WATER QUALITY CERTIFICATION
(P.L. 92-400, Section 401)

In the matter of: Newbury Hydro Company
P.O. Box 142
Warren, VT 05674
Application for the Newbury Hydroelectric Project

The Water Quality Division of the Vermont Department of Water Resources and Environmental Engineering (the Department) makes the following findings after reviewing the Water Quality Certification application and Federal Energy Regulatory Commission Short-Form License application filed by Newbury Hydro Company:

1. The applicant proposes to redevelop the hydroelectric generation facilities at the location of the former Adams Paper Company Mill on the Wells River in the Town of Newbury. The site was originally developed in about 1912 and abandoned in the mid-1950's. The dam is a concrete, gravity-type structure, 20 feet high and 60 feet in length. A 5-foot diameter, 380 foot long steel penstock extends from the forebay, on the right end of the dam, down to the generating equipment housed in the paper mill building. The existing equipment, which consists of a two-wheel horizontal turbine and a 312kw generator, are to be used. An additional new turbine would be connected to the existing penstock using a bifurcation and a 30-inch, 30 foot long section of penstock. This turbine would use a 110kw generator.

2. The project would be operated in a run-of-the-river manner. Five (5) feet of flashboards would be installed to provide an available head of 32 feet with a pool elevation of 463.87' NGVD. The hydraulic capacity of the two turbines would range from 20 cfs to 193 cfs.

3. The site is located just west of the Village of Wells River and about 0.9 mile upstream of the Connecticut River confluence. About 0.6 mile further upstream, the U.S. Geological Society operates a surface water gaging

station (#11390) on the Wells River. Measurements have been collected since August, 1940. The drainage area at the gage is 98.4 square miles. With the intervening watershed area, the site drainage area may be estimated at 100 square miles. Based on a direct drainage area proration, several hydrologic parameters may be estimated for the site:

Parameter	Value (cfs)
7Q10	14
Mean annual flow	142 (19.3 in./yr.)
95% exceedance	23
50% exceedance (median)	77
10% exceedance	346

During the history of the gage, some upstream flow regulation has occurred.

4. The surface area of the present impoundment is about 6.9 acres, and the installation of flashboards would increase the area to 11.4 acres (February 4, 1982 letter from Donnelly, Conklin, Phipps & Buzzell, Inc. to FERC). Most of the additional flooded area lies on the northern side of the river as Vermont Route 302 borders the southern side. The backwater would extend about 0.4 mile upstream.

5. The Wells River has been designated by the Vermont Water Resources Board as Class B, Water Management Type I or II from Boltonville to the Adams Paper Company dam. Below the dam the classification changes to Class C, allowing the discharge of treated wastewater from the mill, which is now abandoned.

The minimum standard for dissolved oxygen (D.O.) is 6 mg/l, and a standard of 7 mg/l may be applied at and near spawning areas.

6. The Department concludes that this project would not have a significant adverse impact on D.O. levels. The impoundment is relatively small, and a minimum flow in excess of 7Q10 would be spilled at the dam. Substantial reaeration opportunities are available both upstream and downstream of the impoundment.

7. Fish species which may be expected to inhabit the Wells River below the dam include rainbow trout, brown trout, brook trout and walleye. In order to preserve the excellent habitat available in the 500-foot bypassed section of river and to maintain good D.O. levels, a minimum flow of 25 cfs is required unless inflows are less. For spring spawning of walleyes and rainbow trout, a minimum flow of 50 cfs is required.

CONDITIONS

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

A. The hydroelectric facility shall be operated in a strict run-of-the-river manner, with instantaneous flows below the tailrace maintained equivalent to instantaneous project inflows. A minimum instantaneous flow of 25 cfs, or instantaneous inflow, if less, shall be passed at the dam at all times with the exception of the period from April 15 to June 10, when the required minimum shall be 50 cfs or instantaneous inflow, if less. When the facility is shut down, all flows shall be passed at the dam.

The aforesaid minimum flows of 25 cfs and 50 cfs shall also apply in the unusual cases when some inflow must be put into storage, such as during refill periods following a maintenance operation, including the replacement of flashboards.

The applicant shall provide the Department with a description and plans detailing how releases will be made at the dam, for review and approval.

B. During the final engineering phase or earlier, the applicant shall file a comprehensive erosion and sediment control plan with the Department 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.

C. 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.

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

E. Any significant changes to the project including the operational scheme must be submitted to the Department for review and approval.

F. Upon completion of the project, the applicant shall provide the Department with an as-built set of plans for the record.

G. No construction may commence until the Department has issued written approval under Conditions A, B and E. Operational changes made after project completion are subject to Condition E 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
10th day of December, 1982.

JRC/rh