79 FERC ¶ 62,097

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Wisconsin Electric Power Company) Project No. 2394-006

ORDER ISSUING NEW LICENSE
(Major Project)
(Issued May 7, 1997)

I. INTRODUCTION

Pursuant to Part I of the Federal Power Act (FPA), 16 U.S.C. 791 § et seq., applications for new licenses were filed with the Commission for continued operation and maintenance of four existing hydroelectric projects on the Menominee River in Michigan and Wisconsin. 1/ On October 11, 1996, Commission staff issued a final Environmental Impact Statement (EIS) that evaluated environmental resource impacts resulting from the continued operation of the four projects, and recommended specific measures to enhance these resources.

Concurrently with this order, I am issuing companion license orders for the other three Menominee River projects. I find that the projects with the environmental enhancement measures that I am requiring will be best adapted to the comprehensive development of the Menominee River.

II. BACKGROUND

Wisconsin Electric Power Company (Wisconsin Electric or licensee) filed for a new license, pursuant to Section 15 of the FPA, 16 U.S.C. § 807, for the continued operation of the 7.8-megawatt (MW) Chalk Hill Project, located on the Menominee River, 2/ in Marinette County, Wisconsin and Menominee County, Michigan. The project, as proposed by Wisconsin Electric, would

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1/ The projects and license applicants are as follows:

Little Quinnesec Falls Project, No. 2536, Niagara of Wisconsin Paper Corporation; Chalk Hill Project, No. 2394 and White Rapids Project, No. 2357, Wisconsin Electric Power Company; and Grand Rapids Project, No. 2433, Wisconsin Public Service Corporation.

2/ The pertinent portion of the Menominee River is a navigable waterway of the United States. Section 23 (b) of the FPA, 16 U.S.C. § 817 (b), therefore, requires that the project be licensed. 3 FPC page 449 (1943).

produce about 36.6 gigawatt-hours (GWh) of electricity annually. Wisconsin Electric proposes no new capacity and no new construction at the Chalk Hill Project. The original license for this project expired on June 30, 1993. 3/ Since then, Wisconsin Electric has operated the project under annual license. 4/

Notice of the application was published on August 22, 1991. One motion to intervene was filed in response to the notice, and was granted. 5/

The entities listed below filed untimely motions to intervene on the following dates: Michigan Department of Natural Resources (Michigan DNR), October 28, 1991; the U.S. Department of the Interior (Interior), April 10, 1992; Michigan Hydro Relicensing Coalition and Izaak Walton League, which filed jointly on October 27, 1994; and River Alliance of Wisconsin, February 13, 1996. The late-filed motions are unopposed. Michigan DNR, Interior, Michigan Hydro Relicensing Coalition, the Izaak Walton League, and River Alliance of Wisconsin have an interest in the proceeding that is not represented by any other party, and their late interventions will not delay or disrupt the proceeding.

No agency, organization, or individual filed a motion to intervene in opposition to the project. All comments received have been fully considered in determining whether or under what conditions to issue this license.

The Commission staff issued a draft EIS for this project on November 27, 1995. Comments on the draft EIS were addressed in the final EIS. Staff also prepared a Safety and Design Assessment, which is available in the Commission's public file for this project.

III. PROJECT DESCRIPTION

The existing Chalk Hill Project consists of: a 42-foot-high, 1,806-foot-long, concrete gravity earth fill dam; a

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3/ The Commission issued the original license for the Chalk Hill project on November 15, 1965. 58 FPC 2771.

4/ See Section 15 (a)(1) of the FPA, 16 U.S.C. § 808 (a)(1).

5/ The Wisconsin Department of Natural Resources (Wisconsin DNR) filed a timely motion to intervene on September 10, 1991.

reservoir with a surface area of 834 acres; and a reinforced concrete and brick powerhouse containing three generating units with a total capacity of 7.8 MW. The project boundary encompasses approximately 3,380 acres of land, located in Wisconsin and Michigan.

The licensee has historically operated the project in a peaking mode, producing about 36.3 GWh of electricity annually. Wisconsin Electric proposes to convert the project from a peaking to a run-of-river operation, which would produce about 36.6 GWh annually.

A more detailed project description is presented in ordering paragraph B(2).

IV. LICENSEE'S PLANS AND CAPABILITIES

In accordance with Sections 10 and 15 of the FPA, staff evaluated Wisconsin Electric's record as a licensee for these areas: (1) conservation efforts; (2) 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 modification; and (8) compliance record. I accept the staff's findings in each of these areas.

Here are the findings.

1. Conservation Efforts

Wisconsin Electric promotes energy conservation among its customers through the implementation of conservation rebates and loans as well as subsidy and no-cost programs for its residential, farm, commercial, and industrial customers. The Public Service Commission of the State of Wisconsin concluded that Wisconsin Electric's energy conservation programs are in compliance with applicable regulatory requirements.

2. Ability to Comply with the New License

Wisconsin Electric's license application demonstrates its ability to comply with the articles, terms, and conditions of any license issued, and with other applicable provisions of the FPA.

Wisconsin Electric has, or can acquire, the resources and expertise necessary to carry out and comply with all articles, terms, and conditions of a new license.

3. Safe Management, Operation, and Maintenance of the Project

Wisconsin Electric owns and operates the Chalk Hill Project. The project dam and appurtenant facilities are subject to Part 12 of the Commission's Regulations concerning project safety. Staff has reviewed Wisconsin Electric's management, operation, and maintenance of the project pursuant to the requirements of Part 12 and the associated Engineering Guidelines, including all applicable safety requirements such as warning signs and boat barriers, Emergency Action Plan, and Independent Consultant's Safety Inspection Report. Staff concludes that the project is being safely managed, operated, and maintained.

4. Ability to Provide Efficient and Reliable Electric Service

Wisconsin Electric ensures the efficiency and reliability of its electrical service by implementing an equipment maintenance program. The licensee determined that it is not economically feasible to increase the project's generating capacity at this time. The project currently uses all river flows that are available 80 percent of the time.

After reviewing the record of the licensee and its ability to provide efficient and reliable electric service, staff concludes that Wisconsin Electric has operated the project in an efficient manner and will continue to provide efficient and reliable electric service in the future.

5. Need for Power

To assess the need for power, staff reviewed Wisconsin Electric's use of the project power to date and in the future, together with that of the operating region in which the project is located.

The Chalk Hill Project is located in the Mid-America Interconnected Network (MAIN) region of the North American Electric Reliability Council (NERC). NERC annually forecasts electrical supply and demand in the nation and the region for a 10-year period. NERC's most recent report 6/ on annual supply and demand projections shows that, for the period 1995-2004,

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6/ Electric Supply and Demand 1995-2004, Summary of Electric Utility Supply and Demand Projections (June 1995).

loads in the MAIN area will keep pace with planned capacity additions, resulting in unchanged reserve margins. These margins, though relatively stable, will remain below 20 percent throughout the forecast period.

The Chalk Hill Project has historically generated an annual average of 36.3 GWh of low-cost power for Wisconsin Electric. In addition, project power displaces nonrenewable fossil-fired generation and contributes to diversification of the generation mix in the MAIN area.

The present and future use of the project's power, its low cost, and its displacement of nonrenewable fossil-fired generation and contribution to a diversified generation mix support a finding that the power from the Chalk Hill Project will help meet a need for power in the MAIN area in both the short- and long-terms. 7/

6. Impact of Relicensing on the Licensee's Transmission System

The project has no impact on the operations and planning of Wisconsin Electric's transmission system. Its transmission system is designed to function with the project out-of-service, such that no circuit loading impacts occur from plant shut-down.

7. Whether the Licensee's Plans will be Achieved in a Cost-Efficient Manner

Wisconsin Electric plans to operate the project in a run-of-river mode and to implement various other environmental modifications. These plans can be achieved in a cost-effective manner. The project, as presently constructed and as the licensee proposes to operate it, fully develops and uses the economical hydropower potential of the site.

8. Compliance Record

Wisconsin Electric's overall record of making timely filings and compliance with its license has been satisfactory. Wisconsin Electric has generally complied with the terms and conditions of its original license. As of April 5, 1995, Wisconsin Electric had paid all annual charges for which it had been billed.

7/ See final EIS at page 1-3.

V. WATER QUALITY CERTIFICATION

Section 401(a)(1) of the Clean Water Act (CWA), 8/ requires an applicant for a federal license or permit for any activity which may result in a discharge into navigable waters of the United States to provide to the licensing or permitting agency a certification from the state in which the discharge originates that such discharge will comply with certain sections of the CWA. The Commission may not issue a license for a hydroelectric project unless the state certifying agency has either 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. 9/ Section 401(d) of the CWA 10/ provides that state certifications shall set forth conditions necessary to ensure that licensees comply with specific portions of the CWA and with appropriate requirements of state law.

The Chalk Hill Project is located within the states of Michigan and Wisconsin. Because the powerhouse discharges into the Menominee River on the Michigan side of the boundary, the State of Michigan has Section 401 authority in this case.

Wisconsin Electric, on December 21, 1992, requested water quality certification for the Chalk Hill Project from Michigan DNR. On July 22, 1993, Michigan Water Resources Commission (Michigan WRC) issued the Section 401 water quality certificate. Although issued by Michigan WRC, the certification delegates follow-up activities to Michigan DNR. A copy of Michigan WRC's water quality certification is attached to this license as Appendix A.

8/ 33 U.S.C § 1341(a)(1).

9/ Section 401(a)(1) requires an applicant for a federal license or permit to conduct any activity which may result in any discharge into navigable waters to obtain from the state in which the discharge originates certification that any such discharges will comply with applicable water quality standards.

10/ 33 U.S.C § 1341(d).

Michigan WRC's certification includes nine conditions labeled 1.1 through 4.0. My findings regarding these conditions follow. 11/

Condition 1.1 requires Wisconsin Electric, within two years of license issuance, to install, operate, and maintain U.S. Geological Survey (USGS) flow gages upstream of the Chalk Hill Project reservoir and downstream of the White Rapids Project dam. Article 402 of this license requires the upstream gage as part of the project's gaging and operational compliance plan. The downstream gage is required by Article 402 of the companion license order for the White Rapids Project (No. 2357).

The licensee's proposed installation schedule, to be included in the plan, will be approved by the Commission. Michigan WRC's condition requiring installation within two years is beyond the scope of Section 401 and is not included in the license, because this requirement would give the State the ability to control the timing of activities under a federal license.

Condition 1.2 requires Wisconsin Electric, upon commencement of flow gage operation, to operate the project on a run-of-river basis. Michigan WRC's condition defines run-of-river such that flow through the Chalk Hill Project as measured downstream of the White Rapids Project (No. 2357) "equals" the flow measured at Z Bridge, after appropriate corrections to account for time of passage and water accretion. The condition further requires Wisconsin Electric to contract with the USGS to determine, following a 3-year evaluation period, the accuracy values of the gages along with appropriate values for time of passage and water accretion. Michigan DNR would reserve its authority to define the term "equal" for project operation compliance purposes, upon review and consultation with Wisconsin Electric and USGS.

Article 401 of the license requires the licensee to operate the project on a run-of-river basis; and to determine the accuracy of the gages in consultation with USGS and Michigan DNR. The article, however, requires Wisconsin Electric to submit its findings, along with the comments of USGS and Michigan DNR, to the Commission for defining the term "equal" for project operation compliance purposes. The proposed reservation of authority to Michigan DNR to define operation compliance terms is beyond the scope of Section 401 and will not be included in the license.

11/ See Great Northern Paper, Inc., 77 FERC ¶ 61,068 at pp. 61,271-72 (1996).

