

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

City of Kaukauna, Wisconsin

Project No. 1510-001

ORDER ISSUING NEW LICENSE  
(Major Project - Existing Dam)

(January 30, 1989)

The City of Kaukauna, Wisconsin (applicant) has filed an application for new license under section 15 of the Federal Power Act (Act) to continue to operate and maintain the Kaukauna Hydro Project, located in Outagamie County, Wisconsin, on the Fox River, a navigable waterway of the United States. The license for the project, which was issued on March 21, 1939, with an effective date of April 1, 1939, will expire on March 31, 1989. 1/

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

Section 10 of the Federal Power Act

Section 15(a)(2) of the Act, as amended by the Electric Consumers Protection Act of 1986, provides that the requirements of section 10 of the Act are applicable to Commission consideration of applications for new license under section 15 of the Act. Following is a discussion of the relevant provisions of section 10.

I. Comprehensive Plans - Section 10(a)(2)(A)

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

1/ FR-747, March 24, 1939.

FERC DOCUMENTED  
*[Handwritten signature]*

The staff reviewed two plans that address various aspects of waterway management in relation to the proposed project. 2/ No conflicts were found.

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

## 2. Recommendations of Other Agencies - Section 10(a)(2)(B)

Section 10(a)(2)(B) of the Act requires the Commission to consider the recommendations of relevant federal and state agencies exercising administration over flood control, navigation, irrigation, recreation, cultural and other relevant resources, and the recommendations of Indian tribes affected by the project.

No specific state and federal agency comments or recommendations were made addressing flood control, navigation, irrigation, or cultural requirements in the basin. Comments and recommendations concerning recreational resources are addressed in the EA. There are no Indian tribal lands affected by the project.

## 3. Consumption Efficiency Improvement Program - Section 10(a)(2)(C)

The applicant has in place or in advanced stages of preparation a reasonably comprehensive program to monitor and encourage conservation efforts and efficient utilization of electric energy. Some of these measures are documented in the applicant's letter dated February 2, 1987, in response to our request for further information, and include:

1. infra-red radiation measurements at generating stations, substations, and along distribution circuits to detect excessive losses in equipment and apparatus, with follow-on maintenance, conversion, or upgrading as required (including measures described below).
2. upgrading of winding insulation in the hydro generating units to insure maximum capacity output,
3. installation of efficient high pressure sodium street lighting.

2/ Wisconsin Water Quality, Report to Congress, 1986, Wisconsin Department of Natural Resources; Wisconsin's 1986-91 Statewide Comprehensive Outdoor Recreation Plan, 1986, Wisconsin Department of Natural Resources.

4. conversion from "hard wired" supervisory and control equipment to a computerized system control and Data Acquisition (SCADA) unit which permits greater efficiency of system operation (e.g., by remote switching and re-configuration of circuits to relieve loading on monitored overloaded circuits and transferring load to other lightly loaded circuits), and
5. institution of a time-of-use rate study to determine the feasibility of using cost-effective time-of-day rate schedules.

Other somewhat less direct conservation measures result from the applicant's membership in Wisconsin Public Power, Inc. (WPPI). This membership allows the applicant to purchase various classifications of energy at a substantially lower cost, thereby reducing the usage of natural gas and fuel oil peaking equipment. Hence, the consumption of non-renewable fuel resources and accompanying air pollution is reduced. WPPI's conservation program on behalf of its members is described in their 1984 Advance Plan, dated June 15, 1984, and filed with the Wisconsin Public Service Commission. This program comprises the following salient features (in addition to the bulk power purchasing service described above):

1. attempts to utilize its own members hydro resources or those of others to share the supply of peak generation to avoid purchasing firm power from thermal resources, thereby reducing consumption of non-renewable resources and accompanying air pollution,
2. provides information to member systems on, (a) load management techniques and state-of-art development, (b) how to make an assessment of the financial feasibility of load management, (c) cost and capability of numerous equipment options, and (d) results of industry experiences with load managements,
3. makes studies to determine feasibility of developing new hydro sites for the benefit of its members and to further conservation,
4. studies the feasibility of utilizing other renewable resource technologies to generate power, such as solar, refuse/wood burning facilities, etc, and
5. provides member systems with updated current information on conservation methods in general.

Staff concludes that the applicant's conservation efforts and efficient utilization of electric energy on its system are adequate.

1. Recommendations of Federal and State Fish and Wildlife Agencies - Section 10(i)

Section 10(i) of the Act requires the Commission to include license conditions, based on the recommendations of federal and state fish and wildlife agencies, for the protection, mitigation, and enhancement of fish and wildlife. The environmental assessment for the Kaukauna Hydro Project addresses the concerns of the federal and state fish and wildlife agencies, and provides recommendations consistent with those of the agencies.

Section 15(a) of the Federal Power Act

Section 15 of the Act specifies a number of factors the Commission is required to consider in acting on applications for new licenses following the expiration of existing licenses.

1. The Plans and Other Articles, Terms, and Conditions of Any License Issued to It and Other Applicable Provisions of Part I of the Act - Section 15(a)(2)(A)

The applicant is a small town with a population of 12,236. It states in its filing of June 15, 1987, that it plans and is able to continue to operate and maintain the project as presently proposed.

The present cost of operating and maintaining the project is approximately \$31,485 per year. This amount includes administrative and general expenses.

The project is fully amortized. If a new license is not issued, the additional cost to the applicant's 9,000 customers to purchase 34,577,000 kWh of energy from the Wisconsin Public Power, Inc. (WPPI) is approximately \$1,260,000 per year. Therefore, the applicant would have \$1,260,000 per year to acquire additional consultant resources, if necessary, to supplement its 39 full time employees.

The new license requires the applicant to comply with new environmental articles. The staff does not foresee any requirements under a new license for which the applicant would not have adequate resources to comply with. Staff concludes, therefore, that the applicant's plans and abilities are adequate to comply with the articles, terms and conditions of any license and other applicable provisions of Part I of the Act.

2. The Plans of the Applicant to Manage, Operate and Maintain the Project Safely - Section 15(a)(2)(B)

The applicant states that it is operating the project facilities safely with a foremost concern for the safety of its

employees and the public. The employee safety record for the project for the past five years was summarized in the filing submitted on June 15, 1987. There have been no job-related deaths among employees.

The applicant has adopted an official safety code based on its operating experience and this code is continually updated. Accidents occurring at the project have been reported to the Commission from time to time in accordance with Commission instructions. The project is operated run-of-river which causes no extreme fluctuations and this eliminates hazard to the fishermen and boaters. The applicant has prepared an emergency action plan with a notification procedure to the public in case of a potential threat to life property downstream.

The scope of the work for the Part 15 for the Houshams dam inspection included a field inspection to observe the condition of the project structures and to set control points on the structures; a review of the available foundation and geologic information; review of the operation and maintenance procedures for the dam; review of the monitoring data collected; analysis of the stability of the structures; a flood study and evaluation of the adequacy of the spillway discharge capacity.

