

WATER QUALITY CERTIFICATION

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

In the matter of: Mr. William B. Taylor  
R.F.D.#1  
Wolcott, Vermont 05680  
Application for hydroelectric project on Baldin Brook

The Water Quality Division of the Vermont Department of Water Resources and Environmental Engineering has examined the Water Quality Certificate application filed by Mr. William B. Taylor (the applicant) on March 4, 1982, and has made the following findings:

1. The applicant proposes to construct a hydroelectric generation facility at a natural falls on Baldin Brook in the Town of Wolcott. The project would involve a recently constructed reinforced-concrete dam just upstream of the falls, the installation of a small diameter penstock up to about 1200 feet in length, and the installation of the generating equipment. The turbine shall be a Pelton wheel manufactured by Small Hydroelectric Systems and Equipment.
2. The primary purpose of the dam is to divert water into the penstock. It creates a minimal impoundment, and the facility will not be operated from storage.
3. Baldin Brook at the dam has a watershed area of about 1600 acres (2.4 square miles). The watershed is ungaged, and the applicant has not done a hydrologic study of the basin.
4. Baldin Brook is a high-quality upland stream. Under the State Water Quality Standards, it is Class B waters. No fisheries surveys or studies have been undertaken by the applicant in assessing the impact of the project on the resident salmonid population. The State District Fisheries Biologist visited the site on January 14, 1982 to evaluate the section of stream which may be bypassed by the construction of this project. Unfortunately, snow

cover made it impossible to inspect at the stream channel. The Department of Water Resources and Environmental Engineering feel that a reasonable and conservative approach to recommending minimum stream flows in the penstock-bypassed section of stream is to use the U.S. Fish and Wildlife Service Flow Recommendation Policy for the New England area. Brook trout, which inhabit the section, are fall-spawners. The policy recommends 1.0 CFS per square mile of watershed area for the fall spawning and incubation period and 0.5 CFS per square mile for the rest of the year. As the project is strictly run-of-the-river, flows below the tailrace will be the natural inflow to the project.

5. No water quality sampling or analyses have been done by the applicant; however, as this is a high-gradient, upland stream, the Department of Water Resources and Environmental Engineering feels that the project will not significantly affect the water quality parameters for which there are technical requirements under the State Water Quality Standards.

6. Flows will be maintained by including in the automatic shutdown system for the turbine an input from a low flow measurement detection device.

## CONDITIONS

The Vermont Department of Water Resources and Environmental Engineering certifies that this project will meet Vermont Water Quality Standards with the following conditions:

A. The project shall be operated in a strictly run-of-the-river manner with instantaneous flows directly downstream of the tailrace equalling instantaneous inflows to the impoundment at all times. On an instantaneous basis, the following flows shall be maintained in the penstock-bypassed section of stream by spilling at the dam:

September 1-March 31 - 2.4 CFS

April 1-August 31 - 1.2 CFS

Whenever inflows to the impoundment are less than the above minimums, the project shall shutdown and spill all inflows.

Under no conditions shall flows be cutoff to the bypassed section.

The applicant shall provide the Department of Water Resources and Environmental Engineering with a description and plans detailing how releases will be made at the dam for review and approval.

B. The applicant shall file a final plan with the Department of Water Resources and Environmental Engineering showing the project design, including both the location of the dam and the powerhouse and the alignment of the penstock.

C. The applicant shall file a comprehensive erosion and sediment control plan with the Department of Water Resources and Environmental Engineering for review and approval. The plan shall cover temporary and permanent measures to limit adverse impacts on water quality from turbidity and sedimentation with regard to construction activities. The plan shall also specify how flows will be managed during construction. It may be beneficial to consult with the Department for input during the development of the plan.

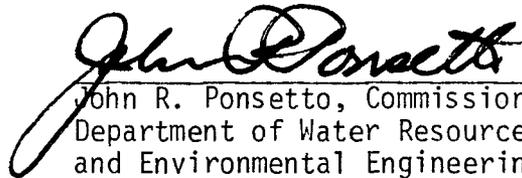
D. The intake shall be designed in such manner as to make desilting of the forebay possible without creating turbidity problems.

E. The applicant shall insure that every reasonable precaution is taken during construction to prevent the discharge of petro chemicals, wet concrete and debris to state waters.

F. Any debris removed from the project area during construction and later operation shall be disposed of properly.

G. Any significant changes to the project, including the operational scheme, must be submitted to the Department of Water Resources and Environmental Engineering for review and approval.

H. No construction may commence until the Department of Water Resources and Environmental Engineering has issued written approval under conditions A, B, C, and G. Operational changes made after project completion are subject to condition G and must be approved prior to effecting the change.

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

Dated at Montpelier, Vermont this  
29<sup>th</sup> day of April, 1982.

JRC/rh