

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Charles B. Curtis, Chairman;
Georgiana Sheldon, Matthew Holden, Jr.,
and George R. Hall.

City and Borough of Sitka,
Alaska

Project No. 2818

ORDER ISSUING MAJOR LICENSE

(Issued April 5, 1979)

On September 19, 1977, the City and Borough of Sitka, Alaska ("Sitka") filed an application for a major license for the proposed Green Lake Project, FERC No. 2818. The project will be located on the Vodopad River near Sitka, Alaska and will affect lands within the Tongass National Forest.

Public notice of the application for Project No. 2818 was given, but no petitions to intervene, notices of intervention, or protests were filed. The Commission staff prepared draft and final environmental impact statements (EIS) covering the proposed Green Lake Project, publishing notice of the availability of each. In addition, the Secretary forwarded copies of the application and the EIS to relevant federal and state agencies. The draft and final environmental impact statements addressed the concerns raised by commenting agencies. Consequently, we will not restate those comments, except to the extent they are incident to matters in need of further clarification.

The Green Lake Project will be located on Baranof Island, about 10 air miles southeast of Sitka. It will consist of a concrete arch dam near the outlet of Green Lake (a natural water body), the Green Lake reservoir, with an elevation of 390 feet msl, and a power tunnel leading from the dam to a powerhouse containing two generating units with a total installed capacity of 16,500 kW. It will also include a 13.8/69 kV substation adjacent to the powerhouse, an access road and a 69 kV transmission line (each about eight miles long) which will generally parallel the eastern shore of Silver Bay and appurtenant facilities. 1/

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Safety of Structures

The Green Lake Project will be located between two fault systems; approximately 15 miles to the east is the north-striking Chatham Strait fault and approximately 17 miles to the west is the northwest-striking Fairweather fault. The Chatham Strait fault may still be active and may be subject to microearthquake activity. Since 1832 more than 73 earthquakes have been felt in the project area; nine of those earthquakes have been of a magnitude of seven or greater on the Richter scale.

Our staff has analyzed the geological conditions at the project site and the preliminary design for the project. The staff reports show that the proposed arch dam would be safe under all normal loading conditions and that the abutments and foundations are adequate to support the dam safely under unusual and extreme loading conditions, including earthquakes. Sitka is currently conducting a final, detailed dynamic analysis of the dam to develop the final design configuration necessary to withstand unusual and extreme loading conditions. Article 42 of this license requires Sitka to file for approval final design drawings and supporting information which will enable our staff to review the safety and adequacy of the final design for the dam.

In addition, Article 44 requires the licensee to retain a board of independent engineering consultants to review the design, specifications, and construction of the project for safety and adequacy and to file with the Commission copies of the board's report prior to or simultaneously with the submission of the final design drawings. Finally, Article 43 requires Sitka to submit its contract drawings and specifications for review before construction begins.

Need for Power and Project Feasibility

Sitka owns and operates Sitka Municipal Utilities, which serves the City and Borough of Sitka on Baranof Island. Sitka is electrically isolated and there are currently no plans to interconnect Sitka's system with other power systems. The topography and great distances between population centers in southeastern Alaska limit the feasibility of interconnections.

For planning purposes, Sitka's long-term growth rate

in energy consumption is six percent. Recently, Sitka has experienced power shortages. As a temporary stop gap, to meet its immediate needs, Sitka has installed 5,500 kW of new, diesel generator units. The proposed hydroelectric project would allow Sitka to meet its projected early 1980 loads with an adequate reserve margin, and to assign the relatively costly-to-operate diesel units to standby status. Continued reliance on diesel generators for other than emergency peaking capability is undesirable from the standpoints of economics, system reliability, and consumption of non-renewable fuel. 2/

The Commission's staff has estimated the annual cost of hydroelectric energy to be produced by Project No. 2818. Based on estimated costs in 1981, the year the project becomes operational, the total project cost will be \$48,384,657. Power benefits were estimated using diesel-electric generators as the alternative power source. For this project, diesel units are the most attractive alternative source with respect to reliability, construction costs, and operating and maintenance costs. Using a 50 year amortization period, the annual project power benefits will exceed the estimated annual costs by \$2,362,889. Accordingly, we find the proposed project economically and financially feasible.

