

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Wisconsin Public Service Corporation) Project No. 2525-004

ORDER ISSUING NEW LICENSE
(Major Project)

JUN 26 1997

INTRODUCTION

On December 18, 1991, Wisconsin Public Service Corporation (Public Service or licensee) filed an application under Part I of the Federal Power Act (FPA) for a new license to continue to operate and maintain the existing 6.4-megawatt (MW) Caldron Falls Hydroelectric Project, located on the Peshtigo River, in Marinette and Oconto Counties, Wisconsin. The project occupies 640 acres of U.S. lands within Nicolet National Forest. 1/ The project as proposed by the licensee would produce about 19 gigawatthours (GWh) of electricity annually. The current license for this project expired on December 31, 1993. 2/ Since then, Public Service has operated the Caldron Falls Project under an annual license with the same terms and conditions as the current license. 3/

Concurrently with this order, I am issuing an Order Granting Applications for New License (Master Order), which discusses issues common to Public Service's six hydroelectric projects on the Peshtigo River. That order is incorporated by reference

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- 1/ The Peshtigo River is a navigable river (55 F.P.C. 78 (1976)) and the project occupies U.S. lands. Section 23(b)(1) of the FPA, 16 U.S.C. §817(1), therefore, requires the project to be licensed.
- 2/ The Commission issued the original license for the Caldron Falls Project in 1969 (41 FPC 777).
- 3/ Pursuant to Section 15(a) of the FPA 16 U.S.C. § 808(a), upon expiration of a major license, the Commission is required to issue, from year to year, an annual license.

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herein. The following discussion pertains to the Caldron Falls Hydroelectric Project.

BACKGROUND

The Commission issued a public notice on February 26, 1993, that the application was accepted and soliciting motions to intervene. Three entities filed motions to intervene on the following dates: U.S. Department of the Interior (Interior), April 27, 1993; Wisconsin Department of Natural Resources (Wisconsin DNR), March 8, 1993; and River Alliance of Wisconsin (River Alliance), August 9, 1996. Interior, Wisconsin DNR, and River Alliance did not provide specific issues for consideration as part of their motions to intervene. No agency, organization, or individual filed a motion to intervene in opposition to the project.

The Commission issued a public notice on August 14, 1995, indicating that the application was ready for environmental analysis. Two fish and wildlife agencies provided comments and recommended terms and conditions pursuant to Section 10(j) of the FPA: Interior on October 6, 1995; and Wisconsin DNR on October 11, 1995. In addition, one non-governmental organization, American Whitewater Affiliation, also filed comments on the application.

On June 27, 1996, the Commission issued a draft multiple-project Environmental Impact Statement (EIS) for six projects on the Peshtigo River: Caldron Falls Project No. 2525; High Falls Project, No. 2595; Johnson Falls Project, No. 2522; Sandstone Rapids Project, No. 2546; Potato Rapids Project, No. 2560; and Peshtigo Project, No. 2581. Commission staff addressed all comments on the draft EIS in the final EIS (FEIS), issued on March 28, 1997.

I have fully considered the motions and comments received in this proceeding in determining whether, and under what conditions, to issue this license.

PROJECT DESCRIPTION

The Caldron Falls Project consists of a dam and spillway,

reservoir, powerhouse, substation, and appurtenant facilities. At the normal pool elevation of 982.0 feet NGVD 4/, the reservoir surface area is 1,180 acres, and the storage volume is 11,570 acre-feet. Public Service owns 3,021 acres of land surrounding the reservoir and powerhouse areas. Public Service operates the project in a limited peaking mode and historically produced about 20 GWh of electricity annually. A more detailed project description can be found in ordering paragraph B(2).

APPLICANT'S PLANS AND CAPABILITIES

In accordance with Sections 10 and 15 of the FPA, 5/ staff evaluated Public Service'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) impact on the transmission system; (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

Public Service is making a good faith effort to conserve electric energy by: (1) implementing least cost plans that meet the requirements of the Public Service Commission of Wisconsin; (2) conducting on-site energy audit services; and (3) offering a financial assistance program that includes a combination of moderate interest loans, rebates, and shared savings. This efficiency program is augmented by a rate program that has all customers over 200 kilowatts (kW) on time-of-use/demand rates, and it also offers these rates to 90 percent of the remaining customers.

4/ All elevations are referenced to National Geodetic Vertical Datum (NGVD).

5/ 16 U.S.C. §§ 803(a)(2)(C) and 808(a).

2. Ability to Comply with the New License

Public Service'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.

Public Service 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

Public Service owns and operates the Caldron Falls Project. The project dam and appurtenant facilities are subject to Part 12 of the Commission's Regulations concerning project safety. Staff reviewed Public Service'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

Staff examined records of Public Service's operation of the Caldron Falls Project and found that it has operated the project in an efficient manner. Public Service is able to provide efficient and reliable service from the Caldron Falls Project based on its experience in operating the project, and based on its coordination of its other Peshtigo River hydroelectric projects downstream.

Public Service operates all of the six hydroelectric plants located along a 60-mile reach of the Peshtigo River. To provide efficient and reliable service, Public Service has implemented an automated operating system that controls the six Peshtigo River hydroelectric facilities through a company-wide System Operating Control Center in Green Bay, and the Eastern Hydro Operations Center in Crivitz, Wisconsin. Operation instructions for the six

plants originate at the System Operating Control Center. Remote sensing of generation, headwater conditions, status of spillway gate operation, and weather conditions allow the operators to control generation during flood conditions.

After reviewing the record of the licensee and its ability to provide efficient and reliable electric service, staff concludes that Public Service 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 Public Service's use of the project power to date and the projected use in the future, together with that of the operating region in which the project is located.

The Caldron Falls 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 indicates that for the period 1995-2004, 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 Caldron Falls Project, when licensed with staff's recommended measures, will generate an annual average of 19 GWh of power. The project power has been and will continue to be used to meet the needs of Public Service's wholesale and retail customers. In addition, the project 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

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

cost, its displacement of nonrenewable fossil-fired generation and contribution to a diversified generation mix support a finding that the power from the Caldron Falls Project will help meet a need for power in the MAIN area in the short- and long-terms. 2/

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

The transmission facilities in this area are very old and must be replaced within the next 10 years due to age and condition. Because these facilities will be rebuilt soon anyway, and the present line flows are low, there would be little impact to the transmission system if Public Service is denied the license for the Caldron Falls Project. However, the impact of Public Service losing all of the hydro generation on the upper Peshtigo River would be considerable. Public Service estimates that on-peak losses would rise and a transformer outage could cause some voltages to drop to less than 92 percent of nominal. Public Service depends on the upper Peshtigo River hydroelectric generation to support the 69-kilovolt (kV) transmission system in the area.

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

Public Service plans to operate the project in a limited peaking mode and to implement various other environmental measures. These plans can be achieved in a cost-effective manner. The project, as presently constructed and as Public Service proposes to operate it, fully develops and uses the economical hydropower potential of the site.

8. Compliance Record

Staff reviewed Public Service's compliance with the terms and conditions of the existing license. They found that Public Service's overall record of making timely filings and compliance with its license is satisfactory.

2/ See FEIS at section 1.2.

COASTAL ZONE MANAGEMENT ACT

Under Section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA), the Commission cannot issue a license for a project within or affecting a state's coastal zone unless the CZMA agency concurs with the applicant's certification of consistency with the state's CZMA program. Marinette County is a state-designated coastal zone under Wisconsin's Coastal Management Program. The Wisconsin Department of Administration (Wisconsin DOA) is the state agency responsible for administering the state's CZMA program. On October 1, 1993, Public Service requested review of the Peshtigo River projects for certification under the state's program. By letter dated October 19, 1993, the Wisconsin DOA waived the review of Public Service's application for consistency with the state's CZMA program.