Based upon a review of the specific information provided by the applicant on various aspects of the project that affect public safety and a review of the project records, staff concludes that the plans of the applicant to manage, operate, and maintain the project safely are adequate.

5. The Plans and Abilities of the Applicant to Operate and Maintain the Project in a Manner Most Likely to Provide Efficient and Reliable Electric Service - Section 15(a)(2)(C)

Staff has reviewed the plans and abilities of the applicant to operate and maintain the project in a manner most likely to provide efficient and reliable electric service. The review indicates that the project is being operated in an efficient and reliable manner.

Staff has reviewed the operation inspection reports by the Regional Director and the applicant's past performance and future plans to operate the project, and concurs with the applicant that the project is being operated and maintained in an efficient and reliable manner.

Staff concludes that the plans and abilities of the applicant to operate and maintain the project in a manner most likely to provide efficient and reliable electric service is sufficient.

4. The Need of the Applicant Over the Short and Long Terms for the Electricity Produced by the Project to Serve its Customers - Section 15(a)(2)(D)

The existing Kaukauna Hydroelectric Project No. 1510 is a small low-head, run-of-river hydroelectric plant. It is located on the lower Fox River in the City of Kaukauna, in Outagamie County, Wisconsin. It consists of two identical generating units utilizing Kaplan adjustable blade propeller type turbines each driving a generator rated at 2,400 kW for a total plant capacity of 4,800 kW. The plant utilizes head developed by a dam that has been owned and operated by the City of Kaukauna since 1940.

The initial license for the project was issued to the applicant by the Federal Power Commission (FPC) on March 21, 1939, for purposes of constructing and operating the Kaukauna hydroelectric project. Construction of the project began in 1940, and commercial operation of units 1 and 2 began in 1940 and 1942, respectively. No new construction or expansion of the project to increase generation is presently planned by the applicant, since studies show it would not be cost-effective.

Applicant's 1987 peak demand was 83.3 megawatts (MW). As of December 31, 1987, the applicant owned 42.1 MW of installed nameplate capacity, comprising the 4.8 MW Kaukauna Project plus 11.3 MW from other hydro projects and 26 MW of standby gas turbine and diesel-driven generation as system reserve. The applicant also has a 50 MW firm demand contract with Wisconsin Public Power, Inc. (WPPI), a joint-action agency made up of 26 Wisconsin municipal electric utilities, including the applicant, which purchases power from major investor-owned utilities in the region for the account of its members. There is no dependable capacity. However, in terms of energy production, the plant has generated an historical average of about 34,577,000 kilowatthours (kWh) per year. In 1987, it generated 32,123,790 kWh, or about 6.4 percent of the total system 1987 energy needs of 500,026,708 kWh. This is comparable to the anticipated 39,400,000 kWh annual generation from the Combined Locks Hydroelectric Project (P-2715) that the applicant is planning to place in operation in 1988 to meet expected growth in demand over the next 4 to 5 years. The applicant will have to rely on purchased power from WPPI to meet its peak and load demand for both short and long term needs. Since all of the applicant's hydro plants are run-of-river, with little reservoir storage capacity, they cannot be used for peaking.

In the event that the applicant is not issued a new license to permit continued operation of Project No. 1510, or in the event that a non-power license is issued by FERC, the applicant will be forced to find a replacement source capable of supplying 4.8 MW of capacity and an annual average generation of 34,577,000 kWh of energy if the current projected reserve margins are to be

maintained. The applicant states that users in its service area have been practicing conservation and that further efforts at conservation may not be viable. This has resulted in a leveled growth in demand of about 1.5 percent per year. In about five years, this would amount to an increase in system energy consumption over the present level approximately equal to the annual average energy production of the project.

In as much as the viable hydro sites within the applicant's service area will be exhausted when the Combined Locks Hydroelectric Project on the Fox River is placed in service in 1988, the most likely alternative source of replacement power, if the Kaukauna Project is not relicensed, will be WPPI. Since the project is fully amortized, the average cost to the applicant's customers for this power is only \$0.00101/kwh to cover the cost of operation, maintenance, and supervision. This is to be compared to the cost from WPPI of \$0.016/kwh. For some 35,000,000 additional kwh purchased annually from WPPI to cover the loss of the Kaukauna project, this would cost the applicant's ratepayers an additional \$1,260,000 per year. Divided evenly among approximately 9,000 customers of all classes, this would amount to \$140 additional charge per customer per year. Since WPPI is the only purchasing agency for the applicant and other municipals, the ultimate resources providing this power will likely be fossil-fueled in most cases. Hence, denial of the project license will probably have resource conservation and environmental consequences as well as economic effects.

Electricity generated by the project has served the same customers and service area from 1940 to the present. This extended period of continuous operating history, in which the project has been actively maintained in good condition, together with the foregoing considerations establishes the need of the applicant, over the short and long terms for the electricity generated by the project to serve the applicant's customers. Based on the above, staff concludes that the project is needed by the applicant over the short and long terms to serve its customers.

##### 5. The Existing and Planned Transmission Services of the Applicant - Section 15(a)(2)(E)

The applicant's electrical system comprises four hydro projects (including the subject Kaukauna City plant project and the Combined Locks project, which will become operational in 1988) totalling 22.3 MW, two peaking and emergency units (one gas, one diesel-fired) totalling 26 MW, a 12.47 kilovolt (KV) distribution system serving the customers of the City of Kaukauna, a 34.5 KV subtransmission system overlaying the distribution system, and the Central Substation providing step-up transformation from the 34.5 KV system to the 138 KV ties to the Menasha (WI) system and the Wisconsin Electric Power Company.

The 4.8 MW Kaukauna Project connects to a 12.47 kV loop at a point less than one mile from the 20 megavoltampere (MVA), 12.47/34.5 kV Badger stepup substation, which, in turn, has a direct tie, via the 34.5 kV system, to the 50 MVA, 34.5/138 kV Central Substation. Current loadings on the Badger and Central Substations are only about 7 and 30 MVA, respectively, so that an additional 4.8 MW of power delivered through them to replace project power, in the event of loss of license, could be easily handled without any change or upgrading of existing substation equipment or transmission lines. Consequently, the applicant has no plans to make any changes in its transmission system whether or not the project is relicensed.

Staff concludes that the existing and planned transmission services of the applicant is sufficient.

6. Whether the Plans of the Applicant will be Achieved, to the Greatest Extent Possible, in a Cost Effective Manner

Section 15(a)(2)(F)

There is no plan by the applicant to increase generation at the project, either by replacement of existing units or by installing additional units. The applicant's hydroelectric plant has been in operation since 1941 and, therefore, the plant is basically paid for. The average cost of generation (based on 1986 data) for the plant is \$0.00101 (0.101 cents) per kilowatt hour. This cost includes operation, maintenance and supervision. The applicant has an insurance policy which covers the entire utility operation. With this, staff concludes that the plans of the applicant will continue to be achieved to the greatest extent possible in a cost effective manner.