Condition 1.3 states that, during the initial 3-year period after commencement of flow gage operation, Wisconsin Electric may use remotely controlled manual water release techniques to operate the Chalk Hill Project. The condition further states that if Michigan DNR, after reviewing flow gage data, concludes that manual/remote operation techniques can achieve the run-of-river criteria, Wisconsin Electric may continue to use manual/remote operation techniques. The condition also stipulates that, if Michigan DNR determines that such techniques cannot achieve run-of-river criteria, Wisconsin Electric shall submit to Michigan DNR for its review and approval, a plan for evaluating the feasibility of the automatic operation of the project.

Article 402 requires Wisconsin Electric to submit a report to the Commission documenting compliance with run-of-river operation and evaluating the feasibility of automatic operation of the project. The report must include the comments of Michigan DNR. The proposed reservation of authority to Michigan DNR to approve project operation is beyond the scope of Section 401 and will not be included in the license. 12/

Condition 2.1 states that Wisconsin Electric may not release a heat load that would warm the river immediately downstream from the White Rapids Project (No. 2357) to temperatures higher than specified monthly average temperatures consistent with Michigan's water quality standards. This condition does not apply when the natural temperature of the Menominee River measured upstream of the Chalk Hill Project exceeds the indicated above monthly average temperature values. This condition is not applicable to the Chalk Hill Project and, therefore, is not included in this license.

Condition 2.2 states that Wisconsin Electric may not release a heat load which would warm the Menominee River immediately downstream from the White Rapids Project (No. 2357) more than 5°F above the existing natural water temperature measured at the Z Bridge gaging station. This condition is not applicable to the Chalk Hill Project and, therefore, is not included in this license.

Condition 2.3 states that Wisconsin Electric may not cause the dissolved oxygen (DO) concentration, measured in the Menominee River at the gaging station immediately downstream from the White Rapids Project (No. 2357), to be less than 5 mg/l at

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12/ See Great Northern Paper, supra at p.61,272.

any time. This condition is not applicable to the Chalk Hill Project and, therefore, is not included in this license.

Condition 2.4 states that, in the event that any of the water quality standards listed in conditions 2.1, 2.2, and 2.3 of the certification are not met, Wisconsin Electric shall notify Michigan DNR and take steps necessary to ensure compliance with these standards is achieved. This condition is not applicable to the Chalk Hill Project and, therefore, is not included in this license.

Condition 3.1 requires the licensee to monitor temperature and DO levels of the Menominee River at the gaging stations located immediately downstream of the White Rapids Project (No. 2357) and at Z Bridge for a period of five years. Monitoring would occur on an hourly basis during the months of May through September. In addition, the licensee is required to measure temperature and DO in the Chalk Hill Project reservoir employing surface-to-bottom profiles one time each month during December through March. If the winter reservoir DO level declines below 5 mg/l in the reservoir, the licensee would need to develop a tailrace DO monitoring program for review and approval by the state.

In addition, this condition requires that the licensee use temperature and DO monitoring equipment approved by the State. The licensee is required to compile temperature and DO data into written reports and submit them to Michigan DNR within 60 days after completing the September monitoring effort.

This condition allows the licensee to request a change to the frequency of monitoring with Michigan DNR after the initial 5-year monitoring period. If approved by Michigan DNR, the licensee may implement a reduced monitoring frequency or alternative.

I included the condition for temperature and DO monitoring of the project reservoir and downstream location in Article 405 along with the State's data submittal and reporting requirements, with the modification that the licensee develop, in consultation with the State, a water quality monitoring plan to be filed with the Commission for approval. Michigan DNR's approval of the licensee's proposed monitoring equipment is beyond the scope of Section 401 and will not be included in the license. I am not including in the license a specific provision to modify the monitoring frequency after the initial 5-year monitoring period because the licensee retains the right to request a license amendment at any time. This right does not require an explicit provision be contained in this license order.

Condition 3.2 requires the licensee to prepare and submit a water/sediment/fish monitoring plan within 6 months after license issuance. The plan must be capable of satisfying the monitoring and data reporting requirements as approved by Michigan DNR.

I am including the requirement for the licensee to prepare a sediment/water/fish monitoring plan in Article 406 with the modification that the licensee file the plan with the Commission, for approval. Conditions to reserve monitoring plan approval authority to Michigan DNR is beyond the scope of Section 401 and will not be included in the license.

Condition 4.0 states that Michigan DNR "reserves the right to seek civil or criminal penalties and liability under applicable law for natural resources damages which may occur, if [Wisconsin Electric] fails to comply with any term or condition in" the certification. This condition avoids the impermissible conflict with the FPA (particularly the civil penalty provisions of Section 31) that we addressed in Consumers Power Co., 13/ where Michigan DNR sought to assess penalties for a licensee's non-compliance with license terms. Here, by contrast, Michigan DNR focuses on the assessment of penalties for any natural resource damages that may occur as a result of such non-compliance. The Commission can neither require nor prevent a licensee's liability, under state law, for damages the licensee's project may cause to natural resources. See South Carolina Public Service Authority v. FERC, 850 F.2d 788 (D.C. Cir. 1988). 14/ Since this matter is beyond the Commission's jurisdiction, we conclude that it is inappropriate to place Condition 4.0 in the license.

VI. COASTAL ZONE MANAGEMENT

Under Section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA), the Commission cannot issue a license for a hydroelectric power 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 CZMA Program (which has been approved by the Secretary of Commerce), or the agency's concurrence is conclusively presumed by its

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13/ 68 FERC ¶ 61,077 at pp. 61,378-80 (1994).

14/ As to this issue, we stated in Consumers Power: "[T]he Commission expresses no opinion as to whether a licensee's agreement to pay a state agency stipulated sums for various categories of injury to the environment may be valid and enforceable under state law."

failure to act within 180 days of its receipt of the applicant's certification.

Wisconsin Electric, on September 1, 1995, requested CZMA certification from the Wisconsin Department of Administration (WDA), which administers Wisconsin's CZMA program. On September 25, 1995, WDA informed Wisconsin Electric that information would be needed before the review of the project could be completed. In its letter dated October 16, 1995, WDA informed Wisconsin Electric that it had received sufficient information to complete its federal consistency review and that the 180-day review period began on October 9, 1995. The review period ended, therefore, on April 7, 1996.

On April 4, 1996, WDA issued a letter concurring in the CZMA consistency certification for the project in recognition of Wisconsin Electric's voluntary measures to minimize potential impacts. These measures included:

- Developing and effectively maintaining public recreation facilities and public access sites;
- Modifying the project's existing operation to an exclusively run-of-river operation that would discharge flows corresponding to inflows;
- Implementing a study program in coordination with interested agencies to determine the feasibility of installing an upstream fish passage migration facility, and if the facility is proven feasible, working in consultation with the agencies to install the facilities;
- Implementing a study to evaluate fish protection options;
- Participating with interested agencies in an effort to restore sturgeon populations to the river upstream of the Chalk Hill Project; and
- Implementing an effective land management plan, including provisions for protecting bald eagle habitat, and conducting a freshwater mussel survey upstream of the project.

WDA filed an October 28, 1996 letter with the Commission expressing concerns regarding several of Commission staff's recommendations in the final EIS. In particular, WDA requests that the Chalk Hill Project license contain articles requiring

Wisconsin Electric to implement its proposed fish passage and protection studies.

Wisconsin Electric also requested CZMA certification from the State of Michigan on September 1, 1995. Proof of receipt was dated September 6, 1995, which began the 180-day review period. Therefore, the review period ended on March 4, 1996. Michigan Department of Environmental Quality (MDEQ) responded to Wisconsin Electric's CZMA certification request on March 14, 1996. There is no record of correspondence or communication from MDEQ to Wisconsin Electric between September 1, 1995, and March 14, 1996.

MDEQ submitted its response to Wisconsin Electric's CZMA certification request after the end of the 180-day response period; consequently, CZMA consistency concurrence is conclusively presumed. Nevertheless, I am considering the conditions that MDEQ included in its federal consistency findings under Section 10(a) of the FPA, as discussed below.

In its letter of March 14, 1996, MDEQ concluded that the operation of the project would directly affect coastal fishery resources and habitat, particularly spawning and nursery habitat of lake sturgeon. The agency, therefore, determined relicensing to be reviewable for federal consistency purposes and submitted the following conditions under which the Commission's relicensing would be consistent with the Michigan Coastal Management Program:

(1) the project is operated in run-of-river mode;

(2) the license requires Wisconsin Electric to make provisions for the upstream and downstream passage of fish; and,

(3) the facility is licensed in compliance with the terms and conditions of the state's 401 water quality certificate.

This order requires the licensee to operate the project in a run-of-river mode, includes provisions for the upstream and downstream passage of fish, and includes the lawful terms and conditions specified in the Section 401 water quality certificate issued by Michigan WRC, except as noted above. I conclude that issuing this license with the assigned conditions is consistent with the policies and goals of the Wisconsin and Michigan coastal zone management programs.

VII. SECTION 18 OF THE FPA - FISHWAY PRESCRIPTION

Section 18 of the FPA authorizes the Secretary of the Interior or the Secretary of Commerce to prescribe fishways at Commission-licensed projects. 15/

Interior, by letter dated September 1, 1993, requested the Commission to reserve the Secretary of the Interior's authority to prescribe the construction, operation, and maintenance of fishways for the Chalk Hill Project pursuant to Section 18 of the FPA.

The Commission recognizes that future fish passage needs cannot always be determined at the time of project licensing. The Commission's practice has been to include a license article that reserves the Secretary of the Interior's authority to prescribe facilities for fish passage. 16/ Therefore, consistent with Commission practice, Article 407 of this license reserves the Commission's authority to require the licensee to construct, operate, and maintain such fishways as may be prescribed by the Secretary of the Interior pursuant to Section 18 of the FPA.

VIII. RECOMMENDATIONS OF STATE AND FEDERAL FISH AND WILDLIFE AGENCIES

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

15/ Section 18 of the FPA states: "The Commission shall require the construction, maintenance, and operation by a licensee at its own expense of... such fishways as may be prescribed by the Secretary of Commerce or the Secretary of the Interior as appropriate."

16/ The Commission has specifically sanctioned the reservation of fishway prescription authority at relicensing. See Wisconsin Public Service Corporation, 62 FERC ¶ 61,095 (1993); affirmed, Wisconsin Public Service Corporation v. FERC, 32 F.3d 1165 (1994).

Numerous recommendations were filed by the Wisconsin DNR, Michigan DNR, and Interior pursuant to Section 10(j). 17/ The new license issued herein contains conditions consistent with the agencies' recommendations that Wisconsin Electric implement the following measures.

(1) Operate the project in a run-of-river mode, with run-of-river determined by comparing flow of the river downstream of the White Rapids Project (No. 2357) with flow as measured upstream of the Chalk Hill Project, corrected for time travel and accretion (Articles 401, 402, and 403).

(2) Maintain a year-round target reservoir elevation of 743.7 feet (Article 401).

(3) Develop and implement a gaging and compliance plan (Articles 402 and 403).

(4) Maintain and telemeter the existing USGS gage upstream of the Chalk Hill Project (Article 403).

(5) Install and maintain a staff gage in the reservoir clearly visible to the public (Article 402).

(6) Maintain automatic water level sensors to continuously monitor and record headwater and tailwater elevations (Article 402).

(7) Coordinate with Wisconsin DNR and Michigan DNR on all emergency and planned maintenance drawdowns (Article 404).

(8) Implement a bald eagle protection plan to include surveys of project lands to inventory nest sites as needed, and preserve large canopy trees as nesting sites (Article 412).

(9) Develop and implement a wildlife management plan (Article 412).

17/ Several recommendations were found to be outside the scope of Section 10(j) because they involve studies that could have been performed prior to licensing, or do not otherwise qualify as specific measures to protect, mitigate damages to, or enhance fish and wildlife. These were considered under Section 10(a)(1), pursuant to the Commission's public interest considerations.

(10) Consult routinely with agencies for input regarding decisions affecting wildlife management on project lands, and cooperate in conducting wildlife surveys on project lands (Article 412).

