91 FERC ¶ 62,029

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

City of Kaukauna)

Project No. 2588-004
Wisconsin

ORDER ISSUING NEW LICENSE
(Major Project)
(April 11, 2000)

INTRODUCTION

On July 10, 1998, the City of Kaukauna (Kaukauna) filed a license application under Sections 15 and 4(e) of the Federal Power Act (FPA)[1] to continue to operate and maintain the existing 3,300 kilowatt (kW) Little Chute Hydroelectric Project, located on the Fox River, a navigable waterway of the United States[2], in the Village of Combined Locks, in Outagamie County, Wisconsin. The project would use surplus water or water power from the U.S. Army Corps of Engineers' (Corps) Little Chute Dam and Reservoir. Kaukauna proposes no construction or new capacity at the project.

BACKGROUND

Notice of the application was published on July 20, 1998. The U.S. Department of the Interior (Interior) and The State of Wisconsin Department of Natural Resources (WDNR) filed timely motions to intervene. The motions to intervene and comments received from interested agencies and individuals have been fully considered in determining whether and under what conditions to issue this license.

A draft environmental assessment (DEA) for the Little Chute Project was issued on December 9, 1999. Interior filed a letter (dated January 21, 2000) on January 27, 2000 clarifying its position on the Bald Eagle management and protection plan. No other comments on the DEA were received. Staff issued a final environmental assessment (EA) on April 3, 2000 which is made part of this license as Appendix B.

PROJECT DESCRIPTION

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[1]16 U.S.C. §§797(e)-808.

[2]33 FPC 335 (1965)

PROJECT DESCRIPTION

The Little Chute Project, owned and operated by Kaukauna, is an existing licensed hydroelectric project located on the Fox River, at the U.S. Army Corps of Engineers' Little Chute Dam, in the Village of Combined Locks, Wisconsin. The existing facilities consist of an intake structure, powerhouse, tailrace, and appurtenant facilities. A more detailed project description is contained in ordering paragraph (B)(2).

APPLICANT'S PLANS AND CAPABILITIES

In accordance with Sections 10 and 15 of the FPA, the staff evaluated Kaukauna's record as a licensee for these areas: (1) conservation efforts; (2) compliance history and ability to comply with the new license; (3) safe management, operation, and maintenance of the project; (4) ability to provide efficient and reliable electric service; (5) need for power; (6) transmission line improvements; (7) project modifications; and (8) compliance record. I accept the staff's finding in each of these following areas.

1. Section 10(a)(2)(C): Conservation Efforts

Kaukauna has had an energy conservation program with its customers since 1989. This program was develop by Wisconsin Public Power, Inc. (WPPI) and has the approval of the Public Service Commission of Wisconsin. Staff concludes that the applicant has and will continue to comply with section 10 (a)(2)(C) of the FPA.

2. Section 15(a)(2)(A): Compliance History and Ability to Comply with the New License

We have reviewed the applicant's license application and its record of compliance with the existing license in an effort to judge its ability to comply with the articles, terms, and conditions of any license issued, and with other applicable provisions of this part of the FPA.

Our review of Kaukauna's compliance record indicates that it has in the past complied in a good faith manner with all articles, terms, and conditions of its current license. As a result of our review, we believe Kaukauna can satisfy the conditions of a new license.

3. Section 15(a)(2)(B): Safe Management, Operation, and Maintenance of the Project

Staff concludes that the Little Chute Hydroelectric Project would be safe and adequate for continued operation during the new license term, and would pose no threat to public safety if operated and maintained according to good engineering practices, and the normal regulations governing our hydroelectric licenses.

4. Section 15(a)(2)(C): Ability to Provide Efficient and Reliable Electric Service

Staff has reviewed Kaukauna's plans and its ability to operate and maintain the project in a manner most likely to provide efficient and reliable electric service.

Staff concludes Kaukauna has been operating the project in an efficient manner within the constraints of the existing license and that it would continue to provide efficient and reliable electric service in the future.

5. Section 15(a)(2)(D): Need for Power

Since 1948, the long operating history of the Little Chute Hydropower Project shows that there are short term and long term needs for the electricity generated by the project to serve the applicant's customers. Kaukauna can claim over 50 years of operating history and customer service. We find the 50 years of operating history, when considered alongside the projected compound annual growth rates for summer and winter season peak-hour demands, support the applicant's short and long term needs for the electricity generated by the project.

Staff concludes that there is a need for power from the Little Chute Project.

6. Section 15(a)(2)(E): Transmission Line Improvements

Kaukauna can operate with purchased power replacing its project generation with no detrimental effects on line loading, line losses, or requirements of new construction of transmission facilities or upgrading of existing facilities. Since Kaukauna has an existing purchasing tie with WPPI, Kaukauna's transmission lines operation need no improvements, and will also not be affected by the outcome of the licensing action.

7. Section 15(a)(2)(F): Project Modifications

Kaukauna proposes new construction, environmental, recreational, and aesthetic resources enhancement to the project that would affect the existing project operation and the present environmental and aesthetic resources of the project.

Staff concludes that the project, as presently configured and operated, fully develops and uses the economical hydropower potential of the site.

8. Section 15(a)(3)(A): Compliance Record

Staff has reviewed Kaukauna's compliance record with the terms and conditions of the existing license. Staff concludes its overall record of making timely filings and compliance with the license is satisfactory.

WATER QUALITY CERTIFICATION

Under Section 401(a)(1) of the Clean Water Act (CWA)[3], the Commission may not issue a license for a hydroelectric project unless the certifying agency either has issued a water quality certification for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year.

Kaukauna requested water quality certification on July 10, 1998. WDNR issued a water quality certificate (WQC) for the Little Chute Project on October 29, 1998, containing the following 10 conditions:

1. comply with all federal, state, and local permit requirements;

2. conduct water quality monitoring every 5 years;

3. cooperate in implementing plans to remove contaminated sediments from the lower Fox river;

4. operate the project in a run-of-river mode;

5. maintain the automatic water level sensors in the forebay and the tailrace and install a staff-type gage in the reservoir;

6. make every effort to develop boat launching facilities above and below the dam;

7. file plans with the WDNR when proposed maintenance or repair work involves the river;

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[3]33 U.S.C. §1341 (a)(1).

8. allow project access to the WDNR for the purpose of monitoring compliance with WQC conditions;

9. file plans with the WDNR if any significant change to the project is proposed; and

10. allow the WDNR to request from the Commission, as necessary, that the license be reopened as to ensure compliance with state water quality standards.

Section 401(d) of the CWA provides that the State certification shall become a condition on any Federal license or permit that is issued.[4] The state certification conditions are included as part of the license and the entire text of the conditions is included as part of the license as Appendix A.

COASTAL ZONE MANAGEMENT PROGRAM

Under Section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA),[5] the Commission cannot issue a license for a project within or affecting a state's coastal zone, unless the state CZMA agency concurs with the license applicant's certification of consistency with the state's Coastal Zone Management program. By letter dated September 1, 1999, the Wisconsin Coastal Management Program (WCMP) indicated that if the project is operated according to the conditions of the Water Quality Certificate, then the project will be consistent with the Coastal Zone Management Act. Staff concurs with WCMP's assessment.

SECTION 4(e) OF THE FEDERAL POWER ACT

Section 4(e) of the FPA[6] requires that Commission licenses for projects located within United States reservations include all the conditions that the Secretary of the Department under whose supervision the reservation falls shall deem necessary for the adequate protection and utilization of such reservation. The project would be located at the existing Little Chute Dam on lands administered by the Corps.

The Corps did not respond to staff's notice requesting terms and conditions for the project. However, pursuant to a Memorandum of Understanding between the

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[4] 33 U.S.C. §1341(d)

[5] 16 U.S.C. §1456(3)(A)

[6] 16 U.S.C. § 797(e)

Commission and the Department of the Army, seven license articles are included for hydroelectric projects to be developed at Corps dams. Such license articles are incorporated as Articles 301 through 307 of this license[7]

SECTION 18 OF THE FEDERAL POWER ACT

Section 18 of the FPA provides that the Commission shall require a licensee, at its own expense, to construct, operate, and maintain such fishways as may be prescribed by the Secretary of the Interior of the Secretary of Commerce, as appropriate.[8] By letter dated August 26, 1999, Interior states that it has no plans to require, under Section 18, upstream or downstream passage at this time. However, Interior requests a reservation of authority to prescribe the construction, operation, and maintenance of fishways at the Little Chute Project.

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[7] These articles: (1) require the licensee to design and construct facilities that could affect the structural integrity or operation of the federal project in consultation with the subject to the review and approval of the Corps' District Engineer (Article 301); (2) require the licensee to review and approve contractor-designed cofferdams and deep excavations, other than those approved by the Corps prior to the start of construction, and to file a copy of the construction drawings and specifications with the Corps and Commission (Article 302); (3) require the licensee to enter into an agreement with the Corps to assure that; (a) studies and construction activities for the licensed project do not interfere with Corps operations or damage Corps facilities, and (b) the licensee compensates the Corps for its project-related personnel and construction costs (Article 303); (4) authorize the Corps to; (a) inspect the construction, operation, and maintenance of any licensed facilities that may affect the structural integrity or operation of the Corps project, and (b) order the licensee to stop any activity that may endanger the structural integrity or safety of the Corps' project (Article 304); (5) require the licensee to submit a regulating plan to the Corps for approval, and to enter into an operating Memorandum of Agreement with the Corps describing the detailed operation of the power facilities acceptable to the Corps (Article 305); (6) provide that the licensee shall have no claim under the license against the United States arising from any changes made in the operation or reservoir levels of the Corps' project (Article 306); and (7) require the licensee to provide the Commission's Regional Director two copies of all correspondence between the licensee and the Corps and ensure that the Commission's Regional Director shall not authorize construction until the Corps provides approval (Article 307).

[8] 16 U.S.C. §811.

The Commission recognizes that future fish passage needs and management objectives cannot always be determined at the time of project licensing. In such cases, the Commission's practice has been to include a license article, when requested, that reserves the Secretary of the Interior's authority, as appropriate, to prescribe fishways.[9] Therefore, Article 405 reserves Interior's authority to prescribe fishways.

RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES AND SECTION 10(j) PROCESS

Section 10(j) of the FPA[10] requires the Commission, when issuing a license, to include license conditions based on the recommendations of the Federal and state fish and wildlife agencies, submitted pursuant to the Fish and Wildlife Coordination Act,[11] to "adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)" affected by the project.

Interior's letter dated August 26, 1999, and WDNR's letter dated August 17, 1999 each included Section 10(j) recommendations for the Little Chute Project. In the EA, the staff addressed the concerns of the federal and state fish and wildlife agencies, and made recommendations consistent with those of the agencies. This license includes, as license articles, the staff's recommended measures.

ENDANGERED SPECIES ACT

Bald eagle (*Haliaeetus leucocephalus*), a federally listed threatened species, occurs in the vicinity of the project. I am including measures to protect Bald eagles and their habitat at the project, consistent with Interior's recommendation (Article 406).

COMPREHENSIVE PLANS

Section 10(a)(2) of the FPA[12] requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project. Under

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[9] *Lynchburg Hydro Associates*, 39 FERC ¶61,079 (1987)

[10] 16 U.S.C. §803(j).

[11] 16 U.S.C §661 *et seq.*

[12] 16 U.S.C. §803(a)(2)(A).

Section 10(a)(2) of the FPA, federal and state agencies filed 66 comprehensive plans that address various resources in the state of Wisconsin. Of these, the staff identified and reviewed nine plans relevant to the Little Chute Project.[13] No conflicts were found.

COMPREHENSIVE DEVELOPMENT

Sections 4(e) and 10(a)(1) of the FPA[14], respectively, require the Commission to give equal consideration to the power development purposes and to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of fish and wildlife, the protection of recreational opportunities, and the preservation of other aspects of environmental quality. Any license issued shall be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

In determining whether a proposed project will be best adapted to a comprehensive plan for developing a waterway for beneficial public purposes, pursuant to Section 10(a)(1) of the FPA, the Commission considers a number of public interest factors, including the economic benefits of project power.

Based on our independent review and evaluation of the Little Chute Project, recommendations of the resource agencies and other stakeholders, and no-action, as documented in the EA, I have selected the Little Chute Project, with the staff-recommended enhancement measures, as the preferred alternative. The preferred alternative was primarily developed during the extensive consultation.

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[13]The National Park Services' *The Nationwide Rivers Inventory*, 1982; the FWS' *Fisheries USA: The Recreational Fisheries Policy of the U.S. Fish & Wildlife Service*, undated; the FWS' *North American Waterfowl Management Plan - Strategy for Cooperation*, 1986; the WDNR's *Lower Green Bay Remedial Action Plan for the Lower Fox River and Lower Green Bay Area of Concern*, 1988; the WDNR's *Lower Fox River Basin Water Quality Management Plan*, 1991; the WDNR's *Statewide Comprehensive Outdoor Recreation Plan, 1986-91*, 1985; the WDNR's *Statewide Comprehensive Outdoor Recreation Plan, 1991-96*, 1991; the WDNR's *Wisconsin Water Quality Assessment Report to Congress*, 1992; and the WDNR's *Wisconsin's Biodiversity as a Management Issue*, 1995.

[14]§§ 16 U.S.C. 797(e) and 803(a)(1)

The staff performed an economic analysis for the relicensing of the Little Chute Project.[15] Based on current economic conditions, without future escalation or inflation, and if licensed for 30 years, the project, as proposed by the applicant with additional staff-recommended measures, would produce about 21.48 gigawatt hours (GWh) of energy, at an annual cost of about $342,000 (or about 16 mills/kWh). The value of the power is about $741,000 (or about 34.6 mills/kWh). Therefore, the current annual net benefit would be about $399,000 (or 18.6 mills/kWh).

In analyzing public interest factors, the Commission takes into account that hydroelectric projects offer unique operational benefits to the electric utility system (ancillary benefits). These benefits include their value as almost instantaneous load-following response to dampen voltage and frequency instability on the transmission system, system-power-factor-correction through condensing operations, and a source of power available to help in quickly putting fossil-fuel based generating stations back on line following a major utility system or regional blackout.

Ancillary benefits are now mostly priced at rates that recover only the cost of providing the electric service at issue, which don't resemble the prices that would occur in competitive markets. As competitive markets for ancillary benefits begin to develop, the ability of hydro projects to provide ancillary services to the system will increase the benefits of the projects.

I selected the preferred alternative because: (1) issuance of a new license would provide a beneficial, dependable, and inexpensive source of electric energy; (2) the required environmental measures would protect and enhance fish and wildlife resources, water quality, recreational and cultural resources; and (3) the 3,300-kW of electric energy generated from renewable resource would continue to offset the use of fossil-fueled, steam-electric generating plants, thereby conserving nonrenewable resources and reducing atmospheric pollution.

The enhancement measures which I am requiring are summarized as follows:

(1) continue to operate the project in a run-of river mode (Article 401);

(2) develop and implement an operations monitoring plan, including maintenance of the forebay and tailrace level gauges (Article 402);

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[15]The staff's analysis is consistent with *Mead Corporation, Publishing Paper Division*, 72 FERC ¶61,027 (July 13, 1995).

(3) conduct water quality monitoring every 5 years for the term of the license (Article 403);

(4) consult with the Village of Little Chute and the agencies in an attempt to construct a boat launch and parking area in the existing Doyle Park and, if possible, upstream of the Little Chute dam as well (Article 404);

(5) cooperate with any plans developed by agencies to remove contaminants from the lower Fox River (Article 404);

(6) reserve the Commission's authority to require fishways as may be prescribed by Interior under Section 18 of the FPA (Article 405);

(7) prepare and implement a Bald Eagle management and protection plan (Article 406); and

(8) prepare and implement the provisions of a Programmatic Agreement to protect cultural resources (Article 407).

LICENSE TERM

Section 6 of the FPA[16] states that licenses under Part 1 of the FPA shall be issued for a period not to exceed 50 years. Because the Little Chute Project will be located at a Corps dam, this license will be issued for a term of 50 years[17]

SUMMARY OF FINDINGS

The final EA contains background information, analysis of effects, support for related license articles, and the basis for a finding of no significant impact on the environment. The design of this project is consistent with the engineering standards governing dam safety. The project would be safe if operated and maintained in accordance with the requirements of this license.

Based upon a review of the agency and public comments filed on the project, and the staff's independent analysis pursuant to the FPA, I conclude that issuing a license for

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[16]16 U.S.C. § 799

[17]All Projects located at the site of federal dams receive 50-year licenses. See City of Danville, VA, 58 FERC ¶ 61,318 at p. 62, 020 (1992).

the Little Chute Project, with the required environmental measures and other special license articles, will be best adapted to the comprehensive development of the Fox River for beneficial public uses.

The Director orders:

(A) This license is issued to the City of Kaukauna (licensee), for a period of 50 years, effective the first day of the month the license is issued, to continue to operate and maintain the Little Chute Hydroelectric Project. This license is subject to the terms and conditions of the FPA, which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

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

Exhibit G	FERC Drawing No.	Showing
Sheet 1	2588-1006	Project Boundary

(2) The Little Chute Hydroelectric Project utilizes the Little Chute Dam and Reservoir which are owned and operated by the U.S. Army Corps of Engineers. The existing project consists of: (1) a 32-foot-high by 29-foot-wide by 121-foot-long reinforced concrete powerhouse, housing three 1,100-kilowatt (kW) generating units for a total installed capacity of 3,300 kW; (2) an integral intake and headworks structure consisting of nine 10.5-foot-wide intake bays with three bays servicing each generating unit equipped with 20-foot-long stop gate slots and trash racks with 5-inch spacing; (3) a 15-ton overhead, motor-operated powerhouse crane; (4) a 1.25-mile-long, 12-kilovolt (kV) transmission line; and (5) appurtenant facilities. The project has an annual average generation of 21,484,000 kilowatt-hours (kWh).

The project works generally described above are more specifically shown and described by those portions of exhibits A and F shown below:

Exhibit A: The following section of exhibit A filed on July 10, 1998:

Pages A-1 through A-8, describing the existing Corps project and the existing and proposed mechanical, electrical, and transmission equipment.

Exhibit F: The following exhibit F filed on July 10, 1998:

Exhibit F Drawing	FERC Drawing No.	Description
Sheet 1 of 5	2588-1001	Site Plan
Sheet 2 of 5	2588-1002	Powerhouse Sections
Sheet 3 of 5	2588-1003	Plan and Elevations of Powerhouse Superstructure
Sheet 4 of 5	2588-1004	Transformer Platform and Head Gate Structure
Sheet 5 of 5	2588-1005	One-line Electrical Diagram

(3) All of the structures, fixtures, equipment, or facilities used to operate or maintain the project and located in the project boundary, all portable property that may be employed in connection with the project, all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) The exhibits G, A, and F described above are approved and made part of the license;

(D) This license is subject to the articles set forth in Form L-3 (October 1975), entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters of the United States," and the following additional articles:

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

a) For the purposes of reimbursing the United States for the costs of administering Part I of the Federal Power Act, a reasonable amount as determined in accordance with the provisions of the Commissioner's regulations in effect from time to time. The authorized installed capacity for that purpose is 3,300 kW.

b) For the purpose of recompensing the United Stated for utilization of surplus water or water power from a government dam, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time.

Article 202. Within 45 days of the date of issuance of the license, the licensee shall file an original set and two duplicate sets of aperture cards of the approved drawings. The set of originals must be reproduced on silver or gelatin 35mm microfilm. The duplicate sets are copies of the originals made on diazo-type microfilm. All microfilm must be mounted on type D (3-1/4" x 7-3/8") aperture cards.

Prior to microfilming, the FERC Drawing Number (2588-1001 through 2588-1006) shall be shown in the margin below the title block of the approved drawing. After mounting, the Commission Drawing Number must be typed on the upper right corner of each aperture card. Additionally, the Project Number, Commission Exhibit (e.g., F-1, G-1, etc.), Drawing Title, and date of this license must be typed on the upper left corner of each aperture card.

The original and one duplicate set of aperture cards must be filed with the Secretary of the Commission, ATTN: OEP. The remaining duplicate set of aperture cards shall be filed with the Commission's Chicago Regional Office.

