

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Penacook Hydro Associates)

Project No. 6689-000

ORDER ISSUING LICENSE (MAJOR)

(Issued December 5, 1984)

Penacook Hydro Associates (PHA) filed on October 7, 1982, an application for a license under Part I of the Federal Power Act (Act) to construct, operate, and maintain the Penacook Upper Falls Project No. 6689. 1/ The project would be located on the Contoocook River in Merrimack County, New Hampshire and would affect the interests of interstate or foreign commerce.

Notice of the application has been published and comments have been received from interested Federal, state, and local agencies. Briar-Hydro Associates (BHA) submitted a protest and was granted intervention. 2/ The significant concerns of the protestor, intervenor, and commenting agencies are discussed below.

Protests and Interventions

BHA which has a pending license application for the upstream Rolfe Canal Project No. 3240 3/ was granted a motion to intervene in order to be a party to the proceeding and to protect its interests. BHA also filed a protest to the issuance of the license for Project No. 6689, because the headwater elevation of this project could encroach on the tailwater of BHA's Rolfe Canal Project and adversely

1/ Authority to act on this matter is delegated to the Director, Office of Hydropower Licensing, under §375.314 of the Commission's regulations, 49 Fed. Reg. 29,369 (1984) (Errata issued July 27, 1984), (to be codified at 18 C.F.R. §375.314). This order may be appealed to the Commission by any party within 30 days of its issuance pursuant to Rule 1902, 18 C.F.R. §385.1902 (1983). Filing an appeal and final Commission action on that appeal are prerequisites for filing an application for rehearing as provided in Section 313(a) of the Act. Filing an appeal does not operate as a stay of the effective date of this order or of any other date specified in this order, except as specifically directed by the Commission.

2/ The Commission granted Briar-Hydro Associates' motion to intervene in the proceeding of Project No. 6689 on February 1, 1983.

3/ Application for license filed on June 28, 1982, by Briar Hydro Associates. A companion order will be issued concurrently for this project.

affect its power production. Subsequently, the two applicants executed an agreement, which stipulates that PHA would perform studies in cooperation with BHA to determine what effect, if any, PHA's Penacook Upper Falls Project would have on BHA's Rolfe Canal Project and to compensate BHA for any power production lost. As a result of this agreement BHA withdrew its protest to the issuance of a license for this project.

Project Description

The Penacook Upper Falls Project would consist of a new spillway built on the remains of an existing dam, making it a 21-foot-high, 187-foot-long structure, a small reservoir, a powerhouse containing one generating unit having an installed capacity of 2,800 kW, and appurtenant facilities. A more detailed project description is contained in ordering paragraph (B).

Safety and Adequacy

The dam was analyzed for stability and was found to be safe against sliding and overturning under normal and flood loading conditions. Staff inspected the project on March 30, 1983, and determined that the dam is a low hazard structure. The spillway capacity is considered adequate. The powerhouse would be safe if constructed in accordance with sound engineering practices.

It is concluded that the project under the conditions of this license will be safe and adequate.

Fish Passage Facilities

The U.S. Department of the Interior (Interior) commented that the proposed project is located in a section of the Contoocook River that is scheduled for restoration of anadromous fishes, primarily American shad. Interior stated that the river upstream of the project will also be used for rearing of juvenile Atlantic salmon, which will contribute to the overall run of salmon in the Merrimack River of which the Contoocook River is a tributary. A salmon run of undetermined size may in turn develop on the lower Contoocook River. Interior, therefore, recommended that both upstream and downstream fish passage facilities be installed at the project by 1988, which is the same timetable as that proposed for the downstream Penacook Lower Falls Project, FERC No. 3342. Interior also stated that provisions for downstream passage of salmon smolt may be required prior to 1988, since salmon fry stocking in the upper Contoocook River may commence in 1984.

The Applicant has proposed to construct upstream fish passage facilities when anadromous fishes appear below the Penacook Lower Falls Project, and to provide measures for downstream passage when outmigrating anadromous fishes are present at the project. Upstream and downstream fish passage facilities should be constructed at the

Penacook Upper Falls Project to provide for passage of American shad and Atlantic salmon. These facilities should be provided on the same schedule as at other projects recently licensed on the lower Contoocook River. Because of the uncertainty associated with the pending application for license for the Sewalls Falls Project, the Licensee is being required herein to provide fish facilities without regard to Sewalls Falls Dam. However, the Commission's authority is preserved to adjust the construction schedule of the fish passage facilities if construction of the Sewalls Falls Project is authorized. 4/

It is concluded that fish passage facilities at the project would protect and enhance the anadromous fishery resource planned for restoration in the Contoocook River and, therefore, Article 24 requires the Licensee to consult with FWS and FGD, and file for approval functional design drawings of fish passage facilities at the project. Article 24 also provides for a construction schedule for those facilities.