(11) Develop and implement a plan to protect and enhance habitat for any federal- or state-designated threatened, endangered, or sensitive species on project lands (Article 412).

(12) Implement Wisconsin's osprey management guidelines when osprey are found and contact Wisconsin DNR annually for new nesting site locations (Article 412).

(13) Implement a program to monitor and control the spread of purple loosestrife and Eurasian milfoil in the flowage (Article 410).

(14) Implement a land management plan (Article 413).

(15) Maintain a 200-foot no-timber-harvest buffer zone on project-owned lands (Article 413).

Pursuant to Section 10(j), Commission staff made a preliminary determination in the draft EIS that several resource agency recommendations that were considered to be within the scope of Section 10(j) were inconsistent with the purpose and requirements of Part I of the FPA. If the Commission finds that any such recommendation may be inconsistent with the purposes and requirements of Part I of the FPA or other applicable law, Section 10(j)(2) requires the Commission and the agencies to attempt to resolve the inconsistency, giving due weight to the recommendations, expertise, and statutory responsibilities of such agencies. If the Commission then does not adopt a recommendation, it must explain how the recommendation is inconsistent with applicable law and how the conditions selected by the Commission adequately and equitably protect, mitigate damages to, and enhance fish and wildlife.

A meeting was held on April 22 and 23, 1996 to attempt to resolve any Section 10(j) inconsistencies. At the meeting, Commission staff and the agencies resolved many, but not all, of the inconsistencies. A number of other issues not identified in the draft EIS as Section 10(j) inconsistencies, but of concern to the fish and wildlife agencies, also were discussed at the meeting.

On October 11, 1996, the Commission issued the final EIS for the Menominee River projects. Subsequent to issuance of the

final EIS, the fish and wildlife agencies filed letters with the Commission dated November 12, 1996 (Michigan DNR), November 8, 1996 (Wisconsin DNR), and November 15, 1996 (Interior). These letters raised a number of concerns regarding staff's recommendations in the final EIS. The agencies also requested another 10(j) meeting and subsequent issuance of a revised or supplemental final EIS.

In the following paragraphs, I address each of the substantive issues discussed at the Section 10(j) meeting or raised in the agencies' final EIS comment letters.

1. Maintain Daily Record Operation on a 30-minute Basis

The agencies recommended that Wisconsin Electric maintain a daily record of project operation, including turbine operation, headwater and tailwater elevations, and flow releases through the powerhouse and spillway, on a 30-minute basis, and provide the data to the agencies upon request. Wisconsin Electric's entire system operation data log currently records data on a 60-minute basis. Consequently, the licensee proposed to continue to record data within that interval.

Staff determined in the draft EIS that Wisconsin Electric's 60-minute interval for recording project operational data would provide sufficient information to monitor project operation, and, therefore, concluded that additional data would not improve project operation.

At the Section 10(j) meeting, the resource agencies concurred with staff's conclusion that a 60-minute monitoring interval would provide adequate data to protect fish and wildlife resources.

Therefore, Article 402 requires that the licensee, as part of the project's operational compliance plan, record headwater, tailwater, and generation data on a 60-minute interval and provide this information to the agencies in a timely manner, when requested.

2. Pass River Inflow Instantaneously or Within a Few Minutes in Case of Plant Blackout

The agencies recommended that, in the case of plant blackout, Wisconsin Electric reestablish flow instantaneously or within a few minutes to prevent dewatering of aquatic resources downstream of the project.

The Chalk Hill Project powerhouse is equipped with a remote-controlled spillway gate that has a source of power from an emergency generator; therefore, during ice-free periods flows can be reestablished using remote control. However, during periods of ice cover, Wisconsin Electric cannot open the spillway gate using remote control; instead, it must dispatch an operator to reestablish flow. The operator must first inspect the gates to determine their condition, whether there are any obvious conditions that would prevent the gates from operating, and initiate the opening of the gates in a manner that would not jeopardize the safety of the equipment, operator, or public. This cannot occur within the time frame recommended by the agencies.

The draft EIS supported the agency recommendation for ice-free periods, stating that project outflows should be reestablished within 10 minutes or as soon as practicable, within the parameters of the project's safe operation. However, staff concluded that, during periods of ice cover, there should be no specific time requirements for reestablishing flows; instead, flows should be reinitiated as soon as practicable, at the discretion of the plant operators in a manner that does not pose a potential hazard to the public, operator safety, project equipment, or property.

At the Section 10(j) meeting, the agencies concluded that staff's recommendation for reestablishing flow during ice-free periods was acceptable. Staff and the agencies also concluded that specific procedures for reestablishing flow during periods of ice conditions should be developed as part of the operational compliance plan for the project, and that the plan should identify necessary procedures to be followed by the plant operator to reinitiate downstream flows as soon as practicable, while ensuring that gate operations would not pose the hazards noted above.

Therefore, Article 402 requires that procedures for reestablishing flows in case of project shutdown be included as an element of the project's operational compliance plan. Further, the article requires these procedures to be developed in consultation with the resource agencies.

3. Water Quality Standards and Monitoring

In addition to the Section 401 water quality conditions issued by Michigan WRC (see Section V of this order), recommendations for water quality standards and monitoring pursuant to Section 10(j) were submitted by Michigan DNR, Wisconsin DNR, and Interior.

Michigan DNR recommended that the licensee maintain state water quality standards for dissolved oxygen (DO) and temperature whenever river flow is greater than or equal to the 95 percent exceedance flow. Wisconsin DNR recommended that the licensee maintain state water quality standards for DO, pH, and temperature, except when natural conditions prohibit attainment of the standards.

Michigan DNR also recommends continuous monitoring of DO and temperature upstream and downstream of the project with sampling location and frequency to be approved by the state. The 401 certification requires hourly monitoring during May through September for these parameters upstream of the Chalk Hill Project and downstream of the White Rapids Project (No. 2357). The certification also requires monthly reservoir profiles for December through March, and tailwater monitoring during these months if DO falls below 5 mg/l.

The monitoring program would be conducted each year for five years, after which time the frequency of monitoring could be modified. In addition, Michigan DNR recommends that the licensee conduct a water/sediment/fish monitoring program for the parameters listed in the Section 401 water quality certification.

Wisconsin DNR recommends hourly monitoring for DO, temperature, and pH at a representative site in the project tailrace and weekly sampling in the reservoir during July through September. This sampling would be conducted at five year intervals over the term of the license.

Interior did not submit recommendations beyond those contained in the state agencies' Section 10(j) recommendations.

In the draft EIS staff recommended that the Commission adopt the agencies' conditions for water quality standards and monitoring. The issue, therefore, was not discussed at length at the 10(j) meeting, other than staff reaffirming that lawful terms and conditions in Michigan WRC's 401 certification would be included in the project's license.

In the final EIS, staff concluded that the combined water quality monitoring desired by the agencies is more extensive than needed to determine if the project complies with state water quality standards. Given that Michigan DNR's monitoring is included in this license pursuant to the state's 401 certification, the remaining issue is whether some or all of the monitoring recommended by Wisconsin DNR is needed. Wisconsin DNR's recommended monitoring is different than Michigan's

certification in terms of parameters, location, frequency, and season.

I concur with staff that the combined monitoring recommended by the agencies appears to be more extensive than necessary at a project such as this where historical sampling has shown that water quality complies with standards. However, I am requiring in Articles 405 and 406 that the licensee further consult with the agencies to determine if any monitoring beyond the Section 401 conditions is needed. Because there are different, and sometimes conflicting, details associated with the Michigan DNR and Wisconsin DNR recommendations, it is necessary that further consultation take place to develop an overall monitoring plan. 18/

Although the Commission will retain its authority to approve the plan, it is appropriate that any subsequent monitoring recommendations by Wisconsin DNR and Michigan DNR be given due consideration. To be consistent with the Commission's balancing responsibilities under the FPA, however, any additional monitoring requested by the agencies should be within the overall scope and cost of the original Section 10(j) terms and conditions. These terms and conditions were deemed consistent with the FPA in the draft EIS, and, given the lack of further discussion at the Section 10(j) meeting, it is appropriate that they be the basis for Commission review of the plans required in Articles 405 and 406.

It is apparent that a reasonable, cost-effective monitoring plan can be developed by the licensee and agencies that will satisfy the need to document compliance with water quality standards. By focusing on critical locations, parameters, and seasons, a plan can be readily developed that falls well within the overall scope and cost of the agencies' original recommendations.

Article 405 requires the licensee to prepare a water quality monitoring plan addressing the monitoring of DO and temperature upstream of the project and in the project reservoir. Downstream monitoring is included in Article 405 of the White Rapids Project

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18/ Providing for a post-licensing water quality monitoring plan that includes additional agency consultation regarding the details of the plan is consistent with recent Commission policy established for similar projects in Michigan [see Mead Corporation, Publishing Paper Division, 72 FERC ¶ 61,027 (1995)].

(No. 2357) license. The minimum requirements for this plan are in accordance with conditions specified in Michigan WRC's Section 401 certificate.

Article 405 also requires the licensee to establish procedures for consulting with the agencies to address water quality conditions that deviate from state standards. Although Michigan WRC's Section 401 conditions require inclusion of standards for DO and temperature, they do not require pH standards. In addition, Wisconsin's temperature standard is expressed as a maximum that should not be exceeded at any time. This does not conflict with Michigan's monthly average temperature standards. Consequently, in accordance with Wisconsin DNR's recommendations, I have also included Wisconsin's temperature and pH standards in Article 405.

Article 406 requires the licensee to prepare a water/sediment/fish monitoring plan satisfying the reporting requirements in Michigan WRC's Section 401 water quality certification. A copy of Michigan DNR's water quality certification is attached to this license as Appendix A. Article 406 includes periodic pH monitoring, which will allow compliance documentation regarding Wisconsin's pH standard in Article 405. The plan required in this article also must be submitted to the Commission, for approval.

4. Fish Passage and Protection Issues

During the license application process, the resource agencies and Wisconsin Electric developed an upstream and downstream fish passage and protection plan (see Section VI of this order). The agencies recommended that this agreed-upon plan be implemented as a condition of license issuance. Michigan DNR, Wisconsin DNR, and Interior also recommended that the licensee pay compensatory mitigation to the states at an amount equivalent to the restitution value of any lost fishery resources caused by turbine entrainment mortality. 19/

In the draft EIS, staff concluded that fish resources found upstream and downstream of the Chalk Hill Project exhibit characteristics of healthy and vigorous populations and that project operation is not significantly affecting the fish

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19/ The recommendations to fund, conduct, and complete a fishery damage assessment, or pay restitution value for lost fishery resources, are not within the scope of Section 10(j) because they are not specific measures for fish and wildlife protection.

resources of the river. Although Wisconsin Electric's studies indicate that fish are subject to entrainment and increased mortality,20/ there is no evidence that this loss of fish adversely affects fish populations or the quality of recreational fisheries.

Based on this finding, staff did not recommend that a measure requiring the installation of downstream fish passage and protection be adopted. Staff also concluded that the licensee should not be required to provide compensatory mitigation for turbine entrainment mortality.

Based on comments and additional information received on the draft EIS, staff indicated at the Section 10(j) dispute-resolution meeting that it would recommend that, to compensate for turbine entrainment mortality, the licensee be required to fund measures consistent with fisheries management goals and plans for the Menominee River. The amount of annual funding recommended in the final EIS, based on an annual mortality rate of 11,840 fish 21/and on replacement values for lost fish, is $6,000 (1996 dollars) for the Chalk Hill Project. 22/

However, the compensatory mitigation remedy lacks adequate evidentiary support. Both draft and final EIS find that the projected mortality levels at the project, either individually or cumulatively, will not adversely affect fish populations. The draft EIS and final EIS each states, at pp. 4-3 and 4-4, respectively:

> Fish entrainment and turbine-induced mortality by the four projects would not significantly impact fisheries resources of the lower Menominee River. Only a small proportion of the fish entrained at each project dam would be killed by turbine passage, and the impacts of these losses would probably not have a substantial impact on the fish populations and recreational fisheries. Because of the fragmentation of the river by multiple dams and the absence of upstream passage facilities at these dams, there is currently no significant use of the river by anadromous fish that

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20/ See pages C-2 through C-3 and C-7 through C-9 of Appendix C in the draft EIS.