7. The Applicant's Compliance History with the Terms and Conditions of the Existing License - Section 15(a)(3)

The compliance record of the City of Kaukauna with the terms and conditions of the existing license is unsatisfactory. A review of the compliance history for the Kaukauna Project shows instances of non compliance from January, 1979 through January, 1988. The licensee did not comply with the requirements of section 10(c) of the Federal Power Act dealing with maintenance of project works. The licensee was to file a plan and schedule for remedial action as requested by the Regional Engineer. This plan was not received until several non-compliance letters, including a letter from the Electric Power Enforcement Division, were sent by the Commission. The Regional Director also required the installation of monitoring instruments to detect any failure of the headrace wall or bulkhead wall. It was not until several non-compliance letters were sent over a considerable period of time that the licensee filed a schedule as to when these instruments would be installed. The licensee did not comply with the requirements of article 17 which required the



licensee to submit a plan for the implementation of the minimum flow requirements. Only after several non-compliance letters were sent did the licensee file the plan. Although the licensee has filed emergency action plans (EAP) for the project, it did not file the updates for these plans until a non-compliance letter was sent from the regional office.

The compliance record described above does not warrant the denial of the City of Kaukauna's application for new license. However, because of the licensee's compliance history, special consideration must be given in this license to ensure that the licensee complies with the terms and conditions of this new license. Therefore, article 501 has been added to the license requiring the licensee to develop, and file for Commission approval, a Hydropower Compliance Management Program that will ensure compliance with the terms and conditions of the new license and allow the Commission to monitor progress toward compliance.

Pursuant to section 31 of the FPA, as added by section 12 of ECPA, the Commission may revoke a license or assess civil money penalties of up to \$10,000 per day for violations of any term or condition of a license or provision of Part I of the FPA occurring after the October 16, 1986 enactment of ECPA. 3/ The licensee is hereby put on notice that its failure to comply with the terms and conditions of this license or any provisions of Part I of the FPA will subject it to any enforcement or penalty provisions of section 31.

#### Section 15(e) of the Federal Power Act

Section 15 of the Act specifies that any license issued under section 15 shall be for a term which the Commission determines to be in the public interest, but not less than 30 years, nor more than 50 years. This new provision is consistent with pre-ECPA Commission policy, which was to establish 30-year terms for those projects which proposed no or less than moderate new construction or capacity, 40-year terms for those projects that proposed a moderate amount of new development, and 50-year terms for those projects that proposed a substantial amount of new development. 4/ The applicant proposes no modifications to the existing project facilities or changes in operation of the project. Accordingly, this license will expire March 31, 2019.

3/ Issuance of the license does not preclude the Commission from taking action under section 31 for any violations occurring after October 16, 1986, and before issuance of this license. See "Order Issuing New License", Project No. 2484-001, issued January 24, 1989.

4/ See Montana Power Company, 56 F.P.C. 2008 (1976).

### Summary of Findings

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

Pursuant to section 15(a)(2) of the Act, as amended by ECPA the Commission considers the applicant's plans and abilities to be adequate in regard to compliance with the articles, terms, and conditions of the license and in managing, operating, and maintaining the project safely and in a manner that would provide efficient and reliable electric service.

The applicant has demonstrated its need for project power, taking into consideration system reliability and reasonable costs and availability, of alternative sources of power and their effect on the providers of the alternative power sources, its customers, and system operating and load characteristics.

The project will be safe if operated and maintained in accordance with the requirements of this license and Part 12 of the Commission's regulations. Analysis of dam safety issues is provided in the Safety and Design Assessment attached to this order.

Based upon a review of the agency and public comments filed in this proceeding, and on the staff's independent analysis, it is concluded that the Kaukauna Hydroelectric Project would not conflict with any planned or authorized development and would be best adapted to a comprehensive plan for the Fox River Basin for beneficial public uses.

#### The Director orders:

(A) This license is issued to the City of Kaukauna, Wisconsin (licensee), for a period effective April 1, 1989, and terminating March 31, 2019, for the continued operation and maintenance of the Kaukauna Hydro Project. This license is subject to the terms and conditions of the Act, which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provision of the Act.

(B) The project consists of:

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

<u>Exhibit G-</u>	<u>FERC NO. 1510-</u>	<u>Showing</u>
1	61	Project Boundary Map
2	62	Project Boundary Map

(2) Project works consisting of: (a) the Kaukauna City Dam, approximately 2,860 feet long and 25 feet high, which is designed as an overflow spillway with the exception of two Tainter gate sections, one of which contains a single 30-foot-wide gate and the second of which contains two 30-foot-wide gates; (b) a 19-acre reservoir having a normal pool elevation of 629 feet msl, (c) a concrete powerhouse located north of the dam and containing two 2,400-kw generators each rated at a 22-foot head for a total installed capacity of 4,800 kw; (d) a downstream tailrace; (e) the 2.4-kV generator leads connected by 68 feet of cable to two 2.4/12-kV, 3,000-kVA transformer banks in the applicant's substation adjacent to the powerhouse; and (f) appurtenant facilities.

The project works generally described above are more specifically shown and described by those portions of exhibits A and F recommended for approval in the attached Safety and Design Assessment.

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

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

(5) 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." The license is also subject to the following additional articles:

Article 201. The licensee shall pay the United States the following annual charge, effective April 1, 1989:

For the purpose of reimbursing the United States for the cost of administration of Part I of the Act, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time. The authorized installed capacity for that purpose is 6,400 horsepower.

Article 401. The licensee shall operate the Yaukauna Hydro Project in an instantaneous run-of-river mode for the protection of fish and wildlife resources in the Fox River. In operating the project, the licensee shall at all times minimize the fluctuations of the reservoir surface elevation by maintaining a sufficient discharge from the project so that the flow, as measured immediately downstream from the project tailrace, approximate the instantaneous sum of inflow to the project reservoir. Instantaneous run-of-river operation may be modified, if required by operating emergencies beyond control of the licensee and for short periods of time upon mutual agreement between the licensee and the Wisconsin Department of Natural Resources.

Article 402. The licensee shall cooperate with the Wisconsin Department Natural Resources (WDNR) in the implementation of the Lower Green Bay Remedial Action Plan (RAP). Such cooperation shall include allowing the WDNR or other agencies involved with the implementation of the RAP reasonable access to the project area. Further, the project's instantaneous run-of-river mode of operation, specified in article 401, may be temporarily modified, should such modifications be necessary to facilitate the removal or treatment of contaminated sediments in the Fox River.

Article 403. In the event the U.S. Fish and Wildlife Service (FWS) determines that there is a contaminant threat to bald eagles feeding in the project's tailraces, the licensee shall cooperate with the FWS and the Wisconsin Department of Natural Resources (WDNR) to develop and implement a plan to reduce or prevent bald eagle use of the open tailwater areas of the project. The licensee shall file the plan with the Commission with comments on the final plan from FWS and WDNR. The Commission reserves the right to require changes in the plan.