However, if salmon are introduced to the Contoocook River, provisions should be made for safe downstream passage of salmon smolt prior to 1988. Therefore, Article 25 requires the Licensee to consult with State and Federal fishery agencies, and to provide for downstream passage of salmon smolt should it be necessary before 1988.

Minimum Flow

Interior recommended that a continuous minimum flow of 338 cubic feet per second (cfs) be discharged from the project to protect resident and anadromous fishes. The Applicant did not object to Interior's recommended minimum flow. It is concluded that Interior's recommended flow would adequately protect fish and wildlife resources downstream of the proposed project. Therefore, Article 26 requires the Licensee to discharge a continuous minimum flow of 338 cfs or the inflow to the reservoir, whichever is less.

4/ The fish passage facilities for Penacook Lower Falls Project No. 3342 are to be provided within one year of the completion of fish passage facilities at the downstream Sewalls Falls Dam, the Garvin Falls Dam, the Hooksett Dam, the Amoskeag Dam, and the Pawtucket Dam. An application for license for the Sewalls Falls Dam Project No. 7216 is pending before the Commission. If a license is not issued for Project No. 7216, the requirements for Article 24 would be triggered by the next dam downstream of Sewalls Falls.

Recreation Access

Interior recommended that, because annual runs of shad and salmon will likely develop on the Contoocook River, the Applicant should be required to provide access for public utilization of fish and wildlife resources whenever possible. Article 13 of the license provides for public recreational access to the project to the extent that public safety is not jeopardized.

Other Environmental Impacts

Project construction would result in temporary increases in sedimentation and turbidity in the Contoocook River in the vicinity of the construction area, and would cause disturbance to the Village of Penacook due to increased noise, dust, and exhaust emissions. In-river construction and blasting may result in some mortality of resident fishes. The completed project and its operation would result in the inundation of about 2,600 feet of free-flowing riffle and cascade riverine habitat, the dewatering of about 2 acres of riverine habitat immediately downstream of the proposed dam, and the creation of an additional barrier to anadromous fish migration on the Contoocook River. 5/ Articles 24, 25, and 26 require that the project be equipped with fish passage facilities, and will provide a minimum instantaneous flow for the protection and enhancement of the aquatic resources. No Federally listed threatened or endangered species will be affected. The proposed project will have no effect on cultural resources, although Article 32 will ensure cultural resources protection should any be discovered in the future. On the basis of the record, and Staff's independent analysis, it is concluded that the issuance of a license for the project will not constitute a major Federal action significantly affecting the quality of the human environment.

Economic Feasibility

The project would operate run-of-river and generate an estimated 7,500,000 kWh annually. 6/ The project would be economically feasible based on the sale of power at avoided costs in the State of New Hampshire, adjusted for escalation.

5/ The New Hampshire Water Supply and Control Commission has issued a water quality certificate on May 6, 1983, for the project, in accordance with Section 401 of the Federal Water Pollution Control Act.

6/ The proposed project would utilize a renewable resource that will save the equivalent of approximately 12,300 barrels of oil or 3,420 tons of coal per year.

Other Aspects of Comprehensive Development

Briar-Hydro Associates has filed a license application to develop hydroelectric facilities on the Rolfe Canal Project, FERC No. 3240, immediately upstream of this project. Potential backwater during periods of high streamflows may affect the power production at the Rolfe Canal Project. Based on the Staff's analysis of the proposed developments and operating schemes, the backwater effect on the Rolfe Canal Project appears to be infrequent and minor in nature. BHA and PHA have executed an agreement concerning the operation of the two projects in which Penacook Hydro Associates would perform studies in cooperation with Briar-Hydro Associates to determine the extent that the backwater of Project No. 6689 would affect the power generation of the Rolfe Canal Project and the optimum design that would maximize power generation for both projects, and would compensate BHA for any lost generation. Article 31 which requires the Licensee to study and compensate BHA for any adverse effects on the generation of the upstream Rolfe Canal Project No. 3240 would assure maximum utilization of the water resources and energy output for both the Penacook Upper Falls and Rolfe Canal Projects.

