

UNITED STATES OF AMERICA 72 FERC ¶ 62,182
FEDERAL ENERGY REGULATORY COMMISSION

Northern States Power Company

Project No. 2444-002

Wisconsin

ORDER ISSUING SUBSEQUENT LICENSE
(Minor Project)

(Issued August 29, 1995)

INTRODUCTION

Northern States Power Company-Wisconsin (Northern States or licensee) filed an application for a subsequent license under Part I of the Federal Power Act (FPA)^{1/} to continue to operate and maintain the 1.0 megawatt (MW) White River Project. The project is located on the White River in the Montreal River basin near Ashland, Wisconsin in Ashland County. The licensee proposes to continue to operate the project to provide power to either the local rural distribution system or to Northern States' interconnected transmission system that supplies electricity to customers in its five-state service territory.

The Federal Power Commission issued an original license for the project in 1966.^{2/} The current license expired on December 31, 1993, and since then the licensee has operated the project under an annual license.

BACKGROUND

Notice of the application was published in the Federal Register on August 5, 1992. On August 14, 1992, the Wisconsin Department of Natural Resources (Wisconsin DNR) filed a motion to intervene in the proceedings. No agency, organization, or individual filed a motion to intervene in opposition to the project. All comments received have been fully considered in determining whether, or under what conditions, to issue this license.

^{1/}16 U.S.C. §§ 791(a)-825(r).

^{2/}The license was issued to the Lake Superior District Power Company, Northern States' predecessor-in-interest. See 35 FPC 671 (May 3, 1966). The White River is a navigable waterway of the United States (*id.* at pp. 572-73) and the project is therefore required to be licensed pursuant to Section 23(b)(1) of the FPA, 16 U.S.C. § 817.

The Commission's staff issued a draft environmental assessment (EA) for this project on February 17, 1995. Comments on the draft EA were received from the Department of the Interior-Fish and Wildlife Service, the Wisconsin DNR, the Izaak Walton League of America, the Great Lakes Indian Fish & Wildlife Commission, the Bad River Band of Lake Superior Tribe of Chippewa Indians, and Mr. Richard Spotts. Commission staff considered these comments in preparing the final EA. The final EA is attached to this license order and is issued concurrently. Staff also prepared a Safety and Design Assessment, which is available in the Commission's public file for this project.

I have fully considered the comments of the above-named organizations and persons in determining to issue the subsequent license for Project No. 2444-002.

PROJECT DESCRIPTION

The existing project consists of: two 48-foot-high earthen embankments approximately 700 ft. in total length, with a gated concrete spillway section; a reservoir with a surface area of 56 acres; a powerhouse containing two generating units with a total rated capacity of 1.0 MW; and appurtenant facilities. The bypassed reach extends approximately 1,300 feet below the dam. Northern States proposes no new capacity and no new construction. A more detailed description of project facilities can be found in ordering paragraph B(2).

The White River Project is operated in run-of-river mode.^{3/} The present operational procedures were implemented during fall 1991. The hydroelectric generating equipment is set up for automatic operation based on headwater elevation. The annual maximum reservoir fluctuation is a 1-foot band between elevation 711.4 feet mean sea level (msl) and 710.4 feet msl.

Project lands are maintained in a natural state, and provide wildlife habitat and recreational opportunities. Northern States provides the following recreational facilities at the project site: (1) a boat launch and parking area north of the dam, (2) a canoe takeout and portage area, and (3) a tailwater fishing area.

^{3/}Run-of-river operation means that, at any point in time, the amount of water flowing into the project reservoir approximates the amount of water released by outflows discharged from the project reservoir.

APPLICANT'S PLANS AND CAPABILITIES

Staff evaluated Northern States' record as a licensee in the areas of conservation efforts and compliance history. I accept the staff's findings, discussed below.

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

The Public Service Commission of Wisconsin (PSCW) has statutory and regulatory authority regarding least-cost planning and energy conservation in Wisconsin. The licensee promotes electricity conservation among its member systems in compliance with the requirements and policies of the PSCW.

The licensee's plans and activities to promote and achieve conservation of electric energy and to reduce peak demand for generating capacity include: (1) automated control systems; (2) direct air-conditioning load control; (3) demand-side management programs; (4) energy-efficient technologies; (5) weatherization; and (6) bill-stuffing of conservation information to its customers.

The licensee is making a good faith effort to conserve electricity in compliance with the requirements of PSCW.

Compliance History

We have reviewed Northern States' compliance with the terms and conditions of the existing license. We find that Northern States' overall record of making timely filings and compliance with its license is satisfactory.

WATER QUALITY CERTIFICATION

Section 401(a)(1) of the Clean Water Act (CWA)^{4/} requires an applicant for a federal license or permit for any activity that may result in a discharge into navigable waters of the United States to provide the licensing or permitting agency a certification from the state in which the discharge originates that such discharge will comply with the CWA.

On August 28, 1990, the licensee applied to Wisconsin DNR for Section 401 water quality certification, as required by the CWA. In a letter dated December 3, 1990, Wisconsin DNR waived the need for water quality certification.

^{4/} 33 U.S.C. § 1341.

