uses; swimming and other primary contact recreation; and boating, fishing, and other recreational uses (VWQS § 3-04).

6. Fish, Aquatic Biota, and Wildlife

There are no reported rare, threatened, or endangered (RTE) species within the immediate project boundaries.

Lake Champlain provides habitat for the following threatened and/or endangered mussel species: Giant floater (*Pyganodon grandis*), Pink heelsplitter (*Potamilus alatus*), Fragile papershell (*Leptodea fragilis*), pocketbook (*Lampsilis ovata*), Cylindrical papershell (*Anodontoidea ferussacianus*), and the Black sandshell (*Ligumia recta*). None of these mussels are none to be present within the Project area.

The project area contains fish habitat. Throughout Lake Champlain there are important reefs and shoals that are utilized for habitat and spawning for multiple species, including Lake trout (*Salvelinus namaycush*), Lake whitefish (*Coregonus clupeaformis*), Lake herring (a.k.a. Cisco) (*Coregonus artedii*), and Rainbow smelt (*Osmerus mordax*). Not only are these areas important for spawning, but species like Slimy sculpin (*Cottus cognatus*) (an important food source for Lake Trout), rely on these rocky habitats to live.

7. Recreational and Land Uses

Recreational uses specific to Lake Champlain in the project area include boating, fishing, hunting, swimming, wildlife observation, sea-plane use, and additional boating-related recreation, including scuba diving and water skiing.

An additional use specific to northern Lake Champlain is the production of fish species at the State of Vermont Ed Weed Fish Culture Station located in Grand Isle, Vermont operated by the Vermont Department of Fish & Wildlife (DFW) for stocking fish in Lake Champlain for the purpose of supporting recreational fishing in the Lake. Specifically, the Ed Weed Fish Culture Station pumps water from a deep water intake located within the Lake for use in the fish hatchery operations. Species raised at the hatchery include brown trout, rainbow trout, steelhead rainbow trout, lake trout, landlocked Atlantic salmon, and walleye. The hatchery stocks over a million fish annually into Lake Champlain to restore fish populations and to maintain recreational angling opportunities. To the end, DFW invests approximately \$1,250,000 annually. The deep water intake used by the Ed Weed Fish Culture Station is utilized by the Grand Isle Consolidated Water District, which also uses the raw water intake for a potable water supply for the residents of Grand Isle County, Vermont.

Additionally, property owners along Lake Champlain utilize individual water intakes for either potable water supply or for irrigation. Lake Champlain is used for commerce, including marina and recreational boating services, transportation (e.g. ferries), and other tourism-related commercial enterprises. Lake Champlain is also currently utilized for several utility crossings that exist on the lake bottom.

Land uses within the watershed generally includes agriculture, silviculture, commercial and residential development, commerce, transportation, and tourism.

B. Regulatory Overview and Resource Impacts

1. State Jurisdiction Overview

The Agency also considered information submitted by the Applicant as part of permit applications required pursuant to Vermont Statutes Annotated (“V.S.A.”) Title 29, Chapter 11 Management of Lakes and Ponds, Lake Encroachment Permit (LEP) #2016-007; and Vermont General Permit 3-9020 (2006) for Stormwater Runoff from Construction Sites, as amended February 2008 (CGP), Notice of Intent (NOI) #7581-9020, issued on May 20, 2016.

According to 29 V.S.A. § 043, the alteration of the lands underlying any waters, or in this case the placement of a cable or similar structure beyond the shoreline is considered to be an encroachment. Structures encroaching on public waters (from mean water level towards the lake) such as docks, bridges, water intakes, cables, or dredging, require a permit. Shoreline is further defined as the mean water level (“MWL”) of a lake, which in the case of Lake Champlain is established to be at elevation 95.5 feet above mean sea level. A LEP application has been prepared to demonstrate how the proposed installation from the Vermont shoreline to the New York border will meet the applicable regulatory criteria.

CGP #7581-9020 covers stormwater discharges from construction activities that result in a total land disturbance equal to or greater than one acre.

