

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Pocantico Development Associates, Inc.,) Project No. 5944-000
Richard J.J. Hungerford and
Kris A. Dyrland

ORDER ISSUING LICENSE (MINOR)

(Issued December 7, 1982)

Pocantico Development Associates, Inc., Richard J.J. Hungerford and Kris A. Dyrland (PDA) filed on February 2, 1982, an application for license under Part I of the Federal Power Act (Act) to construct, operate and maintain the Moretown #8 Project No. 5944. The Moretown #8 project would be located on the Mad River in the town of Moretown, Washington County, Vermont, 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. No protests or motions to intervene have been received, and none of the agencies objected to issuance of the license. 1/

The Proposal

The proposed project would utilize an existing 34-foot high, 333-foot long concrete gravity dam to be repaired and strengthened. The dam's 164-foot long spillway section would also be topped with 4-foot high flashboards. The project reservoir would have a surface area of 35.5 acres and a usable storage capacity of 130 acre-feet. A new 980-foot long, 6-foot diameter

1/ Authority to act on this matter is delegated to the Director, Office of Electric Power Regulation, under §375.308 of the Commission's regulations, 18 C.F.R. §375.308 (1982), FERC Statutes and Regulations ¶30,238. 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, FERC Statutes and Regulations ¶29,052, 47 Fed. Reg. 19014 (1982). 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 any other date specified in this order, except as specifically directed by the Commission.

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penstock would be constructed at the location of the former penstock and would connect to a new powerhouse containing a turbine-generator unit with a total rated capacity of 800 kw. The project would generate about 3,300,000 kWh annually. 2/

Safety and Adequacy

The staff inspected the project on May 10, 1982 and determined that the dam is a low hazard structure. The staff has analyzed the stability of the dam and found that, as it exists, the dam is unstable under normal conditions. PDA intends to widen the base of the dam by 12 feet to make it stable under normal and extreme loading conditions. The design for modifications to the project structure will be submitted pursuant to Article 20 of the license.

If the dam were to fail under extreme flood conditions, the small storage released would not significantly increase flows downstream. The dam's integral spillway capacity is adequate.

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

License Term

The proposed scale of development is less than that which would warrant a full 50-year term since the project dam currently exists. Therefore pursuant to the Commission's policy for licensing projects involving moderate redevelopment, 3/ this license term will be for a period of 40 years.

Flow Releases

The Vermont Agency of Environmental Conservation (AEC) and the U.S. Fish and Wildlife Service (FWS), recommended that continuous minimum flows be released from the project dam to protect aquatic resources in the 980-foot reach of the river between the dam and tailrace area (bypass reach). In addition, these agencies recommended that the combined continuous discharge from the project dam and powerhouse be maintained at a specific level below the tailrace to protect downstream aquatic resources and to maintain water quality. The AEC indicated that the coldwater fishery of the Mad River was excellent and that the reach below the project dam and tailrace provides good quality spawning and rearing habitat for steelhead trout and landlocked Atlantic salmon.

2/ The project would save the equivalent of 5,400 barrels of oil or 1,500 tons of coal annually.

3/ See The Montana Power Company, 56 FPC 2008 (1976).

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On August 27, 1982, AEC issued a ~~water quality certificate~~ that requires continuous minimum flow releases from the project dam and below the tailrace during generation and non-generation periods. The releases vary depending on the inflow to the reservoir.

The FWS concurred with the minimum flow release schedule contained in the water quality certificate. It is concluded that the minimum flow release schedule would provide adequate protection for fish and wildlife resources downstream of the project. Article 25 requires such flows.

The AEC indicated that spawning flows not exceeding 250 cfs may be required from the dam to accommodate fish spawning activities in the bypass reach. If needed, these spawning flows would be required for a period of 8 weeks or the length of the spawning season as determined by the Vermont Department of Fish and Game (VFG), whichever is less. Article 11 provides the means by which VFG can request changes in project facilities and operations, in the interest of protecting fish and wildlife resources.

