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UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

River Falls Municipal Utility  
Project No. 10489-000  
Wisconsin

ORDER ISSUING LICENSE  
(Minor Project)  
(Issued September 27, 1988)

River Falls Municipal Utility filed a license application under Part I of the Federal Power Act (Act) to operate and maintain the constructed River Falls Project located on the Kinnickinnic River, in Pierce County, Wisconsin. The project would affect the interests of interstate or foreign commerce.

Notice of the application has been published. No protests were filed in this proceeding, and no agency objected to issuance of this license. Comments received from interested agencies and individuals have been fully considered in determining whether to issue this license.

The State of Wisconsin Department of Natural Resources (DNR) filed a motion to intervene in this proceeding, requesting that certain conditions be included in any license issued. The DNR concerns have been addressed in the environmental assessment (EA) for the River Falls Project and provided for by license articles 401, 402 and 403.

Section 10(a)(2)-Comprehensive Plans

Section 10(a)(2) of the Act requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans (where they exist) for improving, developing, or conserving a waterway or waterways affected by the project. The Commission provided an interpretation of comprehensive plans under section 10(a)(2) 1/ that is revised by Order Granting Rehearing, issued April 27, 1988. 2/ In granting of rehearing, the Commission instructed the Director, Office of Hydropower Licensing, to request the state and federal agencies to file plans they believe meet the revised guidelines. Until the process is completed, the staff will consider all available plans pursuant to section 10(a)(2).

1/ Order No. 481, 52 FED. REG. 39,905 (October 26, 1987), III FERC STATS. & REGS. ¶ 30,773 (1987).

2/ Order No. 481-A, 43 FERC ¶ 61,120 (April 27, 1988).

The staff reviewed three plans that address various aspects of waterway management in relation to the proposed project. 3/ No conflicts were found.

Based upon a review of the agency and public comments filed in this proceeding, and on the staff's independent analysis, the River Falls Hydroelectric Project is best adapted to a comprehensive plan for the Kinnickinnic River.

Recommendations of Federal and State Fish and Wildlife Agencies

Section 10(j) of the Act requires the Commission to include license conditions, based on recommendations of federal and state fish and wildlife agencies, for the protection, mitigation, and enhancement of fish and wildlife. In the EA for the River Falls Project attached to and made part of this license, the staff addresses the concerns of the federal and state fish and wildlife agencies, and makes recommendations consistent with those of the agencies, except as indicated below.

The Department of the Interior, by letter dated April 5, 1988, recommends that the Commission require the licensee to survey two transmission lines that cross a wetland in the Powell Falls Impoundment to determine if these lines are a hazard to water-fowl. Since these lines are not part of the project to be licensed, the Commission cannot require the licensee to conduct the survey to determine mitigative measures. Therefore, Interior's recommendation is outside the scope of Section 10(j). The staff discussed this with the U.S. Fish and Wildlife Service personnel and no further negotiations are necessary (personal communication, Cathy Carnes, Fish and Wildlife Biologist, U.S. Fish and Wildlife Service, Green Bay, Wisconsin, August 1, 1988).

Summary of Findings

An EA was issued for this project. Background information, analysis of impacts, support for related license articles, and the basis for a finding of no significant impact on the environment are contained in the EA attached to this order. Issuance of this license is not a major federal action significantly affecting the quality of the human environment.

3/ Wisconsin Water Quality, Report to Congress, 1986, Wisconsin Department of Natural Resources; Wisconsin Water Quality Program, St. Croix River Basin Area-wide Water Quality Management Plan, October 1980, Wisconsin Department of Natural Resources; Wisconsin's 1986-91 Statewide Comprehensive Outdoor Recreation Plan, 1986, Wisconsin Department of Natural Resources.

The design of this project is consistent with the engineering standards governing dam safety. The project will be safe if operated and maintained in accordance with the requirements of this license. Analysis of related issues is provided in the Safety and Design Assessment attached to this order.

The Director, Office of Hydropower Licensing, concludes that the project would not conflict with any planned or authorized development, and would be best adapted to comprehensive development of the waterway for beneficial public uses.

The Director orders:

(A) This license is issued to River Falls Municipal Utility (licensee), for a period of 30 years, effective the first day of the month in which this order is issued, to operate and maintain the River Falls Project. This license is subject to the terms and conditions of the Act, which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the Act.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, shown by exhibit G:

Exhibit G-	FERC No. 10489-	Showing
1	8	Project Location & Impoundment Map
		(2) Project works consisting of: (1) Upper facilities; (a) a 140-foot-long and 32-foot-high concrete dam; (b) a reservoir with a surface area of 15.5 acres and a storage capacity of 142.7 acre-feet at elevation 865.3 m.s.l.; (c) an 80-foot-long by 6-foot-diameter penstock; (d) a powerhouse containing one generating unit rated at 250 kW; (e) the 2,400-volt generator leads and the 50-foot-long, 2,400-volt transmission cable; and (f) appurtenant facilities. (2) Lower facilities; (a) a 110-foot-long and 16.5-foot-high concrete dam located approximately 0.5 mile downstream of the upper dam; (b) a reservoir with a surface area of 15.4 acres and a storage capacity of 37 acre-feet at elevation 820 feet m.s.l.; (c) a powerhouse containing one generating unit rated at 125 kW; (d) the 2,400-volt generator leads and the 2500-foot-long, 2,400-volt transmission line; and (e) appurtenant facilities.