21/ See Appendix C, p. C-2 through C-3 and Table C-2 at p. C-9 of the final EIS.

22/ Id. at Table 5-11, p. 5-42.

depend on upstream spawning migration past the existing dams and subsequent downstream dispersal of juveniles or adults through the same dams for completion of their life cycles. Therefore, there is no basis to conclude that fish surviving entrainment at any one project would be any nore likely to become entrained at the next downstream dam. [23/]

Since fish mortality at the Chalk Hill Project has no significant adverse effect on fishery resources, the compensatory mitigation requirement is not supported by substantial evidence, as required by Section 313 of the FPA, and, therefore, is not being included in the new license for the Chalk Hill Project. 24/

Regarding upstream passage facilities, staff conducted research to determine whether upstream fish passage facilities targeting lake sturgeon had ever been designed and successfully implemented at other locations. The research, including discussions with known experts in the United States and Canada, revealed that no passage system had been successfully designed and tested. Staff concluded, based on existing information, that there appears to be no technically feasible method available to achieve upstream passage of this fish species.

Further, because the agreement between Wisconsin Electric and the agencies is vague with respect to the licensee's funding responsibility for a prototype facility, staff was unable to determine whether or not this facility's potential benefits would justify its potential cost.

At the Section 10(j) meeting, staff agreed to recommend the lake sturgeon upstream and downstream passage plan with the provision that the agreement be refined by the applicant and agencies to clearly assign funding responsibilities for each of the parties.

23/ See also the respective Appendices C attached to the draft EIS and the final EIS, both entitled "Review and Exrapolation of Fish Entrainment and Turbine Mortality Study Results for the Menominee River," and the respective findings of minor project impacts on fishery populations in the draft EIS and final EIS, respectively, at pp. 4-18 through 4-22 and 4-22 through 4-26.

24/ See City of New Martinsville v. FERC, 102 F.3d 567 (D.C. Cir. 1996).

In the final EIS, staff recommended against including the upstream and downstream passage plan agreed to by the agencies and Wisconsin Electric, citing the lack of an existing effective method of lake sturgeon passage, questioning whether such passage is needed to attain agency fishery goals, and expressing concerns about the open-ended nature of the plan's costs and obligations.

I share these concerns. However, the proposed plan clearly is aimed at an important goal of the fish and wildlife agencies. In addition, while there is no certainty that a prototype passage facility will fully succeed, it is not unreasonable to require the kind of effort contemplated here. Moreover, Wisconsin Electric has agreed to the plan, and the plan does not violate any established Commission policy. I conclude, therefore, that the proposed plan should be included in the license.

Article 409 requires the licensee, in consultation with the resource agencies, to develop for Commission approval a more specific plan to implement the agencies' agreement with Wisconsin Electric. The plan must delineate the parties' responsibilities for costs and other obligations. Owing to the concerns expressed above, I am further requiring that the plan submitted for approval specifically address the cost effectiveness of the passage measures proposed, and am reserving the Commission's authority to delete the passage requirement, if it appears that no feasible passage alternative can be developed.

5. Bald Eagle Protection Recommendations

The agencies recommend that the licensee implement bald eagle management guidelines and annually consult with agencies to obtain new nest site locations at the project. Staff concluded in the draft and final EIS that the licensee should prepare a bald eagle protection plan that incorporates state and federal management guidelines, and should include bald eagle protection measures in its wildlife management plan for project lands.

Staff also concluded in the final EIS that consultation regarding overall species management need only occur every five years as part of the implementation of the recommended wildlife management plan, which is specified in Article 412. I concur with staff regarding 5-year consultations on overall species management, but conclude that the agencies' request for annual information exchange regarding new nest sites for bald eagle and osprey is appropriate and, therefore, have included this requirement in Article 412.

6. Emergency and Planned Maintenance Drawdowns

Michigan DNR and Wisconsin DNR recommended that Wisconsin Electric be required to notify the resource agencies at least two months in advance of planned reservoir drawdowns. In the draft EIS, staff recommended that this be adopted as a condition of license issuance.

In draft EIS comment letters, however, the resource agencies concluded that two months would not provide adequate time for them to respond to notification of a planned drawdown.

At the Section 10(j) meeting, Michigan DNR stated that it would prefer that the licensee be required to develop and implement a post-license drawdown plan establishing procedures for both emergency and planned drawdowns. The plan should include appropriate time frames for notifying the agencies and provide a reasonable opportunity for their response. Staff concurred with this approach, and the final EIS recommends this measure.

Article 404 requires that the licensee prepare and file a reservoir drawdown plan that discusses when drawdowns would occur; their duration, frequency, and extent; describes other measures that are needed to avoid adverse impacts on the environment; and establishes coordination procedures among the licensee and the resource agencies regarding emergency and planned drawdowns.

7. Run-of-River Operation

The resource agencies recommended that the licensee operate the project in an instantaneous run-of-river mode and maintain a target reservoir elevation of 743.7 feet (National Geodetic Vertical Datum [NGVD]). These measures would provide a maximum amount of reservoir fisheries habitat and would protect existing wetlands.

In the draft EIS, staff agreed with the agency-recommended target elevation, but concluded that a ± 0.5-foot reservoir operating range was needed for efficient project operation consistent with existing equipment limitations.

At the Section 10(j) meeting, Michigan DNR requested confirmation that compliance with run-of-river operation will not be determined by reservoir elevation, but by comparing Menominee River flow downstream of the White Rapids Project (No. 2357) with the flow upstream at the Highway Z Bridge, as specified in Michigan WRC's Section 401 Water Quality Certificate conditions.

The certification requires that downstream flows must "equal" upstream flows, accounting for travel time and accretion.

Staff responded that it would recommend that compliance with run-of-river operation be determined using gages corrected for time and accretion, as specified in the Section 401 Water Quality certificate conditions. However, staff recommended that the licensee operate the project such that the reservoir elevation is allowed to fluctuate up to 0.5 foot above and below the target level of 743.7 feet on a daily basis. The purpose of the operating range would be to accommodate limitations of existing equipment and not to allow peaking or wide fluctuations in downstream river flow. The resource agencies agreed with staff's recommended target elevation of 743.7 feet ± 0.5 foot.

Therefore, Article 402 requires, as part of the project's operational compliance plan, that Wisconsin Electric maintain a reservoir elevation of 743.7 feet ± 0.5 foot NGVD. Compliance with run-of-river shall be measured using the USGS gage upstream of the Chalk Hill Project and downstream of the White Rapids Project, as mandated in the Section 401 water quality certification conditions.

Article 402 does not require that inflow and outflow be within ± 5 percent of one another, after correction for time travel and accretion, as originally recommended by the resource agencies pursuant to Section 10(j). The ability to accurately measure this difference and achieve it through strict project operations is unknown. At the Section 10(j) meeting, the participants agreed that the three-year study plan mandated in the Section 401 water quality certification conditions will determine the accuracy of the gages and how the Commission will define the term "equal." These measures should ensure that run-of-river operation is achieved, which will adequately protect fish and wildlife resources.

8. No-Timber-Harvest Buffer Zone/Removal of Shoreline Trees

Interior recommended that a 200-foot "no cut" buffer zone be established along the project shoreline. The draft EIS supported this recommendation in general but added that selective timber removal for forest management purposes should be allowed.

At the Section 10(j) meeting, the resource agencies agreed with the draft EIS recommendation that flexible management within the buffer zone is appropriate. Therefore, Article 413 requires that, as part of its land management plan, Wisconsin Electric establish a 200-foot no-timber-harvest buffer zone. Timber

removal for the purpose of promoting forest health and achieving other wildlife management objectives will be allowed within this zone.

The agencies requested at the Section 10(j) meeting that the license include an article indicating that the licensee is not required to remove shoreline trees that fall down due to natural causes. Staff agreed that trees that fall in the reservoir should not be removed, unless they pose a hazard to project operation or safety. Standard Form L-3, Article 20 of the license only requires the licensee to remove dead trees that pose a hazard to project operation, public safety or navigation. 25/

9. Penalties and Damages

Michigan DNR's recommendation to reserve to the state the right to impose civil or criminal penalties and to hold the licensee liable for natural resource damages if violation of any term or condition of the 401 certification occurs is not a specific measure to protect fish and wildlife. As discussed on page 10 of this order, this matter is beyond the Commission's jurisdiction; therefore, I am not adopting this recommendation.

10. Turtle and Mussel Surveys

The recommendations to conduct surveys and impact assessments for the wood and Blanding's turtles and freshwater mussels are not specific measures to protect fish and wildlife, and are requests for post-licensing studies that could have been conducted during the license application process.

At the Section 10(j) meeting, staff suggested that, instead of requiring surveys and conducting an impact analysis that would eventually be followed by management prescriptions to protect these species, it would instead recommend that the project's shoreline be managed consistent with turtle protection guidelines. Therefore, Article 412 requires that the licensee, as part of the wildlife management plan, establish shoreline management measures to protect these turtles. 26/

Wisconsin DNR recommended that Wisconsin Electric conduct inventory surveys and impact analysis for three state-listed

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25/ See Montana Power Company and Granite County, Montana, 62 FERC ¶ 61,166 at p. 62,140 (1993).

26/ See final EIS at page 5-44.

species of freshwater mussels. Surveys would be conducted upstream of the Chalk Hill project and downstream of the White Rapids Project (No. 2357). Wisconsin Electric had agreed to conduct the surveys and Commission staff recommended them in the draft EIS. The issue of mussel surveys was discussed at the 10(j) meeting, with staff indicating that it planned to recommend surveys for all four projects.

In the final EIS staff concluded that the mussel surveys are not necessary because these species would not be adversely affected by project operations. Mussel populations upstream of the Chalk Hill Project reservoir would be unaffected by project operations. The projects' reservoirs do not contain the kind of riffle habitat that mussels inhabit. Any mussel habitat that exists downstream of the White Rapids Project (No. 2357) would be enhanced by the change from peaking to run-of-river operation. 27/ Consequently, staff concluded that Wisconsin Electric should not be required to conduct the surveys.

Staff does recommend in the final EIS that mussel surveys downstream of the White Rapids Project (No. 2357) could be included in future wildlife management plans, and that Wisconsin Electric implement applicable provisions of the purple wartyback mussel recovery plan when it is completed by the agencies. To address agency concerns regarding mussel surveys and recovery plans, I am including Article 411 (purple wartyback mussel recovery plan) in this license. I am also providing for additional opportunity for future protection measures related to any federal and state threatened, endangered, or sensitive species, including mussels, in the wildlife management plan (Article 414).

11. Land Ownership and Management Issues

The recommendations that the licensee: (1) be required to retain and manage lands within the project boundary for public benefit over the course of the license; (2) continue to allow public use of project lands; and (3) provide to the agencies, prior to Commission approval, any proposal to remove project lands are not specific measures to protect fish and wildlife.

The Commission's standard special land use article (Article 416) and regulations governing project modifications will allow the licensee the opportunity to make changes to the project boundary during the license period, in consultation with the

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27/ See final EIS at pages 4-59 and 5-44.

resource agencies. 28/ Standard Form L-3 Article 18 requires the licensee to continue allowing public use of project lands except in environmentally sensitive areas or in the immediate vicinity of project facilities that pose a threat to public safety. 29/ The Commission's standard land use article (Article 416) provides for agency consultation before the Commission approves project boundary or land use changes. 30/

Therefore, I find no need to require additional specific license articles to address these recommendations.