WATER QUALITY CERTIFICATION

Under Section 401(a)(1) of the Clean Water Act (CWA), 8/ the Commission may not issue a license for a hydroelectric project unless either the licensee obtains water quality certification from the certifying agency of the state in which the project discharge will originate, or the certifying agency waives certification. Section 401(a)(1) states that certification is deemed waived if the certifying agency fails to act on a water quality certification request 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.

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 that may result in any discharge into navigable waters to obtain from the state in which the discharge originates certification that any such discharge will comply with applicable water quality standards.

10/ 33 U.S.C § 1341(d).

Public Service, on July 22, 1991, requested water quality certification for the Caldron Falls Project from Wisconsin DNR. On May 13, 1992, Wisconsin DNR waived issuance of the Section 401 water quality certification.

SECTION 18 OF THE FPA - FISHWAY PRESCRIPTION

Section 18 of the FPA 11/ authorizes the Secretary of the Interior or the Secretary of Commerce to prescribe fishways at Commission-licensed projects. 12/

In its letter dated October 6, 1995, Interior requested that the Commission reserve its authority to prescribe the construction, operation, and maintenance of fishways at the Caldron Falls 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. 13/ Therefore, consistent with Commission practice, Article 410 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.

11/ 16 U.S.C. § 811.

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

13/ 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).

RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES

Section 10(j) of the FPA 14/ 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. Wisconsin DNR and Interior submitted 14 recommendations that are subject to the provisions of Section 10(j). 15/

The new license issued herein contains 10 conditions consistent with the following recommendations submitted by Wisconsin DNR and Interior that are subject to the provisions of Section 10(j):

- (1) maintain a reservoir surface elevation between 981.6 and 982.1 feet NGVD as measured immediately upstream from the project dam (Article 402);
- (2) allow a reservoir drawdown of up to 8 feet between March 1 and April 15 (Article 405);
- (3) install a U.S. Geological Survey (USGS) streamflow gage upstream of the project reservoir (Article 406);
- (4) rectify low dissolved oxygen (DO) conditions in the tailrace (Article 404);
- (5) implement a gaging and compliance plan (except for definition of run-of-river compliance which is discussed below) (Article 406);

14/ 16 U.S.C. § 803(j)(1).

15/ A number of the recommendations are outside the scope of Section 10(j); these were instead considered under Section 10(a)(1), pursuant to which the Commission considers all aspects of the public interest.

- (6) provide flow continuation after plant shutdown (Article 402);
- (7) sluice downstream all large woody debris through the project (Article 411);
- (8) protect bald eagles and their nest trees from human disturbance (Article 412);
- (9) address timber management impacts on threatened and endangered species (Article 412); and
- (10) establish a 200-foot-wide zone along riparian areas and do not allow timber harvesting in this zone (Article 412).

If the Commission finds that any fish and wildlife agency 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 potential 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.

In the draft EIS, staff determined that the following five agency recommendations were potentially inconsistent with the FPA or other applicable law:

- (1) operate the Caldron Falls Project in an instantaneous run-of-river mode;
- (2) determine run-of-river compliance by allowing no more than ± 5 percent difference between inflow and outflow;
- (3) maintain and monitor for state water quality standards;
- (4) develop and implement a fish protection plan (except for payments for lost fish, which are considered under Section 10(a), below); and

(5) fund and implement a program for monitoring and controlling purple loosestrife, Eurasian milfoil, and zebra mussels.

In response to these preliminary determinations, Wisconsin DNR and Interior filed comment letters on the draft EIS. On September 4, 1996, representatives from Wisconsin DNR, and the U.S. Fish and Wildlife Service (FWS) met with Commission staff to attempt to resolve the aforementioned inconsistencies. Public Service was also present at the meeting.

During the Section 10(j) meeting, Commission staff and the agencies agreed that water quality monitoring at the Caldron Falls Project would occur annually for the first 2 to 3 years, followed by monitoring once every 5 years, if the initial monitoring showed that there were no water quality problems. The agencies also agreed at the meeting that Public Service would cooperate with the agencies in controlling purple loosestrife, Eurasian milfoil, and zebra mussels.

Pursuant to Section 10(j), Commission staff determined that the three recommendations for run-of-river operation, the agencies' definition of run-of-river operation, and a fish protection plan for this project are inconsistent with Sections 4(e) and 10(a) of the FPA. The following paragraphs briefly explain why I am not adopting these three recommendations. As discussed in the Master Order, I conclude that the conditions I am imposing regarding these three issues will provide adequate protection and enhancement of fish and wildlife resources.

In the FEIS, staff states that seasonal run-of-river operation at the Caldron Falls Project will provide significant fishery and recreational enhancement over the project's historical operation. Run-of-river operation during the spring will provide the best spawning conditions for the entire Peshtigo River. I agree with staff that the substantial cost of providing year-round run-of-river operation is not justified by the limited benefits to fishery resources. I, therefore, concur with staff's determination in the FEIS, and find that Wisconsin DNR's and Interior's recommendation for year-round run-of-river operation is inconsistent with the provisions of Section 10(a) and 4(e) of the FPA.

In the FEIS, staff does not recommend that run-of-river operation be defined as no more than a 5 percent difference between inflows and outflows, because there are difficulties when comparing measured or calculated inflows to measured or calculated outflows. 16/ The 5 percent difference recommended by the agencies is too narrow of a range for practical operation. Run-of-river operation that serves the purpose of staff's recommendation will still be achieved with greater differences between measured inflow and outflow from a project. I concur with staff's determination in the FEIS and find that Wisconsin DNR's and Interior's recommendation is inconsistent with the provisions of Section 10(a) and 4(e) of the FPA.

In the FEIS, staff found no evidence suggesting that entrainment mortality is causing adverse effects on the fish populations of the project waters. 17/ I concur with staff's determination in the FEIS and find that Wisconsin DNR's and Interior's recommendation for a fish protection plan is inconsistent with the provisions of Section 10(a) and 4(e) of the FPA. Since entrainment mortality is not having a significant adverse effect on the fishery resources at the Caldron Falls Project, I find that there is no demonstrable need to install costly fish exclusion systems.

The following 19 recommendations made by Wisconsin DNR and Interior are outside the scope of Section 10(j) in that they involve studies that could have been performed prior to licensing, or do not otherwise qualify as measures to protect, mitigate damages to, or enhance fish and wildlife: 18/

- (1) coordinate with agencies on reservoir drawdowns;

16/ See FEIS at section 4.2.2.2.

17/ See FEIS at section 4.2.3.5.

18/ See 18 C.F.R. §4.30(b)(9)(ii)(1994), and Regulations Governing Submittal of Proposed Hydropower License Conditions and Other Matters, 56 Fed. Reg. 23,108 (May 20, 1991), III FERC Statutes and Regulations 30,921 (May 8, 1991) (Order No. 533) at pp. 31, 108-10.

- (2) pay an amount annually to Wisconsin DNR for the value of fish lost to entrainment mortality;
- (3) develop an upstream fish passage plan;
- (4) include a long-term fish and wildlife protection reopener article;
- (5) reserve Section 18 authority;
- (6) finalize existing comprehensive land management plan (CLMP);
- (7) provide for public use of project lands and consult with agencies about wildlife management;
- (8) keep all project lands within the project boundary;
- (9) continue operation and maintenance of existing recreation sites;
- (10) make project tailwater accessible and provide at least one barrier-free access site on the reservoir;
- (11) improve canoe portage;
- (12) develop a designated canoe route;
- (13) provide and maintain rest room facilities at Boat Landings No. 9 and 12;
- (14) install and maintain trash receptacles at each recreation site;
- (15) complete an intensive recreation use survey every five years in consultation with the resource agencies;
- (16) implement measures recommended by resource agencies and local entities to protect and enhance recreational use of fish and wildlife;
- (17) install signage to direct people to access site

downstream of powerhouse;

(18) include a license article requiring compliance with Chapters 30 and 31 of the Wisconsin Statutes; and

(19) establish a project retirement fund.