Article 404. The licensee, before starting any land-clearing or land-disturbing activities within the project boundaries, other than those specifically authorized in this license, shall consult with the Wisconsin State Historic Preservation Officer (SHPO). If the licensee discovers previously unidentified archeological or historic properties during the course of constructing or developing project works or other facilities at the project, the licensee shall stop all land-clearing and land-disturbing activities in the vicinity of the properties and consult with the SHPO. In either instance, the licensee shall file with the Commission a cultural resource management plan prepared by a qualified cultural resource specialist after having consulted with the SHPO.

The management plan shall include the following: (1) a description of each discovered property indicating whether it is listed on or eligible to be listed on the National Register of

Historic Places; (2) a description of the potential effect on each discovered property; (3) proposed measures for avoiding or mitigating effects; (4) documentation of the nature and extent of consultation; and (5) a schedule for mitigating effects and conducting additional studies. The Commission may require changes to the plan.

The licensee shall not begin land-clearing or land-disturbing activities, other than those specifically authorized in this license, or resume such activities in the vicinity of a property, discovered during construction, until informed by the Director of the Office of Hydropower Licensing that the requirements of this article have been fulfilled.

Article 405. (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, cancelling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The type of use and occupancy of project lands and water for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 watercraft at a time and where said facility is intended to serve single-family type dwellings; and (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the

Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the reservoir shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for the program, and to require the licensee to file a description of any modification of those standards, guidelines, or procedures.

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

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no

more than 10 watercraft at a time and are located at least one-half mile from any other private or public marina; (6) recreational development consistent with an approved exhibit R or approved report on recreational resources of an exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from the edge of the project reservoir at normal maximum surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 45 days before conveying any interest in project lands under this paragraph (d), the licensee must submit a letter to the Director, Office of Hydropower Licensing, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked exhibit G or K map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

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

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

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

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

(4) The Commission reserves the right to require the licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the

protection and enhancement of the project's scenic, recreational, and other environmental values.

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

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

Article 501. The licensee, within 4 months of the effective date of this license, shall file a Hydropower Compliance Management Program (HCMF) for Commission approval. The HCMF shall include the following elements for each license requirement:

(1) The identification of and schedule for each action necessary to complete the license requirement;

(2) A schedule for the start and completion of the consultation process with each resource agency required to be consulted for each action necessary to complete the license requirement;

(3) The identification of specific individuals in each agency that need to be consulted on each action necessary to complete the license requirement;

(4) A reporting plan to be filed with the Commission on a quarterly basis, starting 8 months after the effective date of this license, that demonstrates the progress made by the licensee under the schedules presented in elements (1) and (2) above, to complete the license requirements; and

(5) A monitoring report, to be filed on an annual basis, starting one year after the effective date of this license, documenting the compliance of the licensee with all requirements



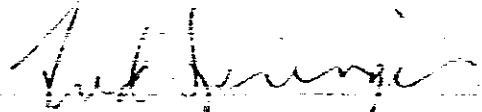
of the license that do not require specific filings with the Commission.

Four copies of all requirements under this article must be filed with the Secretary of the Commission with a copy filed with any agency consulted under element (2) above.

The Commission reserves the right to require the licensee to make modifications to the HCMP and to take other measures necessary to ensure compliance by the licensee with the terms and conditions of the license.

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

(F) This order is issued under authority delegated to the Director and is final unless appealed under Rule 1902 to the Commission by any party within 30 days from the issuance date of this order. Filing an appeal does not stay the effective date of this order or any date specified in this order. The licensee's failure to appeal this order shall constitute acceptance of the license.

  
Fred P. Springer  
Director, Office of  
Hydropower Licensing

ENVIRONMENTAL ASSESSMENT 1/

FEDERAL ENERGY REGULATORY COMMISSION  
OFFICE OF HYDROPOWER LICENSING  
DIVISION OF PROJECT REVIEW

Date: May 27, 1988

Project name: Kaukauna Hydro Project

FERC Project No. 1510 - 001

A. APPLICATION

1. Application type: Relicense (5 megawatts or less)
2. Date filed with the Commission: January 29, 1987
3. Applicant: City of Kaukauna, Wisconsin
4. Water body: Fox River basin: Fox River
5. Nearest city or town: Kaukauna (See figure 1.)
6. County: Outagamie State: Wisconsin

B. PURPOSE AND NEED FOR ACTION

1. Purpose.

The project would generate hydroelectric power, which would be utilized by the City of Kaukauna, Wisconsin (applicant) to assist meeting its customer load.

2. Need for power.

The applicant's system electrical energy needs are currently increasing at an average annual rate of about 1.5 percent, which has decreased during the last 5 years or so due to consumer conservation and the slowed industrial growth of the region.

The applicant has been operating the Kaukauna Hydroelectric Project since 1940. This project currently supplies 7.7 percent of the total average electrical energy consumption by the City of Kaukauna. Approximately another 12 percent is supplied by other hydro projects operated by the applicant. The remaining energy is supplied by its major supplier, the Wisconsin Public Power,

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

Inc. system (WPPI), which purchases bulk power at wholesale from utilities in the Mid-American Interregional Network Reliability Council area for distribution to its members.

With the current resources at its disposal, including the Kaukauna Hydroelectric Project, the applicant expects to be able to meet the growth in demand for the next 4 to 5 years with its present demand contract with the WPPI for 50 megawatts (MW). From all accounts, it appears that there is no shortage of additional available power through WPPI in the near future. Nevertheless, if the relicense application is denied and the project power becomes unavailable, replacement power would be required to be supplied through WPPI at a much higher rate (about 33 mills) and which will require the additional consumption of nonrenewable and polluting resources.

### C. PROPOSED PROJECT AND ALTERNATIVES

#### 1. Description of the proposed action. (See figure 1.)

The existing project is owned and operated by the City of Kaukauna, and consists of: (1) the Kaukauna City dam, approximately 2,860 feet long and 25 feet high, which is designed as an overflow spillway with the exception of two Taintor gate sections, one of which contains a single 30-foot-wide gate and the second of which contains two 30-foot-wide gates; (2) a 19-acre reservoir having a normal pool elevation of 629 feet above mean sea level; (3) a concrete powerhouse located north of the dam, containing two 2,400-kilowatt turbine-generator units operating under a 22-foot head; (4) a downstream tailrace; (5) the 2.4-kilovolt (kV) generator leads connected by 68 feet of cable to two 2.4/12-kV, 3,000-kilovolt ampere transformer banks in the applicant's substation adjacent to the powerhouse; and (6) appurtenant facilities. The applicant estimates that the average annual generation is 34,577 megawatthours.

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

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

b. Operation. The project would be operated in a run-of-run mode.

#### 3. Federal lands affected.

No.  Yes; \_\_\_\_\_; acreage = \_\_\_\_\_;  
 \_\_\_\_\_ (agency)  
 \_\_\_\_\_ Conditions provided by letter dated: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 \_\_\_\_\_ (attachment A).  
 \_\_\_\_\_ Conditions have not been provided.