Recreation

For the protection of the local swimming area, located 0.8 mile upstream of the project dam, PDA and AEC recommended that the amount of reservoir drawdown should not exceed an instantaneous rate of 10 inches per hour during the recreation season. It is concluded that there is a need to protect the swimming area during the summer recreation season, between Memorial Day and Labor Day each year. Article 26 would limit the instantaneous drawdown of the impoundment to 10 inches per hour.

Fish Passage Facilities

The FWS also recommended that the redevelopment plans include retrofitting of fish passage facilities. PDA contends that this is not necessary, since fish passage facilities would have to be operational at three downstream dams prior to construction of facilities to pass fish above the project dam. It is concluded that PDA should not be required at this time to include retrofitting of fish passage facilities in its redevelopment plans. Article 11 would provide for the construction and operation of fish passage facilities if required in the future.

Other Environmental Impacts

There will be minor impacts on water and air quality resulting from the construction activities at the project site, but these impacts will be limited to the construction period. Any adverse

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environmental effects resulting from the refurbishment of the existing project will be of short-term duration and minor in nature. No known Federally-listed threatened or endangered species, or historic or archeological sites will be affected by the project. On the basis of the record, and staff's independent analysis, it is concluded that issuance of a license for the project will not constitute a major Federal action significantly affecting the quality of the human environment.

In accordance with standard Commission practice, 4/ Article 21 of this license also requires cultural resources protection measures in the event of any future construction or development at the project, other than original project development considered and authorized here.

Other Aspects of Comprehensive Development

The project powerhouse would contain a single turbine-generator with a total rated capacity of 800 kW under a normal operating head of 45 feet and a hydraulic capacity of 280 cfs.

The project would develop all of the flow and fall of the Mad River available to the extent practical. Staff analysis based on a long-term contract for sale of power to Washington Electric Cooperative, Inc. indicates that the project is economically feasible.

It is concluded that the project, as proposed, is best adapted to the comprehensive development of the Mad River upon compliance with the terms and conditions of this license.

It is ordered that:

(A) This license is issued to Pocantico Development Associates, Inc., Richard J.J. Hungerford and Kris A. Dyrland (Licensee), 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 Moretown #8 Project No. 5944 located in Washington County, Vermont, on the Mad River. This license is subject to the terms and conditions of the Act, which are incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the Act.

4/ See S. D. Warren, Project No. 2897, Order Denying Rehearing (issued February 19, 1980).

(B) The Moretown #8 Project No. 5944 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 certain exhibits that form part of the application for license and that are designated and described as:

<u>Exhibit</u>	<u>FERC No. 5944</u>	<u>Showing</u>
G Sheet 1	4	Site Plan
G Sheet 2	5	Project Development Plan

(2) Project works consisting of: (1) 333-foot long, 34-foot high concrete gravity dam with a 164-foot long spillway section with 4-foot high flashboards; (2) a 35.5 acre reservoir with a usable storage capacity of 130 acre-feet at elevation 530.6 feet m.s.l.; (3) a 980-foot long, 6-foot diameter penstock; (4) a powerhouse containing a single 800 kW turbine-generator; (5) the 2.5-kV generator leads; (6) the 2.5/12.5-kV transformer; (7) a 500-foot long, 12.5-kV transmission line; and (8) appurtenant facilities.

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

<u>Exhibit</u>	<u>FERC No. 5944</u>	<u>Showing</u>
F Sheet 1	1	Development Profile
F Sheet 2	2	Proposed Powerhouse
F Sheet 3	3	Existing Dam

(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) Pursuant to Section 10(i) of the Act, it is in the public interest to waive the following Sections of Part I of the Act, and they are excluded from the license:

Section 4(b), except the second sentence; 4(e), insofar as it relates to approval of plans by the Chief of Engineers and the Secretary of the Army; 6, insofar as it relates to public notice and to the acceptance and expression in the license of terms and conditions of the Act that are waived here; 10(c), insofar as it relates to depreciation reserves; 10(d); 10(f); 14, except insofar as the power of condemnation is reserved; 15; 16; 19; 20; and 22.