Article 203. If the licensee's project is directly benefitted by the construction work of another licensee, a permittee, or of the United States for a storage reservoir or other headwater improvement, the licensee shall reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed. The benefits will be assessed in accordance with Subpart B of the Commission's regulations.

Article 301. The design and construction of those permanent and temporary facilities, including reservoir impounding cofferdams and deep excavations, that would be an integral part of, or that could affect the structural integrity or operation of the Government project shall be done in consultation with and subject to the review and approval of the Corps' District Engineer. The Corps' review of the cofferdams will be in addition to the licensee's review and approval of the final plans, and shall in no way relieve the licensee of responsibility and liability regarding satisfactory performance of the cofferdams. Within 90 days from the issuance date of the license, the licensee shall furnish the Corps and the Commission's Regional Director, a schedule for submission of design documents and the plans and specifications for the project. If the schedule does not afford sufficient review and approval time, the licensee, upon request of the Corps, shall meet with the Corps and FERC staffs to revise the schedule accordingly.

Article 302. The licensee shall review and approve the design of contractor-designed cofferdams and deep excavations, other than those approved according to Article 301, prior to the start of construction and shall ensure that construction of cofferdams and deep excavations are consistent with the approved design. At least 30

days prior to start of construction of the cofferdam, the licensee shall file with the Director, Division of Dam Safety and Inspections, with a copy to the Commission's Regional Director and the Corps, one copy of the approved cofferdam construction drawings and specifications and a copy of the letter(s) of approval.

Article 303. The licensee shall within 90 days from the issuance date of the license, enter into an agreement with the Corps to coordinate its plans for access to and site activities on lands and property administered by the Corps so that the authorized purposes, including operation of the Federal facilities, are protected. In general, the agreement shall not be redundant with the Commission's requirements contained in this license, shall identify the facility, and the study and construction activities, as applicable, and terms and conditions under which studies and construction will be conducted. The agreement shall be mainly composed of reasonable arrangements for access to the Corps site to conduct studies and construction activities, such access rights to be conditioned by the Corps as may be necessary to protect the federally authorized project purposes and operations. Should the licensee and the Corps fail to reach an access agreement, the licensee shall refer the matter to the Commission for resolution.

Article 304. The construction, operation and maintenance of the project works that, in the judgment of the Corps may affect the structural integrity or operation of the Corps project shall be subject to periodic or continuous inspections by the Corps. Any construction, operation and maintenance deficiencies or difficulties detected by the Corps inspection shall be immediately reported to the Regional Director. Upon review, the Regional Director shall refer the matter to the licensee for appropriate action. In cases when construction, operation or maintenance practices or deficiencies may create a situation posing imminent danger to the structural integrity and safety of the Corps project, the Corps inspector has the authority to stop construction or maintenance while awaiting the resolution of the problem.

Article 305. The licensee shall at least 60 days prior to start of construction, submit for approval a regulating plan to the Corps, describing (a) the designed mode of hydropower operation, and (b) reservoir flow diversion and regulation requirements for operation of the Corps project during construction as established by the Corps. In addition, the licensee, prior to start of power plant operation, shall enter into an operating Memorandum of Agreement (MOA) with the Corps describing the detailed operation of the powerhouse acceptable to the Corps. The MOA shall specify any restrictions needed to protect the primary purposes of the Corps project for navigation, recreation, water quality, and flood control. The Regional Director shall be invited to attend meetings regarding the agreement. The MOA shall be subject to revision by mutual consent of the Corps and licensee as experience is gained by actual project operation. Should the

licensee and the Corps fail to reach an agreement, the matter will be referred to the Director, Office of Energy Projects for resolution. Copies of the regulating plan and signed MOA between the Corps and the licensee and any revision thereof shall be furnished to the Director, Office of Energy Projects and the Regional Director.

Article 306. The licensee shall have no claim under this license against the United States arising from the effect of any changes made in the operation or reservoir levels of the Corps project.

Article 307. The licensee shall provide the Regional Director two copies of all correspondence between the licensee and the Corps. The Regional Director shall not authorize construction of any project work until the Corps' written approval of construction plans and specifications has been received by the Regional Director.

Article 401. The licensee shall operate the project in a run-of-river mode for the protection of water quality, aquatic and recreational resources of the Little Chute Project and Fox River.

The licensee shall at all times act to minimize the fluctuation of the impoundment surface elevation by maintaining a discharge from the project so that, at any point in time, flows, as measured immediately downstream of the project tailrace, approximate the sum of the inflows to the project impoundment.

The run-of-river mode of 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, the U.S. Fish and Wildlife Service and the Wisconsin Department of Natural Resources. If project operations are so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each incident.

Article 402. The licensee shall file, within 6 months of license issuance, for Commission approval, a plan to monitor compliance with the run-of-river operating mode required by article 401.

The plan should include, at a minimum, a description of the methods which will be used to monitor run-of-river operation, including maintenance of the existing forebay and tailrace level gages, and installing a staff-type gage in the reservoir that is visible to the public.

The licensee shall prepare the plan after consultation with the U.S. Fish and Wildlife Service and the Wisconsin Department of Natural Resources. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing should include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. No construction activities shall begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 403. The licensee shall file, within 6 months of license issuance, for Commission approval, a plan to monitor water quality in the project area.

The plan shall include a description of the methods which will be used to collect dissolved oxygen and water temperature data from the project area every 5 years for the term of the license. In addition, the licensee shall cooperate with any future plans developed by state or federal agencies to remove contaminated sediments from the lower Fox River. Such cooperation by the licensee may include, for example, providing reasonable access to project facilities and may also include brief and temporary modification of project operations to allow safe working conditions for agency personnel.

The licensee shall prepare the plan after consultation with the Wisconsin Department of Natural Resources (WDNR). The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the WDNR's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the WDNR to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing should include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 404. Within one year of the date of issuance of this license, the licensee shall file for Commission approval a final recreation plan for providing and maintaining recreation facilities and public access at the Little Chute Hydroelectric Project. The plan shall include, but not necessarily be limited to, a description of how the licensee will make every effort to develop boat launching facilities and shoreline fishing opportunities both above and below the Little Chute Dam, as specified in the Licensee's Application for Hydropower License filed with the Commission on July 10, 1998 and discussed in the Final Environmental Assessment.

The licensee shall develop the plan after consultation with the Village of Little Chute, the Wisconsin Department of Natural Resources, and the U.S. National Park Service. The design and construction of the proposed recreational facilities shall consider the needs of the disabled in accordance with the American with Disabilities Act.

The licensee shall include in the plan: (1) the entity(ies) who will construct, operate and maintain the existing and proposed facilities; (2) final cost estimates for the construction and yearly maintenance of each facility; (3) erosion and sediment control measures to be used during construction of the facilities and access; (4) a construction schedule for implementing the recreation enhancements; and (5) provisions for access to public use areas within the project boundary.

The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the village and agencies and specific descriptions of how the village and agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the village and agencies to comment and make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. No land-disturbing activities shall begin at the project until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

In addition to the above, within 180 days of the issuance of this license, the licensee shall file with the Commission a status report detailing the progress toward providing the boat and pedestrian access, including consultation with the Village of Little Chute concerning easements to construct the facilities.

Article 405. Authority is reserved by the Commission to require the licensee to construct, operate, and maintain, or to provide for the construction, operation, and maintenance of, such fishways as may be prescribed by the Secretary of the Interior under Section 18 of the Federal Power Act.

Article 406. Within 180 days of the date of issuance of this license, the licensee shall file for Commission approval a Bald Eagle management and protection plan (BEMP) for project lands to protect the federally listed threatened bald eagle (*Haliaeetus leucocephalus*) and its habitat. The plan shall be developed in consultation with the U.S. Fish and Wildlife Service (FWS) and the Wisconsin Department of Natural Resources (WDNR).

The BEMP shall include, but not be limited to the following: (1) measures to protect potential bald eagle nesting habitat and wintering habitat; (2) measures to protect potential nest sites and perch trees from incompatible uses; (3) reasonable measures to reduce or prevent bald eagle use of the open water tailwater area, if a contaminant problem develops as a result of wintering bald eagles feeding in the project tailwater; (5) procedures for notifying the Commission if potential adverse impacts to eagles or their habitats arise as a result of project operation or activities on project lands or waters; and (7) a protocol and schedule to implement all aspects of the BEMP. The BEMP shall be developed and prepared using, but not limited to the following Federal and state management guidelines: *Bald Eagles in Wisconsin* (Eckstein 1990); *Management Guidelines for Breeding Areas of the Northern States Bald Eagle Recovery Plan* (Grier 1983); and *Eagle Winter Management Guidelines* (Martell 1992).

The licensee shall include in the BEMP documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to FWS and WDNR, and descriptions of how the agencies' comments and recommendations are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the Licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the BEMP, including any changes required by the Commission.

Article 407. Upon the effective date of this license, the licensee shall implement the applicable provisions of the "Programmatic Agreement Among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and the State of

Wisconsin, State Historic Preservation Officer, and the State of Michigan, State Historic Preservation Officer, For Managing Historic Properties That May Be Affected By New and Amended Licenses Issuing For The Continued Operation Of Existing Hydroelectric Projects in the State of Wisconsin and Adjacent Portions Of The State of Michigan", executed on December 30, 1993, including but not limited to filing, for Commission approval, within one year of the effective date of this license the Historic Resources Management Plan (HRMP) for the project. In the event that the Programmatic Agreement is terminated, the licensee shall implement the provisions of its approved HRMP. The Commission reserves the authority to require changes to the HRMP at any time during the term of the license. If the Programmatic Agreement is terminated prior to Commission approval of the HRMP, the licensee shall obtain approval before engaging in any ground-disturbing activities or taking any other action that may affect any Historic Properties within the project's Area of Potential Effect.

Article 408. (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, canceling 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 waters for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 watercraft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. 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 impoundment 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 or roads where 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 impoundment. 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. If no conveyance was made during the prior calendar year, the licensee shall so inform the Commission and the Regional Director in writing no later than January 31 of each year.

(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 (measured over project waters) 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 project waters at normal 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 60 days before conveying any interest in project lands under this paragraph (d), the licensee must submit a letter to the Director, Office of Energy Projects, 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 the following covenants running with the land: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee shall take all reasonable precautions to ensure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project; and (iii) the grantee shall not unduly restrict public access to project waters.