The proposed Penacook Upper Falls Project would make good use of the flow and fall of the Contoocook River and would be best adapted to the comprehensive development of the Merrimack River Basin for beneficial purposes upon compliance with the terms and conditions of the license.

License Term

The proposed development of this project using existing facilities is similar to the relicensing of an existing licensed project at which a moderate amount of new development is proposed. Therefore, consistent with Commission policy, a 40-year license term is reasonable in this instance. 7/

It is ordered that:

(A) This license is issued to Penacook Hydro Associates (Licensee), of Concord, New Hampshire, under Part I of the Federal Power Act (Act), for a period of 40 years, effective the first day of the month in which this order is issued, for the construction, operation, and maintenance of the Penacook Upper Falls Project No. 6689, located in Merrimack County, New Hampshire, on the Contoocook River, and affecting the interests of interstate or foreign commerce. This license is subject to the terms and conditions of the Act, which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the Act.

7/ Village of Lyndonville, 7 FERC 161,324 (1979).

(B) The Penacook Upper Falls Project No. 6689 consists of:

(1) All lands, to the extent of the Licensee's interests in those lands, constituting the project area and enclosed by the project boundary. The project area and boundary are shown and described by a certain exhibit that forms part of the application for license and that is designated and described as:

Exhibit A, Section 1 VIII, titled "Project Description."

<u>Exhibit</u>	<u>FERC No. 6689-</u>	<u>Showing</u>
G-1	4	Project Boundary Map
G-2	5	Area Plan
G-3	6	Site Plan

(2) Project works consisting of: (a) a timber stoplog dam with a concrete spillway 21 feet high and 187.0 feet long; (b) 16 gates in the spillway, 6 operable timbergates, 9.5 feet wide and 15.5 feet high, 8 fixed timber stoplog gates, and two operable (ice) gates, 12 feet wide and 3.5 feet high; (c) a reservoir with a surface area of 11.4 acres, a negligible storage capacity, and normal water surface elevation of 306 feet m.s.l.; (d) a powerhouse at the east side of the dam with one generating unit having an installed capacity of 2,800 kW; (e) a 35.0-foot-long, 4.16-kV generator lead; (f) a 4.16/34.5-kV 3.6 MVA three-phase transformer; (g) a 50-foot-long, 34.5-kV transmission line; (h) a tailrace, 47 feet wide and 350 feet long; and (i) appurtenant facilities.

The location, nature, and character of these project works are generally shown and described by the exhibit cited above and more specifically shown and described by certain other exhibits that also form a part of the application for license and that are designated and described as:

<u>Exhibit</u>	<u>FERC No. 6689-</u>	<u>Showing</u>
F-1	1	Powerhouse and Equipment
F-2	2	Powerhouse and Equipment
F-3	3	Spillway

(3) All of the structures, fixtures, equipment, or facilities used or useful in the operation or maintenance of the project and located within the project boundary, all portable property that may be employed in connection with the project, located within or outside the project boundary, as approved by the Commission, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) Exhibits A, F and G designated in ordering paragraph (B) above, are approved and made a part of the license.

(D) This license is also subject to Articles 1 through 23 except Article 20 set forth in Form L-11 (revised October 1975), entitled "Terms and Conditions of License for Unconstructed Major Project Affecting the Interests of Interstate or Foreign Commerce," attached to and made a part of this license. The license is also subject to the following additional articles:

Article 24. Licensee shall, not later than 6 months after the commencement of construction of fish passage facilities at the Sewall Falls project (FERC No. 7216) and in no case later than July 1, 1988, file for Commission approval, functional design drawings of the proposed fish passage facilities at the Penacook Upper Falls Project, prepared in consultation with the U. S. Fish and Wildlife Service and the New Hampshire Fish and Game Department. Licensee shall provide upstream and downstream fish passage facilities at the Penacook Upper Falls Project within 1 year after completion of construction of fish passage facilities at the downstream Garvins Falls Dam, Hooksett Dam, Amoskeag Dam, and Pawtucket Dam; provided, however, that if the Sewalls Falls Project is authorized to be constructed, the Commission may adjust the construction schedule. Further, Licensee shall file with the Commission, within 6 months after completion of construction of the Penacook Upper Falls Project fish passage facilities, as-built drawings.