As part of the application for a Certificate of Public Good under 30 V.S.A. § 248, Docket No. 8604, the Applicant has entered into memorandum of agreement/understanding (MOU) with the Agency entitled, *“Stipulation between the Vermont Agency of Natural Resources and Vermont Transco, LLC and Vermont Electric Power Company, Inc.”* The MOU includes conditions regarding avoidance and minimization of resource impacts, and stipulates adherence to five specific plans:

- a. Turbidity Monitoring Plan, dated April 14, 2016;
- b. Aquatic Invasive Species Management Plan, dated April 1, 2016;
- c. Horizontal Directional Drilling Inadvertent Return Contingency Plan, dated April 1, 2016;

- d. Installation Spill Prevention, Containment, and Contingency Plan, dated March 10, 2016; and,
- e. Removal Spill Prevention, Containment, and Contingency Plan, dated April 1, 2016.

2. Impacts to Lake Resources

Project impacts on public waters of Lake Champlain include temporary water quality impacts during construction, where sediment and constituents within the sediment will be temporarily disturbed and suspended in the water column. Additional impacts include the potential for inadvertent material spills during construction both on land at staging areas near the Lake and on the Lake during construction. Additional impacts to the Lake include fill associated with proposed protective coverings of the cable where necessary and the fill associated with the transmission line cables installed in the Lake and Lake bottom. Following construction, during operation of the transmission line, the line will produce heat and a magnetic field, resulting in limited thermal impacts and magnetic impacts respectively. The Project will also result in limited impacts to fish and wildlife habitat within the Lake in locations where the cable is installed and may result in impacts to known cultural resources identified by the Applicant in their application. The potential exists for impacts related to aquatic invasive species (AIS) transport and introduction into Lake Champlain due to project equipment traveling to Lake Champlain from other water bodies. Risk of AIS transport and introduction as a result of the Project, including construction and operation, is to be minimized through the implementation of the aforementioned Aquatic Invasive Species Management Plan.

Pursuant to 10 V.S.A. § 1446(b)(13), this project is exempt from the Shoreland Protection Act.

3. Impacts to Physical, Chemical, and Biological Water Conditions

Stormwater discharges from project related construction activity have the potential to transport stormwater related pollutants, such as sediment and nutrients, to receiving water. Potential impacts to physical, chemical, and biological water conditions as a result of discharges of stormwater related pollutants are evaluated in detail under Lake Encroachment Permit #2016-007 and CGP NOI# 7581-9020.

4. Impacts to Fish, Aquatic Biota, and Wildlife

Pursuant to 30 V.S.A. § 248, project impacts to fish, aquatic biota, and wildlife are investigated in Public Service Board Docket No. 8604. The proposed project will result in impacts associated with installation, however these are expected to be temporary and limited to the immediate work area during construction.

5. Impacts to Recreational and Land Uses

There will be no undue adverse impacts to recreation and other uses within Lake Champlain. Land uses within the project area were also determined not to be significantly impacted.

C. Avoidance, Minimization, and Mitigation

The project was designed to avoid and minimize environmental impacts. The avoidance, minimization, and mitigation of these impacts through permits is described in greater detail below:

1. Avoidance and Minimization

The Erosion Prevention and Sediment Control (EPSC) plan approved under CGP NOI #7581-9020, is designed to prevent or minimize the discharge of these pollutants to receiving waters.

2. Mitigation

The Certificate of Public Good under 30 V.S.A. § 248, Docket No. 8604 and the associated MOU as well as Lake Encroachment Permit #2016-007 includes conditions regarding of mitigation of impacts to Lake Champlain and Ed Weed Fish Culture Station.

D. Vermont Water Quality Standards (VWQS), including the Anti-Degradation Policy

1. VWQS Classifications

Under VWPCPR § 13.11(g)(3), when issuing a Section 401 Water Quality Certification, the Secretary must find “that there is a reasonable assurance that the activity will be conducted in a manner which will not violate applicable water quality standards.” The water quality standards applicable to this permit are the VWQS, Environmental Protection Rule Chapter 29(a) (Effective October 30, 2014).

The VWQS § 1-03 includes the State’s Antidegradation Policy, and the Policy is implemented according to the Agency’s 2010 Interim Anti-Degradation Implementation Procedure (Procedure). Section X of the Procedure specifically applies to Section 401 Water Quality Certifications.