(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.

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

(F) This Order is final unless a request for rehearing is filed within 30 days from the date of its issuance, as provided in Section 313(a0 of the FPA. The filing of a request for rehearing does not operate as a stay of the effective date of this license or of any other date specified in this Order, except as specifically ordered by the Commission. The licensee's failure to file a request for rehearing shall constitute acceptance of this Order.

Daniel M. Adamson
Director
Office of Energy Projects

Appendix A

Water Quality Certificate Conditions for the Little Chute Project issued October 29, 1998, by the Wisconsin Department of Natural Resources:

1. The applicant shall comply with all federal, state, and local permit requirements.

2. The applicant shall meet current water quality standards that apply to this project. As with all other affected operations, the applicant is required to meet any revised state water quality standards. The applicant shall be required to conduct water quality monitoring for water temperature and dissolved oxygen once every five years for the duration of their FERC license, beginning in the year that a new FERC license is issued. A water quality monitoring plan for the project shall be prepared in consultation with the Department. Frequency of monitoring and monitoring locations shall be determined in consultation with the Department. This water quality monitoring plan will be used to assure that the project meets current state water quality standards.

3. The applicant will be requested to cooperate in implementing plans once formulated for the containment or removal of heavily contaminated sediments on the bed of the lower Fox River. This cooperation may include allowing reasonable access to the project site and river above and below the project and temporary modification of operation of the project to facilitate sediment removal or treatment.

4. The applicant must operate the Little Chute Project in a run-of-river mode. The applicant shall at all times act to minimize the fluctuation of the reservoir surface elevation by maintaining discharge from the project so that, at any point in time, flows, as measured immediately downstream of the project tailrace, approximate the sum of inflows to the project reservoir.

5. The applicant must continue to maintain the automatic water level sensors that continuously monitor and record headwater and tailwater elevation. A large visible to the public staff gage shall be maintained by the applicant in the project reservoir with the prescribed operating range clearly marked or notched on it. The applicant shall also continue to maintain a daily record (log) of operation and provide any pertinent information to the Department upon request, including turbine operation, headwater and tailwater elevations, and flow releases through the powerhouse updated on an hourly basis.

6. The licensee shall make every effort to develop boat launching facilities and shoreline fishing opportunities both above and below the Little Chute Dam to assure the public access to the lower Fox River in the vicinity of the project.

7. Any proposals for project maintenance or repair work involving the river, including reservoir drawdowns to facilitate repair/maintenance work shall be filed with the Department for prior review and approval.

8. The applicant shall allow the Department to inspect the project area at any time to monitor compliance with certification conditions.

9. Any change to the project that would have a significant or material effect on the findings, conclusions, or conditions of this certification, including project operation, must be submitted to the Department for prior review and written approval.

10. The Department may request, at any time, that FERC reopen the license to consider modifications to the license necessary to assure compliance with Wisconsin water quality standards.

Form L-3
(October, 1975)

FEDERAL ENERGY REGULATORY COMMISSION

TERMS AND CONDITIONS OF LICENSE FOR CONSTRUCTED MAJOR PROJECT AFFECTING NAVIGABLE WATERS 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 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 Energy Regulatory 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 or 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 nonpower 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 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 any 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 United States specifically retains and safeguards the right to use water in such amount, to be determined by the Secretary of the Army, as may be necessary for the purposes of navigation on the navigable waterway affected; and 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 Secretary of the Army may prescribe in the interest of navigation, and 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 Secretary of the Army may prescribe in the interest of navigation, or as the Commission may prescribe for the other 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 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 21. Material may be dredged or excavated from, or placed as fill in, project lands and/or waters only in the prosecution of work specifically authorized under

the license; in the maintenance of the project; or after obtaining Commission approval, as appropriate. Any such material shall be removed and/or deposited in such manner as to reasonably preserve the environmental values of the project and so as not to interfere with traffic on land or water. Dredging and filling in a navigable water of the United States shall also be done to the satisfaction of the District Engineer, Department of the Army, in charge of the locality.

Article 22. Whenever the United States shall desire to construct, complete, or improve navigation facilities in connection with the project, the Licensee shall convey to the United States, free of cost, such of its lands and rights-of-way and such rights of passage through its dams or other structures, and shall permit such control of its pools, as may be required to complete and maintain such navigation facilities.

Article 23. The operation of any navigation facilities which may be constructed as a part of, or in connection with, any dam or diversion structure constituting a part of the project works shall at all times be controlled by such reasonable rules and regulations in the interest of navigation, including control of the level of the pool caused by such dam or diversion structure, as may be made from time to time by the Secretary of the Army.

Article 24. The Licensee shall furnish power free of cost to the United States for the operation and maintenance of navigation facilities in the vicinity of the project at the voltage and frequency required by such facilities and at a point adjacent thereto, whether said facilities are constructed by the Licensee or by the United States.

Article 25. The Licensee shall construct, maintain, and operate at its own expense such lights and other signals for the protection of navigation as may be directed by the Secretary of the Department in which the Coast Guard is operating.

Article 26. 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 27. 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 28. 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.

Appendix B

FINAL ENVIRONMENTAL ASSESSMENT FOR HYDROPOWER LICENSE

Little Chute Hydroelectric Project

FERC Project No. 2588-004

Wisconsin

Federal Energy Regulatory Commission
Office of Energy Projects
Division of Environmental and Engineering Review
888 First Street, NE
Washington, D.C. 20426

April 2000

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SUMMARY

The City of Kaukauna (Applicant or Kaukauna) proposes to continue to operate the existing Little Chute Hydroelectric Project, which is located on the Fox River, in the Village of Combined Locks, in Outagamie County, Wisconsin. The project has an existing installed generating capacity of 3.3 megawatts (MW). The project supplies power to the City of Kaukauna Electric and Water Department (KEWD) for municipal utility purposes.

This environmental assessment (EA) analyzes the effects of continued project operation and recommends license conditions should the Federal Energy Regulatory Commission decide to issue Kaukauna a license for the project. In addition to the proposed action, we consider two alternatives: (1) proposed action with additional staff-recommended measures, and (2) no-action. The U.S. Department of the Interior (Interior), by letter dated January 21, 2000, commented on the draft environmental assessment (DEA). No other comments were received on the DEA. This EA includes the changes recommended by Interior.

Based on our analysis, we recommend licensing the project as proposed by the Applicant with additional staff-recommended measures. These measures include: (1) continue to operate the project in a run-of-river mode; (2) develop and implement an operations compliance monitoring plan, including maintenance of the forebay and tailrace level gauges; (3) conduct water quality monitoring every 5 years for the term of the license; (4) consult with the Village of Little Chute and the agencies in an attempt to construct a boat launch and parking area in the existing Doyle Park and, if possible, upstream of the Little Chute dam as well; (5) cooperate with any plans developed by agencies to remove contaminants from the lower Fox River; (6) reserve the Commission's authority to require fishways as may be prescribed by Interior under Section 18 of the Federal Power Act (FPA); (7) prepare and implement a Bald Eagle management and protection plan, which includes reasonable measures to reduce or prevent bald eagle winter use of the open tailwater; and (8) prepare an historic resources management plan consistent with the Programmatic Agreement executed December 30, 1993.

On the basis of our independent analysis, we conclude that issuing a new license for the Little Chute Project, with our recommended measures, would not be a major federal action significantly affecting the quality of the human environment.

FINAL ENVIRONMENTAL ASSESSMENT

Federal Energy Regulatory Commission
Office of Energy Projects
Division of Environmental and Engineering Review
Washington, D.C.

LITTLE CHUTE HYDROELECTRIC PROJECT
FERC NO. 2588-004 - Wisconsin

I. INTRODUCTION

On July 10, 1998, the City of Kaukauna (Kaukauna or Applicant) applied to the Federal Energy Regulatory Commission (FERC) for a new major license for the constructed Little Chute Hydroelectric Project, FERC No. 2588. The project is located at the U.S. Army Corps of Engineers' Little Chute Dam on the Fox River, in the Village of Combined Locks, in Outagamie County, Wisconsin (Figure 1). The Little Chute Project has a total capacity of 3.3 megawatts (MW). Kaukauna estimates that the project would produce an average annual energy generation of about 21 gigawatt-hours (GWh), which would be used by the City of Kaukauna Electric and Water Department (KEWD) for public utility purposes. No new construction or installed capacity is proposed. The project does not occupy any federally-owned lands.

II. PURPOSE OF ACTION AND NEED FOR POWER

A. Purpose of Action

The Commission must decide whether to license Kaukauna's proposed project, and what, if any, conditions should be place in any license issued. In this EA, we assess the environmental and economic effects of: (1) operating the project as proposed by Kaukauna; (2) operating the project as proposed by Kaukauna with additional staff-recommended measures; and (3) no action.