The following conclusions were reached with respect to the issues considered under Section 10(a)(1).

(1) Article 408 requires Public Service to develop a drawdown plan that includes measures to coordinate with the agencies on reservoir drawdowns.

(2) I am not requiring Public Service to make annual payments to Wisconsin DNR to compensate for the value of fish lost through entrainment and turbine mortality, as discussed in the Master Order.

(3) I am not requiring Public Service to develop an upstream fish passage plan, as discussed in the Master Order. Any future request for fish passage by Wisconsin DNR, including supporting documentation, should be submitted to the Commission for consideration under the provisions provided for in Article 15 of Standard Form L-5 attached to this license. 19/

(4) Article 15 of Standard Form L-5 attached to this license provides a reopener for long-term fish and wildlife protection.

(5) Article 410 reserves Interior's Section 18 authority.

(6) Article 412 requires Public Service to develop a comprehensive land and wildlife management plan (CLWMP) that includes the existing CLMP, but does not include Wisconsin DNR's recommendation for full-time staff or comprehensive

19/ Wisconsin DNR may also request fish passage through the Secretary of Interior's Section 18 reservation of authority, provided in Article 410.

annual surveys, because the cost of these measures is not commensurate with their benefit.

(7) Article 412 requires Public Service to develop a CLWMP that provides for public use of project lands and consultation with agencies about wildlife management.

(8) Public Service must file with the Commission to remove from the project boundary any lands that are not covered by the "minor conveyances" provisions of Article 416. The filing must include copies of agency consultation; therefore, I am not including a separate license article requiring Public Service to keep all lands within the project boundary and consult with the agencies on any proposed changes.

(9) Article 413 requires Public Service to develop a recreation plan that includes continued operation and maintenance of the existing recreation sites.

(10) The tailwater area at the Caldron Falls Project is currently accessible to the public, and there is already one barrier-free access site on the reservoir. In addition, Article 413 requires Public Service to provide directional signage to the tailwater site.

(11) Article 413 requires Public Service to maintain the existing canoe portage.

(12) Article 413 requires Public Service to develop a canoe route along the Peshtigo River.

(13) Article 413 requires Public Service to provide and maintain rest room facilities at Boat Landings Nos. 8, 9 and 12.

(14) Article 413 requires Public Service to install and maintain trash receptacles at Boat Landings Nos. 8, 9, and 10. I am only requiring trash receptacles at highly used sites. Other sites can be maintained using a pack-it-in and pack-it-out approach.

(15) Article 414 requires Public Service to complete a recreation use survey in consultation with the resource agencies, as part of the Commission's Form No. 80 report.

(16) Article 413 requires Public Service to implement specific recreation measures that have been recommended by resource agencies and local entities.

(17) Article 413 requires Public Service to install signage to direct people to the public access site downstream of the powerhouse.

(18) I am not requiring a license article for project compliance with Chapters 30 and 31 of the Wisconsin Statutes as the Commission's dam safety and construction rules are preemptive at licensed projects.

(19) I am not requiring Public Service to establish a retirement trust fund; however, Article 204 requires Public Service to serve a copy of any transfer application on the Wisconsin DNR and FWS, as discussed in the Master Order.

OTHER CONSIDERATIONS

Local citizens expressed concern over erosion below the Caldron Falls dam. The Marinette County Land & Water Conservation Department recommended that Public Service develop and implement a shoreline erosion monitoring and remediation plan.

At the Caldron Falls Project, variable flows due to peaking operations may contribute to shoreline erosion in the 1.7-mile-long, free-flowing reach downstream of the project. The operation of this project under the new license will allow peaking, resulting in project outflows fluctuating from 50 cubic feet per second (cfs), the required minimum flow, to 1,300 cfs. In order to determine if the Caldron Falls Project produces downstream erosion, I am requiring under Article 401 of this license that Public Service develop and implement an erosion monitoring and control plan for the 1.7-mile river segment.

The goal of this plan is to identify any project-induced

erosion. ^{20/} I am also requiring that Public Service include in the aforementioned plan its proposed measures to fund and implement needed erosion control measures along licensee-owned portions of the shoreline downstream of the Caldron Falls Project. If project-induced shoreline erosion adversely affects properties that are not owned by Public Service, then Public Service should cooperate with the U.S. Fish and Wildlife Service (FWS), the Wisconsin DNR, Marinette County Land & Water Conservation Department (Marinette County), and property owners to address and correct such erosion.

COMPREHENSIVE PLANS

Section 10(a)(2)(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 a waterway or waterways

^{20/} See Order Ruling on Complaint regarding Project No. 2503-009, issued December 4, 1985 (33 FERC ¶ 61,321) and Order Denying Rehearing for Project No. 2503 (34 FERC ¶ 61,254). Project-induced erosion is erosion caused primarily by daily flow fluctuations; that is, erosion not attributable to flood flows or phenomena, such as wind-driven wave action, run-off from steep terrain during storms, and loss of vegetation due to fire and other natural causes.

affected by the project. 21/ Of the comprehensive plans filed with the Commission, the Commission staff identified nine that are relevant to the Caldron Falls Project. 22/

I conclude that the Caldron Falls Project with the requirements contained in this license is consistent with all of these plans, except for certain parts of the *Upper Green Bay Basin Water Quality Management Plan*. I am not requiring year-round run-of-river operation at the Caldron Falls Project, which is recommended within the *Upper Green Bay Basin Water Quality Management Plan*. While the seasonal run-of-river operations is not fully consistent with this management plan, it does provide a significant enhancement over, and should alleviate water quality problems associated with, historical operations.

COMPREHENSIVE DEVELOPMENT

In making the comprehensive development determinations under Sections 4(e) and 10(a)(1) of the FPA, the Commission considers the project both with Public Service's proposed enhancement measures and with the Commission staff's recommendations. Based

21/ Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (1995).

22/ National Forest Land and Resource Management Plan, Forest Service, 1986; Upper Green Bay Basin Water Quality Management Plan, Wisconsin Department of Natural Resources, 1993; Water Quality Modeling of the Peshtigo River for Wasteload Allocation Development, Wisconsin Department of Natural Resources, 1986; Reverification of the Peshtigo River Wasteload Allocation, Wisconsin Department of Natural Resources, 1989; State Comprehensive Outdoor Recreation Plan, 1985 and 1991, Wisconsin Department of Natural Resources; Wisconsin Water Quality: Report to Congress, 1986 and 1992, Wisconsin Department of Natural Resources; North American Waterfowl Plan, 1986, Interior and Canadian Wildlife Service; Fisheries USA: The Recreational Fisheries Policy of the U.S. Fish and Wildlife Service, Interior, undated; and The Nationwide Rivers Inventory, National Park Service, 1982.

on current economic conditions, without future escalation or inflation, the Caldron Falls Project, if licensed as Public Service proposes, would produce an average of 19 GWh of energy, at an annual cost of about \$224,000 (11.8 mills/kWh) less than currently available alternative power. ^{23/} If licensed in accordance with the conditions adopted herein, the project would produce the same amount of energy at an annual cost of \$190,000 (10.0 mills/kWh) less than currently available alternative power.

The FEIS analyzes the effects associated with the issuance of a new license for the Caldron Falls Project. The FEIS recommends a variety of measures to protect and enhance the environmental resources, which I adopt, as discussed herein. Staff's recommended enhancement measures were developed after the consideration of the license terms and conditions submitted by Interior and Wisconsin DNR.

Based on my review and evaluation of the project as proposed by the licensee, and with the additional enhancement measures I am requiring, I conclude that operating and maintaining the project in the manner required by the license will protect and enhance fish and wildlife resources, water quality, recreational, 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 Caldron Falls 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.