(D) The Exhibit F and G drawings generally comply with the Commission's regulations and are approved herein.

(E) This license is also subject to Articles 1 through 18 set forth in Form L-15 (revised October, 1975), entitled "Terms and Conditions of License for Unconstructed Minor Project Affecting the Interest 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 19. The Licensee shall, within 90 days of completion of construction, file in accordance with the Commission's Rules and Regulations, revised Exhibit F drawings showing the project as-built.

Article 20. The Licensee shall file with the Commission's Regional Engineer and the Director, Office of Electric Power Regulation, one copy each of the final contract drawings and specifications for pertinent features of the project, such as water retention structures, powerhouses, and water conveyance structures, at least 60 days prior to start of construction. The Director, Office of Electric Power Regulation may require changes in the plans and specifications to assure safe and adequate operation.

Article 21. Prior to the commencement of any construction or development of any project works or other facilities at the project, the Licensee shall consult and cooperate with the appropriate State Historic Preservation Officer (SHPO) to determine the need for, and extent of, any archeological or historic resource surveys and any mitigative measures that may be necessary. The Licensee shall provide funds in a reasonable amount for any such activity. If any previously unrecorded archeological or historical sites are discovered during the course of construction, 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 22. The Licensee shall pay the United State the following annual charges, 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 1,060 horsepower.

Article 23. The Licensee shall commence construction of the project within two years from the effective date of this license and, in good faith and with due diligence, shall prosecute and complete construction of the project works within four years from the effective date of this license.

Article 24. The Licensee shall review and approve the design and construction procedures for contractor-designed cofferdams and deep excavations prior to the start of construction. The Licensee shall file with the Commission's Regional Engineer and Director, Office of Electric Power Regulation, one copy of the approved construction drawings and specifications and a copy of the letter of approval.

Article 25. Pending further order of the Commission, Licensee shall maintain instantaneous minimum flows for the purpose of protecting and enhancing aquatic resources in the Mad River in accordance with the following schedule:

Inflow to reservoir	During Generation		Non-generation	
	Dam	Below tailrace	Dam	Below tailrace
65 cfs or more	25	65	65	65
Between 25 & 65 cfs	25	Inflow	Inflow	Inflow
25 cfs or less	Inflow	Inflow	Inflow	Inflow

This flow schedule may be temporarily modified if required by operating emergencies beyond the control of the Licensee, and for short periods for fishery management purposes upon mutual agreement between the Licensee and the Vermont Department of Fish and Game.

Article 26. Licensee shall, during the period each year from Memorial Day through Labor Day, operate the Moretown #8 Project so that the project reservoir drawdown does not exceed the instantaneous rate of 10 inches per hour. The rate of

project reservoir drawdown may be temporarily modified if required by operating emergencies beyond the control of the Licensee, and for short periods for project maintenance purposes, upon mutual agreement between the Licensee and the Vermont Agency of Environmental Conservation.

Article 27. (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; 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 title 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 Electric Power Regulation, 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.

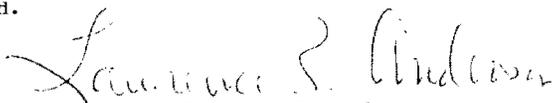
(3) The instrument of conveyance must include covenants running with the land adequate to ensure that: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; and (ii) the grantee shall take all reasonable precautions 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.

(F) 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 license 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.



Lawrence R. Anderson
Director, Office of Electric
Power Regulation

Project No. 5944-000

IN TESTIMONY of its acknowledgment of acceptance of all of the terms and conditions of this order, Pocantico Development Associates, Inc., Richard J.J. Hungerford and Kris A. Dyrland, this _____ day of _____, 1982, 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
MINOR 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. 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 7. 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 8. 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 9. 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 10. 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 11. 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 12. 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 13. 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 14. 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 15. 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 16. 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 17. 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 18. 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.