#### 4. Alternatives to the proposed project.

- a.  No reasonable action alternatives have been found.  
 Action alternative:

##### (1) Issuance of Nonpower License

Section 15(f) of the Federal Power Act (Act), 16 U.S.C. 890a(b), authorizes the Commission to issue a license for nonpower use when the Commission "finds that in conformity with a comprehensive plan for improving or developing a waterway or waterways for beneficial public uses all or part of any licensed project should no longer be used or adapted for use for power purposes." A license that is granted by the Commission for nonpower use is temporary. When the Commission finds that a state, municipality, interstate agency, or another federal agency is authorized and willing to assume regulatory supervision of the project and does so, the Commission shall thereupon terminate the nonpower license.

##### (2) Denial of License Application

Denial of the license application would eliminate power production from a renewable natural resource and national goal of energy self-sufficiency. Loss of the project power would require the applicant to obtain equivalent power from another source.

##### (3) Federal Takeover

An alternative to issuing a new license for continued operation of the Kaukauna hydroelectric project would be takeover of the project by the federal government pursuant to Section 14(a) of the Act. Such action can be recommended to Congress by the Commission on its own motion or upon recommendation of a federal department or agency. If the Commission determined, after notice and opportunity for hearing, that the United States should exercise its right to take over the project, the Commission would submit its recommendation to Congress with such information as it considers appropriate.

If the federal government were to take over the project, the project would be operated in coordination with the other hydro projects in the region just as it has in the past. The only difference would be that the federal government would market the power rather than the applicant, and the applicant would have to develop or obtain alternative additional generation resources in the future to make up for the loss of power from the Kaukauna Hydroelectric Project.

No agency has recommended federal takeover. Federal takeover would not appear to offer any significant environmental benefits as compared to relicensing the project.

(4) Issuance of a New License to an Existing or New Licensee

In the event the United States does not exercise its right to take over, maintain, and operate the project, as provided in Section 14 of the Act, Section 15(a) authorizes the Commission to issue a new license to the existing licensee upon such terms and conditions as may be authorized or required under existing laws and regulations, or issue a new license under said terms and conditions to a new licensee.

(5) Issuance of an Annual License

Section 15(a) of the Act, 16 U.S.C. 5805(a), provides for the issuance of annual licenses to the present licensee if the license expires pending the relicensing determination. Under this alternative, an annual license would be issued to the current licensee under the same terms of the existing license, until the property is taken-over or a new license is issued.

a. Alternative of no action.

A no action alternative under the relicensing process is not a feasible alternative. Upon expiration of an existing license, the Commission must take appropriate legislative or administrative action to dispose of the pending application as previously discussed.

D. CONSULTATION AND COMPLIANCE

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

- a. U. S. Fish & Wildlife Service (FWS):  Yes.  No.
- b. State(s):  Yes.  No.
- c. National Marine Fisheries Service (NMFS):  Yes.  No.

2. Section 7 consultation (Endangered Species Act).

a. Listed species: None.  Present: The bald eagle, which is federally listed as threatened in Wisconsin, is an occasional transient through the area.

b. Consultation:  Not required.  Required; completed:   /  /  .

Remarks: FWS agrees with the applicant's study results, which indicate that the occurrence of wintering bald eagles

in the project area is infrequent to rare (letter from Donald C. Spry, Acting Field Supervisor, U.S. Fish and Wildlife Service, Green Bay, Wisconsin, August 31, 1987).

3. Section 401 certification (Clean Water Act).

Not required.

Required; applicant requested certification on 09/17/86.

Status:  Granted by the certifying agency on 11/7.

Waived by the certifying agency on 06/29/87.

Waived: section 401 certification is waived if not acted upon by the certifying agency within 1 year from the date of the certifying agency's receipt of the request (See Commission order no. 464, issued February 11, 1987).

Undetermined; 1 year has not yet elapsed since the applicant's request and the state agency has not yet acted on the request.

The 1-year period would expire on 1/1.

4. Cultural resource consultation (Historic Preservation Act).

- a. State Historic Preservation Officer (SHPO):  Yes.  No.  
 b. National Park Service (NPS):  Yes.  No.  
 c. National Register status:  None.  Eligible or listed.  
 d. Council:  Not required.  Completed: 1/1.  
 e. Further consultation:  Not required.  Required.

5. Recreational consultation (Federal Power Act).

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

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

Status:  None.  Listed. Determination completed: 1/1.

Administering agency: \_\_\_\_\_

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

Status:  None.  Designated.  
 Determination completed: 1/1.

Administering agency: \_\_\_\_\_

## E. COMMENTS

1. The following agencies and entities provided comments on the application or filed a motion to intervene in response to the public notice dated 05/11/87.

<u>Commenting agencies and other entities</u>	<u>Date of letter</u>
Wisconsin Department of Natural Resources (WDNR)	07/01/87
Department of the Interior, Office of Project Review (Interior)	07/01/87

2. The applicant responded to the comments or motion(s) to intervene by letter(s) dated / /

X the applicant did not respond to the comments or motion(s) to intervene.

## F. AFFECTED ENVIRONMENT

1. General description of the locale.

- a. Description of the lower Fox River Basin.

The lower Fox River Basin is a subbasin of the Fox-Wolf River Basin which drains an area of 6,641 square miles. Waters from the upper Fox River, Wolf River, and Lake Winnebago empty into the lower Fox River at the outlet of Lake Winnebago. Tributaries entering the lower Fox River downstream of Lake Winnebago include the East River and Dutchman's, Ashwaubenton, Apple, Plum, Mud and Neenah Creeks. The lower Fox River extends 33 miles from Lake Winnebago to its mouth at Green Bay, varies in width from 500 to 1000 feet, and has a total fall of about 168 feet for an average slope of 4.3 feet per mile.

The climate, largely affected by the influences of the Great Lakes, can be characterized as having moderate summers with temperatures rising above 85 degrees Fahrenheit (°F) and cold winters with temperatures falling to 20°F below zero. Average annual precipitation is about 30 inches, with about 60 percent of the total occurring from June through early September (Federal Energy Regulatory Commission, 1983).

Twelve dams exist along the lower Fox River. The series of 17 channel locks and canals, constructed to aid navigation on the river, are used for commercial and recreational navigation. The land immediately adjacent to the river is predominately a highly developed industrial area occupied by several cities, including Green Bay, De Pere, Appleton, Menasha, and Neenah, as well as numerous paper mills, power plants, and other industrial developments. The lower Fox River has the greatest concentration

of pulp and paper mills in the world, making up the principal industry in the basin (Wisconsin Department of Natural Resources, 1987). Agriculture is also a major industry in the basin.

- b. Existing hydropower projects in the river basin as of 04/14/88 are listed below (figure 3). There are no exempted projects in the basin.