Environmental Considerations

We have carefully considered the environmental impacts of the proposed project and its alternatives. On the basis of the information contained in the final environmental impact statement (FEIS) 3/ and other material in the record, we believe the beneficial effects to be derived from the Green Lake Project will outweigh the probable adverse effects of the project on the environment. The FEIS discusses in detail the environmental impacts associated with the construction and operation of Project No. 2818. A discussion of the more significant environmental issues

2/ The Green Lake Project will save the equivalent of approximately 106,500 barrels of oil per year.

3/ FERC/EIS 0006, Green Lake Alaska Project No. 2818, Final Environmental Impact Statement, (issued February 1979).

which require special license conditions follows. 4/

Fisheries:

The project reservoir will inundate all of the spawning habitat accessible to brook trout in the Vodopad River above Green Lake. Sitka states that a stocking program for either brook or rainbow trout, provided in cooperation with the Alaska Department of Fish and Game (ADFG), would mitigate the loss of spawning habitat. To date, however, Sitka and ADFG have not formulated a detailed stocking program or fishery management plan for the reservoir. License Article 35 requires Sitka to file a revised Exhibit S to include a detailed fish management plan for the project reservoir.

Construction of the access road and its bridges could result in the introduction of sediments into Silver Bay and Bear Creek. Siltation caused by road construction could adversely affect the spawning of adult fish and the survival of eggs in Bear Creek. Article 33 requires Sitka to consult and cooperate with ADFG in developing a plan to minimize the quantity of sediments and other potential pollutants that might enter Silver Bay, Bear Creek and the project waters as a result of constructing, operating, or maintaining the project and its works. 5/

4/ In a number of instances, those conditions require Sitka to file plans or other information. The license articles have been tailored to require those filings in sufficient time to allow review before pertinent construction activities commence under Sitka's construction schedule.

5/ On March 19, 1979, the Department of Environmental Conservation of the State of Alaska (ADEC) waived the requirement of a state water quality certificate for the project under Section 401 of the Federal Water Pollution Control Act Amendments of 1972. ADEC reported that "there is no evidence available at this time which suggests that any discharges resulting from the proposed project would have a significant adverse effect on waters of the United States."

Wildlife:

Construction of the proposed access road and transmission line will have some adverse impact on the beach fringe winter range of deer along Silver Bay, and may have adverse effects on eagles which nest nearby. Sitka is taking a number of steps to minimize the adverse effects of access road construction on wildlife. Article 33 requires Sitka to submit a detailed plan for mitigation of any remaining access road impacts on wildlife and for avoidance and mitigation of adverse impacts from the proposed transmission line. Avoidance and mitigation of other wildlife impacts must also be covered in that plan.

Air Quality:

Dust from surface blasting and excavation activities, particulate matter and gases from construction equipment exhausts, and dust from the normal movement of personnel, machinery, and trucks will temporarily reduce the air quality. Sitka will require its contractors to comply with air quality criteria promulgated by the U.S. Environmental Protection Agency and the Occupational Safety and Health Administration. In addition, Article 40 requires licensee to develop, in consultation with those and other agencies, a specific plan to protect air quality and to monitor air quality at the project during construction.

Visual Resources:

The proposed mode of operating Project No. 2818 would eliminate a waterfall on the Vodopad River below Green Lake. Our staff describes the falls as being "visually pleasing and audibly refreshing." Interior and the Forest Service have expressed concern over loss of the falls as a visual resource. The proposed project could be redesigned or altered to provide flows in the natural streambed of the Vodopad River to maintain that visual resource. Sitka has made some preliminary studies of possible alterations and costs, but those are inconclusive.

Article 41 requires Sitka, in consultation with federal and state agencies, to study the extent to which flows in the Vodopad's natural streambed may be necessary or desirable to protect the visual resource value in the immediate area of the waterfalls, including any recommendations for changes to project design or operation and more detailed analysis of the changes and their costs.

Cultural Resources:

The Alaska State Historic Preservation Officer reported that the proposed project would not affect any properties listed or determined eligible for listing in the National Register of Historic Places. An archeological survey was conducted in the project area and no evidence of significant archeological sites was found. Article 37 of the license requires Sitka to provide for protection of any archeological resources that may be discovered during construction.