I am requiring the licensee to implement at the Caldron Falls Project the enhancement measures summarized below:

- (1) monitor for erosion downstream of the project dam

^{23/} The staff valued the project power at Public Service's cost to purchase equivalent alternative power at wholesale prices in the region at 1996 levels. Public Service's 1996 energy costs were \$20.425/MWh for peak, and \$12.091/MWh for off-peak, energy, and the cost of capacity was \$31.34/kW-year.

(Article 401);

(2) operate the project in a seasonal run-of-river mode from approximately mid-April through June (Article 402) and down-ramp outflow at a rate not greater than 65 cubic feet per second (cfs) in any 2-minute period (Article 403);

(3) maintain a reservoir surface elevation between 981.6 and 982.1 feet NGVD, except during an annual drawdown of up to 8 feet (Articles 402 and 405);

(4) release a minimum flow of 50 cfs when the project is not operating in a run-of-river mode (approximately July 1 through April 14) to enhance water quality and rectify low DO concentrations in the project tailrace (Article 404) and down-ramp outflow at a rate not greater than 65 cfs in any 2-minute period (Article 403);

(5) develop an operating and compliance plan, including a 3-year test period (Article 406) and a flow monitoring and recording plan, including installation of a U.S. Geological Survey streamflow gage (Article 407);

(6) develop a reservoir drawdown plan, including notification of resource agencies in the event of emergency and scheduled drawdowns (Article 408);

(7) maintain state water quality standards for temperature and DO, and develop a water quality monitoring plan (Article 409);

(8) reserve the Commission's authority to require the licensee to construct, maintain, and operate fishways as prescribed by the Secretary of the Interior pursuant to Section 18 of the FPA (Article 410);

(9) develop a plan to sluice large woody debris downstream (Article 411);

(10) revise the existing CLMP into one CLWMP for the Caldron Falls Project, and for five other Public Service-owned and -operated hydroelectric projects on the Peshtigo River,

including: implementation of a no timber-harvest zone in riparian areas; a bald eagle protection plan; and a monitoring and control program for purple loosestrife, Eurasian milfoil, and zebra mussels (Article 412);

(11) file a final recreation plan to include recreation enhancements (Article 413);

(12) consult with the appropriate agencies regarding recreation use and needs at the project as part of the Commission's Form 80 Report (Article 414); and

(13) implement the Programmatic Agreement to protect cultural resources (Article 415).

TERM OF LICENSE

As discussed in the Master Order, the term of license is set at 40 years.

SUMMARY OF FINDINGS

The FEIS issued for this project includes background information, analysis of impacts, and support for related license articles.

The Commission's Division of Dam Safety and Inspections, pursuant to Part 12 of the Commission's regulations and Engineering Guidelines, evaluated the Caldron Falls Project for the purpose of issuing a new license and concluded that the dam and other project works are safe. The design of this project is consistent with engineering safety standards. The project will be safe if operated and maintained in accordance with the requirements of this license.

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

The Director orders:

(A) This license is issued to Wisconsin Public Service Corporation for a period of 40 years, effective the first day of the month in which this order is issued, to operate and maintain the Caldron Falls Hydroelectric Project. This license is subject to the terms and conditions of the FPA, which is incorporated by reference as part of this license, and subject to the regulations that 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, filed on December 18, 1991:

<u>Exhibit</u>	<u>FERC No. 2525-004</u>	<u>Showing</u>
G (Sheet 1)	1004	Project location
G (Sheet 2)	1005	Project boundary
G (Sheet 3)	1006	Project boundary

(2) The project works consisting of: (1) a reservoir with a surface area of 1,180 acres, a maximum depth of 40 feet and a volume of 11,570 acre-feet at elevation 982.0 feet NGVD; (2) two earth embankments with a 2-foot-thick concrete core wall and a combined length of 1,250 feet; (3) an unregulated spillway section consisting of a concrete gravity overflow dam 121 feet long; (4) a concrete gated spillway section 110 feet long with (a) a conventional ogee overflow segment, and (b) six 12-foot-high by 14 foot-wide radial gates; (5) a nonoverflow concrete gravity dam with crest at elevation 986 feet and vertical upstream face; (6) two 4-foot-square sluice gates, located in the nonoverflow dam; (7) a 7-foot-wide gated concrete trash sluice, located adjacent to the power intake; (8) a 52-foot-wide power intake with four 10.3-foot-high by 10.5-foot-wide gates; (9) one 10-foot diameter penstock 210 feet long; (10) one 10-foot diameter penstock 220 feet long; and (11) a powerhouse consisting of (a) a 29-foot-wide by 76-foot-long by 35-foot-high steel and brick structure, and (b) two identical 3 phase, 60 cycle Allis-Chalmers vertical umbrella type generators rated at 3,200 kW directly connected to

© two Allis-Chalmers type FV 4,650 horsepower vertical turbines operating at 225 rpm.

The project works generally described above are more specifically shown and described by those portions of exhibits A and F of the license application shown below.

Exhibit A. The following sections of exhibit A filed December 18, 1991:

The dam, spillways, head works, dike, penstocks, reservoir, powerhouse, generating equipment, and appurtenant facilities as described on pages A-1 through A-6.

Exhibit F. The following exhibit F drawings filed December 18, 1991:

<u>Exhibit</u>	<u>FERC No. 2525-004</u>	<u>Showing</u>
F (Sheet 1)	1001	Project site layout
F (Sheet 2)	1002	Plan and sections of dam
F (Sheet 3)	1003	Plan of powerhouse

(3) All 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 necessary or appropriate in the operation or maintenance of the project.

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

(D) This license is subject to the articles set forth in Form L-5 (October 1975), entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters and Lands of the United States" (54 FPC 1832), 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 6,400 kilowatts.

For the purpose of recompensing the United States for the use, occupancy, and enjoyment of 640 acres of its lands, other than for transmission line right of way, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time.

Article 202. Pursuant to Section 10(d) of the Federal Power Act (FPA), 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 203. 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 204. Any application to transfer this license shall include proof of service of a copy of that application on the Wisconsin Department of Natural Resources and the U.S. Fish and Wildlife Service.

Article 205. Within 45 days of the date of the issuance date of the license, the licensee shall file an original set and two duplicate sets of aperture cards of the approved drawings. The set of originals must be reproduced on silver or gelatin 35 mm microfilm. The duplicate sets are copies of the originals made on diazo-type microfilm. All microfilm must be mounted on type D (3-1/4" x 7-3/8") aperture cards.

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

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

Article 401. Within one year of license issuance, the licensee shall file with the Commission, for approval, an erosion monitoring and control plan. The plan shall include, but not be limited to: (1) identification of project-induced erosion; (2) measures to control existing and future project-induced erosion on licensee-owned lands along the 1.7-mile river reach immediately downstream of the Caldron Falls dam; (3) detailed descriptions, functional design drawings, and specific topographic locations of all control measures; and (4) a specific implementation schedule and details for monitoring and maintenance programs.

For compliance purposes, project-induced erosion shall be defined as erosion that is not attributable to natural phenomena, such as wind-driven wave action against a shore, run-off from steep terrain during storms, and loss of vegetation due to fire or other natural causes, in the project boundary.

The licensee shall fund and implement erosion control measures along licensee-owned portions of the shoreline downstream of the project dam to control identified project-induced erosion zones. If project-induced shoreline erosion adversely affects properties that are not owned by the licensee, the licensee shall cooperate with the Wisconsin Department of Natural Resources (Wisconsin DNR), Marinette County Land & Water Conservation Department (Marinette County), and property owners to address and correct such erosion.

The licensee shall prepare the plan after consultation with Wisconsin DNR, the U.S. Fish and Wildlife Service, Natural Resources Conservation Service, and Marinette County. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing 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 402. The licensee shall begin operating the project in a run-of-river mode between April 15 and April 30 of each year, continuing for a period of 75 days, for the protection and enhancement of fish, wildlife, and recreation resources of the Peshtigo River. The date of the start of run-of-river operation shall be determined prior to April 1 each year through consultation among the licensee, the Wisconsin Department of Natural Resources (Wisconsin DNR), and the U.S. Fish and Wildlife Service (FWS). The licensee shall notify the Commission of the start date immediately after the consultation.

