

AMENDED WATER QUALITY CERTIFICATION

(P.L. 92-500, Section 401)

In the matter of: White Current Corporation
North Hartland, Vermont 05052
Application for Hydroelectric
Facility at North Hartland, Vermont

The Water Quality Division of the Vermont Department of Water Resources and Environmental Engineering (the Department) has examined the application submitted by the applicant on March 25, 1983, for an amendment to a Water Quality Certificate issued June 30, 1977. This amendment is requested, as the proposed facility has been modified substantially since the date of issuance of the original Water Quality Certificate. The Department has made the following findings:

1. The applicant proposes to construct and operate an electrical generating facility at the existing Ottauquechee Woolen Mill Dam on the Ottauquechee River at North Hartland, 0.1 mile upstream from its confluence with the Connecticut River. The dam is located approximately 1.2 miles downstream from the proposed Vermont Electric Cooperative North Hartland Flood Control Reservoir Hydroelectric Project. The Woolen Mill Dam is built entirely on ledge and spans the width of the river. It consists of three concrete gravity overflow type dam sections having an aggregate length of 215' and joining two small rock islands. The dam is approximately 12' wide at the base. The height varies from four to seven feet, depending upon the ledge configuration. A headgate structure is located at each end of the dam. The northeast headgate is equipped

with stop logs and will be used to drain the reservoir for repair or emergency purposes. The southwest headgate to the penstock was originally plugged with concrete. The spillway is fitted to accept flashboards which were originally part of normal operation. The height of the existing spillway crest is 348.8 NGVD.

2. The applicant proposes to construct a headrace, 40' long retaining wall, powerhouse, tailrace and substation on the southwest side of the dam. Trashracks and a 200' transmission line will also be installed. The powerhouse will contain two vertical shaft turbine generator units with a combined capacity of 1850 kw. Electricity generated from this facility will be sold to a local public utility.

The east wall of the powerhouse is to be constructed to allow removal to accommodate an additional turbine-generator bay for possible future expansion. In addition, if total project cost allows, the small turbine bay will be modified to allow substitution of a larger turbine generator unit.

3. Project construction has commenced. Representatives from the Department inspected the project area on April 13, 1983. At that time, powerhouse construction was underway. Sections of the dam had been repaired and the headrace for the facility had been constructed at the former site of the southwest headgate. Rock and earth cofferdams were used in the earlier stages of construction (November, 1982) to divert water from the work area above the dam and to control discharge of sediment into the river below the dam.

4. Flashboards will be installed to a height of 2.5' above the existing spillway crest. The installation of these flashboards will result in an impoundment approximately one mile long with a surface area of 22 acres at normal maximum surface elevation (351.3 NGVD), and ranging in width from 150' at the dam to 30' at the upstream end. The flashboards will be designed to fail under flood conditions. No maximum drawdown has been proposed. By condition of this certificate, the Department is limiting the maximum operational drawdown to six inches below the crest of the spillway and will, with the cooperation of the Department of Fish and Game, after commencement of project operation, assess the upstream impact to insure that aquatic life is not significantly impacted and streambank stability and vegetative cover is preserved.

5. The proposed facility will operate run-of-the-river under normal flow conditions. The applicant proposes to use a store and release operating mode when the upstream North Hartland project is restricting normal stream flow.

The design hydraulic capacity for the large turbine is 487 cfs (maximum 511 cfs) and 237 cfs (maximum 256 cfs) for the small turbine.

6. No minimum stream flow is required at this time. The Department of Fish and Game expects project operation will not pose any significant negative impact on fish and wildlife in the area.

7. The applicant owns all necessary property, flowage and water rights for operation of the proposed project.

8. The watershed area of the project site is 222 square miles. A USGS gaging station (01151500) is located one mile upstream and has been in operation since 1930. The drainage area at this gaging station is 221 square miles, with a 7Q10 of 23 cfs. Based on records for the gage station, the following hydrologic values may be estimated for the dam site:

<u>Parameter</u>	<u>Value (cfs)</u>
Mean Flow	396 (24.33 inches)
7Q10	23
95% Exceedance	42
50% Exceedance (Median)	201
10% Exceedance	922

9. The Ottauquechee River is currently designated a Class B stream in the vicinity of the proposed project. Class B waters are suitable for bathing and recreation; irrigation and agricultural uses; good fish habitat; good aesthetic value; and acceptable for public water supply with filtration and disinfection. The river is considered Water Management Type I or II for the protection and management of aquatic life.

10. The proposed North Hartland Hydroelectric Project is located approximately 1.5 miles upstream at the U.S. Army Corps of Engineers flood control dam. An instantaneous stream flow of 23 cfs (7Q10) or greater will be released from this project at all times when available from inflow to the reser-

voir. If inflows fall below 23 cfs, outflows shall be maintained at the same rate as inflows. Depending on inflows, generation flow will be either 970 cfs or 435 cfs for 2 to 24 hours per day.

11. A comprehensive project design and construction plan has not been submitted to the Department.

CONDITIONS

Based on its review, the Department certifies that the operation of the proposed facility will not violate Vermont Water Quality Standards provided the following conditions are met:

A. The facility shall be operated in a run-of-the-river mode under normal flow conditions. When normal flow conditions are restricted by the North Hartland project upstream, the facility can be operated in a store and release mode with the installation of flashboards at a height of no greater than 2.5' above the existing spillway crest. The maximum drawdown of water in the reservoir shall be six inches below crest of spillway. No minimum stream flow is required at this time. The Department may require a change in facility operations in the future, should project operation be found to violate Water Quality Standards in the area, including, but not limited to, the requirement of minimum flows during ponding and additional restrictions on the maximum drawdown.

B. The applicant shall obtain written approval from the Department prior to drawing down the impoundment below six inches from the spillway crest for repairs, construction or emergency purposes.

C. Any desilting shall be done in accordance with the Agency of Environmental Conservation's Desilting Policy, a copy of which is attached. The Agency shall be notified prior to any desilting activity.

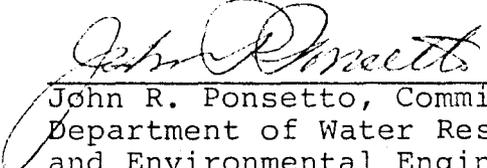
D. A comprehensive project design and construction plan shall be filed with the Department. This plan shall include construction which has been completed and construction which is proposed. It shall also include temporary and permanent measures to be taken to limit adverse impacts on water quality from turbidity and sedimentation with regard to construction activities and project operation. This plan shall be submitted within 30 day of issuance of this certification.

E. The applicant shall insure that every reasonable precaution is taken to prevent the discharge of petro chemicals and debris to State waters.

G. Debris removed from the dam crest, trashracks and construction area shall be disposed of properly.

H. Any significant changes to the project must be submitted to the Department for prior review and approval.

I. The applicant shall provide the Department with an as-built set of plans for the record.


John R. Ponsetto, Commissioner
Department of Water Resources
and Environmental Engineering

Dated at Montpelier, Vermont
this 15th day of September,
1983.

AMD/rh