Article 25. Licensee shall continue to consult with the U. S. Fish and Wildlife Service and the New Hampshire Fish and Game Department regarding the introduction of Atlantic salmon to the Contoocook River, and shall cooperate with these agencies in providing safe downstream passage of salmon smolt at the project, if salmon migrations occur prior to completion of the fish passage facilities required by Article 24.

Article 26. Licensee shall discharge from the Penacook Upper Falls Project a continuous minimum flow of 338 cubic feet per second or the inflow to the reservoir, whichever is less, for the protection and enhancement of aquatic resources in the Contoocook River. These flows may be temporarily modified if required by operating emergencies beyond the control of the Licensee, and for short periods upon mutual agreement between the Licensee and the New Hampshire Fish and Game Department.

Article 27. The Licensee shall commence construction of project works within two years from the issuance date of the license and shall complete construction of the project within four years from the issuance date of the license.

Article 28. The Licensee shall provide to the Commission's Regional Engineer and the Director, Office of Hydropower Licensing, one copy each of the final contract drawings and specifications for pertinent features of the project, such as water retention structures, powerhouse, and water conveyance structures, at least 60 days prior to start of construction. The Director, Office of Hydropower Licensing may require changes in the plans and specifications to assure a safe and adequate project.

Article 29. The Licensee shall review and approve the design of contractor-designed cofferdams and deep excavations prior to the start of construction and shall ensure that construction of cofferdams and deep excavations are consistent with the approved design. At least 30 days prior to start of construction of the cofferdam, the Licensee shall provide to the Commission's Regional Engineer and Director, Office of Hydropower Licensing, one copy of the approved cofferdam construction drawings and specifications and a copy of the letter(s) of approval.

Article 30. The Licensee shall within 90 days of completion of construction file for approval by the Director, Office of Hydropower Licensing, revised Exhibits A, F, and G to describe and show the project as-built.

Article 31. The Licensee shall perform studies in cooperation with the Licensee for Project No. 3240 to determine the effect of project construction and operation on the proposed upstream Rolfe Canal Project, FERC No. 3240, if any, and shall compensate the Licensee of Project No. 3240 for losses, if any, incurred by reason of the construction or operation of the Penacook Upper Falls Project.

Article 32. The Licensee shall, prior to the commencement of any construction at the project, consult with the New Hampshire State Historic Preservation Officer (SHPO) about the need for any cultural resource survey and salvage work. The Licensee shall make available funds in a reasonable amount for any such work as required. If any previously unrecorded archeological or historical sites are discovered during the course of construction or development of any project works or other facilities at the project, construction activity in the vicinity shall be halted, a qualified archeologist shall be consulted to determine the significance of the sites, and the Licensee shall consult with the SHPO to develop a mitigation

plan for the protection of significant archeological or historic resources. If the Licensee and the SHPO cannot agree on the amount of money to be expended on archeological or historic work related to the project, the Commission reserves the right to require the Licensee to conduct, at its own expense, any such work found necessary.

Article 33. The Licensee shall continue to consult and cooperate with the U. S. Fish and Wildlife Service, the New Hampshire Water Supply and Pollution Control Board, and the New Hampshire Fish and Game Department for the protection and development of the environmental resources and values of the project area. The Commission reserves the right to require changes in the project works or operation that may be necessary to protect and enhance those resources and values.

Article 34. The Licensee shall pay the United States the following annual charge, effective the first day of the month in which this license is issued:

For the purpose of reimbursing the United States for the cost of administration of Part I of the Act, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time. The authorized installed capacity for that purpose is 3,750 horsepower.

Article 35. Pursuant to Section 10(d) of the Act, after the first 20 years of operation of the project under license, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. One half of the project surplus earnings, if any, accumulated after the first 20 years of operation under the license, in excess of the specified rate of return per annum on the net investment, shall be set aside in a project amortization reserve account at the end of each fiscal year. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year after the first 20 years of operation under the license, the amount of that deficiency shall be deducted from the amount of any surplus earnings subsequently accumulated, until absorbed. One-half of the remaining surplus earnings, if any, cumulatively computed, shall be set aside in the project amortization reserve account. The amounts established in the project amortization reserve account shall be maintained until further order of the Commission.

