

WATER QUALITY CERTIFICATION

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

In the matter of: Gilbert F. Mach, Jr.
Flowerbrook Hydro, Inc.
Pawlet, Vermont 05761
Application for Flower Brook Hydroelectric Project

The Water Quality Division of the Vermont Department of Water Resources and Environmental Engineering (the Department) has examined the Vermont Public Service Board Section 248 certification application filed by Flowerbrook Hydro, Inc. (the applicant) in considering the project for certification under P.L. 92-500, Section 401 and has made the following findings:

1. The applicant proposes to construct a hydroelectric generation facility at an existing dam on Flower Brook at Pawlet, Vermont. The former mill dam is located approximately 1700 feet upstream of the confluence of Flower Brook with the Mettawee River and directly upstream of the Vermont Route 30 bridge. The applicant proposes to remove a 21 foot diameter undershot water-wheel presently at the site and install a turbine/generator unit approximately 250 feet downstream of the dam on the right bank. A tailrace channel 100 feet in length would carry water from the powerhouse back to the brook. A 12 inch diameter plastic penstock would carry water to the powerhouse. The applicant has estimated the net head at about 40 feet.

2. The dam forms a small impoundment, approximately $\frac{1}{4}$ acre in surface area with a gross volume of about 60,000 cubic feet. The applicant has not indicated that he will be using flashboards. The Department understands the project to be strictly run-of-the-river, with no drawing out of storage. The design flow of the turbine is 7 CFS. The applicant proposes to maintain a minimum stream flow of 5 CFS in the bypassed section of river. The bypassed section is essentially a gorge and contains salmonids.

3. The site has a watershed area of approximately 19 square miles. Flows are ungaged. A small tributary of the Mettawee River near Pawlet was gaged by the U.S. Geological Survey from water year 1964 to 1974. Based on data from that gaging station, it is expected that a flow of 12 CFS, or 5 CFS in the bypassed section and 7 CFS for design generation flow, would be available about 56 percent of the time. The gaging station (#428030) had a drainage area of 2.10 square miles. If the low flow characteristics of Flower Brook are similar to the gaged tributary, the 7Q10 value of Flower Brook would probably be substantially less than 1 CFS.

4. Flower Brook is a Class B, upland stream. It is not anticipated that this project will degrade the water quality of Flower Brook. The project is run-of-the-river with a short bypassed section. A flow well in excess of 7Q10 is to be released at the dam.

5. The impoundment has been recently desilted by sluicing through the waste gate. The applicant did not conform to the Agency Desilting Policy, which requires notification and approval by the Agency prior to undertaking desilting operations. 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; however, significant adverse impacts can occur at any time during the year depending on how the desilting is carried out and the quantity of the 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 channel shall discharge to Flower Brook at a point not to exceed 400 feet downstream of the dam. Under no conditions shall flow be cut off to Flower Brook by construction or operation of this project. A minimum flow of 5 CFS or instantaneous inflow, if less, shall be passed at the dam at all times.

B. Any desilting shall comply with the Agency of Environmental Conservation 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. The applicant shall furnish the Department with a detailed description of the tailrace channel, especially with regard to the type of lining to be used in the channel for the prevention of erosion during periods of generation. The applicant shall contact the Department if there are questions or any unusual anticipated problems with regard to erosion control.

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

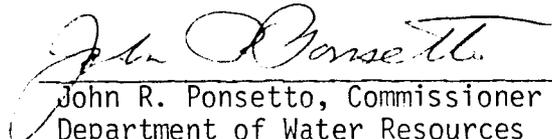
E. Any debris removed from the impoundment during construction or later operation shall be disposed of properly.

F. The applicant shall provide the Department with the tailrace channel details and obtain approval for the design prior to the discharge of any water

into the channel. Any significant changes to the project, including the operational scheme, must be submitted to the Department for review and approval prior to making the change.

G. Flashboards are not to be used unless approved in accordance with Condition F.

H. The applicant shall provide the Department with a description, design calculations and plans for the method to be used to release the minimum flow required in Condition A at the dam. Approval by the Department is necessary before operation may begin.


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

Dated at Montpelier, Vermont
this 22nd day of July, 1982

JRC/rh
Attachment