(3) All of the structures, fixtures, equipment or facilities used to operate or maintain the project, all portable property that may be employed in connection with the project and located within or outside the project boundary, and all riparian

or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) The exhibit G described above and those sections of exhibits A and F recommended for approval in the attached Safety and Design Assessment are approved and made part of the license.

(D) The following sections of the Act are waived and excluded from the license for this minor project:

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 4/; 16; 19; 20; and 22.

(E) This license is subject to the articles set forth in Form L-12, (October 1975), entitled "Terms and Conditions of License for Constructed Minor Project Affecting the Interests of Interstate or Foreign Commerce", and the following additional articles:

Article 201. The licensee shall pay the United States the following annual charge, effective the first day of the month in which this license is issued:

For the purpose of reimbursing the United States for the cost of administration of Part I of the Act, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time. The authorized installed capacity for that purpose is 500 horsepower.

Article 202. The licensee, within 90 days of completion of the proposed Junction Falls Dam rehabilitation, shall file for approval by the Commission, revised exhibits A and F to describe and show the Junction Falls Dam as-rehabilitated.

Article 401. The licensee shall operate the River Falls Project in an instantaneous run-of-river mode to protect the fish and wildlife resources in the Kinnickinnic River. The licensee,

4/ At the expiration of this license, any license application filed, including the licensee's, will be treated as an original license application. The municipal preference provisions of section 7(a) of the Act will apply.

in operating the project in an instantaneous run-of-river mode, shall minimize fluctuations of each reservoir surface elevation, i.e., maintain the discharge from each powerhouse that approximates the instantaneous sum of inflow to each reservoir. The instantaneous run-of-river operation may be temporarily modified if required by operating emergencies beyond the control of the licensee and for short periods upon mutual agreement between the licensee and the Wisconsin Department of Natural Resources.

Article 402. The licensee, after consulting with the Wisconsin Department of Natural Resources (WDNR), shall install three streamflow gauges in the project reservoirs and in the Kinnickinnic River to monitor compliance with the instantaneous run-of-river mode of operation, as stated in article 401. One flow gauge shall be installed at each of the following locations: (1) above Junction Falls dam to be visible from the Falls Street Bridge; (2) above the Powell Falls dam to be visible from the Powell Falls powerhouse; and (3) in the tailwater downstream of the Powell Falls dam to be visible from the Powell Falls powerhouse. The gauges shall be installed within one year from the date of issuance of this license.

Article 403. The licensee, after consulting with the Wisconsin Department of Natural Resources and the U.S. Fish and Wildlife Service, and within 1 year from the issuance date of this license, shall provide: (1) a sign upstream of the dams to warn upstream boaters of the presence of the dams; (2) a sign identifying the Junction Falls take-out point; and (3) a portage route around the dams for boaters. Within 3 months of completing these facilities, the licensee shall file as-built drawings with the Commission showing the type and location of these facilities. In addition, the licensee shall operate and maintain, or arrange for the operation and maintenance of the recreational facilities during the term of the license.

Article 404. (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 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 use 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 type of use and occupancy of project lands and water for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 watercraft at a time and where said facility is intended to serve single-family type dwellings; and (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the use 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 certification 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 submit a letter to the Director, Office of Hydropower Licensing, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked exhibit G or K map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraph (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 grantees shall take all reasonable precautions to insure 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.

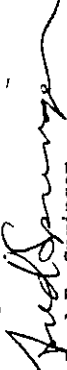
(4) The Commission reserves the right to require the licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(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.

(g) The authority granted to the licensee under this article shall not apply to any part of the public lands and reservations of the United States included within the project boundary.

(F) The licensee shall serve copies of any Commission filing required by this order on any entity specified in this order to be consulted on matters related to that filing. Proof of service on these entities must accompany the filing with the Commission.

(G) This order is issued under authority delegated to the Director and is final unless appealed to the Commission by any party within 30 days from the issuance date of this order. Filing an appeal does not stay the effective date of this order or any date specified in this order. The licensee's failure to appeal this order shall constitute acceptance of the license.