Recreation:

Exhibit R appears to provide an adequate recreational plan during the initial phase of operation. Adequate information is not currently available to develop reliable estimates of future public use of the project area for recreation. Therefore, an informed decision on the need for future recreational development is not now possible. For this reason, Article 39 requires Sitka to consult with appropriate federal and state agencies, conduct a study to determine the need for any additional recreational development at the project, and report the results to the Commission, with a revised Exhibit R if necessary. 6/

Other Exhibits

Sitka's Exhibit K is approved to the extent that it generally shows the project boundary and location of project works. Article 48 requires Sitka to file a revised Exhibit F conforming with our regulations and, for approval, "as built" Exhibits J, K, L, and M

6/ Under Article 17 of the license, Sitka may be required to install additional recreational facilities that may become necessary or desirable in the future.

to show the project as finally constructed and located.

Transmission Facilities

From a substation adjacent to the powerhouse, project power will travel approximately 8 miles via a 69-kV transmission line to the substation for the Blue Lake Project No. 2230. From the Blue Lake substation the power will travel four miles to the city's load area via the transmission facilities for Project No. 2230.

The four mile existing transmission line from the Blue Lake substation to the city is rated at 34.5 kV. In order to carry the power from Green Lake reliably, the Blue Lake transmission facilities must be upgraded to 69 kV. Ordering paragraph (F) below requires Sitka to file an application to upgrade the Project No. 2230 transmission line.

Comprehensive Development

The Green Lake Project will be located on the Vodopad River which drains a 28.8-square mile area. The project's reservoir will have a gross storage capacity of 90,000 acre-feet and will regulate approximately 95% of the river's flow. Project No. 2818 will use two generating units having a total installed capacity of 16,500 kW. Annually, the project will generate an estimated 64,900,000 kwh of electric energy. Although an additional head of 50 feet could be developed, the average per kilowatt cost of the additional energy produced by that head is not economically justified at this time. ^{7/} We conclude that the project as conditioned in this order is best adapted to a comprehensive plan of development of the affected waterways.

The Commission orders:

(A) This license is issued under Part I of the Federal Power Act ("Act") to the City and Borough of Sitka, Alaska, for a period of fifty years, effective the first day of the month in which this license is issued, for the construction, operation, and maintenance of the

^{7/} Article 9 of the license reserves the necessary authority to require additional generating capacity installed if it becomes economically feasible in the future.

Green Lake Project No. 2818, located on the Vodopad River and affecting lands within the Tongass National Forest, subject to the terms and conditions of the Act, which is incorporated by reference as part of this license, and subject to the regulations as the Commission issues under the provisions of the Act.

(B) Project No. 2818 consists of:

(1) all lands, to the extent of the Licensee's interest in those lands, constituting the project area and enclosed by the project boundary, the project area and boundary being shown and described by certain exhibits which form part of the application for license and are designated and described as:

<u>Exhibit</u>	<u>FERC Drawing No. 2818</u>	<u>Title</u>
J	4	General Project Map
K-1	5	Project Boundary
K-2	6	" "
K-3	7	" "
K-4	8	" "

(2) Project works consisting of:

(a) a double-curvature, concrete arch dam, 210 feet high and 460 feet long at its crest, having a centrally located uncontrolled ogee spillway section 100 feet wide; (b) Green Lake Reservoir, with a surface area of 1,000 acres at normal maximum reservoir elevation of 390 feet msl and a usable storage capacity of 74,000 acre-feet between elevations 390 and 280 msl; (c) a 1,910-foot long power tunnel, varying in diameter from 3 to 11.5 feet, leading from the dam to the powerhouse where it bifurcates into two 5.6-foot-diameter steel-lined sections; (d) an indoor-type, remotely controlled, concrete powerhouse containing two generating units with a total installed capacity of 16,500 kW; (e) a 13.8/69-kV substation located adjacent to the powerhouse; (f) an unpaved access road, approximately 14 feet wide and 8 miles long extending from the end of the Sawmill Creek State Highway to the project site where it divides, with one branch leading to the dam and another to the powerhouse; (g) a 69-kV wood-pole transmission line, approximately 8 miles long, leading from the project powerhouse substation to the Blue Lake powerhouse substation; and (h) appurtenant facilities.