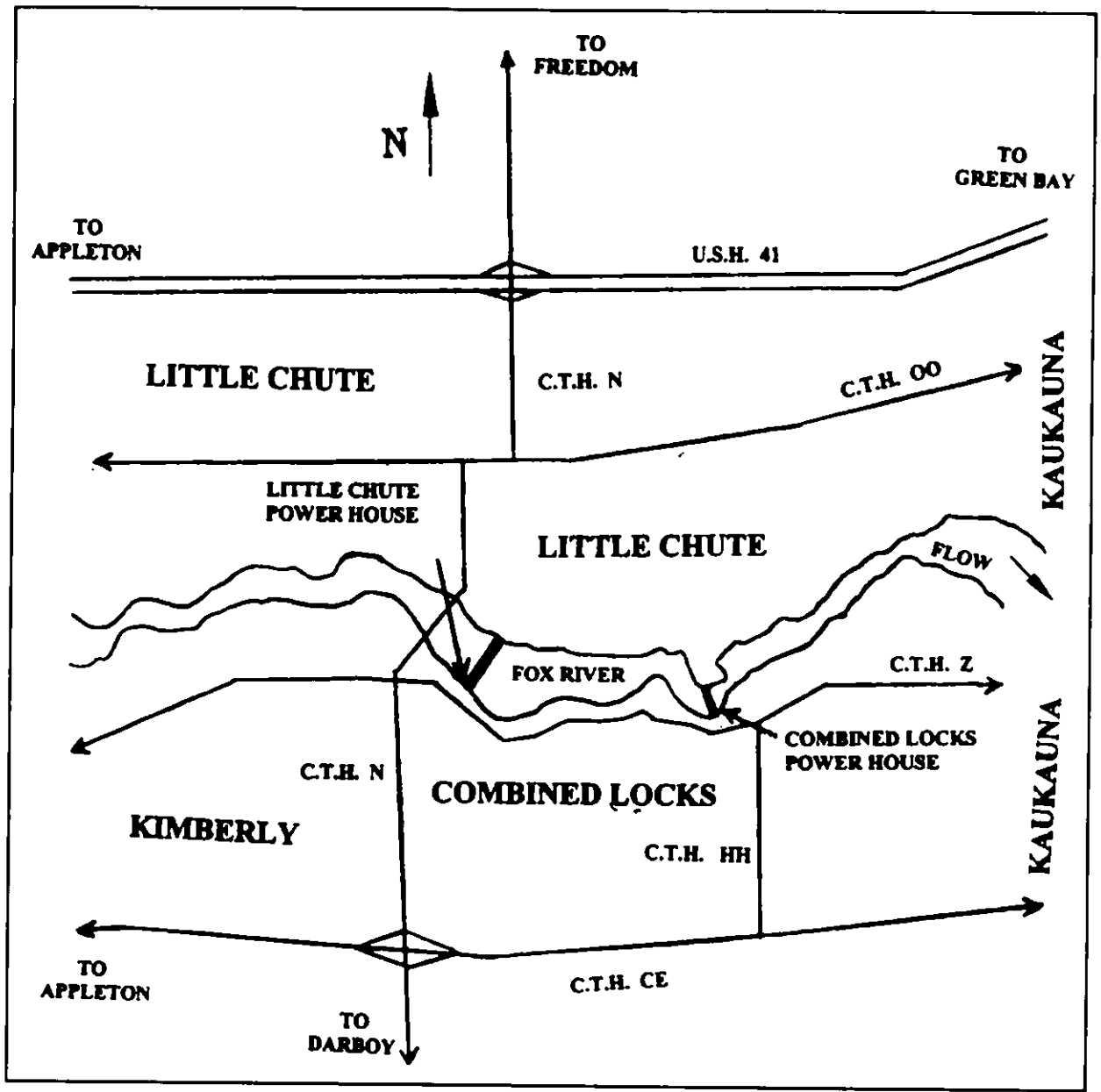

Figure 1. Location of Little Chute Hydroelectric Project, FERC No. 2588 (Source: City of Kaukauna 1999, as modified by staff).

B. Need for Power

As licensed with our recommendations, the Little Chute Hydro Project would generate an average of 21,484 MWh of energy annually.

To assess the need for power, we reviewed the needs in the operating region in which the project is located. The Little Chute Hydro Project is located in the East

Central Area Reliability Coordination Agreement region (ECAR) of the North American Electric Reliability Council (NERC). NERC annually forecasts electrical supply and demand in the nation and the region for a ten-year period. NERC's most recent report[18] on annual supply and demand projections indicates that, for the period 1998 through 2007, the demand for electric energy in the ECAR region will grow at an average rate of 1.59 percent annually (from 524,414 MWh to 624,683 MWh).

We conclude that the project power could contribute to a diversified generation mix and help meet a need for power in the ECAR area.

III. PROPOSED ACTION AND ALTERNATIVES

A. Proposed Action

1. Project Description

The Little Chute Hydroelectric Project utilizes the Little Chute Dam and Reservoir which are owned and operated by the U.S. Army Corps of Engineers. The existing run-of-river project, from right to left looking downstream, consists of: (1) a 32-foot-high by 29-foot-wide by 121-foot-long reinforced concrete powerhouse, housing three 1,100-kilowatt (kW) generating units for a total installed capacity of 3,300 kW; (2) an integral intake and headworks structure consisting of nine 10.5-foot-wide intake bays with three bays servicing each generating unit equipped with 20-foot-long stop gate slots and trash racks with 5-inch spacing; (3) a 15-ton overhead, motor-operated powerhouse crane; (4) a 1.25-mile-long, 12-kilovolt (kV) transmission line; and (5) appurtenant facilities. The project has an annual average generation of 21,484,000 kilowatt-hours (kWh). No new construction or modification is proposed.

2. Proposed Operation

Little Chute Hydroelectric Project is a run-of-river operation plant and Kaukauna proposes to continue operating in this mode. The generating units can be controlled either locally or remotely from the applicant's control room. All project water levels and generation are logged on an hourly basis. An operator visits the powerhouse about three times each week for monitoring purposes. A target headwater elevation of 689.50 feet International Great Lakes Datum (IGLD) is maintained year-round with the

[18]NERC's Electricity Supply and Demand Database, Data set 1998-2007.

maximum headwater elevation being 689.67 feet IGLD. Kaukauna maximizes its generation through the use of 6-inch flashboards. During high flow conditions or winter operations (typically between mid-November and mid-March), the flashboards are removed. All stream flow is passed through the plant during periods of normal and low water. When inflows exceed the hydraulic capacity of the turbines (4,000 cubic feet per second; cfs), excess water is passed over the overflow spillway and the normal operating head of 12.6 feet is reduced.

3. Proposed Environmental Measures

Kaukauna proposes to continue to operate the project in a run-of-river mode. Kaukauna also proposes the following measures to protect and enhance environmental resources that may be affected by the project:

- Within one year of license issuance, develop and file with the Commission a Historic Resources Management Plan, consistent with the Programmatic Agreement (PA) among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, the State of Wisconsin, State Historic Preservation officer, and the State of Michigan, State Historic Preservation Officer, for Managing Historic Properties that may be Affected by New and Amended Licenses Issuing for the Continued Operation of Existing Hydroelectric Projects in the state of Wisconsin and Adjacent Portions of the State of Michigan, executed on December 30, 1993.

- Investigate the possibilities of locating pedestrian access to the project at an undetermined location on the west shoreline.

B. Proposed Action with Additional Staff-Recommended Measures

In addition to Kaukauna's proposed measures, we recommend the following measures: (1) develop and implement an operations compliance monitoring plan, including maintenance of the forebay and tailrace level gauges; (2) conduct water quality monitoring every 5 years for the term of the license; (3) consult with the Village of Little Chute and the agencies in an attempt to construct a boat launch and parking area in the existing Doyle Park and, if possible, upstream of the Little Chute dam as well; (4) cooperate with any plans developed by agencies to remove contaminants from the lower Fox River; (5) reserve the Commission's authority to require fishways as may be prescribed by Interior under Section 18 of the FPA; and (6) prepare and implement a Bald Eagle management and protection plan, which includes reasonable measures to reduce or prevent bald eagle winter use of the open tailwater.

C. No-action

Under the no-action alternative, the project would continue to operate under the terms and conditions of the existing license, and no new environmental protection, mitigation, or enhancement measures would be implemented. We use this alternative as the baseline environmental condition for comparison with other alternatives.

D. Alternatives Considered but Eliminated from Detailed Study

We considered two other alternatives to the Applicant's relicensing proposal but eliminated them from detailed study because they are not reasonable in the circumstances of this case. They are:

(1) Issuing a nonpower license; and

(2) Denial of a license and decommissioning the project.

Issuing a nonpower license would not provide a long-term resolution of the issues presented. A nonpower license is a temporary license which the Commission would terminate whenever it determines that another government agency would assume regulatory authority and supervision over the lands and facilities covered by the nonpower license. In this case, no agency has suggested its willingness or ability to do so. No party has sought a nonpower license, and we have no basis for concluding that the project should no longer be used to produce power. Thus, a nonpower license is not a realistic alternative to relicensing in these circumstances.

Project decommissioning would involve denial of the license application and surrender or termination of the existing license with appropriate conditions. This alternative would also involve retaining the diversion structures and removing the generating equipment, securing the site, blocking the intakes, and releasing all the water over the diversions, while the Corps of Engineers would retain regulatory control and supervision of the remaining facilities. Because the power supplied by the project is needed, a source of replacement power would have to be identified. No participant has advocated this decommissioning alternative, nor have we any basis for recommending it. In these circumstances, we don't consider removal of the electric generating equipment to be a reasonable alternative.

IV. CONSULTATION AND COMPLIANCE

A. Agency Consultation and Interventions

The Commission's regulations require prospective Applicants to consult with appropriate state and federal agencies, tribes, and the public before filing a license application. This consultation is the first step in complying with the Fish and Wildlife Coordination Act, the Endangered Species Act, the National Historic Preservation Act, and other federal statutes. Pre-filing consultation must be complete and documented in accordance with Commission regulations.

Public notification and requests for comments on the Little Chute Project were made by: (1) the notice of accepted application issued December 8, 1998; (2) scoping notice issued April 9, 1999; and (3) notice that the application was ready for environmental analysis, issued June 30, 1999. All notices were sent to all entities on the project's mailing list.

After the Commission issued the June 30, 1999, public notice stating that the application was ready for environmental analysis, the following entities commented.

Commenting Entities	Date of Letter
Wisconsin Department of Natural Resources	August 17, 1999
U.S. Department of the Interior	August 26, 1999
Wisconsin Coastal Management Program	September 1, 1999

In addition to filing comments, organizations and individuals may petition to intervene and become a party to the licensing proceedings. The following entities filed for intervenor status. Neither of these interventions was in opposition to the project.

Intervenor	Date of Motion
Wisconsin Department of Natural Resources	January 19, 1999
U.S. Department of the Interior	February 3, 1999

B. Scoping Process

Before preparing this EA, we scoped the environmental issues for the Little Chute Project to determine what issues and alternatives should be addressed. Scoping Document 1, which asked for written comments on issues to be addressed in the EA, was issued on April 9, 1999. No written comments were received. Oral comments were provided at the scoping meetings on May 26, 1999, by the Wisconsin Department of Natural Resources (WDNR) and the U.S. Fish and Wildlife Service (FWS). These comments referenced conditions provided by WDNR in its water quality certificate (WQC), issued on October 29, 1998, and comments provided by the FWS in its letter dated November 28, 1997. We address the agencies' conditions and comments in the appropriate sections of this EA.

