

Water Quality Certification Amendment
(P.L. 92-500, Section 401)

In the matter of: **Green Mountain Power Corporation**
Green Mountain Drive
Box 850
South Burlington, VT 05402

APPLICATION TO AMEND
THE ESSEX NO. 19
WATER QUALITY CERTIFICATION

The Water Quality Division of the Vermont Department of Environmental Conservation (the Department) has reviewed, for consistency with Vermont Water Quality Standards, an application dated November 9, 1994 and filed by the Green Mountain Power Corporation (GMP or the applicant) to amend the November 8, 1993 water quality certification for the Essex No. 19 Hydroelectric Project. The applicant proposes certain changes to project operations consistent with the provisions of the attached November 24, 1993 settlement agreement between GMP, the Agency of Natural Resources, and the Vermont Natural Resources Council. Based on the application, the record of the original proceeding, and comments and filings received during the public notice period for this action, the Department makes the following findings and conclusions:

1. Condition B of the water quality certification requires that the project release 500 cfs, or inflow if less, below the tailrace continuously during the period June 16 through March 31 in order to protect aquatic habitat. The applicant proposes to reduce this minimum flow requirement by ten percent in order to enhance its capability to produce power on peak.
2. Based on the original habitat/flow analyses discussed in the original water quality certification, the maintenance of a minimum flow of 450 cfs, coupled with restrictions on allowed hydropeaking-induced flow fluctuations, will adequately protect habitat conditions for aquatic biota, including macroinvertebrates, non-game fish, and the target sports-fish species for which the river is managed.

3. The applicant also proposes amendments that would allow more flexibility in project operation, both with respect to the extent of impoundment drawdowns and the range of artificial flow fluctuations, under emergency operating conditions or in cases beyond its reasonable control, such as failure of the air-inflated rubber flashboard system.
4. Flow fluctuations outside of the range prescribed in the original certification and drawdowns below elevation 272.0 feet are acceptable if carefully controlled and infrequent, given the desirability and need for the operator to exercise some immediate discretion under emergency conditions. The conditions under which such discretion is used and the resulting impact on the river resources will be reviewed by the Department, which will reserve the right to restrict such discretion in the future if warranted.

ACTION OF THE DEPARTMENT

Based on its review of the proposed changes and the above findings, the Department concludes that there is reasonable assurance that operation and maintenance of the Essex No. 19 Hydroelectric Project in accordance with the conditions amended below and the remaining original certification conditions will not cause a violation of Vermont Water Quality Standards and will be in compliance with sections 301, 302, 303, 306, and 307 of the Federal Clean Water Act, P.L. 92-500, as amended, and other appropriate requirements of state law:

- A. The applicant shall operate and maintain this project consistent with its original water quality certification application except where modified by the conditions of this amendment and the remaining conditions of the original certification.
- B. The project shall be operated in accordance with the minimum-flow schedule tabulated below. Minimum flows shall be released on a continuous basis and not interrupted.

Period	Minimum Flow (cfs)	
	Bypass	Below Project
April 1 - May 15	50	r-o-r
May 16 - June 15	50	1,000
June 16 - March 31	50	450

Note: Minimum flows are values listed, or instantaneous inflow if less.

The run-of-the-river condition noted shall be outflow equal to inflow on an instantaneous basis. Within 90 days of the issuance of this certification, a description, hydraulic design calculations, and plans for the measure to be used to release the bypass flow shall be filed with the Department for its review and approval. No construction shall commence until Department approval is received.

The project shall be managed such that no lag times occur that would result in a minimum flow violation. The method for controlling lag time shall be filed with the Department within 90 days of the issuance of this certification.

- E. Peaking on any calendar day shall not result in differences between the high and low artificial flows, as measured directly below the project, greater than those tabulated below:

Period	Low Flow for Calendar Day (cfs)	Maximum Allowed Fluctuation in Flow (cfs)
April 1- May 15		None (r-o-r)
May 16 - June 15	<1,000	None (r-o-r)
	≥1,000	No limit
June 16 - September 30	<450	None (r-o-r)
	≥450	500
October 1 - March 31	<450	None (r-o-r)
	≥450	No limit

The project may exceed the maximum allowed fluctuation in flow required by the above chart in emergency situations such as the need for full capacity output in the event of a NEPOOL or local power emergency. GMP shall annually provide the Agency with a description of all such events. After considering the duration, degree, and benefits of actual emergency fluctuations resulting from this exception and any resulting impact to the river environment or the public use thereof, and having provided notice and an opportunity for hearing, the Secretary of the Agency may modify this exception as appropriate.

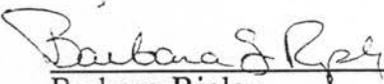
GMP shall, in consultation with the Agency, develop a plan for complying with the maximum flow constraints. Among other issues, this plan shall describe the appropriate operation in the event natural river flows do not allow the project to maintain the river within the constraints described in the table above.