These project works are generally shown and described by the previously mentioned exhibits and more specifically described by the following exhibits:

<u>Exhibit</u>	<u>FERC Drawing No. 2818 -</u>	<u>Title</u>
L-1	9	Dam Plan, Elevation and Section
L-2	10	Power Tunnel, Profile and Sections
L-3	11	Powerhouse and Substation Plans and Sections

Exhibit M: Three typewritten pages of text entitled "General Description of Mechanical, Electrical and Transmission Equipment".

Exhibit R: Nine typewritten pages of text entitled "Recreation Plan" and one map, FERC Drawing No. 2818-12.

(3) All of the structures, fixtures, equipment, facilities or property which may be employed in connection with the project area, as approved by the Commission, and all riparian or other rights, which are necessary or appropriate for the construction, maintenance, or operation of the project.

(C) Exhibits K and L-1, designated and described in paragraph (B) above are approved and made a part of the license only to the extent that they show the general location and layout of the project.

(D) Exhibits J, M, L-2, and L-3, designated in paragraph (B) above, are approved and made a part of the license.

(E) This license is also subject to Articles 1 through 32 set forth in Form L-2 (revised October, 1975), entitled "Terms and Conditions of License for Unconstructed Major Project Affecting Lands of the United States," attached to and made a part of this license. This license is also subject to the following special conditions set forth as additional articles:

Article 33. Within 90 days from the date of issuance of this license, Licensee shall consult and cooperate with the Alaska Department of Fish and Game to develop a plan

to control soil erosion and to minimize the quantity of inorganic sediments, or other potential pollutants resulting from construction, operation, and maintenance of the project and its works that might enter Bear Creek, Green Lake, or Silver Bay. Within 135 days from the date of issuance of this license, the Licensee shall file that plan, including an implementation schedule, with the Commission. The Director, Office of Electric Power Regulation, may require modifications to that plan to minimize erosion, sedimentation, or water pollution.

Article 34. The Licensee shall take such measures as may be necessary for the control of vectors at the project, and shall seek, in this regard, the recommendation of the Alaska Department of Public Health. In the event of the Licensee's failure to undertake effective control measures, the Commission reserves the right to order the Licensee to take appropriate measures for the control of vectors at the project.

Article 35. After consultation with the Alaska Department of Fish and Game, the Fish and Wildlife Service of the U.S. Department of the Interior, and the Forest Service of the U.S. Department of Agriculture, the Licensee shall file, within one year from the date of issuance of this license, a revised Exhibit S for approval, which shall include:

- (1) a detailed fish management plan for the project reservoir, including stocking and other measures to protect and enhance the fishery resource;
- (2) a detailed plan to avoid or to mitigate expected adverse impacts on wildlife resources in the project area resulting from the construction and operation of project facilities, including the access road and transmission line. Among other things, the plan shall include measures to mitigate any disturbance or loss of the beach fringe winter range of deer along Silver Bay due to the construction of the access road and measures to prevent or minimize electrical shock hazards to raptors in the final design and location of the transmission line;
- (3) estimated costs, and the portions to be paid

by the Licensee and any other entities for implementing the fish and wildlife mitigation plans.

Article 36. After consultation with appropriate federal and state agencies, the Licensee shall develop and file with the Commission at least 30 days prior to beginning construction of the powerhouse, switchyard, and power tunnels a comprehensive plan for disposing of material excavated from the sites for those facilities. This plan shall utilize upland disposal sites, not side-casting into Silver Bay, and shall provide that the excavated material be deposited in a manner which reasonably preserves the environmental values of the project area and the disposal sites. The Director, Office of Electric Power Regulation, may require modifications to the plan to preserve those values.

* Article 37. The Licensee shall continue to cooperate with the Alaska State Historic Preservation Officer (SHPO). If any previously unrecorded archeological sites are discovered during the course of any 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 resources. The Licensee shall provide funds in a reasonable amount for any mitigative measures that may be necessary. If the Licensee and the SHPO cannot agree on the amount of money to be expended on archeological work related to the project, the Commission reserves the right to require the Licensee to conduct, at its own expense, any archeological work found necessary.

Article 38. The Licensee shall, to the satisfaction of the Commission's authorized representative, install and operate any signs, lights, sirens or other devices that may reasonably be needed to warn the public of fluctuations in flow from the project and protect the public in its recreational use of project lands and waters.