  
Fred E. Springer  
Director, Office of  
Hydropower Licensing

ENVIRONMENTAL ASSESSMENT 1/  
FEDERAL ENERGY REGULATORY COMMISSION  
OFFICE OF HYDROPOWER LICENSING,  
DIVISION OF PROJECT REVIEW

August 30, 1988

River Falls Municipal Hydroelectric Project

FERC Project No. 10482-000

A. APPLICATION

1. Application type: minor license, existing dam.
2. Date filed with the Commission: October 15, 1987.
3. Applicant: River Falls Municipal Utility.
4. Water body: Kinnickinnic River River basin: St. Croix
5. Nearest city: River Falls, Wisconsin
6. Location: The Kinnickinnic River in Pierce County, Wisconsin

B. PURPOSE AND NEED FOR ACTION

1. Purpose:

The purpose of the River Falls Municipal Hydroelectric project is to assist in meeting the customer power requirements of the municipal utility of the city of River Falls, Wisconsin.

2. Need for power:

The power from this existing project will continue to be useful in meeting a small part of the current and projected future need for power for the Mid-American Interpool Network Reliability Council region. In 1987, the project supplied 2.26 gigawatt-hours of hydroelectric energy, or about 3 percent of the applicant's total energy requirement, thereby reducing the amount of fossil-fueled electric power generation that would be purchased from investor-owned utilities in the area. Hence, the project contributes to the conservation of nonrenewable fossil fuels and to the reduction in emission of noxious byproducts caused by the combustion of fossil fuels. On this basis, the staff concludes that a need for the project power exists.

- 1/ Figures and attachments referenced in the text are omitted from this document due to reproduction requirements.

### C. EXISTING PROJECT AND ALTERNATIVES

#### 1. Project Description:

The existing, unlicensed River Falls project consists of the Junction Falls and the Powell Falls developments (figure 1). The Junction Falls development consists of: (a) an existing 140-foot-long and 32-foot-high concrete dam; (b) an existing reservoir with a surface area of 15.5 acres and a storage capacity of 142.7 acre-feet at elevation 865.3 mean sea level (msl); (c) an existing 80-foot-long, 6-foot diameter penstock; (d) an existing powerhouse containing one generating unit rated at 250 kilowatts (kW); (e) the existing 50-foot-long transmission line; and (f) related facilities (figure 2). The Powell Falls development consists of: (a) an existing 110-foot-long and 16.5-foot-high concrete dam located approximately 0.5 mile downstream of the upper dam; (b) an existing reservoir with a surface area of 15.4 acres and a storage capacity of 37 acre-feet at elevation 820 feet msl; (c) an existing powerhouse containing one generating unit rated at 125 kW; (d) the existing 2500-foot-long transmission line; and (e) related facilities (figure 3). The estimated average annual energy output for the River Falls project is 2,000,000 kWh.

The Junction Falls dam was originally constructed in 1896 and was renovated in 1948 to generate electricity. The Powell Falls dam was originally built in 1903 and was renovated in 1948 and again in 1966. Each facility has been operating in a run-of-river mode since 1975. The project was previously operated in a peaking mode. The mode of operation was modified pursuant to a request from the Wisconsin Department of Natural Resources.

#### 2. Applicant's proposed mitigative measures.

a. Construction. No new construction is anticipated therefore, no mitigative measures are proposed.

b. Operation. To reduce the impacts of operating the project, the applicant proposes to maintain the present run-of-river mode of operation and to enhance the recreational opportunities in the project area by providing canoe portage around the dams, and by installing signs at the Junction Falls take-out point. No other changes to the existing facilities are proposed.

3. Federal lands affected. There are no federal lands either in or adjacent to the project area and no such lands would be affected.

#### 4. Alternatives to Licensing the Project

- a. X No reasonable action alternative has been found.  
b.      Action alternative: Denial of the License.

Denying the license would result in removal of the project facilities and would preclude the city of River Falls from generating power at the site. To replace the power lost by removing the project facilities the city would need to consider developing other sources of energy, reducing the energy demand by employing conservation measures, or purchasing additional power from another utility. The city of River Falls has a fossil-fueled generating plant immediately adjacent to the Junction Falls development. If the license is denied and project facilities are removed, expanding the generating capacity of this plant may be an alternative for replacing the power lost by removing the River Falls Hydroelectric project.

#### D. CONSULTATION AND COMPLIANCE

1. Fish and wildlife agency consultation (Fish & Wildlife Coordination Act).

- a. U.S. Fish & Wildlife Service (FWS):      X Yes.      No.  
b. Wisconsin Department of Natural Resources:      X Yes.      No.  
c. National Marine Fisheries Service (NMFS):      X Yes.      No.

2. Section 7 consultation (Endangered Species Act).

a. Listed species:      None.      X Present.

b. Consultation:      X Not required.  
     Required.

The project is within the general range of the peregrine falcon (endangered), the bald eagle (threatened), and the prairie bush-clover (threatened). The FWS states that because no new construction of facilities or access roads is proposed, the project would not affect the peregrine falcon, bald eagle, or prairie bush-clover (letter from Janet M. Smith, Field Supervisor, U.S. Fish and Wildlife Service, Green Bay, Wisconsin, March 22, 1988).

3. Section 401 certification (Clean Water Act).

Section 401 Water Quality Certification was granted by the Wisconsin Department of Natural Resources (WDNR) on September 9, 1986.