12. Erosion Inventory and Control

The recommendation that the licensee develop and implement a plan to inventory, control, and repair present and future erosion sites is a specific measure to protect fish and wildlife. However, I am not requiring that such a plan be developed because there is no evidence of widespread erosion at the project, and because the Standard Form L-3 Article 19 requires the licensee to take reasonable measures to prevent soil erosion. If major land-disturbing or land-clearing activities are proposed on project lands in the future, the licensee would be required to file a plan to control erosion, slope instability, and sedimentation with the Commission. 31/

13. Recreation Enhancements

The agencies' recommendations that the licensee: (1) provide for various recreation facilities enhancements, including specified barrier-free facilities; (2) continue to operate and maintain all recreation facilities associated with this project; (3) submit recreation facility designs to Michigan DNR and Wisconsin DNR for review; (4) implement all recreation enhancements in accordance with a schedule approved by the agencies; and (5) conduct periodic recreation reviews with the agencies are not measures to protect fish and wildlife.

28/ See final EIS at page 5-44.

29/ See final EIS at page 4-65.

30/ See final EIS at page 5-45.

31/ See final EIS at page 4-48.

Article 414 requires some, but not all of the nine recommended facility enhancements. 32/ Article 414 also requires the licensee to include a discussion in its plan of how the needs of the disabled are accomodated by the plan. Standard Form L-3 Article 17 indicates that the licensee is ultimately responsible for the operation and maintenance of all project recreation sites throughout the license period. Wisconsin Electric, however, may elect to lease or subcontract the actual maintenance of the facilities, if desired. 33/ Regarding item 3 above, Article 414 requires the licensee to submit its recreation facility designs to Michigan DNR and Wisconsin DNR when it is preparing its final recreation plan. 34/

The recommendation for agency approval of the schedule conflicts with the Commission's authority to administer the license. Article 414 requires the licensee to prepare and file a final recreation plan specifying the recreation enhancements and schedule for their development. 35/ The plan and schedule must be prepared in consultation with the agencies. Regarding recreation reviews, I am not requiring additional reviews beyond what is required pursuant to the Commission's regulations and the Form 80 reviews, which occur on a 6-year cycle. 36/

14. Compliance with Various State Statutes and Codes

Wisconsin DNR's recommendations that the licensee comply with chapters 30 and 31, Wisconsin Statutes and portions of NR 330, 333, and 116 of the Wisconsin Administrative Code are not specific measures to protect fish and wildlife resources. Moreover, federal authority preempts state regulations in this area. I conclude that the Commission's safety regulations provide sufficient protective measures; therefore, this measure will not be included in the license. 37/

32/ See final EIS at pages 4-67 to 4-68; 4-72 to 4-73; and 5-45 to 5-46.

33/ See final EIS at pages 4-65 and 5-46.

34/ See final EIS at pages 4-68 and 5-46.

35/ See final EIS at pages 4-65 and 5-46.

36/ See final EIS at pages 4-65 and 5-46.

37/ See final EIS at page 5-46.

15. Project Decommissioning

The recommendation that the licensee conduct a study to determine the cost of project retirement, and establish a project retirement fund is not a specific measure to protect fish and wildlife resources.

In its December 14, 1994 Policy Statement on project retirement (RM93-23000), the Commission stated that:

> "In light of the practical problems involved in trying to deal with events far in the future, and because in many cases the time horizon and general financial strength of the licensee may be such that there is not substantial need for a pre-retirement funding program, the Commission will not act generically to impose such programs on all licensees .... There may be particular facts on the record in individual cases, however, that will justify license conditions requiring the establishment of decommissioning cost trust funds in order to assure the availability of funding when decommissioning occurs..." 38/

Although several agencies and intervenors requested that the licensee perform studies to determine the cost associated with dam retirement and establish a fund to cover such costs if the project is ever retired, no entities have advocated dam retirement at this time. Therefore, there are no particular facts on the record to justify establishing a decommissioning cost trust fund for this project. I am not requiring this measure as a license condition. 39/

16. Fish and Wildlife Reopener

The agencies recommend that the license include an article reserving the Commission's authority to reopen the license for the purpose of addressing any new fish and wildlife issues. The standard reopener, Standard Form L-3, Article 15, is included in this license. 40/

38/ Project Decommissioning at Relicense; Policy Statement, RM93-23000, slip op. cit. pp. 33-34, issued December 14, 1994.

39/ See final EIS at pages 2-29, 2-30, and 5-46.

40/ See final EIS at pages 4-56 and 5-46.

IX. COMPREHENSIVE PLANS

Section 10(a) of the FPA, 16 U.S.C. § 803(a)(2)(A), requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving waterways affected by the project. Under Section 10(a)(2)(A) of the FPA, federal and state agencies filed a total of 115 comprehensive plans for Michigan and Wisconsin that address resources in these states. Of these, staff identified and reviewed seven plans relevant to the Menominee River. 41/

Based on staff's review of these plans, Wisconsin Electric's project, as licensed in accordance with the conditions adopted herein, is consistent with these plans for the most part. There are two exceptions. The first is an inconsistency with two objectives of the Menominee River Fisheries Plan: (1) the project would not eliminate fish turbine mortality losses; and (2) the project would not reestablish natural flow conditions on the Menominee River downstream of the project.

In addition, the project, as licensed, is inconsistent with the Fisheries Division Strategic Plan's goal to immediately enhance natural reproduction and movement of native fish.

Staff's analysis determined that, (1) although the operation of this project would result in the loss of fish resources from turbine entrainment mortality; and (2) the project would not immediately enhance natural production and movement of native fish, the project would not produce a significant adverse impact on fish populations or recreational fishing opportunities of the Menominee River.

Studies performed at several locations along the lower Menominee River indicate that the overall fishery of the river is diverse and healthy, supporting a desirable mix of game and

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41/ Michigan: MDNR, (1991) *1991-1996 Michigan Recreation Plan;* Wisconsin: WDNR, (1991) *Wisconsin Statewide Comprehensive Outdoor Recreation Plan for 1991-1996;* WDNR, (1993) *Upper Green Bay Basin Water Quality Management Plan;* Michigan and Wisconsin: WDNR and MDNR (1993) *Menominee River Fisheries Management Plan;* WDNR and MDNR, (1990) *Lower Menominee River Remedial Action Plan;* Michigan: MDNR (1994) *Fisheries Division Strategic Plan;* and, U.S. Fish and Wildlife Service and Canadian Wildlife Service (1994) *North American Waterfowl Management Plan.*

panfish species. In addition, growth rates of these species compare favorably to non-project waters elsewhere in Wisconsin and the Lake Michigan drainage. Therefore, although the continued loss of fish because of turbine mortality is not consistent with a specific objective of the two plans, these losses are not preventing the realization of the two plans' overall fisheries management goals. 42/

Staff determined that there is no known technically and economically feasible means to provide upstream passage for lake sturgeon at this time. Therefore, although this plan's goal is to immediately enhance the movement of native fish, there is no known means to accomplish the goal. However, implementation of the upstream and downstream fish passage plan provided for in Article 409 could ultimately contribute to enhancing the movement of native fish, and contribute to the realization of the plan's fisheries management goals.

X. COMPREHENSIVE DEVELOPMENT

Sections 4(e) and 10(a)(1) of the FPA, 16 U.S.C. 797(e) and 803(a)(1), require the Commission, in acting on applications for license, to give equal consideration to a project's power development purposes and to the purposes of energy conservation, the development of the waterway for the use or benefit of interstate commerce, 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 judgement will be best adapted to a comprehensive plan for improving or developing the waterway or waterways for all beneficial public uses including irrigation, flood control, and water supply. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

The EIS analyzes the effects associated with the issuance of four new licenses in the Menominee River basin. The EIS recommends a number of measures to protect and enhance environmental resources, which I adopt, as discussed herein. Many of these measures were recommended and supported by resource agencies and other commentors.

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

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42/ See final EIS at page 5-27.

FPA, the Commission considers a number of public interest factors, including the economic benefits of project power.

Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in Mead Corporation, Publishing Paper Division, 43/ the Commission employs an analysis that uses current costs to compare the costs of the project and likely alternative power with no forecasts concerning potential future inflation, escalation, or deflation beyond the license issuance date. The basic purpose of the Commission's economic analysis is to provide a general estimate of the potential power benefits and the costs of a project, and reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

In addition, certain economic factors related to project decommissioning impinge on the decision to issue a new license that are not present in the licensing of new projects. If an existing project is not issued a new license, or if the licensee declines to accept the new license, the project probably will have to be retired in one form or another. This could range from simply removing the generator at the project to major environmental restoration varying from minor measures to dam removal.

Based on current economic conditions, without future escalation or inflation, the Chalk Hill Project, if licensed as Wisconsin Electric proposes, would provide an installed capacity of 7,800 kW and produce and average of 36.6 GWh of energy, at an annual cost of about 4.55 cents/kWh (45.5 mills/kWh). This is about 1.49 cents/kWh (14.9 mills/kWh) more than the current cost of an equivalent amount of capacity and energy using alternative power sources, which would cost about 3.06 cents/kWh (30.6 mills/kWh). 44/ If licensed in accordance with the conditions adopted herein, the project would produce about the same amount of energy and capacity at an annual cost of 2.06 cents/kWh (20.6 mills/kWh), or about 1.00 cents/kWh (10.0 mills/kWh) less than the cost of alternative power sources. 45/

43/ 72 FERC ¶ 61,027 (1995).

44/ The alternative source of power is a gas-fired combined-cycle combustion turbine.

45/ Applicant's proposal includes the construction and operation of a fish ladder and downstream bypass facility for lake sturgeon and other species. Staff's

In any event, as noted above, it is Wisconsin Electric which must make the business decision whether to pursue the license. As the Commission explained in Mead, supra, project economics is, moreover, only one of the many public interest factors the Commission considers in determining whether or not, and under what conditions, to issue a license. 46/

Based on my review and evaluation of the project as proposed by the licensee, and with the additional enhancement measures I am adopting, I conclude that operating the project in the manner required by the license will protect and enhance fish and wildlife resources, water quality, recreational resources, and cultural resources. The electricity generated from renewable water power resources will be beneficial because it will continue to offset the use of fossil-fueled, steam-electric generating plants, thereby conserving nonrenewable resources and reducing atmospheric pollution. I, therefore, find that the Chalk Hill Project, with the required environmental enhancement measures, is best adapted to a comprehensive plan for the use, conservation, and development of the waterway for beneficial public purposes. The required enhancement measures are summarized below.

(1) Operate the project in run-of-river mode, with run-of-river determined by comparing flow of the river downstream of the White Rapids Project (No. 2357) with flow as measured upstream of the Chalk Hill Project (Article 401).

(2) Maintain a year-round reservoir elevation of 743.7 foot ± 0.5 feet (Article 401).

(3) Develop and implement an operational compliance plan that includes:

- maintenance of a visible staff gage in the reservoir;

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alternative does not include these facilities; consequently, staff's alternative provides greater economic benefits for the licensee.

46/ In analyzing public interest factors, the Commission takes into consideration the fact that hydroelectric projects offer unique electric utility system operational benefits, and that proposed projects may provide substantial benefits not directly related to utility operations, benefits that would be lost if a license were denied solely on economic grounds. See City of Augusta, et al., 72 FERC ¶ 61,114, flat copy at p. 19 n. 57 (1995).

- maintenance of automatic water level sensors to monitor and record headwater and tailwater elevations;
- recording of project operation on a 60-minute basis;
- procedures for reestablishing flows during periods of plant blackout;
- methods for providing operational data to agencies upon request (Article 402).