C. Mandatory Requirements

1. Water Quality Certification

Under Section 401 (a) (1) of the Clean Water Act (CWA), license applicants must obtain either state certification that any discharge from a project would comply with applicable provisions of the CWA or a waiver of certification by the appropriate state agency.

On July 10, 1998, Kaukauna applied to the WDNR for a WQC for the Little Chute Project. The WDNR issued a WQC for the project on October 29, 1998 containing the following 10 conditions:

- comply with all federal, state, and local permit requirements;
- conduct water quality monitoring every 5 years;
- cooperate in implementing plans to remove contaminated sediments from the lower Fox river;
- operate the project in a run-of-river mode;
- maintain the automatic water level sensors in the forebay and the tailrace;
- make every effort to develop boat launching facilities above and below the dam;

- file plans with the WDNR when proposed maintenance or repair work involves the river;

- allow project access to the WDNR for the purpose of monitoring compliance with WQC conditions;

- file plans with the WDNR if any significant change to the project is proposed; and

- allow the WDNR to request from the Commission, as necessary, that the license be reopened as to ensure compliance with state water quality standards.

2. Section 18 Fishway Prescription

By letter dated August 26, 1999, Interior states that it has no plans to require, under Section 18, upstream or downstream fish passage facilities at this time. However, Interior states that it reserves authority to prescribe the construction, operation, and maintenance of fishways in the future.

3. Coastal Zone Management Act

By letter dated September 1, 1999, the Wisconsin Coastal Management Program indicated that if the project is operated according to the conditions of the WQC, then the project will be consistent with the Coastal Zone Management Act.

V. ENVIRONMENTAL ANALYSIS

In this section, we first describe the general environmental setting in the project area, including a discussion of environmental resources in the project area that may be subject to cumulative effects from the Little Chute Project when considered in combination with other actions affecting the resources. Then, we discuss each environmental resource. For each resource, we first describe the affected environment--which is the existing condition and the baseline against which to measure the effects of the proposed project and any alternative actions--and then the environmental effects of the project, including proposed protection and enhancement measures.

We include only resources that would be affected, or about which comments have been made by interested parties, in detail in this EA. For this reason, we do not include detailed analysis of socioeconomics, land use, or aesthetics.

Unless we mention otherwise, the sources of our information are the license application (KEWD, 1998) and additional information filed by the Applicant (KEWD, 1999).

A. General Description of the lower Fox River Drainage Area

The project is located on the Fox River, in the Village of Combined Locks, Outagamie County, Wisconsin, approximately 26 miles from the confluence of the Fox River with Green Bay (Lake Michigan) and about 10 miles downstream of Lake Winnebago. The area is dominated by farmland, although there is substantial industrial development along the river and in the nearby city of Appleton. The immediate project vicinity contains two paper mills and the Little Chute Dam is one of 13 dams on the lower Fox River, with which 18 navigational locks are associated. The Cedars Lock Dam is located 0.9 miles upstream and the Combined Locks Dam is located 1.0 miles downstream of the Little Chute Dam; all 3 dams are owned and operated by the Corps of Engineers.

The climate in east central Wisconsin is characterized by cold snowy winters and warm, humid summers. January is the coldest month and July is the warmest, with average temperatures of -9.3 degrees Celsius (°C) and 21.3 °C, respectively. Annual precipitation is 30.41 inches, with June being the wettest month (3.60 inches).

B. Scope of Cumulative Effects Analysis

According to the Council on Environmental Quality's Regulations for implementing the National Environmental Policy Act (NEPA) (§ 1508.7), a cumulative effect is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

We identify water quality as having the potential to be cumulatively affected by this project in combination with the other hydropower developments in the basin.

1. Geographic Scope

The geographic scope of our cumulative effects analysis defines the physical boundaries of the proposed actions' effects on water quality. The geographic scope of

analysis for this EA is the lower Fox River Basin. Included within this scope are 13 dams as well as numerous industrial and municipal effluent inputs.

For all other resources, we confine our analysis to the immediate project area.

2. Temporal Scope

The temporal scope of analysis includes a discussion of the past, present, and future actions and their effects on water quality. Based on the term of the proposed license, we projected 30 to 50 years into the future, concentrating on the effects on water quality from reasonably foreseeable future actions. The historical discussion is limited, by necessity, to the amount of available information. We identified the present resource conditions based on the license application, comprehensive plans, and scoping comments received from agencies.

As we discuss in detail in section V.C.1, Aquatic Resources, with our proposed environmental measures, the project could have beneficial cumulative effects on water quality in the lower Fox River Basin.

C. Proposed Action and Action Alternatives

1. Aquatic Resources

a. Affected Environment

Streamflow

Flows at the project are estimated from the gage at Rapide Croche Dam (7.2 miles downstream; USGS Gage No. 04084500), the drainage area at which is 6,010 square miles, or 0.6% larger than the Fox River at the Little Chute Dam. Between 1896 and 1994, the mean annual flow has been approximately 4,300 cubic feet per second (cfs) and daily flows have ranged from a low of 138 cfs to 24,000 cfs. The Little Chute Project operates in a run-of river mode and the project does not have a bypassed reach. Flows in excess of the project's 4,000-cfs hydraulic capacity are spilled. Based on flow exceedence data, this occurs approximately 40% of the time, typically during the spring.

Water Quality

The lower Fox River is classified by WDNR for fish and aquatic life, and for recreational use. The state standards for such waters designate that dissolved oxygen

(DO) concentration not drop below 5 milligrams per liter (mg/L), temperature not exceed 89 degrees Fahrenheit (°F; 31.6°C), pH be between 6.0 and 9.0, and average fecal coliform counts not exceed 200 per 100 mL (based on 5 or more samples per month).

Although existing water quality in the project area has improved dramatically in the last 20 years, the river's sediments still contain large amounts of persistent chemicals, especially PCBs, and low DO events still continue to occur throughout the lower Fox River. Between 1988 and 1994, fish tissue samples collected from the lower Fox River, at locations both upstream and downstream of the project, contained concentrations of PCBs as high as 12 parts per billion (ppb). For comparison, EPA recommends limiting consumption at levels as low as 1.5 ppb and eliminating consumption at levels of 97 ppb. Mercury concentrations in the same fish tissue samples ranged from 0.02 to 1.10 ppm. For comparison, EPA recommends limiting consumption at levels as low as 0.03 ppm and eliminating consumption at levels of 1.9 ppm.

The WDNR collected temperature and DO data in July, August, and September of 1990-1992, at several lower Fox River locations, although none of the sampling locations were in project waters. In addition, Kaukauna collected DO and temperature data during the same months of 1996 and 1997, both in the forebay and the tailrace of the project. Both water quality monitoring efforts used continuous data loggers. Water temperature never exceeded the Wisconsin state standard of 89°F. The minimum hourly DO concentration was below 5 mg/L on some occasions during both the WDNR and Kaukauna studies. During Kaukauna's 1996 monitoring effort, minimum daily DO fell below 5 mg/L on 10 different days over the 3 month period (non-compliant values ranged from 1.96 to 4.73 mg/L). In 1997, there were 21 days on which minimum daily DO levels dropped below the standard, although DO concentration was never less than 3 mg/L.

Fisheries Resources

The existing fish community in the lower Fox River comprises warm and coolwater species including carp, black bullhead, yellow perch, freshwater drum, white sucker, gizzard shad, river shiners, white bass, trout perch, black crappie, northern pike, smallmouth bass, and walleye. As water quality has improved over the last 20 years, so has the fish community. WDNR fishery survey data from sites upstream and downstream of the project in 1976, 1977, 1993, and 1994 appear to indicate that species diversity in the lower Fox River is increasing as well as the abundance of desirable gamefish, such as bass and walleye.

Fish habitat both upstream and downstream of the project dam is primarily lacustrine or modified riverine with low current velocities, containing suitable habitat for sunfish, bass, crappie, catfish, perch, pike and carp. However, the area immediately below the project spillway is rocky, with higher current velocities, and suitable as spawning habitat for species such as white suckers and walleye.

b. Environmental Effects

Streamflow and water quality

Kaukauna proposes to continue to operate the project in a run-of-river mode. The WDNR and the FWS concur with this proposal and recommend continued maintenance of the existing headpond and tailrace level gauges in order to document compliance with this proposed operating mode. WDNR includes conditions in its WQC that require both the operational mode and the compliance monitoring.

The applicant does not propose any additional measures to protect or enhance water quality in the project area. In its application, Kaukauna states that the non-compliant episodes of low DO recorded in its water quality study were not caused by project operations, as evidenced by the simultaneous occurrence of low DO throughout the lower Fox River. While the WDNR agrees with Kaukauna's conclusions regarding water quality, it nonetheless requires monitoring every 5 years as a condition of the WQC in addition to cooperation by Kaukauna with any contaminant remediation efforts on the lower Fox River. The FWS, by its letter dated November 28, 1997, concurs with the WDNR.

Our Analysis

Because the Little Chute Project operates in a run-of-river mode and would continue to do so under Kaukauna's proposal, and because there is no bypassed reach, the project does not alter the natural quantity or allocation of flow in the lower Fox River. This operational mode is well-documented as the most protective of aquatic resources and water quality because it most closely approximates an unregulated river. Also, because the project does not store water, it does not affect the availability of water for any other uses downstream of the project, such as industrial process water and wasteload assimilation for waste water treatment plants. For these reasons, we recommend that Kaukauna continue to operate the project in a run-of-river mode and develop, through consultation with the WDNR and the FWS, an operational compliance monitoring plan that includes maintenance of the existing headpond and tailrace level gauges, as well as a

description of measures to restore flow below the project as soon as possible, during power outages.

Regarding water quality, we agree with Kaukauna and the WDNR that, based on the data collected at Little Chute in 1996, 1997, and other water quality observations throughout the lower Fox River during the same periods, it appears that the Little Chute Project was not the cause of these low DO events. Clearly the contamination problem in the Fox River is not linked to the Little Chute Project. However, because both of these water quality problems are well-documented, and occur within project waters, we consider it to be reasonable that Kaukauna conduct limited water quality monitoring and cooperate in any contaminant remediation efforts, as required by the WDNR and recommended by the FWS. We assess that the 5-year interval for water quality monitoring suggested by WDNR is reasonable. Therefore, we recommend that any license issued for this project should contain articles requiring these activities.