The licensee, during the run-of-river period, shall 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 from the project tailrace, approximate the sum of inflows to the project reservoir.

In addition, during all operating periods, except as allowed in Article 405, the licensee shall maintain a reservoir water surface elevation between 981.6 and 982.1 feet National Geodetic Vertical Datum (NGVD), as measured immediately upstream from the project dam.

The run-of-river operation and reservoir surface elevation requirements identified above 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, the Wisconsin DNR, and the FWS.

If run-of-river operation or reservoir surface elevation is modified due to an emergency, the licensee shall notify the Commission and the Wisconsin DNR as soon as possible, but no later than 10 days after each such incident.

In the event of project shutdown during run-of-river operation, the licensee shall pass all inflow through the project

instantaneously.

Article 403. The licensee shall not downramp the turbines at a rate that produces changes in powerhouse outflow greater than 65 cubic feet per second in any 2-minute period, for the protection and enhancement of fish and wildlife resources of the Peshtigo River.

This requirement may be temporarily modified, if required by operating emergencies beyond the control of the licensee, and for short periods, upon mutual agreement among the licensee, the Wisconsin Department of Natural Resources (Wisconsin DNR), and the U.S. Fish and Wildlife Service (FWS). If the flow is so modified, the licensee shall notify the Commission, Wisconsin DNR, and FWS as soon as possible, but no later than 10 days after each such incident.

Article 404. The licensee shall release from the project a continuous minimum flow of 50 cubic feet per second (cfs), or inflow, from June 1 through March 31, for the protection and enhancement of water quality and fishery resources in the Peshtigo River.

The minimum flow release may be temporarily modified, if required by operating emergencies beyond the control of the licensee, and for short periods, upon mutual agreement among the licensee, the Wisconsin Department of Natural Resources (Wisconsin DNR), and the U.S. Fish and Wildlife Service (FWS). If the flow is so modified, the licensee shall notify the Commission, Wisconsin DNR, and FWS as soon as possible, but no later than 10 days after each such incident.

Article 405. The licensee may draw down the project reservoir up to 8 feet (to an elevation of 974 feet National Geodetic Vertical Datum) beginning after March 1 of any given year. The licensee shall refill the reservoir before the start of yearly run-of-river operations, required by Article 402.

The licensee, when implementing seasonal reservoir elevation changes permitted by this article, shall not draw down the reservoir at a rate greater than one-half inch per hour or refill the reservoir at a rate greater than 2 inches per hour.

The drawdown and refill rates may be temporarily modified, if required by operating emergencies beyond the control of the licensee, and for short periods, upon mutual agreement among the licensee, the Wisconsin Department of Natural Resources (Wisconsin DNR), and the U.S. Fish and Wildlife Service (FWS). If the rates are so modified, the licensee shall notify the Commission, Wisconsin DNR, and FWS as soon as possible, but no later than 10 days after each such incident.

Article 406. Within one year of license issuance, the licensee shall file with the Commission, for approval, a plan to operate the project in compliance with Articles 402, 403, 404, and 405. The plan also shall include descriptions of procedures the licensee will implement during drought periods. Flow monitoring for determining drought periods shall be done using flows measured at the U.S. Geological Survey streamflow gage required by Article 407, to be located upstream of the Caldron Falls Project reservoir.

The plan shall include a description of and a schedule for a 3-year test period to determine the ability of the licensee to maintain the compliance standards developed in the operating plan. Results of the compliance maintenance test shall be filed with the Commission within 60 days of its completion.

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

operation to satisfy the operating requirements of this license.

Article 407. Within one year of license issuance, the licensee shall file with the Commission, for approval, a plan to monitor and record streamflows, reservoir levels, and generation at the project in order to verify compliance with Articles 402, 403, 404, 405, and 406.

The plan shall include, but not be limited to: (1) the current or proposed location, design, calibration, and maintenance of automatic water level sensors that continuously record headwater and tailwater elevations; (2) a staff gage in the project headwater with the prescribed operating range clearly marked on the gage; and (3) a U.S. Geological Survey (USGS) streamflow gage on the Peshtigo River, upstream of the influence of the project reservoir, with telemetry equipment having sufficient memory to allow for instantaneous short-term retrieval of the data over the phone lines.

The plan also shall describe the licensee's methods to maintain hourly records of turbine operations, headwater elevations, tailwater elevations, and flow releases, and provide these records to the Wisconsin Department of Natural Resources (Wisconsin DNR) and the U.S. Fish and Wildlife Service (FWS) upon request.

The licensee shall prepare the monitoring plan after consultation with the Wisconsin DNR, the FWS, and the USGS. The licensee shall include with the plan documentation of consultation with the resource agencies, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing 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 408. Within one year 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 activity requiring a reservoir drawdown on aquatic resources in the project impoundment and downstream of the project.

The plan shall include descriptions of the following:
(1) procedure for notification of the Wisconsin Department of Natural Resources (Wisconsin DNR), the U.S. Fish and Wildlife Service (FWS), and the Commission after the initiation of any emergency reservoir drawdown needed to prevent dam failure or imminent risk to public health and safety, with notification no later than 24 hours for the Wisconsin DNR and FWS and no later than 10 days for the Commission; (2) consultation with Wisconsin DNR and FWS, if possible, in determining appropriate response measures for emergency drawdowns, and proposed remedial action and reservoir level restoration; (3) consultation with Wisconsin DNR and FWS on proposed reservoir drawdowns and refills for maintenance purposes; and (4) notification of Wisconsin DNR and FWS at least 60 days in advance of proposed maintenance drawdowns.

The licensee shall prepare the plan after consultation with the 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 to 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 409. Within one year of license issuance, the licensee shall file with the Commission, for approval, a plan to monitor dissolved oxygen (DO), water temperature, and pH of the

Peshtigo River upstream and downstream of the Caldron Falls dam.

The purpose of the plan is to ensure that flow releases from the project, as measured immediately downstream from the dam, maintain the following standards, except when natural conditions prohibit attainment of the standards: (1) DO concentrations shall not be less than 5.0 milligrams per liter (mg/L) at any time; (2) water temperature shall not exceed 89 degrees Fahrenheit; and (3) the pH 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 plan shall include provisions for: (1) monitoring for at least the first 2 years of the license, followed by monitoring during one year out of every 5; (2) monitoring upstream and downstream of the Caldron Falls dam, with sensor locations and monitoring frequency determined in consultation with the Wisconsin Department of Natural Resources (Wisconsin DNR) and the U.S. Fish and Wildlife Service (FWS); and (3) operating procedures, developed in consultation with the Wisconsin DNR and the FWS, to address actions to be taken if water quality deviates from the above limits.

The plan shall include schedules for: (1) implementation of the monitoring program within 24 months from the date of license issuance; (2) review of the monitoring results with the Wisconsin DNR and the FWS; and (3) filing the results, agency comments, and licensee's response to agency comments with the Commission.

The licensee shall prepare the plan after consultation with the Wisconsin DNR and the 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 water quality monitoring plan, including any changes required by the Commission.

Article 410. 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 411. 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 reach of river below the project dam to improve fish habitat downstream of the project dam.

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

The licensee shall include with the plan documentation of agency consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on site-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, a comprehensive land and wildlife management plan (CLWMP) for all licensee-owned lands within the project boundary.

The CLWMP may be consolidated into a single plan for the Caldron Falls Hydroelectric Project (Project No. 2525), High

Falls Hydroelectric Project (Project No. 2595), Johnson Falls Hydroelectric Project (Project No. 2522), Sandstone Rapids Hydroelectric Project (Project No. 2546), Potato Rapids Hydroelectric Project (Project No. 2560), and Peshtigo Hydroelectric Project (Project No. 2581).

