WATER QUALITY CERTIFICATION
(P.L. 92-500, Section 401)

In the matter of: Mr. David F. Buckley
Williams River Electric Corporation
18 Bridge Street
Bellows Falls, VT 05101
Application for the Brockways Mills Hydroelectric Project

The Water Quality Division of the Vermont Department of Water Resources and Environmental Engineering (the Department) has reviewed the Williams River Electric Corporation (the applicant) FERC license application Environmental Report as filed November 24, 1981 in support of the applicant's request for certification. The Department also has examined subsequent filings and correspondence submitted by the applicant. The Department makes the following findings:

1. The applicant proposes to develop the falls at Brockways Mills in the Town of Rockingham for the purpose of generating hydroelectric power. The site is on the Williams River about 4.6 miles upstream of the Connecticut River confluence. The project would involve the construction of a dam and intake facilities, a penstock and a powerhouse. The dam would be concrete, about 15 feet in height and 135 feet long, with a 107 foot ogee spillway section and a crest elevation of 439.0' NGVD.

The intake structure would be located on the right bank. The first section of penstock would consist of a buried concrete box, 5.5-foot square and about 290 feet long. The remainder of the penstock would be steel, 5.5 feet in diameter, and with a bifurcation conveying water to either or both of two vertical Francis turbines.

The larger turbine would be sized to develop 1105 hp under 50 feet of head and would be connected to a generator rated at 772 kw. The smaller unit

would develop 491 hp at the same head and would be connected to a 343 kw generator. The total output is 1115 kw.

2. Three feet of flashboards would be installed, raising the normal pool elevation to 442.0' NGVD. The pool surface area with the flashboards in place would be about four acres and the impoundment would extend about 1500 feet upstream. The gross storage capacity would be 16 acre-feet.

3. The facility is to be operated in a strict run-of-the-river manner. The project will not be operated out of storage. With flashboards in place and a tailwater elevation of 389.0' NGVD, the net head has been estimated at 50 feet. It is anticipated that the flashboards would fail during periods of high water such as the normal spring peak. The hydraulic capacity of the powerhouse is 60 to 340 cfs. The proposal as submitted to the Department would result in no flows in the 400 foot bypassed section of stream whenever the project was operating and natural flows were within the turbines' range.

4. The U.S. Geological Survey has owned and operated a surface water gaging station (#011535) at Brockways Mills since June, 1940. The watershed area is 103 square miles. Based on the gage data, following are several hydrologic values for the site:

Parameter	Value (cfs)
Mean Flow	173 (23 inches/year)
95% Exceedance	12
50% Exceedance (median)	75
10% Exceedance	430
7Q10	5.8

5. The Vermont Water Resources Board has classified the Williams River Class B from the Hall Brook confluence downstream. The Water Management Type is Type I or II, with a minimum dissolved oxygen (D.O.) standard of 6 mg/l. A D.O. standard of 7 mg/l may be required in spawning areas. The quality of the river in this section is good. The impoundment is small and reaeration opportunities directly below the proposed powerhouse location are substantial. During low flow periods, the project will not be operating.

6. This section of stream is considered an important resource in terms of recreational use and aesthetic/geologic merit. Detailed construction plans are not available; therefore, the Department has not been able to fully review the dam and powerhouse location and the structures' impact on this natural area.

7. The proposed dewatering of the penstock-bypassed section of river has been carefully evaluated. Not only would it have an undue adverse effect on the aesthetic appeal of the falls, it would reduce or eliminate macro-invertebrate food production in the reach. Also, the spring sports fishery of walleyes and rainbow trout presently includes pools located in the bypassed section.

8. The U.S. Fish and Wildlife Service Flow Recommendation Policy for the New England Area contains recommended base flows necessary to sustain aquatic life. For the Williams River during the summer season, the policy uses a value of 25 cfs. In evaluating this issue the Department has taken into consideration the specific hydrology of the river. the resource to be protected, and the importance of the additional source of energy. The Department believes a minimum year-around flow in the bypassed section of 10 cfs would be acceptable.

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 strict run-of-the-river manner, with instantaneous flows below the powerhouse equivalent to instantaneous inflows to the project. The project shall pass a minimum flow of 10 cfs, or project inflow, if less, at the dam at all times. The facility shall not be operated from storage. 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. Final plans indicating the layout of the dam and powerhouse shall be submitted to the Department for review and approval.

C. 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. The Department's review shall include, but not be limited to, the tailrace excavation and powerhouse construction.

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

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

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

G. No construction may commence until the Department has issued written approval under conditions A, B, C, and F. Operational changes made after project completion are subject to condition F 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
1st day of Dec, 1982.

JRC/rh