Fisheries Resources

No specific fisheries measures were proposed or recommended during this proceeding. Therefore, we conclude that Kaukauna, the WDNR, and the FWS agree that the best way to protect and enhance fisheries resources in the project area is through the protection and enhancement of water quality and natural streamflow conditions. Interior states, however, that although fish passage at the project is not required at this time, efforts to restore lake sturgeon within the Fox River basin may make it necessary in the future. Accordingly, Interior requests that the Commission reserve authority to require fishways as may be prescribed under Section 18 of the FPA.

Our Analysis

Fisheries resources in the project area appear to be rebounding from the poor water quality that limited them earlier in this century. Given the lack of anadromous fish species in the project area, as well as the lack of passage facilities at other hydroelectric projects in the area, we agree with Kaukauna and the agencies that protection, enhancement, and continued monitoring of water quality, combined with maintaining run-of-river operation, are the actions most likely to foster the continued recovery of fish communities in the lower Fox River. We also conclude that, because restoration of lake sturgeon to this portion of the Fox River may be a goal of fisheries agencies in the future, a reservation of the Commission's authority to require fishways, as may be prescribed by Interior, should be included in any license issued for the Little Chute Project.

c. Cumulative Effects

During scoping for this project, we identified water quality in the lower Fox River as a resource that could potentially be cumulatively affected through the licensing of the Little Chute Project. Given Kaukauna's proposal, as well as the recommendations of the agencies and Commission staff, such as continued run-of-river operation, regular monitoring of water quality, and cooperation with any lower Fox River contaminant removal efforts, we conclude that continued operation of the Little Chute Project, as proposed with additional staff-recommended measures, would have a beneficial cumulative effect on water resources within the Fox River, and downstream in Green Bay.

d. Unavoidable adverse effects: None.

2. Terrestrial Resources

a. Affected Environment

Pre-settlement vegetation in Outagamie County was a mix of conifer and hardwood forests. Today, forested land accounts for 17 percent of the county, and most is associated with wetlands. These areas are characterized by sedges and grasses as well as water-tolerant trees and shrubs, including tamarack, white cedar, and tag alder. There are approximately 5 acres of wetlands located in the upstream portion of the Little Chute project impoundment. This wetland is classified in the Wisconsin Wetlands Inventory as aquatic bed, which are rooted or floating (e.g., pond lilies and duckweed). Agriculture, row crops and hay, comprise approximately 65 percent of the land use. The immediate project area is urban and industrial in nature.

The terrestrial and aquatic habitats of the Little Chute project area provide habitat for urban wildlife species, including white-tailed deer, squirrel, skunk, racoon, muskrat, beaver, waterfowl, robins, cardinals, and sparrows.

b. Environmental Effects

No specific terrestrial habitat or wetland measures were proposed or recommended during this proceeding. Therefore, we conclude that Kaukauna, the WDNR, and the FWS agree that the best way to protect and enhance terrestrial and wetland habitats and the associated wildlife species in the project area is by not changing project operation and by the continued efforts to improve water quality conditions.

Our Analysis

The Little Chute Project area is urban and industrial in nature. The plant and animal species living in the project area are well adapted to these conditions. Kaukauna proposes to operate the Little Chute Project in a run-of-river mode, there is no bypassed reach, and the project does not store water or alter the natural flow in the lower Fox River. The wetland area upstream of the project dam would not be affected. For these reasons, we recommend that the Kaukauna continue to operate the project in a run-of-river mode.

c. Unavoidable Adverse Effects: None.

3. Threatened or Endangered Species

a. Affected Environment

The DOI by letter dated August 26, 1999, indicated that there are two Federally listed threatened or endangered species that occur or may occur in the Little Chute project. These are the Karner blue butterfly (*Lycaeides melissa samuelis*) , listed as endangered; and the bald eagle (*Haliaeetus leucocephalus*), listed as threatened. The DOI letter states that the FWS records indicate that the Karner blue butterfly is not known to occur in the Little Chute project area.

Bald eagles forage in the project area but do not nest on project land. Eagle surveys show one area on the south shore as the only place in the Little Chute project area where a few large oak trees, protected from human disturbance, are used as perching and loafing sites. However, eagles do fly the river corridor, looking for foraging and perch sites. Approximately 30 sightings of bald eagles were made during a winter 1996-1997 survey.

b. Environmental Effects

The FWS recommends measures to protect potential bald eagle nesting habitat and wintering habitat for the Little Chute project. The FWS recommends that Kaukauna prepare a bald eagle management plan. The plan is to protect potential nest sites and perch trees from incompatible uses. Further, the plan should conform with state and Federal management guidelines. Finally, if over the term of the license, a contaminant problem develops in wintering bald eagles feeding in the project tailwater, the licensee shall cooperate with the agencies to implement reasonable measures to reduce or prevent

bald eagle use of the open tailwater area of the Little Chute Hydro Project.. Kaukauna does not object to the FWS terms for the protection and enhancement of bald eagles.

The FWS states that with these measures continued operation of the Little Chute Hydro Project will not affect federally listed threatened and endangered species and consultation under the 1973 Endangered Species Act, as amended, is not needed.

Our Analysis

Bald eagle surveys indicate that the open water created at the project tailwater provides forage opportunities for wintering eagles. This area becomes more important as the snow depth and ice increases and other potential food sources are covered. Bald eagles are primarily fish eaters and forage over the open project waters in the winter. Additionally, the contaminant problem in the lower Fox River is well documented. There is remediation planning; however, how it will be done and when it will be completed is still being discussed. Because of possible bio-accumulation of contaminants like PCB's through the food chain, there is a potential problem of contamination of bald eagles.

There are no nesting birds in the project area and there appear to be no good nest sites; however, land use does change and it is prudent to include this aspect in a bald eagle plan. Also, because of the potential contaminant problem in bald eagles, future consultation is an important part of the management plan. We conclude that, because of the importance of the continued restoration of the bald eagle, and its threatened status under the endangered species act, a requirement for a bald eagle management plan as outlined above should be included in any license issued for the Little Chute Project.

c. Unavoidable adverse effects: None.

4. Cultural Resources

a. Affected Environment

In compliance with the state-wide Programmatic Agreement (PA) among the Commission, Advisory Council on Historic Preservation, Wisconsin State Historic Preservation Officer (SHPO), Michigan SHPO, executed December 30, 1993, agents of the licensee completed efforts to identify historic and archaeological properties that could be affected by project operations. Mead and Hunt reported the results of its identification efforts in *Little Chute Hydroelectric Project, Outagamie County: Reconnaissance Survey of Potentially Significant Historic Properties* (July 1996). The

Little Chute hydroelectric facility, which consists of a powerhouse, headworks, substation, and transmission line, is the only historic property in the area of potential effect. The facility was evaluated for the National Register of Historic Places (NRHP) and determined not eligible. A concrete abutment wall separates the powerhouse from the U.S. government-owned dam, which is listed on the NRHP. The SHPO concurred with the findings of the report (letter from Richard W. Dexter, Chief, Compliance Section, State Historical Society of Wisconsin, Madison, Wisconsin, August 6, 1996).

Midwest Archaeological Consulting reported the results of its identification efforts in *Archaeological Investigation of the Little Chute Hydroelectric Project on the Fox River, Outagamine County, Wisconsin* (September 1996). No archaeological properties were found. The SHPO agreed with the findings of the report (letter from Sherman Banker, Compliance Archeologist, State Historical Society of Wisconsin, Madison, Wisconsin, September 23, 1996).

b. Environmental Effects

The PA assigns licensees responsibility to ensure that historic properties are considered in the continued operation and maintenance of hydroelectric facilities during the term of the license. Licensees are required to develop a Historic Resources Management Plan (HRMP) within one year of the license issuance. Kaukauna has proposes to develop an HRMP within one year of license issuance.

Our Analysis

We assess that the Little Chute project would not affect cultural resources. However, to ensure that historic resources are protected, we recommend that Kaukauna develop an HRMP consistent with the PA. The HRMP should be developed in consultation with the SHPO and filed for Commission approval, within one year of any license issued for the Little Chute project.

c. Unavoidable Adverse Effects: None.

5. Recreation

a. Affected Environment

The Project is located in an urban area. Project facilities are located in the village of Combined Locks and are adjacent to the villages of Kimberly and Little Chute. The three villages maintain 23 recreation areas including community parks and conservation

areas. These areas provide fields for organized sports, play areas, picnic areas, hiking, and fishing access. There are currently no boat launching facilities available in the vicinity of the project. The Fox River from Lake Winnebago to Green Bay, including the project area, is very popular for recreational boating.

b. Environmental Effects

Closure of the U.S. Army Corps of Engineers' navigation locks has resulted in a lack of access to the Fox River for boaters in the vicinity of the project. As a result, Interior and WDNR recommended additional boat access. Interior recommends that the applicant develop a plan and submit it for review to the WDNR, National Park Service (NPS), and the FWS to ensure that the boaters will have access above and below the dam (Michael Chezik, Regional Environmental Officer, U.S. Department of the Interior, Philadelphia, Pennsylvania, August 26, 1999). WDNR recommends that the applicant make every effort to develop barrier-free access boat launching facilities both above and below the dam to ensure boating access to the lower Fox River in the vicinity of the project (letter from Thomas F. Thuemler, Regional FERC Coordinator, Wisconsin Department of Natural resources, Peshtigo, Wisconsin, August 17, 1999). WDNR's recommendation is also included in the WQC issued for the project on October 29, 1998.

Mead and Hunt responded for the applicant by stating that discussions are currently underway to provide boat access. The Applicant, however, does not own land and would need to obtain access through other land owners (both private and government) whose land completely surrounds the project including areas both upstream and downstream of the dam. The Applicant stated that there are no opportunities to provide boat access upstream of the dam and the only possible downstream site is at the park owned by the Village of Little Chute. The applicant proposes to continue discussions with the Village of Little Chute regarding the possibility of providing boat access on land owned by the Village of Little Chute (letter from Arie DeWaal, Senior Project Scientist, Mead & Hunt, Inc., Madison, Wisconsin, September 14, 1999). In addition to providing boat access, the Applicant agreed to investigate the possibilities of providing pedestrian access at an undetermined location on the west shoreline of the impoundment.