Article 39. The Licensee shall, in consultation with the Heritage Conservation and Recreation Service of the U.S. Department of the Interior, the Forest Service

of the U.S. Department of Agriculture, and the Alaska Department of Natural Resources, conduct a study to determine the need for any additional recreational development at the project. The study shall include, but not be limited to, a survey extending over the first two complete recreation seasons after commencement of commercial operation of the project to determine: (1) the total number of annual visitors to the project; (2) the types of recreational activities the visitors participate in while at the project; (3) the frequency and duration of visitation; and (4) the mode of travel used by recreationists to reach the project. The Licensee shall submit a report on the study, the first time a required Form 80 is filed after the study is completed. Should the results of the study indicate a need for additional recreational facilities at the project, the Licensee shall at the same time file for approval a revised Exhibit R including the additional recreational facilities that are to be provided and a schedule for their development.

Article 40. Prior to construction, and after consultation with the U.S. Environmental Protection Agency, the Occupational Safety and Health Administration of the U.S. Department of Labor, and any other appropriate federal and state agencies, the Licensee shall develop and file with the Commission a plan to protect the ambient air quality and monitor air quality at the project during construction activities. The Director, Office of Electric Power Regulation, may require modifications to the plan to protect air quality.

Article 41. Within nine months from the date of issuance of this license, the Licensee shall, in consultation and cooperation with the Heritage Conservation and Recreation Service of the U.S. Department of the Interior, the Forest Service of the U.S. Department of Agriculture, the Alaska Department of Natural Resources, and other appropriate federal or state agencies, complete a detailed study of the visual resource value of the Vodopad River falls below Green Lake. That study shall develop in detail, the desirability of protecting that visual resource, any changes in project design or operation that could preserve, or minimize adverse impact on, that visual resource; and the cost of those changes. Within twelve months from the date of issuance of this license, the Licensee shall file a report on the results of that

study. The Commission reserves the right to require modifications of the design or operation of the project to mitigate its impact on the Vodopad River falls.

Article 42. The Licensee shall file, for approval by the Director, Office of Electric Power Regulation, Exhibit L drawings conforming to Section 4.41 of the Commission's regulations and showing the final design of the arch dam. The Exhibit L drawings shall be accompanied by full and detailed information sufficient to provide a full understanding of the final arch dam design and to allow analysis of the safety and adequacy of the dam under unusual and extreme loading conditions. Construction of the dam shall not start before approval of the Exhibit L drawings.

Article 43. The Licensee shall file plans and specifications with the Commission's Regional Engineer in San Francisco, California, and the Director, Office of Electric Power Regulation, prior to start of construction. The Director may require changes in the plans and specifications to assure the safety and adequacy of project works.

Article 44. The Licensee shall retain a Board of three or more qualified, independent engineering consultants to review the design, specifications, and construction of the project works for safety and adequacy. The names and qualifications of the Board members shall be submitted to the Director, Office of Electric Power Regulation, for approval. Among other things, the Board shall assess the geology of the project site and surroundings; the design, specifications, and construction of the dam, spillway, powerhouse, electrical and mechanical equipment involved in water control and emergency power supply; the filling schedule for the reservoir; the construction inspection program; and construction procedures and progress. The Licensee shall submit to the Commission copies of the Board's report on each meeting. Reports reviewing each portion of the project shall be submitted prior to or simultaneously with the submission of the corresponding Exhibit L final design drawings. The Licensee shall also submit a final report of the Board upon completion of the project. The final report shall contain a statement indicating the Board's satisfaction with the construction, safety, and adequacy of the project structures.

Article 45. Licensee shall file with the Commission, implement, and modify when appropriate, an emergency action plan designed to provide an early warning to upstream and downstream inhabitants and property owners if there should be an impending or actual sudden release of water caused by an accident to, or failure of, project works. That plan shall be submitted prior to initial filling of the project reservoir and shall include: instructions to be provided on a continuing basis to operators and attendants for action they are to take in the event of an emergency; detailed and documented plans for notifying law enforcement agents, appropriate Federal, State, and local agencies, operators of water-related facilities, and those residents and owners of properties that could be endangered; actions that would be taken to reduce the inflow to the reservoir, if possible, by limiting the outflow from upstream dams or control structures; and actions to reduce downstream flows by controlling the outflow from dams located on tributaries to the stream on which the project is located. Licensee shall also submit a summary of the study used as a basis for determining the areas that may be affected by an emergency, including criteria and assumptions used. Licensee shall monitor any changes in upstream or downstream conditions which may influence possible flows or affect areas susceptible to damage, and shall promptly make and file with the Commission appropriate changes in the emergency action plan. The Commission reserves the right to require modifications to the plan.