2. Anti-Degradation Policy and Procedure

Under the Procedure, “[w]aters whose existing ambient water quality exceeds (i.e. is better than) the applicable minimum water quality criteria and indices for the class to which the waterbody is assigned shall be considered high quality water” (Procedure § X(F)(1)(a)). The Secretary is to “presume that all waters are high quality for at least one criterion and/or index for some portion of the year” (Procedure § X(F)(1)(c)). High quality waters require review under Tier 2 of the Procedure (Procedure § X(F)). Tier 2 requires that high quality waters “shall be managed to maintain and protect the higher water quality and minimize risk to existing and designated uses,” and that “[i]n all cases, the level of water quality necessary to maintain and protect all existing uses as well as applicable water quality criteria shall be maintained” (VWQS § 1-03(C)(1)). Under Tier 2 a limited reduction in the existing higher quality of high quality waters is only allowed if the project satisfies the socio-economic justification test (VWQS § 1-03(C)(2); Procedure § X(F)(4)).

A Tier 2 review of this project is conducted below in Section III of this Certification.

As provided in the Procedure, in reviewing an application “the Secretary shall determine whether the proposed discharge will result in a limited reduction in water quality in a high quality water by utilizing all credible and relevant information and the best professional judgment of Agency staff” (Procedure § X(F)(2)(b)).

This project does not affect any Outstanding Resource Waters and therefore, does not require review under Tier 3 of the Procedure for the protection of Outstanding Resource Waters (Procedure § X(E)).

A separate Tier 1 review is not required for this project because the maintenance and protection of existing uses and the level of water quality necessary to protect those existing uses is included in a Tier 2 review.

III. ANALYSIS

A. Summary

The Agency has conducted an anti-degradation review in accordance with the Procedure. The Agency has evaluated the nature of the activities and discharges and the resulting potential effects of the pollutants that could possibly be discharged and affect aquatic biota and habitat, wildlife and plant life, recreational uses, and the existing physical, chemical, and biological condition of the project’s receiving waters. The land uses within the watershed(s) in which the project is located include commercial development, residential development, transportation infrastructure and roads, agriculture, silviculture, natural areas, and wetlands. The predominant pollutants of concern across the watershed(s) include phosphorus, nutrients, sediment, hydrocarbons, chlorides, and, *Escherichia coli*.

B. Presumptions

1. Automatic Satisfaction of Tier 2 Review

Under Section X(D)(1) of the Procedure, certain permitted discharges and activities automatically satisfy a Tier 2 review, including:

- a. “Discharges that meet the requirements of a BMP or treatment and control manual that takes into consideration anti-degradation requirements during its adoption.”
- b. “A discharge that is seeking authorization to operate under a general permit when the Tier 2 analysis is performed at the time of the development of the general permit.”
- c. “Discharges that result in no measurable reduction in the physical, chemical or biological quality of a surface water.”

2. Discharges

The discharges covered under CGP NOI #7581-9020, must comply with the requirements of the Vermont Standards and Specifications for Erosion Prevention and Sediment Control and therefore, satisfy the presumption in Section X(D)(1)(b) of the Procedure.

C. Limited Lowering of Water Quality

If the Applicant complies with the LEP #2016-007 and CGP NOI #7581-9020, and the requirements of this Certification, no change is expected in physical or chemical water quality that would result in a reduction in biological integrity in the Lake affected by the project and existing uses within the Lake will be protected and maintained. The magnetic field values associated with the submarine cables are highest directly over the cables and decrease rapidly with distance from the cables. The magnetic field for the new cables will be lower than the existing cables at the current electrical load. The results of modeling and calculations estimate the heat transfer from the new versus old operating cables will slightly decrease as well. High voltage power cables do not emit an external electric field due to the presence of the grounded concentric metallic shield/sheath surrounding the cable.

D. Cumulative Impacts

1. Water quality

The project will have no additional cumulative impact. The project itself consists of the replacement of existing lines, and will not result in the degradation in the condition of the water, or affect existing and designated uses. The project is expected to have impacts on water quality and fish and wildlife habitat, however impacts are expected to be temporary, limited to project construction, and limited to immediate work areas, and are not expected to exceed VWQS.

2. Aquatic biota and fisheries

In the immediate area of construction, there may be a temporary impact on water quality, aquatic biota, and fisheries; however, impacts are expected to be temporary, limited to project construction and immediate work areas, and are not expected to exceed VWQS. Therefore, no cumulative impacts are anticipated.