Our Analysis

Due to the scarcity of river access near the project staff agrees that every possible effort should be made to increase access at the project for both pedestrian and boating opportunities. Staff recommends that within one year after license issuance Kaukauna file for Commission approval a plan to provide access for pedestrian and boat

opportunities at the project and that the facilities be design to be accessible for people with disabilities. The plan should be developed in consultation with the NPS, FWS, and WDNR. In addition, within six months after license issuance, Kaukauna should file a status report detailing the progress made toward providing the access.

c. Unavoidable Adverse Effects: None.

C. No-Action

Under the no-action alternative, Kaukauna would continue to operate the project under the terms of the original license. The environmental measures that staff recommends would not occur. The existing situation, as described in the Affected Environment portions of this document, would not change.

VI. DEVELOPMENTAL ANALYSIS

Based on our independent analysis, we conclude that the 3.3-MW Little Chute Hydroelectric Project would make good use of the available water that passes through the United States Army Corps of Engineers' Little Chute dam and reservoir. Flows in the Fox River have been measured for more than 100 years, and these records have been utilized to make estimates of average annual hydroelectric energy production at the project site. The existing three units, each rated at 1,100-kW with a maximum hydraulic capacity at 1333 cfs, would produce an average 21,484,000 kWh per year. The plant factor of the project, as proposed, would be about 69 percent.

We estimate the project would have a capital cost of about $2,500,000, including environmental measures. We also estimate the annual operation and maintenance costs that would reasonably be allocated solely to power production (no Federal, state and local taxes applicable to the project), would be about $92,000.

For our economic analysis of this project, we used a 30-year period of analysis based on current fuel costs with no escalation and 8% interest and discount rates. The levelized annual cost of maintaining and operating the Little Chute Project would be about $342,000 or 16 mills per kWh. The project would produce power with an annual value of about $741,000 or 34.6 mills per kWh in 1999 dollars, based on the average cost

of alternative capacity and energy in the region.[19] Therefore, in the first year of operation, we estimate that the project power would result in a positive net annual benefit of about $399,000 or 18.6 mills per kWh for the project.

Project economics of hydropower projects is only one of the many public interest factors that is considered in determining whether or not to issue a license. The construction and operation of a project may be desirable for other reasons, such as to diversify the mix of energy sources in the area, to promote local employment, to provide a fixed-cost source of power and reduce contract needs, and to conserve fossil fuels and reduce atmospheric pollution.

VII. COMPREHENSIVE DEVELOPMENT AND RECOMMENDED ALTERNATIVE

Sections 4(e) and 10(a)(1) of the FPA require the Commission to give equal consideration to all uses of the waterway on which a project is located. When we review a proposed project, we equally consider the environment, recreation, fish and wildlife, and other non-developmental values of the project as well as power and other developmental values. Accordingly, any license issued shall be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses.

Based on our independent review of agency comments filed on this project, and our comparison of the environmental and economic effects of the proposed action, the proposed action with additional staff-recommended measures, and no-action, we

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[19]Our estimate of the cost of alternative power is based on the current cost of energy generation in natural gas-fueled combined cycle combustion turbine (CCCT) generating plants in the ECAR region, plus a value of $109 per kilowatt year for the project's average annual capacity of 2,240 kW. We compute the regional energy value to be 23.2 mills/kWh and the capacity value to be 11.4 mills/kWh, for a total power value of 34.6 mills/kWh. Our estimate of the energy value is based on the cost of fuel that would be displaced by the hydroelectric generation in a natural gas-fueled CCCT generating plant, operating at a heat rate of 6,200 Btu/kWh. We estimate the cost of fuel based on the Energy Information Administration's reference-case estimate of average real fossil fuel costs for electric utilities, as published by the Energy Information Administration (EIA) in their Annual Energy Outlook for 1998 and its supplemental data on the EIA Internet Homepage.

recommend the proposed action, with staff's additional recommended measures, as the preferred alternative. We recommend this alternative because: (1) issuance of a new hydropower license by the Commission would allow the Applicant to operate the project as an economically beneficial and dependable source of electrical energy for its customers; (2) the 3.3-MW project would eliminate the need for an equivalent amount of fossil-fuel derived energy and capacity, which helps conserve these nonrenewable resources and limits atmospheric pollution; (3) the public benefits of the selected alternative would exceed those of Kaukauna's proposal and the no-action alternative, and (4) the recommended measures would protect aquatic resources, bald eagles, cultural resources, and enhance recreational opportunities.

We recommend the following environmental measures be included in any license issued by the Commission for the Little Chute Project: (1) continue to operate the project in a run-of-river mode; (2) develop and implement an operations compliance monitoring plan, including maintenance of the forebay and tailrace level gauges; (3) conduct water quality monitoring every 5 years for the term of the license; (4) consult with the Village of Little Chute and the agencies in an attempt to construct a boat launch and parking area in the existing Doyle Park and, if possible, upstream of the Little Chute dam as well; (5) cooperate with any plans developed by agencies to remove contaminants from the lower Fox River; (6) reserve the Commission's authority to require fishways as may be prescribed by Interior under Section 18 of the Federal Power Act (FPA); (7) prepare and implement a Bald Eagle management and protection plan, which includes reasonable measures to reduce or prevent bald eagle winter use of the open tailwater; and (8) prepare an historic resources management plan consistent with the Programmatic Agreement executed December 30, 1993.

From our evaluation of the environmental and economic effects of the project we conclude that licensing the Little Chute Project with our additional recommended measures would best adapt the project to a comprehensive plan for the Fox River drainage.

VIII. RECOMMENDATIONS OF FISH AND WILDLIFE AGENCIES

Under the provisions of Section 10(j) of the FPA, as amended by the Electric Consumers Protection Act of 1986, each hydroelectric license issued by the Commission shall include conditions based on recommendations provided by federal and state fish and wildlife agencies for the protection, mitigation, and enhancement of such resources affected by the project, where those conditions are not inconsistent with the purposes and requirements of the FPA or other applicable law.

The WDNR and the FWS submitted Section 10(j) recommendations for the Little Chute Project, by letters dated August 17 and August 26, 1999, respectively. Our analysis of the recommendations is summarized in Table 1 and discussed in the Aquatic, Recreation, and Terrestrial Resource sections. We have recommended inclusion of all Section 10(j) recommendation in any license issued for the Little Chute Project.

Table 1 . Analysis of fish and wildlife agency recommendations for the Little Chute Project (Source: Staff)

Recommendation	Agency	Within scope of section 10(j)?	Recommend adopting?
Run-of-river Operation	WDNR and FWS	Yes	Yes
Operational Compliance Monitoring Plan	WDNR and FWS	Yes	Yes
Water Quality Monitoring	WDNR and FWS	Yes	Yes
Cooperation w/ Contaminant Removal Plans	WDNR and FWS	Yes	Yes
Reopener Article	WDNR	No. Not a specific measure to protect fish and wildlife	Yes; all licenses include a standard reopener
Develop Boat Access	WDNR and FWS	No. Not a specific measure to protect fish and wildlife	Yes, to the extent possible, under 10(a)
Bald Eagle Management and Protection Plan	FWS	Yes	Yes

IX. CONSISTENCY WITH COMPREHENSIVE PLANS

Section 10(a)(2) of the FPA requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project.

Federal and state agencies filed 66 plans with the Commission that address various resources in Wisconsin. Nine of these plans are relevant to this project[20]. No conflicts were found.

X. FINDING OF NO SIGNIFICANT IMPACT

We've prepared this environmental assessment for the Little Chute Project pursuant to the National Environmental Policy Act of 1969.

Implementing the measures described and recommended in this environmental assessment would ensure that the environmental effects of the project would remain insignificant.

Based on this analysis, issuing a new license for the project would not be a major federal action significantly affecting the quality of the human environment. With our recommended measures, wildlife and aquatic resources would be protected and maintained, and recreational opportunities in the project area would be enhanced.

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[20]The National Park Services' *The Nationwide Rivers Inventory*, 1982; the FWS' *Fisheries USA: The Recreational Fisheries Policy of the U.S. Fish & Wildlife Service*, undated; the FWS' *North American Waterfowl Management Plan - Strategy for Cooperation*, 1986; the WDNR's *Lower Green Bay Remedial Action Plan for the Lower Fox River and Lower Green Bay Area of Concern*, 1988; the WDNR's *Lower Fox River Basin Water Quality Management Plan*, 1991; the WDNR's *Statewide Comprehensive Outdoor Recreation Plan, 1986-91*, 1985; the WDNR's *Statewide Comprehensive Outdoor Recreation Plan, 1991-96*, 1991; the WDNR's *Wisconsin Water Quality Assessment Report to Congress*, 1992; and the WDNR's *Wisconsin's Biodiversity as a Management Issue*, 1995.

XI. LITERATURE CITED

City of Kaukauna Electric and Water Department (KEWD). 1998. Application for a Subsequent License for the Little Chute Hydroelectric Project. Little Chute, Wisconsin. July 1998.

KEWD. 1999. Applicant's Response to Request for Correction of Deficiencies and Additional Information. Little Chute, Wisconsin. January 1999.

XII. LIST OF PREPARERS

Steve Kartalia, Project Coordinator--Aquatic resources (B.S., Biology, M.S., Fisheries Biology); seven years experience evaluating the environmental effects of hydroelectric projects.

John Costello--Visual Resources, Cultural Resources, Recreation, Land Use, Aesthetics (Landscape Architect; BLA, Landscape Architecture and Environmental Planning); eight years experience evaluating the environmental effects of hydroelectric projects.

Eddie Lee--Engineering, (B.S., M.S., P.E. Civil Engineering); nineteen years experience evaluating and assessing the administration and engineering impacts of hydroelectric development.

Ron McKitrick--Terrestrial Resources, Threatened and Endangered Species, (B.S., Biological Sciences; M.S. Vertebrate Ecology); nineteen years experience assessing the environmental impacts of hydropower development.

XIII. RESPONSE TO COMMENTS

Interior commented on the DEA by letter dated January 21, 2000. Interior recommended editorial changes to the DEA, but agreed in principle to staff's findings. This EA incorporates all of the changes recommended by Interior. No other comments were filed on the DEA.