- H. The impoundment shall not be drawn below elevation 272.0 feet without prior written approval by the Department except in cases where the drawdown is necessitated by a system or facility

emergency (i.e., NEPOOL or local power emergency) or to prevent damage to the project (i.e., the rubber bladder may be damaged if not deflated), or when the drawdown is beyond the control of the applicant (i.e., the rubber bladder loses air pressure). Under such special events, the applicant shall:

1. notify the Agency in writing as soon as practical after it becomes aware of such an occurrence but in no event more than one business day after such event begins;
2. take all reasonable action to limit the extent and duration of any such event including making every attempt to maintain the elevation above 271.0 feet prior to Agency notification; and
3. provide the Agency with a written report within 30 days after such event describing the cause and nature of the event including a discussion as to whether this type of situation can be prevented in the future. If it can be prevented, the applicant shall discuss how it will accomplish this.

If the frequency, duration or degree of these events reach proportions that the Agency believes are detrimental to the river environment, this exception may be modified by the Secretary of the Agency at that time as appropriate after consultation with GMP and an opportunity for hearing.



Barbara Ripley
Secretary
Agency of Natural Resources

Dated at Waterbury, Vermont
this 1 day of ~~December~~, 1994.

January, 1995^{BE}

attachment: settlement agreement
cc: distribution list

BR:KSF

AGREEMENT

In consideration of the Vermont Agency of Natural Resources (VANR) reducing the minimum flow requirement in the Essex 19 Water Quality Certificate by 50 cfs in Condition B (from 500 cfs to 450 cfs from June 15 - March 31) Condition D and Condition E (the low flow for the calendar day should be reduced to 450 cfs), and modifications to address the administrative concerns of GMP consistent with Attachment 1, and the Vermont Natural Resources Council (VNRC) forgoing an appeal of the 401 Certificate as modified in Attachment 1, Green Mountain Power Corporation hereby agrees not to appeal the 401 Certificate and to voluntarily enter into a \$1003 Proceeding which shall result in an Order consistent with the following items. The parties will not be bound by this agreement should some other party file an appeal of the 401 Certificate.

1. GMP will undertake a redevelopment feasibility study for the Gorge #18 plant, such study to be completed by year end 1994. Along with issues typically studied within a feasibility study, the study shall include an analysis of alternative methods for downstream fish passage, and the value and feasibility of maximum flow constraints and an aesthetic spillage.
2. For the present Gorge #18 project, GMP will undertake a study of fish passage alternatives and aesthetic spillage, such study to be completed by year end 1994. GMP shall hire an independent consultant, subject to approval of the VANR, to perform a comprehensive study of the value, need, and if appropriate, the amount and timing of an aesthetic spillage that would be appropriate at the Gorge facility. The aesthetic study will include an analysis of existing spillage conditions at Gorge #18; spillage conditions at Gorge #18 as modified by the Essex 401 Certificate; and other spillage alternatives. Results of the studies shall be provided to the interested parties.
3. Upon licensing of Essex 19, GMP will manage flows below Gorge #18 in an equivalent manner to the flow management provisions of Condition B, C, D, and E, of the Essex 19, 401 Certificate. (The bypass flow at Essex 19 required by Condition B is not applicable to Gorge #18.) GMP may choose not to accept the management provisions of Condition E at the Gorge site if it complies with item 5 below.
4. GMP will provide downstream fish passage at the Gorge #18 facility no later than the Spring of 1996. The passage plan is subject to prior approval by the Agency. Passage methods will be developed in consultation with the VANR, VNRC and Trout Unlimited.

5. If GMP does not wish to accept the maximum flow constraints of item 3 above, then GMP may study both the riverine impacts and the power production and operation impacts of peaking flows/constraints and shall consult with the VANR, the Vermont Department of Public Service (VDPS), and the VNRC regarding its findings. All parties will then make a good faith effort in determining the appropriateness of peaking constraints. If the parties are unable to reach an agreement as to this issue, the VANR may order such constraints as it determines to be appropriate provided those constraints are no greater than those imposed on Essex 19 in its 401 Certificate issued in November of 1993 and provided such order shall be valid only until such time as GMP pursues any redevelopment or upgrade of the Gorge facility.

6. GMP shall construct a portage at the Gorge #18 facility after consultation and direction from the Northern Vermont Canoe Cruisers, the Winooski Valley Park District (WVPD), VANR and VNRC. The portage shall be constructed at the same time that the canoe portage at Essex 19 is constructed.

By signature below, the parties acknowledge their acceptance of this agreement.

Cheryl Clark

Vermont Agency of Natural Resources

11/24/93

Date

Ned Freyhan

Vermont Natural Resources Council

11/24/93

Date

Christopher [Signature]

Green Mountain Power Corporation

11/23/93

Date