The annual specified reasonable rate of return shall be the sum of the annual weighted costs of long-term debt, preferred stock, and common equity, as defined below. The annual weighted cost for each component of the reasonable rate of return is the product of its capital ratio and cost rate. The annual capital ratio for each component of the rate of return shall be calculated based on an average of 13 monthly balances of amounts properly includable in the Licensee's long-term debt and proprietary capital

accounts as listed in the Commission's Uniform System of Accounts. The cost rates for long-term debt and preferred stock shall be their respective weighted average costs for the year, and the cost of common equity shall be the interest rate on 10-year government bonds (reported as the Treasury Department's 10 year constant maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

Article 36. (a) In accordance with the provisions of this article, the Licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain other types of use and occupancy, without prior Commission approval. The Licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the Licensee shall also have continuing responsibility to supervise and control the uses and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the Licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the Licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, cancelling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The types of use and occupancy of project lands and waters for which the Licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 watercraft at a time where said facility is intended to serve single-family type dwellings; and (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the Licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The Licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the uses and occupancies for which it grants permission are maintained in good repair and comply with applicable State and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the Licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3)

determine that the proposed construction is needed and would not change the basic contour of the reservoir shoreline. To implement this paragraph (b), the Licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the Licensee's costs of administering the permit program. The Commission reserves the right to require the Licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The Licensee may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expansion, realignment, or maintenance of bridges and roads for which all necessary State and Federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir. No later than January 31 of each year, the Licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The Licensee may convey fee titles to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary State and Federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary Federal and State water quality certificates or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary Federal and State approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are located at least one-half mile from any other private or public marina; (6) recreational development consistent with an approved Exhibit R or approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed

is located at least 75 feet, measured horizontally, from the edge of the project reservoir at normal maximum surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 45 days before conveying any interest in project lands under this paragraph (d), the Licensee must file a letter to the Director, Office of Hydropower Licensing, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G or K map may be used), the nature of the proposed use, the identity of any Federal or State agency official consulted, and any Federal or State approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the Licensee to file an application for prior approval, the Licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraphs (c) or (d) of this article:

(1) Before conveying the interest, the Licensee shall consult with Federal and State fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.


(2) Before conveying the interest, the Licensee shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved Exhibit R or approved report on recreational resources of an Exhibit E; or, if the project does not have an approved Exhibit R or approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include covenants running with the land adequate to ensure that: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; and (ii) the grantee shall take all reasonable precautions to ensure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project.

(4) The Commission reserves the right to require the Licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G or K drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised Exhibit G or K drawings would be filed for approval for other purposes.

(E) The Licensee's failure to file a petition appealing this order to the Commission shall constitute acceptance of this license. In acknowledgment of acceptance of this order and its terms and conditions, it shall be signed by the Licensee and returned to the Commission within 60 days from the date this order is issued.



Quentin A. Edson
Director, Office of
Hydropower Licensing

Project No. 6689-000

IN TESTIMONY of its acknowledgment of acceptance of all of the terms and conditions of this order, Penacook Hydro Associates, this ____ day of _____, 19 ____, has caused its corporate name to be signed hereto by _____, its President, and its corporate seal to be affixed hereto and attested by _____, its Secretary, pursuant to a resolution of its Board of Directors duly adopted on the ____ day of _____, 19 ____, a certified copy of the record of which is attached hereto.

By _____
President

Attest:

Secretary

(Executed in quadruplicate)

FEDERAL ENERGY REGULATORY COMMISSION

TERMS AND CONDITIONS OF LICENSE FOR UNCONSTRUCTED
MAJOR PROJECT AFFECTING THE INTERESTS
OF INTERSTATE OR FOREIGN COMMERCE

Article 1. The entire project, as described in this order of the Commission, shall be subject to all of the provisions, terms, and conditions of the license.

Article 2. No substantial change shall be made in the maps, plans, specifications, and statements described and designated as exhibits and approved by the Commission in its order as a part of the license until such change shall have been approved by the Commission: Provided, however, That if the Licensee or the Commission deems it necessary or desirable that said approved exhibits, or any of them, be changed, there shall be submitted to the Commission for approval a revised, or additional exhibit or exhibits covering the proposed changes which, upon approval by the Commission, shall become a part of the license and shall supersede, in whole or in part, such exhibit or exhibits theretofore made a part of the license as may be specified by the Commission.