<u>FERC Project no.</u>	<u>Project name</u>	<u>Water body</u>
4914	West de Pere	Fox River
2677	Rapide Croche	Fox River
1510	Kaukauna	Fox River
2677	Badger	Fox River
2715	Combined Locks	Fox River
2588	Little chute	Fox River
-----	Kimberly*	Fox River
-----	Appleton Lower*	Fox River
-----	Appleton Middle	Fox River
2352	Monasha	Fox River

\* = Projects not licensed by the FERC.

- c. Pending license applications in the river basin as of 04/14/88 are listed below (figure 2). There are no exempted projects in the basin.

<u>Project no.</u>	<u>Project name</u>	<u>Water body</u>
2677	Rapide Croche	Fox River
1510	Kaukauna	Fox River
2677	Badger	Fox River

- d. Target resource.

The Council on Environmental Quality (CEQ) defines cumulative impacts as impacts on the environment that result from the incremental impacts of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time (40 CFR, part 1508.7).

A target resource is an important resource that may be cumulatively affected by multiple development within the basin. The staff based its selection of target resources on the regional significance and geographic distribution of the resource within the river basin.



Target resource

1. Water quality

The target resource listed above is described below in section F(2). Impacts to the target resource is discussed in section G.7.

2. Descriptions of the resources in the project impact area  
(Source: City of Kaukauna, 1987a, application, exhibit E, unless otherwise indicated).

a. Geology and soils: Bedrock in the project area is dolomitic limestone. The bedrock is overlain by clayey glacial till, and till is subsequently overlain by clayey glacio-lacustrine deposits. The Fox River channel in the Kaukauna area has cut down into the old flat, till-lacustrine plain deposits, leaving steep shoreline banks within the city rising up to 50 feet above the level of the surrounding flat till-lacustrine plain. The project is located in a section of the city of Kaukauna that lies on part of the old floodplain of the river where the banks are relatively low and the unconsolidated deposits include fill materials as well as till and alluvial deposits (personal communication with Augie Otter, Area Soil Scientist, Appleton Area Office, Soil Conservation Service, Appleton, Wisconsin, April 6, 1988, and Gary Stanke, District Conservationist, Outagamie County District, Soil Conservation Service, Appleton, Wisconsin, April 7, 1989).

b. Streamflow:

low flow: 1,350 cfs; flow parameter: flow exceeded 95% of the time.  
high flow: 5,400 cfs; flow parameter: flow exceeded 20% of the time.  
average flow: 4,200 cfs.

Remarks: Flow parameters are based on the applicant's flow duration curve.

c. Water quality: The lower Fox River is highly industrialized. Fourteen pulp and paper mills and five major municipal wastewater treatment facilities discharge directly into the river. In addition, non-point source pollutants are contributed through runoff from urban and agricultural areas and from landfills. During the 1930's through the 1970's, high biological oxygen demands (BOD's) from pollutants resulted in low dissolved oxygen (DO) levels severely limiting the number and diversity of aquatic organisms in the river; fish kills were frequent (Wisconsin Department of Natural Resources, 1987).

In the early 1970's, the State of Wisconsin began implementing pollution abatement measures which included monitoring water quality and allocating wastewater discharges through a permit system. Wastewater treatment facilities were upgraded to reduce the BOD loadings. Subsequently, water quality of the lower Fox River has greatly improved. The WDNR reports that DO levels in the project vicinity normally exceed the state water quality standard of 5 parts per million (letter from Ronald T. Fassbender, Water Management Coordinator, Wisconsin Department of Natural Resources, Green Bay, Wisconsin, April 7, 1987).

Past land use practices, wastewater discharges, and industrial development have contributed to the accumulation of polychlorinated biphenyls (PCB's), pesticides, and other hazardous materials in the sediments in many portions of the Fox River. The reintroduction of toxic substances into the river from these sediments continues to be a major problem. The WDNR has begun to implement a remedial action plan for improving water quality in the lower Fox River. This plan includes feasibility studies for controlling contaminated sediments in the lower Fox River (Wisconsin Department of Natural Resources, 1987).

#### d. Fisheries:

Anadromous:  Absent.  Present.  
Resident:  Absent.  Present.

Game fish in the project vicinity include walleye, sauger, yellow perch, northern pike, smallmouth bass, largemouth bass, channel catfish, flathead catfish, black crappie, white bass, bluegill, pumpkinseed and rock bass. Nongame fish include common carp, gizzard shad, freshwater drum, white sucker, redhorse, quillback carpsucker, burbot, longnose gar, black nillhead, yellow bullhead, brown bullhead, trout-perch, and emerald shiner. Although a variety of game fish may be found in the area, rough fish such as common carp, gizzard shad, and freshwater drum are the most abundant species (City of Kaukauna, 1987). A fish consumption advisory has been issued for the lower Fox River since fish tissue samples from the area have been found to contain varying levels of contaminants such as PCB's and pesticides (Wisconsin Department of Natural Resources, 1988).

#### e. Vegetation:

Cover type  
Wetlands

Dominant species  
red-osier dogwood, box elder, cottonwood, red maple, willows, and cattails

Scattered woodlots

red oak, black oak, red maple, and silver maple

f. Wildlife: Wildlife is limited to species that are tolerant to urbanization, and most of the wildlife in the area is limited to the Thousand Islands Wetland located below the project dam. Area mammals include deer, raccoon, mink, muskrat, weasel, and occasionally beaver. Over 100 species of birds have been viewed at the Thousand Islands Wetland. Waterfowl known to nest in the area include Canada geese, mallards, black ducks, wood ducks, and teal; goldeyes, mallards and mergansers frequently overwinter in the area. In addition, raptors including red-tailed hawks, great horned owls, and screech owls nest in the area. The bald eagle has been infrequently sighted in the area during the winter.

g. Cultural:

X National Register (listed and eligible) properties have not been recorded.

There are properties listed on, or eligible for listing on, the National Register of Historic Places in the area of the project's potential environmental impact.

h. Visual quality: Much of the landscape near the project vicinity is characterized by industrial and commercial developments. However, the Thousand Islands Wetland, an urban wetland located downstream of the project dam, serves as a significant area for bird watching and nature photography.

i. Recreation: A total of 446 acres is available for public outdoor recreational use in the city of Kaukauna, including 12 city-owned parks with a combined area of about 366 acres. Facilities available include playgrounds, ball fields, tennis courts, a swimming pool, picnic tables, boat launch, and fishing pier, as well as areas for passive recreation. The city-owned Thousand Island Environmental Conservancy, encompassing the Thousand Island Wetlands and located immediately downstream of the project dam, serves as a river access site and an outdoor recreation area for fishing, hiking, nature study and photography, cross-country skiing, and snowshoeing. Facilities include a shooting range, hiking trail system, and an environmental awareness center. A city park, Central Park, is planned for development upstream of the project boundary. Facilities planned for Central Park include a picnic shelter/warming shed, band shell, river edge walk, and pedestrian bridge to facilitate access to the park.