The intent of the plan is to maintain project lands in a manner that protects environmentally sensitive habitat and ensures that land use is compatible with wildlife management.

The plan shall include, at a minimum:

- (1) maps showing a 200-foot, no-timber-harvest zone along the landward side of all riparian areas within the project boundary;
- (2) land management goals, objectives, and schedule;
- (3) land management categories and allowable uses and activities within each category, including public recreational use of project lands;
- (4) a shoreline development policy, including lease policies and other conveyances of land use rights;
- (5) a plan to monitor zebra mussels (*Dreissena polymorpha*) in project waters, including, but not limited to:
 - (a) the method of monitoring, (b) the frequency of monitoring, and (c) documentation of transmission of monitoring data to the Wisconsin Department of Natural Resources (Wisconsin DNR), U.S. Fish and Wildlife Service (FWS), and the University of Wisconsin Sea Grant Institute; and if deemed necessary by the Wisconsin DNR and FWS, cooperate with the agencies to control/eliminate zebra mussels when an effective eradication method is developed;
- (6) a plan to monitor purple loosestrife (*Lythrum salicaria*) and Eurasian milfoil (*Myriophyllum spicatum*) in project waters, including, but not limited to:
 - (a) the method of monitoring; (b) the frequency of monitoring; and (c) documentation of transmission of

monitoring data to Wisconsin DNR and FWS; and if deemed necessary by the Wisconsin DNR and FWS, cooperate with the agencies to control/eliminate purple loosestrife and Eurasian milfoil when an effective eradication method is developed;

- (7) a final plan to protect the bald eagle (*Haliaeetus leucocephalus*) in the project area, including, but not limited to: (a) measures to protect existing habitat in the project area, including protection of necessary supercanopy trees; (b) plans to control public access to project lands if eagle nesting begins; (c) measures to protect winter roosting or feeding sites identified in the future from adverse human disturbance; (d) measures to limit the use of herbicides and pesticides on project lands; (e) measures to cooperate with the Wisconsin DNR and FWS on any baseline inventory studies; and (f) a schedule for implementing the plan; and
- (8) provision for consultation with the Wisconsin DNR for input regarding decisions affecting wildlife management, and cooperation with the Wisconsin DNR in conducting wildlife surveys on project lands.

The plan shall be prepared after consultation with Wisconsin DNR, FWS, and Marinette County Land & Water Conservation Department (Marinette County). The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing 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.

The licensee shall review and update the CLWMP every 6 years, after consultation with Wisconsin DNR, FWS, and Marinette County. The licensee shall file the updated plan with the Commission for approval.

Article 413. Within one year after issuance of this license, the licensee shall file with the Commission, for approval, a final recreation plan to construct, operate, and maintain the following facilities at the Caldron Falls Project:

- (1) all existing public recreation and public access sites within the project boundary;
- (2) rest room or toilet facilities at Boat Landings Nos. 8, 9, and 12, during the summer months;
- (3) directional signs for the tailwater access area;
- (4) trash receptacles at Boat Landings Nos. 8, 9, and 10, during the summer months; and
- (5) a canoe portage at the dam and a designated canoe route.

The plan, at a minimum, shall include:

- (1) the names(s) of entity (entities) responsible for operating and maintaining the facilities;
- (2) erosion and sediment control measures, designed in consultation with the Natural Resources Conservation Service (NRCS), which shall be implemented during construction;
- (3) a schedule and costs for installing the facilities; and
- (4) recommended procedures for updating and enhancing public recreation information, including an update of the Public Service publication *Guide Map to Wild Shores and Recreation*, with information to include: (a) a portage location; (b) canoeing time and distance between reservoirs; (c) campsite locations; (d) safety

warnings; (e) information on special use areas; and (f) interpretive or educational information, where appropriate.

The licensee shall prepare the plan after consultation with the Wisconsin Department of Natural Resources, National Park Service, U.S. Fish and Wildlife Service, NRCS, and Marinette County Parks and Recreation Department.

For documentation purposes, elements of the Caldron Falls Project recreation plan may be consolidated with similar plans required for the High Falls Hydroelectric Project (Project No. 2595), Johnson Falls Hydroelectric Project (Project No. 2522), Sandstone Rapids Hydroelectric Project (Project No. 2546), Potato Rapids Hydroelectric Project (Project No. 2560), and Peshtigo Hydroelectric Project (Project No. 2581).

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

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

Article 414. The licensee shall consult with the Wisconsin Department of Natural Resources, the National Park Service, and the Marinette County Parks and Recreation Department regarding recreation use and needs at the project, as part of the Form 80 reporting cycle, for the term of the license, pursuant to Part 8 of the Commission's regulations.

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. If 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 enhancement.

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

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

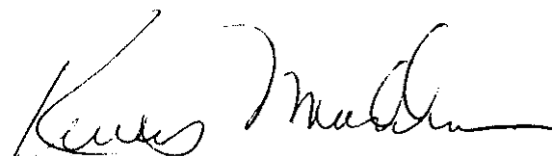
(4) The Commission reserves the right to require the licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(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 that filing. Proof of service on these entities must accompany the filing with the Commission.

(F) This order is issued under authority delegated to the Director and constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of its issuance 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

FEDERAL ENERGY REGULATORY COMMISSION

TERMS AND CONDITIONS OF LICENSE FOR CONSTRUCTED
MAJOR PROJECT AFFECTING NAVIGABLE WATERS
AND LANDS OF THE UNITED STATES

Article 1. The entire project, as described in this order of the Commission, shall be subject to all of the provisions, terms, and conditions of the license.

Article 2. No substantial change shall be made in the maps, plans, specifications, and statements described and designated as exhibits and approved by the Commission in its order as a part of the license until such change shall have been approved by the Commission: Provided, however, That if the Licensee or the Commission deems it necessary or desirable that said approved exhibits, or any of them, be changed, there shall be submitted to the Commission for approval a revised, or additional exhibit or exhibits covering the proposed changes which, upon approval by the Commission, shall become a part of the license and shall supersede, in whole or in part, such exhibit or exhibits theretofore made a part of the license as may be specified by the Commission.

Article 3. The project area and project works shall be in substantial conformity with the approved exhibits referred to in Article 2 herein or as changed in accordance with the provisions of said article. Except when emergency shall require for the protection of navigation, life, health, or property, there shall not be made without prior approval of the Commission any substantial alteration or addition not in conformity with the approved plans to any dam or other project works under the license or any substantial use of project lands and waters not authorized herein; and any emergency alteration, addition, or use so made shall thereafter be subject to such modification and change as the Commission may direct. Minor changes in project works, or in uses of project lands and waters, or divergence from such approved exhibits may be made if such changes will not result in a decrease in efficiency, in a material increase in cost, in an adverse environmental impact, or in impairment of the general scheme of development; but any of such minor changes made without the prior approval of the Commission, which in its judgment have produced or will produce any of such results, shall be subject to such alteration as the Commission may direct.

Article 4. The project, including its operation and maintenance and any work incidental to additions or alterations authorized by the Commission, whether or not conducted upon lands

of the United States, shall be subject to the inspection and supervision of the Regional Engineer, Federal Energy Regulatory Commission, in the region wherein the project is located, or of such other officer or agent as the Commission may designate, who shall be the authorized representative of the Commission for such purposes. The Licensee shall cooperate fully with said representative and shall furnish him such information as he may require concerning the operation and maintenance of the project, and any such alterations thereto, and shall notify him of the date upon which work with respect to any alteration will begin, as far in advance thereof as said representative may reasonably specify, and shall notify him promptly in writing of any suspension of work for a period of more than one week, and of its resumption and completion. The Licensee shall submit to said representative a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of any such alterations to the project. Construction of said alterations or any feature thereof shall not be initiated until the program of inspection for the alterations or any feature thereof has been approved by said representative. The Licensee shall allow said representative and other officers or employees of the United States, showing proper credentials, free and unrestricted access to, through, and across the project lands and project works in the performance of their official duties. The Licensee shall comply with such rules and regulations of general or special applicability as the Commission may prescribe from time to time for the protection of life, health, or property.