Article 3. The project works shall be constructed in substantial conformity with the approved exhibits referred to in Article 2 herein or as changed in accordance with the provisions of said article. Except when emergency shall require for the protection of navigation, life, health, or property, there shall not be made without prior approval of the Commission any substantial alteration or addition not in conformity with the approved plans to any dam or other project works under the license or any substantial use of project lands and waters not authorized herein; and any emergency alteration, addition, or use so made shall thereafter be subject to such modification and change as the Commission may direct. Minor changes in project works, or in uses of project lands and waters, or divergence from such approved exhibits may be made if such changes will not result in a decrease in efficiency, in a material increase in cost, in an adverse environmental impact, or in impairment of the general scheme of development; but any of such minor changes made without the prior approval of the Commission, which in its

judgment have produced or will produce any of such results, shall be subject to such alteration as the Commission may direct.

Upon the completion of the project, or at such other time as the Commission may direct, the Licensee shall submit to the Commission for approval revised exhibits insofar as necessary to show any divergence from or variations in the project area and project boundary as finally located or in the project works as actually constructed when compared with the area and boundary shown and the works described in the license or in the exhibits approved by the Commission, together with a statement in writing setting forth the reasons which in the opinion of the Licensee necessitated or justified variation in or divergence from the approved exhibits. Such revised exhibits shall, if and when approved by the Commission, be made a part of the license under the provisions of Article 2 hereof.

Article 4. The construction, operation, and maintenance of the project and any work incidental to additions or alterations shall be subject to the inspection and supervision of the Regional Engineer, Federal Power Commission, in the region wherein the project is located, or of such other officer or agent as the Commission may designate, who shall be the authorized representative of the Commission for such purposes. The Licensee shall cooperate fully with said representative and shall furnish him a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of the project and for any subsequent alterations to the project. Construction of the project works or any feature or alteration thereof shall not be initiated until the program of inspection for the project works or any such feature thereof has been approved by said representative. The Licensee shall also furnish to said representative such further information as he may require concerning the construction, operation, and maintenance of the project, and of any alteration thereof, and shall notify him of the date upon which work will begin, as far in advance thereof as said representative may reasonably specify, and shall notify him promptly in writing of any suspension of work for a period of more than one week, and of its resumption and completion. The Licensee shall allow said representative and other officers or employees of the United States, showing proper credentials, free and unrestricted access to, through, and

across the project lands and project works in the performance of their official duties. The Licensee shall comply with such rules and regulations of general or special applicability as the Commission may prescribe from time to time for the protection of life, health, or property.

Article 5. The Licensee, within five years from the date of issuance of the license, shall acquire title in fee or the right to use in perpetuity all lands, other than lands of the United States, necessary or appropriate for the construction, maintenance, and operation of the project. The Licensee or its successors and assigns shall, during the period of the license, retain the possession of all project property covered by the license as issued or as later amended, including the project area, the project works, and all franchises, easements, water rights, and rights of occupancy and use; and none of such properties shall be voluntarily sold, leased, transferred, abandoned, or otherwise disposed of without the prior written approval of the Commission, except that the Licensee may lease or otherwise dispose of interests in project lands or property without specific written approval of the Commission pursuant to the then current regulations of the Commission. The provisions of this article are not intended to prevent the abandonment or the retirement from service of structures, equipment, or other project works in connection with replacements thereof when they become obsolete, inadequate, or inefficient for further service due to wear and tear; and mortgage or trust deeds or judicial sales made thereunder, or tax sales, shall not be deemed voluntary transfers within the meaning of this article.

Article 6. In the event the project is taken over by the United States upon the termination of the license as provided in Section 14 of the Federal Power Act, or is transferred to a new licensee or to a non-power licensee under the provisions of Section 15 of said Act, the Licensee, its successors and assigns shall be responsible for, and shall make good any defect of title to, or of right of occupancy and use in, any of such project property that is necessary or appropriate or valuable and serviceable in the maintenance and operation of the project, and shall pay and discharge, or shall assume responsibility for payment and discharge of, all liens or encumbrances upon the project or project property created by the Licensee or created or incurred after the issuance of the license: Provided, That the provisions of this article are not intended to require the Licensee, for

the purpose of transferring the project to the United States or to a new licensee, to acquire any different title to, or right of occupancy and use in, any of such project property than was necessary to acquire for its own purposes as the Licensee.