Recreational boat travel on the lower Fox River is aided by a series of locks. Intra-pool boating also occurs. Recreational use of the project area by anglers and boaters is minimal. Most fishing and boating activity in the area occurs along the canals and locks.

j. Land Use: Land in the project area is used for industrial, commercial, and residential purposes. The lower Fox River is navigable due to a series of locks and is used for boat travel including recreational boating.

k. Socioeconomics: The City of Kaukauna is characterized by many industrial developments. The manufacture of paper products is a major industry. Capital goods, such as large machinery, are also produced. Nearby agricultural activities, producing dairy products, corn, soybeans, and vegetables, are another source of income for the area's economy.

### C. ENVIRONMENTAL ISSUES AND PROPOSED RESOLUTIONS

There are 7 issues addressed below.

1. Instantaneous Flow: Operation of the project would alter the flow regime of the Fox River. The applicant presently operates and proposes to continue to operate the project in a run-of-river mode, in which instantaneous inflow to the project impoundment equals instantaneous outflow.

The WDNR and Interior recommend that the project be operated in an instantaneous run-of-river mode. Interior further recommends that no flowage fluctuations, including drawdown for dam maintenance, be initiated by the applicant without receiving prior written concurrence from the WDNR.

Operation of the proposed project in an instantaneous run-of-river mode would minimize fluctuations of the reservoir surface elevations. When operating in this manner, downstream flows would vary only with the amount of inflow entering the project impoundment. Since the project would not alter stream flow in the Fox River above or below the project, fish and wildlife habitats, including wetland areas, would not be affected by project operation. Therefore, to protect fish and wildlife resources, the project should be operated in an instantaneous run-of-river mode. This mode of operation may be modified for operating emergencies beyond the control of the licensee and for short periods of time upon mutual agreement between the licensee and the WDNR.

2. Implementation of the Lower Green Bay Remedial Action Plan (RAP): Operation of the proposed project could affect the implementation of the RAP. The applicant has agreed to cooperate with the implementation of the RAP.

The WDNR recommends that the applicant cooperate with the WDNR in the future implementation of the RAP should toxic sediments be found in the project impoundments. Interior recommends that the applicant cooperate with applicable federal

and state agencies in implementing measures for the RAP that reasonably pertain to the operation of the hydroelectric facilities. Interior suggests that this cooperative effort may require the applicant to temporarily modify project operations to allow such activities as dredging and removal of contaminated sediments from the river.

The WDNR estimates that contaminated river sediments contribute to greater than 80 percent of the PCB loads entering Green Bay from the Fox River. Potentially, most of these contaminants may be found in organic sediments deposited behind dams on the lower Fox River (Wisconsin Department of Natural Resources, 1987). As part of the RAP, studies would be initiated to identify areas in the Fox River containing sediments with high concentrations of hazardous materials. Once these areas are located, appropriate treatment measures for these sites would be evaluated and undertaken (personal communication with Vickie Harris, Implementation Coordinator for the RAP, Wisconsin Department of Natural Resources, Green Bay, Wisconsin, April, 1988).

The licensee should cooperate with the WDNR and other agencies involved with the RAP during its implementation. Such cooperation should include allowing agency personnel access to the project area to study the accumulated sediments to determine the presence of toxic materials. In addition, reduced project flows or an impoundment drawdown may be needed to reduce suspension of contaminated sediments during possible future dredging of the reservoir. The applicant should modify the project's instantaneous run-of-river mode of operation, if necessary, to facilitate the removal or treatment of contaminated sediments in the Fox River.

3. Potential sea lamprey migration: Interior expressed concern that the sea lamprey, in response to improved water quality, may ascend the Fox River from Green Bay on spawning migrations. Interior suggests that if the sea lamprey passes through the Fox River dams and invades Lake Winnebago and the waters of the Butte des Moris and Poygan areas, serious damage to these fisheries is probable. Interior suggests that sometime in the future, it may be necessary for the applicant to implement preventive measures to block sea lamprey migrations up the Fox River above the project dam. Interior does not recommend any specific preventive measures at this time but suggests that minor, structural modifications to the powerhouse and spillways or temporary modifications in plant operations may be needed.

There is no indication that sea lampreys presently reach the project area. However, should they gain access to the project vicinity in the future, measures to deter their upstream migrations may be necessary to avoid adversely impacting upstream fishery resources. Terms and conditions of the license could

provide for the future modification of project facilities and operation as necessary to conserve and protect fish and wildlife resources. Modifications to project facilities and operating procedures may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the WDNR, after notice and opportunity for hearing.

**4. Potential impacts to bald eagle:** FWS stated that wintering bald eagles might be attracted to ice-free areas below the dam caused by project operation. FWS is concerned that eagles would feed on fish that are contaminated with PCB's, mercury, and lead, and that this could cause adverse health effects to eagles.

Eagles that feed on contaminated fish could suffer illness, loss of reproduction, or mortality from contaminant poisoning.

The bald eagle is a federally listed threatened species in Wisconsin. At the request of FWS, the applicant prepared a report on the potential contaminant hazard to eagles. The applicant's report, which included a literature search and interviews with experts, concluded that because bald eagles are rare visitors to this region of Wisconsin, the continued operation of the project would pose no contaminant threats to bald eagles. FWS agrees with the applicant's conclusion, but recommends that if bald eagles begin to use the project's tailrace as a feeding area, the applicant should cooperate with the WDNR and FWS to implement reasonable measures, to the extent possible, to reduce or prevent bald eagles' use of open water at the project's tailrace.

Because bald eagles presently do not use the project's tailrace for feeding, no provision for protection of this species is needed. However, if bald eagles begin to feed in the project's tailrace, the licensee should consult with the WDNR and the FWS to develop a plan that would cause the eagles to avoid the tailrace area to reduce contaminant risk to bald eagles. This would ensure the protection of any bald eagles that might use the project area.

**5. Recreational access and development:** Interior recommends that the applicant allow public access to project lands upstream and downstream (tailwater) from the dam, except in those areas at the dam that are already hazardous (letter from Bruce Blanchard, Director, Environmental Project Review, Department of the Interior, Washington, D.C., July 7, 1967). The applicant offers no objections to the Interior's recommendation.

The applicant does not propose any recreational development within the project boundary. Existing recreational development in the project vicinity adequately provides for public recreation in that area. However, infernal public access to project lands would enhance recreational opportunities. Therefore, the licensee should allow public access to project lands for

recreational purposes. An article included in any license issued would require the licensee to allow free public access, to a reasonable extent, to project lands and waters for recreational purposes within safety limitations.

6. Archeological and historic properties identified during land-clearing and land-disturbing activities, or affected by changes in the design or location of project facilities:

Eligible archeological and historic properties could be adversely affected either because their presence was unknown prior to construction being commenced or because of changes in the design and location of project facilities. Therefore, before commencing land-clearing or land disturbing activities within the project boundaries, other than those on which the SHPO has commented, and before resuming such activities in the vicinity of properties discovered during construction, the licensee should file a plan, including a schedule for necessary studies, and the SHPO's written comments concerning the plan. The licensee should also assure official notification that these requirements have been fulfilled.