Article 46. In the interests of protecting and enhancing the scenic, recreational, and other environmental values of the project, Licensee: (1) shall supervise and control the use and occupancy of project lands and waters; (2) shall prohibit, without further Commission approval the further use and occupancy of project lands and waters other than as specifically authorized by this license; (3) may authorize, without further Commission approval, the use and occupancy of project lands and waters for landscape plantings and the construction, operation, and maintenance of access roads, power and telephone distribution lines, piers, landings, boat docks, or similar structures and facilities, and embankments, bulkheads, retaining walls, or other similar structures for erosion control to protect the existing shoreline; (4) shall require, where feasible and desirable, the multiple use and occupancy of facilities for access to project lands and waters; and (5) shall ensure to the

satisfaction of the Commission's authorize representative that all authorized uses and occupancies of project lands and waters: (a) are consistent with shoreline aesthetic values, (b) are maintained in a good state of repair, and (c) comply with State and local health and safety regulations. Under item (3) of this article, Licensee may, among other things, institute a program, for issuing permits to a reasonable extent for the authorized types of use and occupancy of project lands and waters. Under appropriate circumstances, permits may be subject to the payment of a fee in a reasonable amount.

Before authorizing the construction of bulkheads or retaining walls, Licensee shall: (a) inspect the site of the proposed construction, (b) determine that the proposed construction is needed, and (c) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site. If an authorized use or occupancy fails to comply with the conditions imposed by the Licensee for the protection of the environmental quality of project lands and waters, the Licensee shall take appropriate action to correct the violations, including, if necessary, cancellation of the authorization and removal of any non-complying structures or facilities. The Licensee's consent to an authorized use or occupancy of project lands and waters shall not, without its express agreement, place upon the Licensee any obligation to construct or maintain any associated facilities.

Article 47. The Licensee shall pay the United States the following annual charge, effective the first day of the month in which this license is issued:

(a) for the purpose of reimbursing the United States for the cost of administration of Part I of the Act, a reasonable annual charge as determined by the Commission in accordance with the provisions of its regulations in effect from time to time. The authorized installed capacity for that purpose is 22,000 horsepower.

(b) for the purpose of recompensing the United States for the use, occupancy and enjoyment of its lands, an amount to be determined later.

Article 48. Within one year following the commencement of operation of the project, the Licensee shall file a revised exhibit F and, for approval, "as built" exhibits J, K, L, and M, conforming to section 4.41 of the Commission's regulations and showing the project as finally constructed and located.

Article 49. The Licensee shall commence the construction of the project within one year of the date of issuance of the license, and, in good faith and with due diligence, shall prosecute and complete construction of the project works within five years of the date of issuance of the license.

(F) This license is also subject to the condition that the Licensee file within 90 days from the date of its issuance an application to upgrade to 69-kV the 34.5-kV transmission line for the Licensee's Blue Lake Project No. 2230.

(G) This order shall become final 30 days from the date of its issuance unless an application for rehearing is filed as provided in Section 313(a) of the Federal Power Act. Failure of the Licensee to file such an application shall constitute acceptance of this license. The acknowledgment of acceptance attached to this license shall be signed for the Licensee and returned to the Commission within 60 days from the date of issuance of this order.

By the Commission.

(S E A L)

Kenneth F. Plumb,
Secretary.

Project No. 2818

IN TESTIMONY of its acknowledgment of acceptance of all provisions, terms, and conditions of the foregoing order, the City and Borough of Sitka, Alaska this 24th day of April, 1979, has caused its corporate name to be signed hereto by _____, its Mayor and its corporate seal to be affixed hereto by _____ its Clerk, pursuant to a resolution by its Council duly adopted on the 24th day of April, 1979, a certified copy of the record of which is attached.