(4) Develop and implement a plan to conduct a 3-year test study to determine accuracy of gages for determining compliance, including maintenance of the existing USGS gage upstream of the Chalk Hill Project with telemetry and installation and maintenance of a new telemetered USGS gage downstream of the White Rapids Project (No. 2357) (Article 403).

(5) Develop and implement a reservoir drawdown plan (Article 404).

(6) Develop and implement a water quality monitoring plan, with the minimum requirements as stipulated in the 401 water quality certification (Article 405).

(7) Develop and implement a water/sediment/fish monitoring plan (Article 406).

(8) Reserve the Secretary of the Interior's authority to prescribe fish passage facilities (Article 407).

(9) Develop and implement a plan providing large woody debris transport (Article 408).

(10) Develop a plan to provide for the upstream and downstream passage of lake sturgeon (Article 409).

(11) Implement a program to monitor and control the spread of purple loosestrife and Eurasian milfoil in the reservoir (Article 410).

(12) Upon completion of the state of Wisconsin's Purple Wartyback Mussel Recovery Plan, implement protective measures (Article 411).

(13) Develop and implement a wildlife management plan that includes the following additional measures beyond what the licensee proposed:

- bald eagle protection and osprey management measures;

- provisions for surveying project lands for active and inactive bald eagle nest sites;
- policies for preservation of large canopy trees as bald eagle nesting sites;
- wood turtle habitat protective measures;
- Blanding's turtle habitat protective measures;
- consultation with agencies regarding decisions affecting wildlife management on project lands;
- provisions for protecting and enhancing habitat for any federal- or state-designated threatened, endangered, or sensitive species on project lands (including protection of the small yellow lady's slipper); and
- provisions for cooperating with agencies in conducting wildlife surveys within project boundaries (Article 412).

(14) Implement a land management plan for protection of shoreline resources that includes maintenance of a 200-foot no-timber-harvest buffer zone on project-owned lands (Article 413).

(15) Construct, maintain, and operate various recreation enhancements including:

- at Recreation Area 3, add circular road in order to redirect traffic at the boat launch and improve the drainage at the boat ramp;
- at Recreation Area 4, construct a boat launch;
- provide directional signs to the recreation facilities from major roadways in the area; and
- include information indicating the presence of disabled accessibility, potable water; toilets on the recreation facility signs at the entrance to each recreation site (Article 414).

(16) Implement the December 30, 1993, "Programmatic Agreement 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" to protect existing and future potential cultural resources (Article 415).

XI. LICENSE TERM

Section 15(e) of the FPA 47/ provides that any new license issued shall be for a term of not less than 30 years nor more than 50 years. The Commission's general policy is to establish 30-year terms for projects with little or no redevelopment, new construction, new capacity, or environmental mitigative and enhancement measures; 40-year terms for projects with a moderate amount of proposed redevelopment, new construction, new capacity or mitigative and enhancement measures; and 50-year terms for projects with proposed extensive redevelopment, new construction, new capacity, or mitigative and enhancement measures. Also, as an inducement for new license applicants to propose better balanced comprehensive development of a waterway, we will set a new license term at greater than 30 years to ease the impacts of large costs when the new license includes substantial environmental mitigation and enhancement measures. Accordingly, because this new license authorizes moderate enhancement measures, the license will have a term of 40 years.

XII. SUMMARY OF FINDINGS

Background information, analysis of impacts, support for related license articles, and the basis for the conclusions regarding significant beneficial impacts on the environment are contained in staff's final EIS for the Menominee River projects.

I find that it is not necessary, as requested by Wisconsin DNR, Michigan DNR, and Interior in their letters on the final EIS, to convene a second Section 10(j) meeting or issue a revised or supplemental final EIS. This license contains adequate provision for additional agency consultation and involvement in all fish and wildlife related activities over the term of the license. This includes provision for upstream and downstream fish passage and protection, water quality monitoring measures, and other fish and wildlife surveys and protection plans.

The project will be safe if operated and maintained in accordance with the requirements of this license. Analysis of related issues is provided in the Safety and Design Assessment.

I conclude that the Chalk Hill Project does not conflict with any planned or authorized development, and is best adapted to the comprehensive development of the Menominee River for beneficial public use.

47/ 16 U.S.C. § 8098(e).

The Director orders:

(A) This license is issued pursuant to both Section 4(e) and Section 15 of the FPA to the Wisconsin Electric Power Company (licensee) for a period of 40 years, effective the first day of the month in which it is issued, to continue to operate and maintain the Chalk Hill Project. This license is subject to the terms and conditions of the FPA, which is incorporated by reference as part of this license, and to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, shown by Exhibit G-1 (FERC Drawing Number 2394-24) in the application for new license, filed on June 20, 1991.

(2) Project works consisting of: (1) a 1,806-foot-long and 42-foot-high (28 feet from headwater to tailwater) dam with embankment and gravity sections consisting of, from left to right looking downstream, (a) a powerhouse section, (b) a 300-foot-long, concrete gravity, spillway section with eleven 24-foot-wide by 12-foot-high Taintor gates, and (c) a 1,373-foot-long, earth embankment section; (2) an intake structure integral with the powerhouse equipped with six slide headgates; (3) a reinforced concrete and brick powerhouse, 133 feet long by 36 feet wide, and with a superstructure 36 feet high, integral with the dam, housing three 2,600-kW generating units with a total installed capacity of 7,800-kW; (4) a 834-acre reservoir having a maximum storage capacity of 6,757 acre-feet at 744.2 feet National Geodetic Vertical Datum (NGVD); and (5) appurtenant facilities.

The project works generally described above are more specifically described in Exhibit A of the license application and shown by Exhibit F.

Exhibit A. The following sections of Exhibit A filed June 20, 1991.

Pages A-1 through A-6 describing the project's existing mechanical, electrical, and transmission equipment.

Exhibit F. The following Exhibit F drawings filed June 20, 1991:

Exhibit F	FERC No.	Showing
F-1	2394-17	General Layout
F-2	2394-18	Cross Section of Plant
F-3	2394-19	Foundation Boring Exploration
F-4	2394-20	Plant Floor and Sectional Plans
F-5	2394-21	Plant Elevations
F-6	2394-22	Taintor Gate and Spillway Details
F-7	2394-23	Abutment Walls

(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.

(C) Exhibits A, F, and G of the license application 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 Projects 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 this license is issued:

> For the purposes of reimbursing the United States for the Commission's administrative costs, pursuant to Part I of the Federal Power 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 7,800 kilowatts.

Article 202. If the licensee's project was directly benefitted by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the original license (including extensions of that term by annual licenses), and if

those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the licensee shall reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed, in the same manner as for benefits received during the term of this new license.

Article 203. Pursuant to Section 10(d) of the Federal Power Act, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. The licensee shall set aside in a project amortization reserve account at the end of each fiscal year one-half of the project surplus earnings, if any, in excess of the specified rate of return per annum on the net investment. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year, the licensee shall deduct the amount of that deficiency from the amount of any surplus earnings subsequently accumulated, until absorbed. The licensee shall set aside one-half of the remaining surplus earnings, if any, cumulatively computed, in the project amortization reserve account. The licensee shall maintain the amounts established in the project amortization reserve account until further order of the Commission.

The specified reasonable rate of return used in computing amortization reserves shall be calculated annually based on current capital ratios developed from an average of 13 monthly balances of amounts properly includible in the licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rate for such ratios shall be the weighted average cost of long-term debt and preferred stock for the year, and the cost of common equity shall be the interest rate on 10-year government bonds (reported as the Treasury Department's 10-year constant maturity series) computed on the monthly average for the year in question plus 4 percentage points (400 basis points).

Article 401. The licensee shall operate the project in a run-of-river mode for the protection of fish, riparian vegetation, and recreation opportunities upstream and downstream of the dam. The licensee shall at all times act to minimize the fluctuation of the reservoir surface elevation by maintaining a discharge from the project so that, at any point in time, flows, as measured immediately downstream of the White Rapids Project (No. 2357) tailrace, "equal" the sum of inflows to the Chalk Hill and White Rapids projects' reservoirs, accounting for corrections associated with time lag and flow accretion.

To protect shoreline aquatic habitat and wetlands, the licensee shall also maintain the reservoir water surface elevation at or within 6 inches of the normal reservoir elevation of 743.7 feet National Geodetic Vertical Datum as measured immediately upstream from the project dam. The licensee shall not operate over the full range on a daily basis for the purpose of power system load-following.

Run-of-river operation and reservoir water surface elevation may be temporarily modified, if required by operating emergencies beyond the control of the licensee, including flood and ice conditions, and for short periods, upon mutual agreement among the licensee, Michigan Department of Natural Resources, (Michigan DNR), Wisconsin Department of Natural Resources, (Wisconsin DNR), and U.S. Fish and Wildlife Service (FWS). If project operation or reservoir water surface elevation is temporarily modified for mutually agreed upon short periods of time, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident. If run-of-river operation or reservoir surface elevation is modified due to an emergency, the licensee shall notify the Commission, Michigan DNR, Wisconsin DNR, and FWS within 24 hours.

In case of project shutdown during "ice-free" periods, the licensee shall pass river inflow through the project within 10 minutes, or in a manner consistent with safe project operation. During periods of "ice cover," the licensee shall pass river inflow through the project in accordance with procedures established by Article 402.

The "ice-free" and "ice-cover" periods referenced in this article shall be defined in accordance with the plan required by Article 402. The term "equal" referenced in this article shall be defined in accordance with the plan required by Article 402.

Article 402. Within 180 days of license issuance, the licensee shall file with the Commission, for approval, an operational compliance plan to document compliance with the run-of-river operation and reservoir elevation range specified by Article 401.

The plan, at a minimum, shall include measures to:

(1) install, calibrate, and maintain a staff gage in the reservoir that is visible to the public with the prescribed operating levels clearly marked;

(2) operate automatic water level sensors to record headwater and tailwater elevations, and devices to record

power generation, capable of providing records at 60-minute intervals;

(3) maintain records of headwater and tailwater elevations and power generation;

(4) provide operational data to the interested agencies in a timely manner;

(5) pass project inflow downstream within 10 minutes or in a manner consistent with safe project operation, in the event of project shutdown during "ice-free" periods;

(6) pass project inflow downstream as soon as possible and practicable, in a manner consistent with safe project operation, in the event of a project shutdown during "ice-cover;" and

(7) develop a definition of "ice-free" and "ice-cover" periods applicable to Article 401.

The licensee shall prepare the plan after consultation with Michigan Department of Natural Resources, Wisconsin Department of Natural Resources, and U.S. Fish and Wildlife Service. 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 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. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 403. Within 180 days of license issuance, the licensee shall file with the Commission, for approval, a plan to conduct a three-year evaluation to determine whether operation of the project in a run-of-river mode as required by Article 401 has been achieved. This plan shall include the following elements:

(1) provisions for ongoing calibration and maintenance of the existing U.S. Geological Survey (USGS) type recording streamflow gage with telemetry upstream of the project on the Menominee River at Z Bridge (USGS gage No. 04066003);

(2) the licensee's proposed location for gage installation, a schedule for installation, and measures to maintain its operation over a 3-year testing period; and

(3) procedures and a schedule to contract with USGS to evaluate upstream and downstream river flow data and operation records from the Chalk Hill Project to determine, following a 3-year test period, the "ice-free" and "ice-cover" accuracy values of the gages along with appropriate values for time of passage and water accretion.

The licensee shall prepare the plan after consultation with Michigan Department of Natural Resources, Wisconsin Department of Natural Resources, and U.S. Fish and Wildlife Service.

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 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. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 404. Within 180 days of license issuance, the licensee shall file with the Commission, for approval, a reservoir drawdown plan. The purpose of the drawdown plan is to minimize the impact of any project maintenance requiring a reservoir drawdown on aquatic and wetland resources. The plan shall include procedures for consulting with Michigan Department of Natural Resources (Michigan DNR), Wisconsin Department of Natural Resources (Wisconsin DNR), and U.S. Fish and Wildlife Service (FWS) in advance of planned drawdowns.