Article 5. The Licensee, within five years from the date of issuance of the license, shall acquire title in fee or the right to use in perpetuity all lands, other than lands of the United States, necessary or appropriate for the construction maintenance, and operation of the project. The Licensee or its successors and assigns shall, during the period of the license, retain the possession of all project property covered by the license as issued or as later amended, including the project area, the project works, and all franchises, easements, water rights, and rights or occupancy and use; and none of such properties shall be voluntarily sold, leased, transferred, abandoned, or otherwise disposed of without the prior written approval of the Commission, except that the Licensee may lease or otherwise dispose of interests in project lands or property without specific written approval of the Commission pursuant to the then current regulations of the Commission. The provisions of this article are not intended to prevent the abandonment or the retirement from service of structures, equipment, or other project works in connection with replacements thereof when they become obsolete, inadequate, or inefficient for further service due to wear and tear; and mortgage or trust deeds or judicial sales made thereunder, or tax sales, shall not be deemed voluntary transfers within the meaning of this article.

Article 6. In the event the project is taken over by the United States upon the termination of the license as provided in Section 14 of the Federal Power Act, or is transferred to a new licensee or to a non-power licensee under the provisions of Section 15 of said Act, the Licensee, its successors and assigns shall be responsible for, and shall make good any defect of title to, or of right of occupancy and use in, any of such project property that is necessary or appropriate or valuable and serviceable in the maintenance and operation of the project, and shall pay and discharge, or shall assume responsibility for payment and discharge of, all liens or encumbrances upon the project or project property created by the Licensee or created or incurred after the issuance of the license: Provided, That the provisions of this article are not intended to require the Licensee, for the purpose of transferring the project to the United States or to a new licensee, to acquire any different title to, or right of occupancy and use in, any of such project property than was necessary to acquire for its own purposes as the Licensee.

Article 7. The actual legitimate original cost of the project, and of any addition thereto or betterment thereof, shall be determined by the Commission in accordance with the Federal Power Act and the Commission's Rules and Regulations thereunder.

Article 8. The Licensee shall install and thereafter maintain gages and stream-gaging stations for the purpose of determining the stage and flow of the stream or streams on which the project is located, the amount of water held in and withdrawn from storage, and the effective head on the turbines; shall provide for the required reading of such gages and for the adequate rating of such stations; and shall install and maintain standard meters adequate for the determination of the amount of electric energy generated by the project works. The number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, shall at all times be satisfactory to the Commission or its authorized representative. The Commission reserves the right, after notice and opportunity for hearing, to require such alterations in the number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, as are necessary to secure adequate determinations. The installation of gages, the rating of said stream or streams, and the determination of the flow thereof, shall be under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region of the project, and the Licensee shall advance to the United States Geological Survey the amount of funds estimated to be necessary for such supervision, or cooperation for such periods as may mutually agreed upon. The Licensee shall keep accurate and sufficient records of the foregoing

determinations to the satisfaction of the Commission, and shall make return of such records annually at such time and in such form as the Commission may prescribe.

Article 9. The Licensee shall, after notice and opportunity for hearing, install additional capacity or make other changes in the project as directed by the Commission, to the extent that it is economically sound and in the public interest to do so.

Article 10. The Licensee shall, after notice and opportunity for hearing, coordinate the operation of the project, electrically and hydraulically, with such other projects or power systems and in such manner as the Commission may direct in the interest of power and other beneficial public uses of water resources, and on such conditions concerning the equitable sharing of benefits by the Licensee as the Commission may order.

Article 11. Whenever the Licensee is directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement, the Licensee shall reimburse the owner of the headwater improvement for such part of the annual charges for interest, maintenance, and depreciation thereof as the Commission shall determine to be equitable, and shall pay to the United States the cost of making such determination as fixed by the Commission. For benefits provided by a storage reservoir or other headwater improvement of the United States, the Licensee shall pay to the Commission the amounts for which it is billed from time to time for such headwater benefits and for the cost of making the determinations pursuant to the then current regulations of the Commission under the Federal Power Act.

Article 12. The United States specifically retains and safeguards the right to use water in such amount, to be determined by the Secretary of the Army, as may be necessary for the purposes of navigation on the navigable waterway affected; and the operations of the Licensee, so far as they affect the use, storage and discharge from storage of waters affected by the license, shall at all times be controlled by such reasonable rules and regulations as the Secretary of the Army may prescribe in the interest of navigation, and as the Commission may prescribe for the protection of life, health, and property, and in the interest of the fullest practicable conservation and utilization of such waters for power purposes and for other beneficial public uses, including recreational purposes, and the Licensee shall release water from the project reservoir at such rate in cubic feet per second, or such volume in acre-feet per specified period of time, as the Secretary of the Army may prescribe in the interest of navigation, or as the Commission may prescribe for the other purposes hereinbefore mentioned.

Article 13. On the application of any person, association, corporation, Federal agency, State or municipality, the Licensee shall permit such reasonable use of its reservoir or other project properties, including works, lands and water rights, or parts thereof, as may be ordered by the Commission, after notice and opportunity for hearing, in the interests of comprehensive development of the waterway or waterways involved and the conservation and utilization of the water resources of the region for water supply or for the purposes of steam-electric, irrigation, industrial, municipal or similar uses. The Licensee shall receive reasonable compensation for use of its reservoir or other project properties or parts thereof for such purposes, to include at least full reimbursement for any damages or expenses which the joint use causes the Licensee to incur. Any such compensation shall be fixed by the Commission either by approval of an agreement between the Licensee and the party or parties benefiting or after notice and opportunity for hearing. Applications shall contain information in sufficient detail to afford a full understanding of the proposed use, including satisfactory evidence that the applicant possesses necessary water rights pursuant to applicable State law, or a showing of cause why such evidence cannot concurrently be submitted, and a statement as to the relationship of the proposed use to any State or municipal plans or orders which may have been adopted with respect to the use of such waters.

Article 14. In the construction or maintenance of the project works, the Licensee shall place and maintain suitable structures and devices to reduce to a reasonable degree the liability of contact between its transmission lines and telegraph, telephone and other signal wires or power transmission lines constructed prior to its transmission lines and not owned by the Licensee, and shall also place and maintain suitable structures and devices to reduce to a reasonable degree the liability of any structures or wires falling or obstructing traffic or endangering life. None of the provisions of this article are intended to relieve the Licensee from any responsibility or requirement which may be imposed by any other lawful authority for avoiding or eliminating inductive interference.

Article 15. The Licensee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate, or arrange for the construction, maintenance, and operation of such reasonable facilities, and comply with such reasonable modifications of the project structures and operation, as may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the fish and wildlife agency or agencies of any State in which the project or a part thereof is located, after notice and opportunity for hearing.

Article 16. Whenever the United States shall desire, in

connection with the project, to construct fish and wildlife facilities or to improve the existing fish and wildlife facilities at its own expense, the Licensee shall permit the United States or its designated agency to use, free of cost, such of the Licensee's lands and interests in lands, reservoirs, waterways and project works as may be reasonably required to complete such facilities or such improvements thereof. In addition, after notice and opportunity for hearing, the Licensee shall modify the project operation as may be reasonably prescribed by the Commission in order to permit the maintenance and operation of the fish and wildlife facilities constructed or improved by the United States under the provisions of this article. This article shall not be interpreted to place any obligation on the United States to construct or improve fish and wildlife facilities or to relieve the Licensee of any obligation under this license.