4. Cultural resource consultation (Historic Preservation Act).

- a. State Historic Preservation Officer (SHPO):      X Yes.      No.  
b. National Park Service (NPS):      X Yes.      No.  
c. National Register status:  
Eligible or listed:      X None.  
d. Council:      X Not required.      Completed:      Required.  
e. Further consultation:      X Not required.      Required.

5. Recreational consultation (Federal Power Act).

- a. U.S. Owners:  Yes.  No.
- b. NPS:  Yes.  No.
- c. State(s):  Yes.  No.

6. Wild and scenic rivers (Wild and Scenic Rivers Act).

The St. Croix River, from its headwaters to its confluence with the Mississippi River, is part of the National Wild and Scenic River System. The Kinnickinnic River is not part of, and is not being considered for inclusion in, the National Wild and Scenic River System.

7. Land and Water Conservation Fund lands and facilities (Land and Water Conservation Fund Act).

Status:  None.  Designated.  
Determination completed:       
Administering agency:     

E. COMMENTS

1. The following agencies and entities provided comments on the application or filed a motion to intervene in response to the public notice dated January 29, 1988. The applicant responded to the comments and interventions by a letter dated April 21, 1988.

<u>Commenting agencies and other entities</u>	<u>Date of letter</u>
Wisconsin Department of Natural Resources Department of the Interior	February 23, 1988 April 5, 1988
<u>Motion to intervene</u>	<u>Date of motion</u>
Wisconsin Department of Natural Resources	March 28, 1988

F. AFFECTED ENVIRONMENT

1. General description of the St. Croix River Basin.

The St. Croix River forms the northern border between Minnesota and Wisconsin and is a major tributary of the upper Mississippi River. The drainage area of the St. Croix River Basin is 7,650 square miles. The river flows through rolling glacial terrain, including agricultural and forest lands typical of the upper Midwest region. The St. Croix River Basin has an abundant supply of both ground- and surface water, and the hundreds of lakes scattered throughout the basin are the primary source of water for the river. The average annual flow of the

St. Croix River at its confluence with the Mississippi is 4,200 cubic feet per second (cfs). Elevations in the basin range from 1,730 feet at the highest point to 675 feet at the confluence of the St. Croix and Mississippi Rivers. The entire mainstem St. Croix River is a Wild and Scenic River under the National Wild and Scenic Rivers System.

The Kinnickinnic River, a small tributary of the St. Croix River, is located in the lower portion of the basin about 30 miles southeast of St. Paul, Minnesota (figure 4). The river is approximately 40 miles long and has a drainage area of 174 square miles. The Kinnickinnic River flows through primarily agricultural land in its headwaters and through urban and suburban land near the confluence with the St. Croix River.

2. Existing Hydropower Projects

There are no pending applications for license in the St. Croix River Basin other than the River Falls Project. However, there are 11 other hydropower projects in the St. Croix River Basin. Only three of these projects are licensed.

The following is a list of the existing licensed and unlicensed hydropower projects and the pending license applications in the St. Croix River Basin, as of August 1, 1988.

<u>Project Name</u>	<u>FERC Project No.</u>	<u>River</u>
Powell Falls*	10489 (pending)	Kinnickinnic
Junction Falls*	10489 (pending)	Kinnickinnic
Apple River*		Apple
Riverdale*		Apple
Black Brook	2894	Balsam
Balsam Lake*		Clam
St. Croix Falls*		Yellow
Clam Falls*		Eau Claire
Danbury*		Totagatic
Grodon*		Namekagon
Nancy*	2711	
Hayward	2417	

\* Unlicensed projects

The important natural resources within the St. Croix River Basin are related to the mainstem St. Croix River's designation as a Wild and Scenic River under the National Wild and Scenic Rivers System. Licensing the River Falls Project, an operating, unlicensed hydropower development on the Kinnickinnic River, would not involve any new construction or changes in project operation. Therefore, continued operation of the project would not contribute to adverse cumulative impacts to the natural

resources of the St. Croix River and its designation as a Wild and Scenic River.

3. Descriptions of the resources in the project area. (Source: River Falls Municipal Utility, 1987, application, exhibit E, unless otherwise indicated).

a. Geology and soils: The project area is characterized by a glaciated surface consisting of a thin layer of silty loess over glacial till. Faulted Precambrian granites, diorites, and gneisses comprise the underlying bedrock. Cambrian sandstones, dolomite, and shale superpose the Precambrian igneous rocks. The soils in the area consist of prairie soils, including black silt loams and silty soils on plains of outwash sand and gravel. Upstream of the city of River Falls, the Kinnickinnic River flows through broad outwash plains bordered by steeply sloped valley walls. The Junction Falls dam is located in a steep narrow rock gorge on the North Branch of the Kinnickinnic River.

b. Streamflow:

low flow: 47 cfs. flow parameter: Flow exceeded 90% of the time.  
high flow: 96 cfs. flow parameter: Flow exceeded 10% of the time.  
median flow: 58 cfs. Flow exceeded 50% of the time.