Article 7. The actual legitimate original cost of the project, and of any addition thereto or betterment thereof, shall be determined by the Commission in accordance with the Federal Power Act and the Commission's Rules and Regulations thereunder.

Article 8. The Licensee shall install and thereafter maintain gages and stream-gaging stations for the purpose of determining the stage and flow of the stream or streams on which the project is located, the amount of water held in and withdrawn from storage, and the effective head on the turbines; shall provide for the required reading of such gages and for the adequate rating of such stations; and shall install and maintain standard meters adequate for the determination of the amount of electric energy generated by the project works. The number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, shall at all times be satisfactory to the Commission or its authorized representative. The Commission reserves the right, after notice and opportunity for hearing, to require such alterations in the number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, as are necessary to secure adequate determinations. The installation of gages, the rating of said stream or streams, and the determination of the flow thereof, shall be under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region of the project, and the Licensee shall advance to the United States Geological Survey the amount of funds estimated to be necessary for such supervision, or cooperation for such periods as may be mutually agreed upon. The Licensee shall keep accurate and sufficient records of the foregoing determinations to the satisfaction of the Commission, and shall make return of such records annually at such time and in such form as the Commission may prescribe.

Article 9. The Licensee shall, after notice and opportunity for hearing, install additional capacity or make other changes in the project as directed by the Commission, to the extent that it is economically sound and in the public interest to do so.

Article 10. The Licensee shall, after notice and opportunity for hearing, coordinate the operation of the project, electrically and hydraulically, with such other projects or power systems and in such manner as the Commission may direct in the interest of power and other beneficial public uses of water resources, and on such conditions concerning the equitable sharing of benefits by the Licensee as the Commission may order.

Article 11. Whenever the Licensee is directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement, the Licensee shall reimburse the owner of the headwater improvement for such part of the annual charges for interest, maintenance, and depreciation thereof as the Commission shall determine to be equitable, and shall pay to the United States the cost of making such determination as fixed by the Commission. For benefits provided by a storage reservoir or other headwater improvement of the United States, the Licensee shall pay to the Commission the amounts for which it is billed from time to time for such headwater benefits and for the cost of making the determinations pursuant to the then current regulations of the Commission under the Federal Power Act.

Article 12. The operations of the Licensee, so far as they affect the use, storage and discharge from storage of waters affected by the license, shall at all times be controlled by such reasonable rules and regulations as the Commission may prescribe for the protection of life, health, and property, and in the interest of the fullest practicable conservation and utilization of such waters for power purposes and for other beneficial public uses, including recreational purposes, and the Licensee shall release water from the project reservoir at such rate in cubic feet per second, or such volume in acre-feet per specified period of time, as the Commission may prescribe for the purposes hereinbefore mentioned.

Article 13. On the application of any person, association, corporation, Federal agency, State or municipality, the Licensee shall permit such reasonable use of its reservoir or other project properties, including works, lands and water rights, or parts thereof, as may be ordered by the Commission, after notice and opportunity for hearing, in the interests of comprehensive development of the waterway or waterways involved and the conservation and utilization of the water resources of the region for water supply or for the purposes of steam-electric, irrigation, industrial, municipal or similar uses. The Licensee shall receive reasonable compensation for use of its reservoir or other project properties or parts thereof for such purposes, to include at least full reimbursement for any damages or expenses which the joint use causes the Licensee to incur. Any such compensation shall be fixed by the Commission either by approval of an agreement between the Licensee and the party or parties benefiting or after notice and opportunity for hearing. Applications shall contain information in sufficient detail to afford a full understanding of the proposed use, including satisfactory evidence that the applicant possesses necessary water rights pursuant to applicable State law, or a showing of cause why such evidence cannot concurrently be submitted, and a statement as to the relationship of the proposed use to any State or municipal plans or orders which may have been adopted with respect to the use of such waters.

Article 14. In the construction or maintenance of the project works, the Licensee shall place and maintain suitable structures and devices to reduce to a reasonable degree the liability of contact between its transmission lines and telegraph, telephone and other signal wires or power transmission lines constructed prior to its transmission lines and not owned by the Licensee, and shall also place and maintain suitable structures and devices to reduce to a reasonable degree the liability of any structures or wires falling or obstructing traffic or endangering life. None of the provisions of this article are intended to relieve the Licensee from any responsibility or requirement which may be imposed by any other lawful authority for avoiding or eliminating inductive interference.