Article 17. The Licensee shall construct, maintain, and operate, or shall arrange for the construction, maintenance, and operation of such reasonable recreational facilities, including modifications thereto, such as access roads, wharves, launching ramps, beaches, picnic and camping areas, sanitary facilities, and utilities, giving consideration to the needs of the physically handicapped, and shall comply with such reasonable modifications of the project, as may be prescribed hereafter by the Commission during the term of this license upon its own motion or upon the recommendation of the Secretary of the Interior or other interested Federal or State agencies, after notice and opportunity for hearing.

Article 18. So far as is consistent with proper operation of the project, the Licensee shall allow the public free access, to a reasonable extent, to project waters and adjacent project lands owned by the Licensee for the purpose of full public utilization of such lands and waters for navigation and for outdoor recreational purposes, including fishing and hunting: Provided, That the Licensee may reserve from public access such portions of the project waters, adjacent lands, and project facilities as may be necessary for the protection of life, health, and property.

Article 19. In the construction, maintenance, or operation of the project, the Licensee shall be responsible for, and shall take reasonable measures to prevent, soil erosion on lands adjacent to streams or other waters, stream sedimentation, and any form of water or air pollution. The Commission, upon request or upon its own motion, may order the Licensee to take such measures as the Commission finds to be necessary for these purposes, after notice and opportunity for hearing.

Article 20. The Licensee shall clear and keep clear to an adequate width lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other

material unnecessary for the purposes of the project which results from the clearing of lands or from the maintenance or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. All clearing of the lands and disposal of the unnecessary material shall be done with due diligence and to the satisfaction of the authorized representative of the Commission and in accordance with appropriate Federal, State, and local statutes and regulations.

Article 21. Material may be dredged or excavated from, or placed as fill in, project lands and/or waters only in the prosecution of work specifically authorized under the license; in the maintenance of the project; or after obtaining Commission approval, as appropriate. Any such material shall be removed and/or deposited in such manner as to reasonably preserve the environmental values of the project and so as not to interfere with traffic on land or water. Dredging and filling in a navigable water of the United States shall also be done to the satisfaction of the District Engineer, Department of the Army, in charge of the locality.

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

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

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

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

Article 26. Timber on lands of the United States cut, used, or destroyed in the construction and maintenance of the project works, or in the clearing of said lands, shall be paid for, and the resulting slash and debris disposed of, in accordance with the requirements of the agency of the United States having jurisdiction over said lands. Payment for merchantable timber shall be at current stumpage rates, and payment for young growth timber below merchantable size shall be at current damage appraisal values. However, the agency of the United States having jurisdiction may sell or dispose of the merchantable timber to others than the Licensee: Provided, That timber so sold or disposed of shall be cut and removed from the area prior to, or without undue interference with, clearing operations of the Licensee and in coordination with the Licensee's project construction schedules. Such sale or disposal to others shall not relieve the Licensee of responsibility for the clearing and disposal of all slash and debris from project lands.

Article 27. The Licensee shall do everything reasonably within its power, and shall require its employees, contractors, and employees of contractors to do everything reasonably within their power, both independently and upon the request of officers of the agency concerned, to prevent, to make advance preparations for suppression of, and to suppress fires on the lands to be occupied or used under the license. The Licensee shall be liable for and shall pay the costs incurred by the United States in suppressing fires caused from the construction, operation, or maintenance of the project works or of the works appurtenant or accessory thereto under the license.

Article 28. The Licensee shall interpose no objection to, and shall in no way prevent, the use by the agency of the United States having jurisdiction over the lands of the United States affected, or by persons or corporations occupying lands of the United States under permit, of water for fire suppression from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license, or the use by said parties of water for sanitary and domestic purposes from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license.

Article 29. The Licensee shall be liable for injury to, or destruction of, any buildings, bridges, roads, trails, lands, or other property of the United States, occasioned by the construction, maintenance, or operation of the project works or of the works appurtenant or accessory thereto under the license. Arrangements to meet such liability, either by compensation for such injury or destruction, or by reconstruction or repair of damaged property, or otherwise, shall be made with the appropriate department or agency of the United States.

Article 30. The Licensee shall allow any agency of the United States, without charge, to construct or permit to be constructed on, through, and across those project lands which are lands of the United States such conduits, chutes, ditches, railroads, roads, trails, telephone and power lines, and other routes or means of transportation and communication as are not inconsistent with the enjoyment of said lands by the Licensee for the purposes of the license. This license shall not be construed as conferring upon the Licensee any right of use, occupancy, or enjoyment of the lands of the United States other than for the construction, operation, and maintenance of the project as stated in the license.

Article 31. In the construction and maintenance of the project, the location and standards of roads and trails on lands of the United States and other uses of lands of the United States, including the location and condition of quarries, borrow pits, and spoil disposal areas, shall be subject to the approval of the department or agency of the United States having supervision over the lands involved.

Article 32. The Licensee shall make provision, or shall bear the reasonable cost, as determined by the agency of the United States affected, of making provision for avoiding inductive interference between any project transmission line or other project facility constructed, operated, or maintained under the license, and any radio installation, telephone line, or other communication facility installed or constructed before or after construction of such project transmission line or other project facility and owned, operated, or used by such agency of the United States in administering the lands under its jurisdiction.

Article 33. The Licensee shall make use of the Commission's guidelines and other recognized guidelines for treatment of transmission line rights-of-way, and shall clear such portions of transmission line rights-of-way across lands of the United States as are designated by the officer of the United States in charge of the lands; shall keep the areas so designated clear of new growth, all refuse, and inflammable material to the satisfaction of such officer; shall trim all branches of trees in contact with or liable to contact the transmission lines; shall cut and remove all dead or leaning trees which might fall in contact with the transmission lines; and shall take such other precautions against fire as may be required by such officer. No fires for the burning of waste material shall be set except with the prior written consent of the officer of the United States in charge of the lands as to time and place.

Article 34. The Licensee shall cooperate with the United States in the disposal by the United States, under the Act of July 31, 1947, 61 Stat. 681, as amended (30 U.S.C. sec. 601, et seq.), of mineral and vegetative materials from lands of the

United States occupied by the project or any part thereof: Pro-
vided, That such disposal has been authorized by the Commission
and that it does not unreasonably interfere with the occupancy of
such lands by the Licensee for the purposes of the license: Pro-
vided further, That in the event of disagreement, any question of
unreasonable interference shall be determined by the Commission
after notice and opportunity for hearing.

Article 35. If the Licensee shall cause or suffer essential
project property to be removed or destroyed or to become unfit
for use, without adequate replacement, or shall abandon or dis-
continue good faith operation of the project or refuse or neglect
to comply with the terms of the license and the lawful orders of
the Commission mailed to the record address of the Licensee or
its agent, the Commission will deem it to be the intent of the
Licensee to surrender the license. The Commission, after notice
and opportunity for hearing, may require the Licensee to remove
any or all structures, equipment and power lines within the pro-
ject boundary and to take any such other action necessary to
restore the project waters, lands, and facilities remaining
within the project boundary to a condition satisfactory to the
United States agency having jurisdiction over its lands or the
Commission's authorized representative, as appropriate, or to
provide for the continued operation and maintenance of nonpower
facilities and fulfill such other obligations under the license
as the Commission may prescribe. In addition, the Commission in
its discretion, after notice and opportunity for hearing, may
also agree to the surrender of the license when the Commission,
for the reasons recited herein, deems it to be the intent of the
Licensee to surrender the license.

Article 36. The right of the Licensee and of its successors
and assigns to use or occupy waters over which the United States
has jurisdiction, or lands of the United States under the
license, for the purpose of maintaining the project works or
otherwise, shall absolutely cease at the end of the license
period, unless the Licensee has obtained a new license pursuant
to the then existing laws and regulations, or an annual license
under the terms and conditions of this license.

Article 37. The terms and conditions expressly set forth in
the license shall not be construed as impairing any terms and
conditions of the Federal Power Act which are not expressly set
forth herein.