These streamflow parameters were determined from the applicant's flow duration curve. The curve was derived from U.S. Geological Survey data taken from 1917 to 1921.

c. Water quality: The quality of the surface and ground-water in the Kinnickinnic River Basin is generally very good. The pollution that does exist in the river comes predominantly from agricultural runoff from the surrounding farmland. The river's sediment load is a concern because of the relatively high annual erosion rate of 5.0 tons of soil per year (Wisconsin Department of Natural Resources, 1980). The eroding top soil washed into the river contributes to seasonally high turbidity levels and decreased water quality. In addition, the city of River Falls' municipal wastewater treatment plant discharges into the Kinnickinnic River in the Powell Falls impoundment (figure 1). However, because of the tertiary water treatment at the plant, no water quality problems have occurred from the plant.

d. Fishery Resources: The Kinnickinnic River in the project area supports an excellent fishery for coolwater and coldwater fish. The fish species present in the project area are typical of those inhabiting the St. Croix River Basin. The species include walleye, sauger, yellow perch, smallmouth bass, channel catfish, bullheads, crappie, bluegill and brown, brook, and rainbow trout.

The Kinnickinnic River upstream and downstream of River Falls provides ideal conditions for the existence and reproduction of trout and other coldwater fish and is classified by the WPMR as Class I trout water. Class I means that the stream is a high quality trout stream and the trout populations are sustained entirely by natural reproduction. The Class I designation does not include the impounded portions of the river in the project area. The south fork of the Kinnickinnic River, which joins the mainstem Kinnickinnic River in the Powell Falls impoundment, is designated as Class II brook and brown trout water. This designation means that some stocking is required to maintain the trout population.

e. f. Vegetation and Wildlife:

Several sections of land along the lower Kinnickinnic River, near its confluence with the St. Croix River, have been identified by the FWS as potential candidates for federal acquisition because of the area's unique mixture of wildlife habitat (e.g. bluff, prairie, floodplain, forest) and the high diversity of wildlife and plant species associated with the area.

Mammals inhabiting the lower Kinnickinnic Basin include white-tailed deer, raccoon, beaver, muskrat, gray squirrel, striped ground squirrel, red fox, striped skunk, and mink. Avian species include marsh hawk, broad-winged hawk, barn owl, ruffed grouse, ring-necked pheasant, great blue heron, green heron, common loon, Canada goose, wood duck, mallard, blue-winged teal, black tern, belted kingfisher, barn swallow, American gold finch, cerulean warbler, common yellow throat, eastern kingbird, and mourning dove. Canada geese and several species of ducks nest on the wetlands within the project impoundments and on several islands in the river downstream of the project.

The following is a partial list of the dominant plant species found in the project area.

<u>Cover type</u>	<u>Dominant species</u>
grassland	big bluestem, little bluestem, side-oats grama
upland mixed deciduous forest	sugar maple, red oak, basswood, paper birch
forested wetland (adjacent to the river)	willow, cottonwood
emergent wetland	burreed, cord grass, bulrush, reed canary grass, smartweed, cattail



g. Cultural: Properties listed or eligible for listing on the National Register of Historic Places have not been recorded in the project area.

h. Recreation: Recreational use in the area includes fishing, canoeing, hiking, hunting, and picnicking. The Kinnickinnic River has an excellent trout fishery and fishing pressure is heavy. The river below Powell Falls dam is frequently used by canoeists, however, natural river obstacles limit canoe use above Junction Falls impoundment. Recreational facilities in the project area include the Lake George Trails, which are located in the project vicinity, and Glen Park, which is adjacent to the river between Junction Falls and Powell Falls dams. Glen Park offers picnicking, softball, and other day-use facilities. The 1,034-acre Kinnickinnic State Park, located 25 miles below Powell Falls dam at the confluence of the Kinnickinnic and St. Croix Rivers, provides extensive water-based recreation opportunities including fishing, swimming, and boating, as well as areas for hiking, riding, cross-country skiing, and bird-watching.

i. Land use: The project is located in the city of River Falls. Land in the city is used for residential, commercial, and recreational purposes. In the immediate project vicinity, development is limited. Land is used for recreational and agricultural purposes, as well as for supporting a sewage treatment plant and the hydroelectric project.

#### G. ENVIRONMENTAL ISSUES AND PROPOSED RESOLUTIONS

There are three issues addressed below.

1. Mode of Operation and Stream Gauging: The current project operator proposes, and the FWS and the WDNR recommend, that the project be operated in a run-of-river mode.

The existing unlicensed project, including both the Junction Falls and Powell Falls developments, is currently operated in a run-of-river mode such that outflow from each development equals the inflow to each impoundment. By continuing to provide this present mode of operation, the project would continue to maintain the existing flow regime of the river and would minimize fluctuations in the elevation of the reservoirs and discharges downstream of the project. Minimizing the streamflow fluctuations would reduce instances when the streambed would be dewatered and would protect fish habitat and the fish population in the Kinnickinnic River. Therefore, the licensee should continue to operate the project in a run-of-river mode to protect aquatic resources in the river upstream and downstream from the project.