By _____
Mayor

Attest:

Mystic P. Flynn
Clerk

(Executed in Quadruplicate)

FEDERAL ENERGY REGULATORY COMMISSION

TERMS AND CONDITIONS OF LICENSE FOR
UNCONSTRUCTED MAJOR PROJECT
AFFECTING LANDS OF THE UNITED STATES

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, of the 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. Timber on lands of the United States cut, used, or destroyed in the construction and maintenance of the project works, or in the clearing of said lands, shall be paid for, and the resulting slash and debris disposed of, in accordance with the requirements of the agency of the United States having jurisdiction over said lands. Payment for merchantable timber shall be at current stumpage rates, and payment for young growth timber below merchantable size shall be at current damage appraisal values. However, the agency of the United States having jurisdiction may sell or dispose of the merchantable timber to others than the Licensee: Provided, That timber so sold or disposed of shall be cut and removed from the area prior to, or without undue interference with, clearing operations of the Licensee and in coordination with the Licensee's project construction schedules. Such sale or disposal to others shall not relieve the Licensee of responsibility for the clearing and disposal of all slash and debris from project lands.

Article 22. The Licensee shall do everything reasonably within its power, and shall require its employees, contractors, and employees of contractors to do everything reasonably within their power, both independently and upon the request of officers of the agency concerned, to prevent, to make advance preparations for suppression of, and to suppress fires on the lands to be occupied or used under the license. The Licensee shall be liable for and shall pay the costs incurred by the United States in suppressing fires caused from the construction, operation, or maintenance of the project works or of the works appurtenant or accessory thereto under the license.

Article 23. The Licensee shall interpose no objection to, and shall in no way prevent, the use by the agency of the United States having jurisdiction over the lands of the United States affected, or by persons or corporations occupying lands of the United States under permit, of water for fire suppression from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license, or the use by said parties of water for sanitary and domestic purposes from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license.

Article 24. The Licensee shall be liable for injury to, or destruction of, any buildings, bridges, roads, trails, lands, or other property of the United States, occasioned by the construction, maintenance, or operation of the project works or of the works appurtenant or accessory thereto under the license. Arrangements to meet such liability, either by compensation for such injury or destruction, or by reconstruction or repair of damaged property, or otherwise, shall be made with the appropriate department or agency of the United States.

Article 25. The Licensee shall allow any agency of the United States, without charge, to construct or permit to be constructed on, through, and across those project lands which are lands of the United States such conduits, chutes, ditches, railroads, roads, trails, telephone and power lines, and other routes or means of transportation and communication as are not inconsistent with the enjoyment

of said lands by the Licensee for the purposes of the license. This license shall not be construed as conferring upon the Licensee any right of use, occupancy, or enjoyment of the lands of the United States other than for the construction, operation, and maintenance of the project as stated in the license.

Article 26. In the construction and maintenance of the project, the location and standards of roads and trails on lands of the United States and other uses of lands of the United States, including the location and condition of quarries, borrow pits, and spoil disposal areas, shall be subject to the approval of the department or agency of the United States having supervision over the lands involved.

Article 27. The Licensee shall make provision, or shall bear the reasonable cost, as determined by the agency of the United States affected, of making provision for avoiding inductive interference between any project transmission line or other project facility constructed, operated, or maintained under the license, and any radio installation, telephone line, or other communication facility installed or constructed before or after construction of such project transmission line or other project facility and owned, operated, or used by such agency of the United States in administering the lands under its jurisdiction.

Article 28. The Licensee shall make use of the Commission's guidelines and other recognized guidelines for treatment of transmission line rights-of-way, and shall clear such portions of transmission line rights-of-way across lands of the United States as are designated by the officer of the United States in charge of the lands; shall keep the areas so designated clear of new growth, all refuse, and inflammable material to the satisfaction of such officer; shall trim all branches of trees in contact with or liable to contact the transmission lines; shall cut and remove all dead or leaning trees which might fall in contact with the transmission lines; and shall take such other precautions against fire as may be required by such officer. No fires for the burning of waste material shall be set except with the prior written consent of the officer of the United States in charge of the lands as to time and place.

Article 29. The Licensee shall cooperate with the United States in the disposal by the United States, under the Act of July 31, 1947, 61 Stat. 681, as amended (30 U.S.C sec. 601, et seq.), of mineral and vegetative materials from lands of the United States occupied by the project or any part thereof: Provided, That such disposal has been authorized by the Commission and that it does not unreasonably interfere with the occupancy of such lands by the Licensee for the purposes of the license: Provided further, That in the event of disagreement, any question of unreasonable interference shall be determined by the Commission after notice and opportunity for hearing.

Article 30. 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 31. 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 32. 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.