IV. CONDITIONS

The Secretary has examined the application, and this decision is based upon an evaluation of the information contained within the application and other pertinent information that is relevant to the Agency’s responsibilities under Section 401 of the federal Clean Water Act. The Agency certifies that there is a reasonable assurance that construction and operation of the project proposed by the Applicant and in accordance with the following conditions will not cause a violation of the VWQS and will be in compliance with sections 301, 302, 303, 306, and 307 of the federal Clean Water Act, 33 U.S.C. § 1341, as amended, and other appropriate requirements of state law. This Certification is granted pursuant to the following conditions:

- A. The Applicant shall comply with all terms and conditions of this Certification.
- B. The reasonable assurances provided by this Certification are contingent upon compliance with the Lake Encroachment Permit and the authorization under the General Permit 3-9020 (2006) for Stormwater Runoff from Construction Sites, and all amendments and renewals thereto.
- C. The conditions of the following permits and stipulations are incorporated by reference as conditions of this Certification: Lake Encroachment Permit, the authorization under General Permit 3-9020 (2006) for Stormwater Runoff from Construction Sites Permit, the conditions of the ANR-VELCO MOU, and all amendments and renewals thereto.
- D. The Applicant shall give the Agency advance notice of the date on which construction of the project will commence, the date on which construction of the project will be completed, and the date operation of the project (if applicable) will commence.
- E. The Applicant shall provide written notice to the Agency, including the Director of the Watershed Management Division, of any proposed change to the project that would have a significant or material effect on the findings, conclusions, or conditions of this Certification, including any changes to the construction, operation, or schedule of the project. The Applicant shall not make any such change without approval from the Agency.
- F. The Applicant shall ensure that every reasonable precaution is taken during construction to prevent the discharge of petrochemicals, wet concrete, and debris into state waters.
- G. The Applicant shall provide written notice to the Agency of any proposed change to the conditions of this Certification, including any changes to the construction, operation, or schedule of the project. The Applicant shall not make any such change without approval from the Agency.
- H. The Applicant shall allow authorized Agency representatives, at reasonable times and upon presentation of credentials, to enter upon the project site for purposes of inspecting the project and determining compliance with this Certification.
- I. The Agency may reopen and alter or amend the conditions of this Certification over the life of the project when such action is necessary to assure compliance with the VWQS and to respond to any changes in the classification or management objectives for the affected waters. Any amendment that results in a change of conditions for the project shall be subject to VWPCPR § 13.11(c) (Public Notice) and VWPCRP §§ 13.11(d), (e), and (f) (Public Hearing).
- J. This Certification does not relieve the Applicant of the responsibility to comply with all other applicable federal, state, and local laws, regulations, and permits.

V. ENFORCEMENT

- A. Upon receipt of information that water quality standards are being violated as a consequence of the project's construction or operation or that one or more certification conditions has not been complied with, the Secretary, after consultation with the Applicant and notification of the appropriate federal permitting agency, may, after notice and opportunity for a public hearing, modify this Certification and provide a copy of such modification to the Applicant and the federal permitting agency.
- B. Certification conditions are subject to enforcement mechanisms available to the federal agency issuing the permit and to the State of Vermont. Other mechanisms under Vermont state law may also be used to correct or prevent adverse water quality impacts from construction or operation of activities for which certification has been issued.

VI. APPEALS

Pursuant to 10 V.S.A. Chapter 220, any appeal of this decision must be filed with the Vermont Public Service Board pursuant to 10 V.S.A. § 8506. This section does not apply to a facility that is subject to 10 V.S.A. § 1004 (dams before the Federal Energy Regulatory Commission), 10 V.S.A. § 1006 (certification of hydroelectric projects) or 10 V.S.A. Chapter 43 (dams). Any appeal under this section must be filed with the Clerk of the Public Service Board within 30 days of the date of this decision; the appellant must file with the Clerk an original and six copies of its appeal. The appellant shall provide notice of the filing of an appeal in accordance with 10 V.S.A. § 8504(c)(2), and shall also serve a copy of the Notice of Appeal on the Vermont Department of Public Service. For further information, see the Rules and General Orders of the Public Service Board, available on line at www.psb.vermont.gov. The address for the Public Service Board is 112 State Street, Montpelier, Vermont, 05620-2701 (Telephone: # 802-828-2358).

VII. EFFECTIVE DATE & EXPIRATION

By delegation from the Secretary to Vermont Department of Environmental Conservation, this certification shall become effective on the date of signing, and the conditions of this Certification shall become conditions of the federal permit (33 U.S.C. § 1341(d)). If the federal authority denies a permit, this Certification shall become null and void. Otherwise it remains in effect for the term of the federal license or permit.

Alyssa B. Schuren, Commissioner
Department of Environmental Conservation

By 

Mary Borg, Deputy Director
Watershed Management Division