The WDNR, by letter dated February 23, 1988, and by their petition to intervene dated March 28, 1988, recommends that the applicant install three staff gauges to monitor compliance with the run-of-river mode of operation. The WDNR recommends the staff gauges be placed such that WDNR personnel are able to visually verify compliance with the mode of operation. The WDNR recommends that one flow gauge be installed above Junction Falls dam and that it be visible from the Falls Street Bridge; one flow gauge be installed above the Powell Falls dam and that it be visible from the Powell Falls powerhouse; and one flow gauge be installed in the tailwater below Powell Falls dam and that it be visible from the Powell Falls powerhouse.

Installing staff gauges would provide for monitoring of the inflow and outflow from the impoundments, and installing the gauges at the specific sites recommended by the WDNR would provide easy access to the gauges. These measures would facilitate compliance of the recommended mode of project operation. Therefore, the licensee should install the three staff gauges at the specific sites as recommended by the WDNR.

#### 2. Recreational Resources:

The WDNR, by letter dated February 23, 1988, states that the project may adversely affect recreational opportunities currently available on the Kinnickinnic River including recreational navigation, fishing, hunting, and swimming. The WDNR also recommends that signs be installed at the take-out point above Junction Falls dam. These signs would indicate the presence of the dam for safety purposes and would identify the take-out point for canoes. The Interior by letter dated April 5, 1988, recommends the applicant allow public access to project lands and waters, except in those areas of the dams that are hazardous. The WDNR and Interior recommend the applicant provide and maintain canoe portage facilities around each dam.

The applicant agrees with Interior's and WDNR's recommendation to provide and to maintain canoe portage around the dams and to install the signs at the Junction Falls take-out point.

The existing recreational developments in the project vicinity provides for public recreation in the area. Canoeists frequently use the river below Powell Falls dam and there is occasional use of the pool above Junction Falls dam. Canoes cannot negotiate the dams, therefore, the dams disrupt the continuous canoe run between the upstream and downstream reaches of the river. In addition, Powell Falls dam is a safety hazard to canoeists approaching from the upstream side. Canoe portage facilities and warning signs would provide a safe and adequate means for canoeists to utilize the upstream and downstream reaches of the river in a single continuous canoeing experience.

Therefore, the licensee, after consulting with the WDNR and the FWS, should provide and maintain canoe portage around the dams and install signs at the Junction Falls take-out point.

Public access to rivers is decreasing rapidly as residential and commercial development spreads, especially in urban areas. This decline in recreational river access supply comes at a time when participation in river-oriented activities, including fishing and canoeing, is increasing (President's Commission on Americans Outdoors, 1987). The impacts from the loss of public river access is even more severely felt near population centers. Since people are choosing to recreate closer to home, the demand for recreational access is much greater near populated areas. By providing continued free, public access to project lands and waters, the opportunity for participation in river-oriented activities within a short distance of the approximately 10,000 residents of River Falls, Wisconsin and nearby towns is assured. Therefore, the licensee should allow free public access to project lands. An article included in any license issued would require the licensee to allow free public access, to a reasonable extent, to project lands and waters for recreational purposes within safety limitations.

The recommended run-of-river mode of operation, the maintenance of existing flows, the maintenance of public access to project lands, and the addition of the canoe portage facility would preserve and enhance the existing recreational opportunities on the Kinnickinnic River in the project area.

3. Waterfowl collisions with the transmission lines: Two existing distribution transmission lines cross an emergent backwater wetland north of the Powell Falls impoundment. The wetland contains numerous wood duck nest boxes and is used extensively by waterfowl. The FWS states that there is some potential for waterfowl collisions with the transmission lines although the transmission lines are relatively high and waterfowl would most likely fly along the river and under the lines to land in the wetland. The FWS recommends that the applicant monitor the transmission lines to determine the extent of bird collisions and to determine if mitigative measures, such as marking the lines, are necessary to reduce the number of bird collisions (letter from Janet M. Smith, Field Supervisor, U.S. Fish and Wildlife Service, Green Bay, Wisconsin, March 22, 1988).

The applicant states that they have been conducting periodic bird strike inspections and will consult with the FWS and the WDNR to determine if protective measures are needed. The applicant adds that these lines have been in place since 1900 and no bird strike problems are known.

One of the two transmission lines in the vicinity of the project is owned by the city of River Falls and the other is

owned by Northern States Power Company. Although both transmission lines are shown in the application, neither of these lines are in fact, part of the project. Both transmission lines originate from the electrical generating station located immediately downstream of the Junction Falls dam (figure 1) and distribute power throughout the city of River Falls. Since the transmission lines originate from the city's power station, and not from the hydropower project, they are not primary transmission lines and therefore cannot be considered as part of the project (Section 3(11) of the Act). Although the applicant agrees to voluntarily conduct the studies of the transmission lines, the Commission does not have the authority to require the licensee to conduct studies or to impose mitigative measures to reduce bird strikes.