Article 15. The Licensee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate, or arrange for the construction, maintenance, and operation of such reasonable facilities, and comply with such reasonable modifications of the project structures and operation, as may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the fish and wildlife agency or agencies of any State in which the project or a part thereof is located, after notice and opportunity for hearing.

Article 16. Whenever the United States shall desire, in connection with the project, to construct fish and wildlife facilities or to improve the existing fish and wildlife facilities at its own expense, the Licensee shall permit the United States or its designated agency to use, free of cost, such of the Licensee's lands and interests in lands, reservoirs, waterways and project works as may be reasonably required to complete such facilities or such improvements thereof. In addition, after notice and opportunity for hearing, the Licensee shall modify the project operation as may be reasonably prescribed by the Commission in order to permit the maintenance and operation of the fish and wildlife facilities constructed or improved by the United States under the provisions of this article. This article shall not be interpreted to place any obligation on the United States to construct or improve fish and wildlife facilities or to relieve the Licensee of any obligation under this license.

Article 17. The Licensee shall construct, maintain, and operate, or shall arrange for the construction, maintenance, and operation of such reasonable recreational facilities, including modifications thereto, such as access roads, wharves, launching ramps, beaches, picnic and camping areas, sanitary facilities, and utilities, giving consideration to the needs of the physically handicapped, and shall comply with such reasonable modifications of the project, as may be prescribed hereafter by the Commission during the term of this license upon its own motion or upon the recommendation of the Secretary of the Interior or other interested Federal or State agencies, after notice and opportunity for hearing.

Article 18. So far as is consistent with proper operation of the project, the Licensee shall allow the public free access, to a reasonable extent, to project waters and adjacent project lands owned by the Licensee for the purpose of full public utilization of such lands and waters for navigation and for outdoor recreational purposes, including fishing and hunting: Provided, That the Licensee may reserve from public access such portions of the project waters, adjacent lands, and project facilities as may be necessary for the protection of life, health, and property.

Article 19. In the construction, maintenance, or operation of the project, the Licensee shall be responsible for, and shall take reasonable measures to prevent, soil erosion on lands adjacent to streams or other waters, stream sedimentation, and any form of water or air pollution. The Commission, upon request or upon its own motion, may order the Licensee to take such measures as the Commission finds to be necessary for these purposes, after notice and opportunity for hearing.

Article 20. The Licensee shall consult with the appropriate State and Federal agencies and, within one year of the date of issuance of this license, shall submit for Commission approval a plan for clearing the reservoir area. Further, the Licensee shall clear and keep clear to an adequate width lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which results from the clearing of lands or from the maintenance or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. Upon approval of the clearing plan all clearing of the lands and disposal of the unnecessary material shall be done with due diligence and to the satisfaction of the authorized representative of the Commission and in accordance with appropriate Federal, State, and local statutes and regulations.

Article 21. If the Licensee shall cause or suffer essential project property to be removed or destroyed or to become unfit for use, without adequate replacement, or shall abandon or discontinue good faith operation of the project or refuse or neglect to comply with the terms of the license and the lawful orders of the

Commission mailed to the record address of the Licensee or its agent, the Commission will deem it to be the intent of the Licensee to surrender the license. The Commission, after notice and opportunity for hearing, may require the Licensee to remove any or all structures, equipment and power lines within the project boundary and to take any such other action necessary to restore the project waters, lands, and facilities remaining within the project boundary to a condition satisfactory to the United States agency having jurisdiction over its lands or the Commission's authorized representative, as appropriate, or to provide for the continued operation and maintenance of nonpower facilities and fulfill such other obligations under the license as the Commission may prescribe. In addition, the Commission in its discretion, after notice and opportunity for hearing, may also agree to the surrender of the license when the Commission, for the reasons recited herein, deems it to be the intent of the Licensee to surrender the license.

Article 22. The right of the Licensee and of its successors and assigns to use or occupy waters over which the United States has jurisdiction, or lands of the United States under the license, for the purpose of maintaining the project works or otherwise, shall absolutely cease at the end of the license period, unless the Licensee has obtained a new license pursuant to the then existing laws and regulations, or an annual license under the terms and conditions of this license.

Article 23. The terms and conditions expressly set forth in the license shall not be construed as impairing any terms and conditions of the Federal Power Act which are not expressly set forth herein.