The plan shall also address procedures for consulting with the agencies after an emergency drawdown of the reservoir surface water elevation. The procedures shall identify notification and agency consultation requirements that would occur prior to returning to normal operating reservoir levels.

The licensee shall prepare the plan after consultation with Michigan DNR, Wisconsin DNR, and FWS. 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 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. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 405. Within 180 days from the date of license issuance, the licensee shall file with the Commission, for approval, a plan to monitor dissolved oxygen (DO) and temperature of the Chalk Hill Project impoundment and immediate project vicinity, as specified in this article. This plan should be prepared in conjunction with the plan required by Article 405 of the White Rapids Project (No. 2357) license.

The purpose of this monitoring plan is to ensure that releases from the Chalk Hill Project maintain the state standards specified below and for DO concentration and temperature specified in Article 405 of the White Rapids Project (No. 2357) license, except when river flow in the Menominee River is less than the 95 percent exceedance flow or when natural conditions prohibit attainment of the standards.

(1) Temperature in the Chalk Hill Project waters shall not exceed 89°F at any time.

(2) DO concentrations must be not less than 5 milligrams per liter (mg/l) at any time in all project waters.

(3) The pH in all project waters shall be within the range of 6.0 to 9.0, with no change greater than 0.5 units outside the estimated natural seasonal maximum and minimum.

The water quality monitoring plan shall include, at a minimum, the provisions listed below.

(1) Monitor for five years following license issuance temperature and DO in the Menominee River upstream of the Chalk Hill Project at the Z Bridge on an hourly basis from May 1 through September 30.

(2) Monitor during the first two years after license issuance, recording surface to bottom profiles of temperature and DO at one-meter intervals once per month

during December, January, February, and March for the purpose of determining if low DO conditions become established in the Chalk Hill Project reservoir.

(3) Implement a Chalk Hill Project tailrace DO monitoring program within 30 days if winter reservoir DO levels decline below 5 mg/l.

(4) Prepare a summary report of temperature and DO data, to be submitted within 60 days of completing the September monitoring to the Commission, Michigan Department of Natural Resources (Michigan DNR), Wisconsin Department of Natural Resources (Wisconsin DNR), and U.S. Fish and Wildlife Service (FWS).

(5) Include provisions for notifying the Commission, Michigan DNR, Wisconsin DNR, and FWS if water quality limits contained in this license are not met, including operating procedures for addressing and correcting the exceedance of water quality limits.

The licensee shall prepare the plan after consultation with Michigan DNR, Wisconsin DNR, and FWS. 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 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. Upon Commission approval, the licensee shall implement the monitoring plan, including any changes required by the Commission.

Article 406. Within 180 days of license issuance, the licensee shall file with the Commission, for approval, a water/sediment/fish monitoring plan, capable of satisfying the monitoring and data reporting requirements cited below.

(1) Quarterly water quality monitoring in the Menominee River at the Z Bridge gaging station and in the Chalk Hill Project impoundment quarterly every fifth year. The following parameters shall be analyzed: alkalinity, chlorophyll-a, color, dissolved sulfates, pH, hardness, secchi depth, specific conductivity, total ammonia, total

dissolved solids, total nitrates, total nitrites, total nitrogen, total organic carbon, total phosphorus, total suspended solids, and temperature and dissolved oxygen profiles at the deepest location in the impoundment every 0.5 meter.

(2) Sediment monitoring in the Chalk Hill Project impoundment once every 10 years for the following parameters: oil and grease, percent volatile solids, total arsenic, total barium, total cadmium, total chromium, total copper, total lead, total manganese, total mercury, total nickel, total nitrogen, total organic carbon, total phosphorus, total selenium, total silver, total zinc, acid volatile sulfides, and total PCB.

(3) Fish monitoring on resident walleye (20-22 inch size range) once every 5 years from the following location: the Menominee River in the vicinity of the Z Bridge gaging station. Chemical analyses on the whole fish samples shall include: dieldrin; DDE; DDD; DDT; mercury; total chlordane; PCB (Arochlors 1242, 1248, 1254, 1260); toxaphene; 2,3,7,8-TCDD; and 2,3,7,8-TCDF.

(4) The licensee shall prepare a summary report of results every 5 years and submit this report to the Commission, Michigan Department of Natural Resources (Michigan DNR), Wisconsin Department of Natural Resources (Wisconsin DNR), and U.S. Fish and Wildlife Service (FWS).

The licensee shall prepare the plan after consultation with Michigan DNR, Wisconsin DNR, and FWS. 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 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. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 407. Authority is reserved to 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 pursuant to Section 18 of the Federal Power Act.

Article 408. Within 180 days of license issuance, the licensee shall file with the Commission, for approval, a plan for the passage of large woody debris that collects near the project intake into the project tailrace to improve fish habitat downstream of the project.

The licensee shall prepare the plan after consultation with Wisconsin Department of Natural Resources, Michigan Department of Natural Resources, and U.S. Fish and Wildlife Service. 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 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 site-specific conditions.

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 409. Within one year of license issuance, the licensee shall file with the Commission, for approval, a lake sturgeon passage plan. The plan shall address downstream and upstream passage of lake sturgeon consistent with the intent and objectives of the May 14, 1993 agreement between the licensee, Wisconsin Department of Natural Resources (Wisconsin DNR), Michigan Department of Natural Resources (Michigan DNR), and U.S. Fish and Wildlife Service (FWS). The plan shall also include the following changes and additional provisions:

(1) an updated and revised implementation schedule, including adequate opportunity for Commission review and approval at important decision points;

(2) detailed documentation of all costs for the plan and any proposed implementation measures;

(3) cost-effectiveness analyses for any passage measures proposed; and

(4) delineation of all parties' responsibilities for costs and other obligations.

The licensee shall prepare the plan after consultation with Wisconsin DNR, Michigan DNR, and FWS. 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 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 make changes to the plan, including but not limited to, deletion of any fish passage requirement if the Commission determines that no feasible measure can be developed. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 410. Within 180 days of license issuance, the licensee shall develop and file with the Commission, for approval, a plan to monitor and control the spread of purple loosestrife (*Lythrum salicaria*) and Eurasian milfoil (*Myriophyllum spicatum*) in project waters.

The plan shall include, but is not limited to: (a) the method of monitoring, (b) the frequency of monitoring, (c) a provision to cooperate in the control/elimination of these vegetative species if deemed necessary by the agencies, and (d) documentation of transmission of monitoring data to Michigan Department of Natural Resources (Michigan DNR), Wisconsin Department of Natural Resources (Wisconsin DNR), and U.S. Fish and Wildlife Service (FWS).

The licensee shall develop the plan in consultation with Michigan DNR, Wisconsin DNR, and FWS. 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 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. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 411. Within 180 days of notification by Wisconsin Department of Natural Resources (Wisconsin DNR) that a state-

approved Recovery Plan for the Purple Wartyback Mussel has been completed, the licensee shall develop a plan to implement the Recovery Plan within the project boundary.

The licensee shall prepare the plan after consultation with Wisconsin DNR. 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 agency, and specific descriptions of how the agency's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agency 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. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 412. Within one year of license issuance, the licensee shall file with the Commission, for approval, its proposed wildlife management plan, including any changes or additions specified in this article.

The plan, at a minimum, shall incorporate or adopt by reference all other wildlife resource protection plans required by this license order, and also include the following additional provisions:

(1) all resource topics listed in the licensee's "wildlife element" of its proposed land management plan in Appendix 14 of the license application, except as modified below:

(2) a bald eagle protection plan that incorporates state and federal management guidelines and includes such measures as contacting the agencies on an annual basis regarding new information on nest sites within the project boundary; updating their existing GIS systems with information on bald eagles' and other rare raptors' nesting activities on project lands; preserving large canopy trees for bald eagles and other raptors; and a survey of project lands and an inventory of active and inactive bald eagle nest sites if needed to prepare the bald eagle protection plan for project lands;

(3) specific management protection measures for the following plant and animal species and their habitat:

- small yellow lady's slipper
- wood turtle habitat
- Blanding's turtle habitat
- osprey management
- cavity nesting and super canopy tree protection

(4) applicable management guidelines for the protection of federal- and state-designated threatened, endangered, or sensitive species;

(5) provision for cooperating with agencies in conducting wildlife surveys within project boundaries;

(6) provision for consultation with Wisconsin Department of Natural Resources (Wisconsin DNR), Michigan Department of Natural Resources (Michigan DNR), and U.S. Fish and Wildlife Service (FWS) prior to any land-disturbing activities in order to ensure protection of fish and wildlife; and,

(7) provision for meetings and consultation to occur at a minimum of once every five years with Wisconsin DNR, Michigan DNR, and FWS to review and update the plan.

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 413. Within one year of license issuance, the licensee shall file with the Commission, for approval, its proposed land management plan to protect shoreland resources in the project area. The land management plan, at a minimum, shall incorporate or adopt by reference all other resource protection plans, and include the following additional provisions and policies:

(1) all items listed in the licensee's proposed land management plan included in Appendix 14 of the license application, except as modified in items 2 through 6 below:

(2) expansion of the shoreline buffer zone to 200 feet, with policies stating that no timber harvesting can occur in this buffer;

(3) policies regarding leasing of lands, including detail of existing leases;

(4) incorporation of Michigan Department of Natural Resources' (Michigan DNR's) Best Management Practices policy guidelines;

(5) provision for consultation with Wisconsin Department of Natural Resources, (Wisconsin DNR), Michigan DNR, and U.S. Fish and Wildlife Service (FWS) prior to any land-disturbing activities to ensure protection of fish and wildlife; and

(6) provision for meetings with Wisconsin DNR, Michigan DNR, and FWS to review and update the plan.

The licensee shall prepare the plan after consultation with Michigan DNR, Wisconsin DNR, and FWS. 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 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. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 414. Within one year of license issuance, the licensee shall file with the Commission, for approval, a recreation plan for the Chalk Hill Project. The plan shall include, at a minimum, the following information:

(1) type and estimated amount of public and private recreation use at the project;

(2) discussion of the adequacy of existing recreation improvements to meet existing and future public and recreation demand;

(3) final site plans and final design drawings and specifications for proposed new recreation facilities to be funded in part or in whole by the licensee;

(4) a description of the construction materials for the recreational facilities;

(5) landscaping of new construction areas;

(6) cost of the improvements;

(7) identification of the entity or entities responsible for the construction, operation, and maintenance of existing

or proposed facilities and, if this is not the licensee, documentation of the licensee's construction, operation, and maintenance agreement with the entity or entities;

(8) implementation schedule for proposed new recreation improvements;

(9) discussion of how existing and proposed facilities consider the needs of persons with disabilities; and

(10) documentation of consultation with resource agencies and other providers of public recreation at the project.

The plan shall provide for the specific recreation facilities and improvements described below.

(1) At Recreation Area 3, add a circular road in order to redirect traffic at the boat launch, and improve the drainage at the boat ramp.

(2) At Recreation Area 4, construct a boat launch.

(3) Provide directional signs to the recreation facilities from major roadways in the area. The number and location of signs should be determined in consultation with Wisconsin Department of Natural Resources (Wisconsin DNR) and Michigan Department of Natural Resources (Michigan DNR).

(4) Include information indicating the presence of disabled accessibility, potable water, and toilets on the recreation facility signs at the entrance to each project recreation site.

The licensee shall prepare the plan after consultation with Michigan DNR, Wisconsin DNR, and local agencies having land management or planning/zoning authority in the area. The licensee shall also consult with the above agencies, regarding recreation use and needs at the project, every sixth year as part of the Form 80 reporting cycle, for the term of the license, pursuant to Part 8 of the Commission's regulations.