4. Reason for selecting the preferred alternative.

The proposed project would generate electricity using a renewable resource without significantly affecting the existing environmental conditions of the area.

I. UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS OF THE RECOMMENDED ALTERNATIVE

No unavoidable adverse environmental impacts are expected to occur.

J. CONCLUSION

X. Finding of No Significant Impact. Approval of the recommended alternative [H(3)] would not constitute a major federal action significantly affecting the quality of the human environment; therefore, an environmental impact statement (EIS) will not be prepared.

Intent to Prepare an EIS. Approval of the recommended alternative [H(3)] would constitute a major federal action significantly affecting the quality of the human environment; therefore, an EIS will be prepared.

K. LITERATURE CITED

President's Commission on Americans Outdoors. 1987. Americans Outdoors, the Legacy, the Challenge. Island Press, Washington, D.C.

River Falls Municipal Utility. 1987. Application for license for a minor hydroelectric power project, River Falls Municipal Hydroelectric Facilities (FERC Project No.10489), Wisconsin. October 15, 1987.

Wisconsin Department of Natural Resources. 1980. The St. Croix River Basin Area-wide Water Quality Management Plan. Madison, Wisconsin.

L. LIST OF PREPARERS

NAME	Position title
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John Staples	Ecologist
Ann E. Mates	Environmental Protection Specialist
Mary C. Nowak	Writer - Editor

H. ENVIRONMENTAL IMPACTS

1. An assessment of impacts expected from the applicant's proposed project (P), with the proposed mitigation and any terms and conditions set by the fish and wildlife agencies; the proposed project with any additional mitigation recommended by the staff (Ps); and any action alternative considered (A). Assessment symbols indicate the following impact levels:

O = None; 1 = Minor; 2 = Moderate; 3 = Major;  
 A = Adverse; B = Beneficial; L = Long-term; S = Short-term.

Resource	Impact			Resource	Impact		
	P	Ps	A		P	Ps	A
a. Geology-Soils	0			f. Wildlife	0		
b. Streamflow	0			g. Cultural: Archeological	0		
c. Water quality: Temperature	0			Historical	0		
Dissolved oxygen	0			h. Visual quality	0		
Turbidity and sedimentation	0			i. Recreation	1BL		
d. Fisheries: Anadromous	0			j. Land use	0		
Resident	0			k. Socioeconomics	0		
s. Vegetation	0						

Remarks:

- Installing portage facilities and take-out signs would enhance the recreational opportunities in the project area.
- Impacts of the No-Action Alternative.
  - Under the No-Action Alternative, the project would continue to operate without a license and without any needed requirements for operating the project.
  - Recommended alternative (including proposed, required, and recommended mitigative measures):
  - X. Proposed project. \_\_\_Alternative. \_\_\_No action.

2

SAFETY AND DESIGN ASSESSMENT  
RIVER FALLS PROJECT  
FERC NO. 10489-000 - WISCONSIN

DAM SAFETY

On June 23, 1988, the Commission's Chicago Regional Director classified the existing Junction Falls dam and the existing Powell Falls dam as having a low hazard potential. The classification was based on a field inspection and other information available to the Regional Office staff. Powell Falls dam is located about one-half mile downstream of the Junction Falls dam. The dams were originally constructed in the mid-1800's.

The Junction Falls dam was reconstructed in 1920. The dam is a 32-foot-high concrete gravity structure with an uncontrolled ogee shaped spillway spanning 115 feet of the dam's 140-foot-length. The entire dam is founded on bedrock. The freeboard between the normal pool and the top of the dam is 7 feet. The gross storage capacity of the reservoir at normal pool elevation is 142.7 acre-feet. The field inspection showed that a sewage treatment plant along the right bank downstream would not be affected by the dam failure because of its higher elevation. A small park along the left bank is rarely used by the public, is not well maintained, and has been flooded occasionally. There is no overnight camping at the park.

The Powell Falls dam was replaced in 1966. It is a 16.5-foot-high and 110-foot-long concrete gravity structure with its entire length acting as a spillway. It impounds 37 acre-feet. The field observation revealed that because of steep slopes and limited access, there is lack of development downstream.

The probable maximum flood for the Junction Falls dam was estimated at 86,400 cubic feet per second (cfs) and for the Powell Falls dam at 91,800 cfs.

The dams are classified low hazard because any failure of the dams would not significantly increase the hazard downstream and thereby would not cause loss of life or result in extensive property damage.

The rehabilitation proposed at the project would involve rectifying the deteriorated concrete surface of the spillway and improving the stability of the Junction Falls dam. The spillway crest would be reshaped for better flow conditions. The applicant intends to improve the stability of the dam to withstand an inflow design flood, less than the probable maximum flood, in accordance with our standards of factors of safety for all credible loading

conditions. This would be accomplished by post-tensioning the dam into the foundation bedrock.

