WATER QUALITY CERTIFICATION

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

In the matter of: S.R. Thanhauser
White Oak Water Power
P.O. Box 12
South Newbury, VT 05066
Application for hydroelectric project on Halls 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. S.R. Thanhauser (the applicant) by letter dated March 3, 1982, and has made the following findings:

1. The applicant proposes to construct a hydroelectric generation facility at an existing stone dam on Halls Brook at South Newbury. The project is located about two and a half miles upstream of the confluence of Halls Brook with the Connecticut River. Formerly, water power was used to operate a saw mill at the site. The applicant proposes to construct a powerhouse on the remains of the mill house foundation and to install an overshot waterwheel, 12 to 13 feet in diameter and 6 feet wide. A 4 foot wide intake flume would carry water to the wheel, and the tailrace would discharge it to the brook about 75 feet downstream of the dam.

2. The existing dam is 15 to 16 feet high and forms a relatively small impoundment, with a storage volume of about 20,000 cubic feet. The pool is contained within the gorge, and the backwater terminates at a waterfall a short distance upstream.

3. The facility will be operated in a strict run-of-the-river mode, with no drawing out of storage. Although the design flow of the wheel is approximately 24 CFS, the facility will be able to produce power at much smaller rates of flow due to the relatively flat efficiency curve for the wheel. The watershed area at the project is about 25 square miles. The site is ungaged. Based on two gages which had been installed on two small tributaries of the Connecticut River, one in Putney and another in Concord, the mean annual flow

for Halls Brook at the site is estimated at 40 CFS. If these two gages are good indicators of flow characteristics on Halls Brook, the median flow, or 50 percent exceedance probability flow may be estimated at 19 CFS.

4. Halls Brook is a Class B, upland stream. It is not anticipated that this project will degrade the water quality of Halls Brook. The storage volume is very small; the project is run-of-the-river with a very short bypassed section; and the stream in the vicinity of the project has a high gradient providing good opportunities for a natural reaeration. The State District Fisheries Biologist has made a site inspection and reviewed the information on this project. The biologist concludes that this project will not have a significant adverse impact on fisheries. Because this is an overshot wheel, turbine mortality of migrating fish is not a concern.

5. The applicant has stated in his application that no heavy machinery will be used in the brook to construct the project. As no substantial amount of work is to be done in the stream and as the powerhouse is to be constructed on an existing foundation, the Department of Water Resources and Environmental Engineering does not expect erosion and sedimentation during construction to be a problem.

6. The applicant intends to perform routine maintenance desilting by venting small quantities of silt at the dam during periods of high water. It is noted that the particularly critical time in terms of impact on aquatic life is the fall spawning and incubation period, which is approximately between October 15 and spring high water on Halls Brook; however, significant adverse impacts can occur at any time of the year depending on how the desilting is carried out and the quantity of material involved.

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. The tailrace shall discharge to Halls Brook at a point not to exceed 100 feet downstream of the dam. Under no conditions shall flow be cut off by construction or operation of this project.

B. Any desilting shall comply with the Agency of Environmental Conservation's desilting policy, a copy of which is attached.

C. Care shall be taken during construction to limit the disturbance of soils near the streambank. Disturbed soils shall be stabilized as soon as practicable following the removal of vegetation. Such areas shall be regraded and revegetated no later than September 15 of the year of construction. Conservation mix or similar seed mix shall be applied at a rate of no less than 60 pounds/acre and the area mulched at a rate of 2 tons/acre using hay. The applicant shall contact the Department of Water Resources and Environmental Engineering if there are questions or any unusual anticipated problems with regard to erosion control.

D. 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.

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

F. 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 prior to making the change.

John R. Ponsetto

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

Dated at Montpelier, Vermont this
4th day of May, 1982.

JRC/rh