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 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 construction of new recreational facilities shall begin until the licensee is notified that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 415. The licensee shall implement the "Programmatic Agreement 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, including but not limited to the Historic Resources Management Plan for the project.

In the event that the Programmatic Agreement is terminated, the licensee shall implement the provisions of its approved Historic Resources Management Plan.

The Commission reserves the authority to require changes to the Historic Resources Management Plan at any time during the term of the license. If the Programmatic Agreement is terminated prior to Commission approval of the Historic Resources Management Plan, the licensee shall obtain Commission approval before engaging in any ground-disturbing activities or taking any other actions that may affect any historic properties within the project's area of potential effect.

Article 416. (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 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; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancements.

To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements.

Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect the site of the proposed construction; (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site; and (3) determine that the proposed construction is needed and would not change the basic contour of the reservoir shoreline.

To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensee may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expansion, realignment, or maintenance of bridges 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 1 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 (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 5 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 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 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 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; 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 this order to be consulted on matters related to the Commission 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 constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of this order, pursuant to 18 C.F.R. section 385.713. The filing of a request for rehearing does not operate as a stay of the effective date of this order 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.

Kevin P. Madden
Acting Director
Office of Hydropower
Licensing

Appendix A

Michigan Water Resources Commission
Certification Under Section 401 of the Federal Clean Water Act

In the matter of: Wisconsin Electric Power Company (WEPCo)
Chalk Hill Hydroelectric Project
Federal Energy Regulatory Commission (FERC)
No. 2394; and

Wisconsin Electric Power Company (WEPCo)
White Rapids Hydroelectric Project
Federal Energy Regulatory Commission (FERC)
No. 2357

The Michigan Water Resources Commission (WRC) certifies that the WEPCo Chalk Hill and White Rapids Hydroelectric Projects located on the Menominee River (Menominee County) will comply with Section 401 of the Federal Clean Water Act, including the Michigan Water Quality Standards (MWQS), providing the conditions set forth in this Certification are met. This Certification is based on the WEPCo's 401 Certification request letter dated May 16, 1991 and other information contained in the official files of the WRC, subsequently submitted by WEPCo in support of that original request.

Certification Conditions:

1.0 Chalk Hill and White Rapids Hydroelectric Projects -- Operational Requirements:

1.1 WEPCo shall contract with the United States Geological Survey (USGS) for the installation, operation and maintenance of flow gauges with telemetry on the Menominee River upstream of the Chalk Hill Reservoir at Z Bridge, USGS gauge No. 04066003, and immediately downstream of the White Rapids Dam. WEPCo shall complete all arrangements for the USGS flow gauges within 2 years of the FERC license issuances.

1.2 Upon commencement of flow gauge operation, WEPCo shall operate the Chalk Hill and White Rapids Hydroelectric Projects on a run-of-river basis. "Run-of-river" means the Menominee River flow through the White Rapids Project shall "equal" the Menominee River flow measured at Z Bridge, after appropriate corrections to account for time of passage and water accretion. WEPCo shall contract with USGS to determine, following a 3-year evaluation period, the ice free and ice-affected accuracy values of the gauges, along with appropriate values for time of passage and water accretion. Upon receiving these accuracy estimates and values for time of passage and water accretion, and after consultation with USGS and WEPCo, the Fisheries Division of MDNR will define "equal" for compliance purposes and notify WEPCo of the determination. Any alternate criterion proposed by

WEPCo must be submitted within 3 months of the Fisheries Division determination to the Chief of the Fisheries Division for review and approval.

1.3 During the initial 3 year period after commencement of flow gauge operation, WEPCo may use remotely controlled manual water release (manual/remote) techniques to operate the Chalk Hill and White Rapids Hydroelectric Projects.

If the Chief of the Fisheries Division of MDNR determines, after reviewing the available flow gauge data, that manual/remote operation techniques can achieve the run-of-river criteria, WEPCo may continue to use manual/remote operation techniques for the remaining duration of the FERC licenses.

If the Chief of the Fisheries Division of MDNR determines, after reviewing the available flow gauge data, that manual/remote operation techniques cannot achieve the run-of-river criteria, WEPCo shall, within 3 months of that determination, submit to the Chief of the Fisheries Division of MDNR for review and approval, a plan for evaluating the feasibility of the automatic operation of the Chalk Hill and White Rapids Hydroelectric Projects. This plan shall include an assessment of controls that are commercially available; examples of control installations at plants of similar size, on rivers of similar flow characteristics; and cost for control equipment and required modifications, if practicable, to existing equipment. If the feasibility study is supportive of automation and if plant equipment (e.g., turbines, governor, generators, and tainter gates) would not be adversely impacted, then a final plan shall be prepared within six months. This plan shall include final engineering plans and specifications and an implementation schedule for all automatic control equipment.

2.0 Chalk Hill and White Rapids Hydroelectric Projects -- Water Quality Limitations:

2.1 WEPCo shall not release a heat load which would warm the Menominee River immediately downstream from the White Rapids Hydroelectric Project to temperatures in degrees Fahrenheit higher than the following monthly average temperatures:

J	F	M	A	M	J	J	A	S	O	N	D
38	38	41	56	70	80	83	81	74	64	49	39

This condition (2.1) shall not apply when the natural temperature of the Menominee River measured at the Z Bridge gauging station exceeds the above monthly average temperature values.

2.2 WEPCo shall not release a heat load, at any time, which would warm the Menominee River immediately downstream from the White Rapids Hydroelectric Project more than 5 degrees Fahrenheit above the existing natural water temperature measured at the Z Bridge gauging station.

2.3 WEPCo shall not cause the dissolved oxygen concentration, measured in the Menominee River at the gauging station immediately downstream from the White Rapids Hydroelectric Project, to be less than 5 mg/l at any time.

2.4 In the event that any of the water quality limitations listed in Conditions 2.1, 2.2 and 2.3 of this Certification are not met, WEPCo shall immediately notify the Chief of the Surface Water Quality Division of MDNR, and take all steps necessary to ensure that compliance with these limitations is achieved.

3.0 Chalk Hill and White Rapids Hydroelectric Projects -- Water Quality Monitoring and Reporting:

3.1 WEPCo shall, for five years following license issuance, monitor the temperature and dissolved oxygen levels of the Menominee River at the gauging stations located immediately downstream from the White Rapids Hydroelectric Project and Z Bridge on an hourly basis during the months of May, June, July, August and September. During the first two years following license issuance, WEPCo shall measure temperature and dissolved oxygen in the Chalk Hill and White Rapids reservoirs during the winter. Specifically, surface to bottom vertical profiles of temperature and dissolved oxygen shall be made one time per month for the months of December, January, February and March to determine if low DO conditions become established in the reservoirs. Within 30 days, if winter reservoir DO levels fall below 5 mg/l in the reservoir(s), WEPCo shall develop a monitoring program for the downstream tailwaters of the affected reservoir(s) for review and approval by the Chief of the Surface Water Quality Division.

WEPCo shall use temperature and dissolved oxygen monitoring equipment approved by the Chief of the Surface Water Quality Division of MDNR. WEPCo shall compile and summarize the temperature and dissolved oxygen data in written reports, submitted within 60 days of completing the September monitoring to the Chiefs of the Fisheries and Surface Water Quality Divisions of MDNR.

After the initial 5-year monitoring period, WEPCo may send a written request to the Chief of the Surface Water Quality Division of MDNR to change the frequency of temperature and dissolved oxygen monitoring. After receiving written notification from the Chief of the Surface Water Quality Division of MDNR, a reduced

monitoring frequency or alternative may be implemented as determined by the Chief of Surface Water Quality Division.

3.2 Within 6 months of the issuance of the FERC licenses, WEPCo shall prepare and submit a water/sediment/fish monitoring plan, capable of satisfying the monitoring and data reporting requirements listed in Appendix A, to the Chief of the Surface Water Quality Division of MDNR for review and approval. WEPCo shall implement the monitoring plan within 3 months of receiving MDNR approval of the plan.

4.0 Chalk Hill and White Rapids Hydroelectric Projects -- Natural Resource Damages and Penalties:

The state reserves the right to seek civil or criminal penalties and liability under applicable law for natural resources damages which may occur, if WEPCo fails to comply with any term or condition in this Certification.

Issued this 22 day of July, 1993, by the Michigan Water Resources Commission and shall expire at the end of the FERC license period.

William McCracken
Executive Secretary

APPENDIX A

Chalk Hill and White Rapids Hydroelectric Projects
Water/Sediment/Fish Monitoring Requirements

Water Monitoring Requirements

Monitoring Locations:

1. Menominee River at the Z Bridge gauging station.
2. Menominee River at the gauging station immediately downstream from the White Rapids Hydroelectric Project.
3. Chalk Hill Hydroelectric Project Impoundment.
4. White Rapids Hydroelectric Project Impoundment.

Parameters and Monitoring Frequency:

Parameter*	Frequency
Alkalinity	Quarterly every fifth year
Chlorophyll a	Quarterly every fifth year
Color (PCU)	Quarterly every fifth year
Dissolved Sulfates	Quarterly every fifth year
pH (S.U.)	Quarterly every fifth year
Hardness	Quarterly every fifth year
Secchi Depth (m)	Quarterly every fifth year
Specific Conductivity (umhos)	Quarterly every fifth year
Total Ammonia	Quarterly every fifth year
Total Dissolved Solids	Quarterly every fifth year
Total Nitrates	Quarterly every fifth year
Total Nitrites	Quarterly every fifth year
Total Nitrogen	Quarterly every fifth year
Total Organic Carbon	Quarterly every fifth year
Total Phosphorus	Quarterly every fifth year
Total Suspended Solids	Quarterly every fifth year
Temperature Profile (F)**	Quarterly every fifth year
Dissolved Oxygen Profile**	Quarterly every fifth year

* All units are mg/l, unless otherwise indicated.

** Temperature and Dissolved Oxygen profiles are only required for the Impoundment monitoring locations. Profiles should be taken by sampling every 0.5 meters at the deepest location within the Impoundment.

Sediment Monitoring Requirements

Monitoring Locations:

1. Chalk Hill Hydroelectric Project Impoundment
2. White Rapids Hydroelectric Project Impoundment

Parameters and Monitoring Frequency

Parameter*	Frequency
Oil and Grease	Annually every tenth year
Percent Volatile Solids (%)	Annually every tenth year
Total Arsenic	Annually every tenth year
Total Barium	Annually every tenth year
Total Cadmium	Annually every tenth year
Total Chromium	Annually every tenth year
Total Copper	Annually every tenth year
Total Lead	Annually every tenth year
Total Manganese	Annually every tenth year
Total Mercury	Annually every tenth year
Total Nickel	Annually every tenth year
Total Nitrogen	Annually every tenth year
Total Organic Carbon	Annually every tenth year
Total Phosphorus	Annually every tenth year
Total Selenium	Annually every tenth year
Total Silver	Annually every tenth year
Total Zinc	Annually every tenth year
Acid Volatile Sulfides	Annually every tenth year
Total PCB	Annually every tenth year

* All units are mg/kg, unless otherwise indicated.

Fish Monitoring Requirements:

1. Resident walleye (20-22" size range) shall be monitored for selected chemical contaminants once every fifth year of the FERC license. Other species and/or size ranges may be used with the approval of the Chief of the MDNR, Surface Water Quality Division.

2. Monitoring locations shall be: (1) Menominee River in the vicinity of the Z Bridge gauging station; and (2) Menominee River in the vicinity of the gauging station downstream from the White Rapids Hydroelectric Project.

3. Chemical analyses of whole fish samples shall include: Dieldrin, DDE, DDD, DDT, Mercury, Total Chlordane, PCB (Arochlors 1242, 248, 1254, 1260), Toxaphene, 2,3,7,8-TCDD and 2,3,7,8-TCDF.