The rock anchors would be installed by drilling holes through the crest of the spillway into the underlying sandy dolomitic foundation. Rock anchors would be installed in these holes, grouted and then post-tensioned. Each rock anchor would be proof-tested. Solid threaded-bar anchors with the required design force at 60 percent of the ultimate strength would be spaced appropriately for each monolith. The required bond length, in conjunction with a free stressing length, would constitute the total length of each anchor.

The Powell Falls dam is in sound condition and, except for minor repairs, would not be rehabilitated by the applicant.

PROJECT DESIGN

The constructed project consists of two developments: the Junctions Falls Development and the Powell Falls Development. The latter development is located about one-half mile downstream.

The Junction Falls Development consists of a dam with headworks at the right end. One of the slide gates at the headworks controls flow via a 6-foot-diameter concrete-encased steel penstock to a powerplant located 200 feet downstream. The powerplant contains a single vertical Francis turbine-generator unit rated at 250 kilowatts (kW).

The Powell Falls Development consists of a dam with an integral powerhouse at the left end. The intake is controlled by gates. The powerplant contains a single vertical Francis turbine-generator unit rated at 125 kW.

WATER RESOURCES PLANNING

Both the developments operate run-of-river. The single-unit powerplant at Junction Falls operates at a design hydraulic capacity of 80 cfs and an average head of 44 feet. The single-unit powerplant at Powell Falls operates at a design hydraulic capacity of 82 cfs and an average head of 20 feet. The combined average annual generation of the powerplants is 2,000,000 kilowatt-hours (kWh).

The drainage area at the Junction Falls site is 100 square miles and at the downstream Powell Falls site it is 120 square miles. The drainage area for the Powell Falls site includes the additional area of the South Fork of the Kinnickinnic River. Both sites are located on the Kinnickinnic River. The flow data is based upon the 1916-1921 record from a USGS gaging station located about 5 miles downstream of the project site. This is the only flow data available in the vicinity of the project site and

was used to develop the flow-duration curve. A streamflow of 80 cfs, which is the hydraulic capacity of the powerplant at Junction Falls, is equalled or exceeded 7 percent of the time on the flow-duration curve. For Powell Falls, the streamflow of 82 cfs represents a 12 percent exceedance on the flow-duration curve. No minimum flows are required. The project site is adequately developed.

Based on a review of the agency and public comments filed in this proceeding and on the staff's independent analysis, the River Falls project is best adapted to a comprehensive plan for the river.

#### CONSERVATION PLANNING

The applicant is engaged in a number of conservation and energy consumption efficiency programs.

The following programs include:

- a) replacing all street lighting mercury vapor fixtures with high pressure sodium units, resulting in about 40 percent energy savings on street lighting.
- b) working with the Wisconsin Public Service Commission to establish time-of-day rates to encourage use of cheaper energy during off-peak hours.
- c) supporting their wholesale power supplier, Wisconsin Public Power, Inc., in working with the Wisconsin Public Service Commission in development of a customer rebate program for energy efficient appliances, which is expected to go into operation in 1989.
- d) disseminating information to customers on energy conservation and assisting commercial customers for energy conservation loans and grants.
- e) complying with various energy efficiency mandates promulgated from various state of Wisconsin agencies.

On the basis of these activities, the staff concludes that the applicant is making a good-faith effort to improve and maintain a reasonably high level of energy consumption efficiency.

#### EXHIBITS

The following portions of exhibit A and the following exhibit F drawings conform to the Commission's rules and regulations and they are included in the license.

EXHIBIT A: Table A-1 entitled "Technical Data."

Exhibit F Drawing	FERC No.	Description
F-1	10489	Junction Falls dam-existing conditions-site plans & downstream elevation
F-2	1	Junction Falls dam-existing conditions-dam sections & elevation
F-3	2	Junction Falls dam-existing conditions-powerhouse plan & sections
F-4	3	Junction Falls dam-proposed dam rehabilitation-plan, elevation & section
F-5	4	Junction Falls dam-proposed dam rehabilitation-sections
F-6	5	Powell Falls dam-plan, elevation & sections
F-7	6	Powell Falls dam-powerhouse plan & sections

FEDERAL POWER COMMISSION

TERMS AND CONDITIONS OF LICENSE FOR CONSTRUCTED  
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 area and project works shall be 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.

Article 4. The project, including its operation and maintenance and any work incidental to additions or alterations authorized by the Commission, whether or not conducted upon lands of the United States, 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 such information as he may require concerning the operation and maintenance of the project, and any such alterations thereto, and shall notify him of the date upon which work with respect to any alteration 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 submit to said representative a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of any such alterations to the project. Construction of said alterations or any feature thereof shall not be initiated until the program of inspection for the alterations or any feature thereof has been approved by said representative. 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. The Commission shall have the authority to prevent the abandonment of this article are not intended to prevent the provisions of this article from service of structures, equipment, or other project works in connection with replacement 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

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 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. 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

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



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.