7. Cumulative impacts - water quality:

Initial efforts to improve water quality within the lower Fox River Basin and lower Green Bay, as recommended in the RAP, would focus on: (1) increasing nonpoint source pollution controls to reduce sediment and phosphorous loadings; (2) protecting marsh and wetland areas from further loss and degradation through public and private purchase and maintenance; (3) controlling discharges of toxic substances through permit regulations; and (4) initiating a feasibility study for control of contaminated sediments in the Fox River (Wisconsin Department of Natural Resources, 1986).

The lower Fox River Basin contains 8 hydropower projects in addition to the proposed relicensing of the Kaukauna Project (figure 2). Of the action items listed in the RAP, the continued operation of the Kaukauna Project has the potential to contribute to cumulative adverse impacts to water quality through release of contaminants from sediments deposited behind the project dam. Since the extent of sediment contamination at each of the hydroelectric facilities on the lower Fox River has not been quantified, each project has the potential to cumulatively contribute to the release of toxic materials to the river.

By operating the proposed Kaukauna Project in an instantaneous run-of-river mode, the potential for resuspension of contaminated bottom sediments would be reduced through minimizing fluctuations of the impoundment's water surface elevations. In addition, no new construction or dredging is proposed at this time. Further, the applicant would be required to cooperate with the implementation of the RAP. The involved

agencies would be granted access to the project area to study the accumulated sediments for the presence of toxic materials. The project's potential cumulative impact of contributing toxic materials from accumulated sediments would be further reduced by modifying project operations to allow treatment of contaminated sediments.

#### ENVIRONMENTAL IMPACTS

1. Assessment of impacts expected from the applicant's proposed project (P), with the applicant's proposed mitigation and any conditions set by a federal land management agency; the proposed project with any additional mitigation recommended by the staff (PA); and any action alternative considered (A). Assessment symbols indicate the following impact levels:

0 = None; 1 = Minor; 2 = Moderate; 3 = Major;  
A = Adverse; B = Beneficial; L = Long Term; S = Short Term

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

Remarks: Minor beneficial impacts to socioeconomics would result from the continued production of power at the site.



## 2. Impacts of the no-action alternative.

The impacts of the no-action alternative cannot be assessed because a no-action alternative, under the relicensing process, is not a reasonable alternative.

## 3. Recommended alternative (including proposed, required, and recommended mitigative measures):

Proposed project.  Action alternative.  No action.

## 4. Reason(s) for selecting the preferred alternative.

The proposed project would continue to generate electrical energy from a renewable resource without significantly affecting the existing environment.

## I. UNAVOIDABLE ADVERSE IMPACTS OF THE RECOMMENDED ALTERNATIVE

The continued operation of the Kaukauna Project has the potential to contribute to cumulative adverse impacts to water quality through release of contaminants from sediments deposited behind the project dam. However, recommended license conditions would allow the agencies involved with the RAP access to the project area to determine the presence of toxic materials in the accumulated sediments. Further, license conditions could require modification to project operations, as necessary, to initiate treatment or removal of contaminated sediments.

## J. CONCLUSION

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

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

## K. LITERATURE CITED

City of Kaukauna. 1987a. Application for a new license for a major water project 5 megawatts or less (existing dam) for the Kaukauna Hydroelectric Project on the Fox River in Outagamie County, Wisconsin, FERC Project No. 1510. January 22, 1987.

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SAFETY AND DESIGN ASSESSMENT  
KAUKAUNA HYDROELECTRIC PROJECT

PLRC No. 1510-001

DAM SAFETY

The existing Kaukauna Dam is located within the City of Kaukauna, Wisconsin. The dam is approximately 2,860-foot-long, is constructed of concrete and is founded on bedrock. The entire dam is an overflow spillway with the exception of two tainter gate sections. One section contains a single 30-foot-wide tainter gate and the other section contains two 30-foot-wide tainter gates. The gravity dam crest elevation is 629.5 National Geodetic Vertical Datum. The Kaukauna hydroelectric plant is located on the north side of the dam.

The Chicago Regional Office determined, from a special inspection of the project area on September 10, 1985, that the hazard potential of the dam should be changed from low to high due to the proximity of industrial buildings. Because of this change in hazard potential, the licensee was informed on November 14, 1985, that a Part 12 consultant's safety inspection report must be submitted by December 1, 1987. The findings of the Part 12 consultant's investigation was filed on November 19, 1987, and concluded that no deficiencies exist that would endanger the public safety. Therefore, the project would be safe and adequate for continued operation upon compliance with the terms and conditions of a new license.

PROJECT DESIGN

The constructed Kaukauna Hydroelectric Project was licensed on March 21, 1939. The project works consists of the 2,860-foot-long by 25-foot-high concrete Kaukauna City dam; two tainter gate sections; a 940-foot-long by 15 to 20-foot-high headrace retaining wall located along the shore; and a powerhouse with a substructure 92 feet long by 86 feet wide housing two 2,400 kilowatts (KW) units having a total installed capacity of 4,800 KW. When sufficient river flow is available, flow equal to the 3,000 cubic feet per second (cfs) maximum capacity of the turbines is directed through the powerhouse, which is located on the north bank. The remainder flows of the river would pass over the dam, which is designed as a overflow spillway. No change to the existing project is proposed.

WATER RESOURCE PLANNING

The proposed project would have a hydraulic capacity of 3,000 cfs. The river flows would exceed the hydraulic capacity of the project less than 57 percent of the time. Since the Kaukauna City plant is on a river which has its flows controlled by the U.S. Army

Corps of Engineers, the licensee can not operate its facilities to efficiently utilized additional river flow. However, within the constraints of river regulation, the licensee operates the project to optimize generation.

The project generates 34,577,000 kilowatt hours annually (kWh), based on the actual average annual generation of the last eleven years.

The staff identified no resource plans that address various aspects of waterway management in relation to the proposed project, as part of a broad public interest examination under section 10(a)(1) of the Federal Power Act (Act). In addition, the staff identified no comprehensive plans, as defined under section 10(a)(2) of the Act, which conforms to the guidelines established by the Commission for such a plan. 1/

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

#### EXHIBITS

The following portions of exhibit A and the exhibit F drawings, filed on January 29, 1987, conform to the Commission's rules and regulations and should be included in the license.

Exhibit A. Pages A-1 to A-4

<u>Exhibit F Drawing</u>	<u>FERC No. 1510-</u>	<u>Title</u>
F-1 (Dwg. 1)	56	General layout
F-2 (Dwg. 2)	57	Plan of powerhouse
F-3 (Dwg. 3)	58	Powerhouse elevation
F-4 (Dwg. 4)	59	Powerhouse section
F-5 (Dwg. 5)	60	Sections and elevations of dam

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