COASTAL ZONE MANAGEMENT ACT

Under Section 307(c) (3) (A) of the Coastal Zone Management Act (CZMA)^{5/}, the Commission cannot issue a license for a project within or affecting a state's coastal zone unless the state CZMA agency concurs with the license applicant's certification of consistency with the state's CZMA program, or the agency's concurrence is conclusively presumed by its failure to act within 180 days of its receipt of the applicant's certification.

In a letter dated October 19, 1993, the Wisconsin Department of Administration waived the right to review Northern States' consistency certification for the White River Project, and therefore, consistency with the state's CZMA program is presumed.

SECTION 18 OF THE FPA

Section 18 of the FPA authorizes the Secretary of the Interior to prescribe fishways at Commission-licensed projects.^{6/}

In a letter dated September 10, 1993, the Department of the Interior (Interior) requested reservation of its authority to prescribe fishways pursuant to Section 18 of the FPA. Although fish passage facilities have not been prescribed by Interior at the time of project licensing, the Commission's practice has been to include a license article that reserves Interior's authority to prescribe fishways in the future. Therefore, Article 404 of this license reserves authority to the Commission to require the licensee to construct, operate, and maintain such fishways as may be prescribed by Interior pursuant to Section 18 of the FPA.

RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES

Section 10(j) (1) of the FPA^{7/} 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^{8/}, to

^{5/} 16 U.S.C. § 1456 (3) (A).

^{6/}Section 18 of the FPA states "The Commission shall require the construction, maintenance, and operation by a licensee at its own expense of . . . such fishways as may be prescribed by the Secretary of the Interior or the Secretary of Commerce, as appropriate." See 16 U.S.C. § 811.

^{7/}16 U.S.C. § 803(j).

^{8/}16 U.S.C. § 661 et seq.

"adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)" affected by the project.

If the Commission believes that any such recommendation may be inconsistent with the purposes and requirements of Part I of the FPA or other applicable law, Section 10(j)(2) requires the Commission and the agencies to attempt to resolve any such inconsistency, giving due weight to the recommendations, expertise, and statutory responsibilities of such agencies. If the Commission then does not adopt an agency 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 letters to Wisconsin DNR and Interior dated February 23, 1995, Commission staff made a preliminary determination that certain Wisconsin DNR and Interior recommendations maybe inconsistent with the comprehensive planning standard of Section 10(a)^{9/} and the public interest standard of Section 4(e)^{10/} of the FPA. In addition, certain recommendations by Wisconsin DNR were determined to be outside the scope of Section 10(j). These latter recommendations were considered by staff under Section 10(a) of the FPA.

In response to these determinations, comment letters were received from Wisconsin DNR and Interior. Additionally, comments on the draft EA were received from the Great Lakes Fish and Wildlife Commission, Bad River Band of Lake Superior Tribe of Chippewa Indians and Mr. Richard Spotts.

Commission staff held a Section 10(j) teleconference on April 13, 1995, to attempt to resolve inconsistencies under Section 10(j) of the FPA. Representatives from the Department of the Interior-Fish and Wildlife Service, Wisconsin DNR and the licensee were present. Fish and wildlife concerns addressed in the 10(j) teleconference are summarized below. As a result of these discussions, several of staff's recommendations for the project have been modified as reflected in the final EA. Based on the proceeding, including the EA, I have made the following determinations with respect to the agency recommendations found by staff to be inconsistent with Section 10(j):

^{9/16} U.S.C. § 803(a).

^{10/16} U.S.C. § 797(e).

Minimum Flow Release

Northern States, the Wisconsin DNR, and Interior each submitted a different instream flow recommendation for the 1,300-foot-long bypassed channel, after jointly observing alternative instream flow releases into the bypassed channel during a qualitative study conducted in Spring 1994. Northern States proposed in its license application a flow of 5 cubic feet per second (cfs) (from Dec. 1-April 15 and June 1-Sept. 14) and 10 cfs (from April 15-May 30 and Sept. 15-Nov. 30). Pursuant to Section 10(j) of the FPA, Wisconsin DNR recommended a year-round flow of 16 cfs. In its Section 10(j) recommendations, Interior recommended a winter flow of 16 cfs (Dec. 1-March 31) and 27 cfs (April 1-Nov. 30) during the spring and fall fish spawning seasons and the summer growing season.

In its letters of February 23, 1995, staff made preliminary determinations that Wisconsin DNR and Interior's respective instream flow recommendations maybe inconsistent with Section 10(a) of the FPA. Staff based the determinations on the grounds that the baseline condition (the 1-2 cfs instream flow to the bypassed reach from dam leakage and natural spring seepage) was adequately providing for an existing diverse fishery despite no flow augmentation; the recommended minimum flow releases would only marginally improve the habitat while the cost associated with the recommended flow releases would adversely affect the economic viability of the project; and the existing fisheries in the impoundment and upstream, and the downstream fishery provided adequate recreational angling opportunities.

Subsequent to the 10(j) teleconference, further analysis of hydrological records by staff biologists revealed that historically, in most years, the project spills about 200-300 cfs over the dam into the bypassed reach during spring and early summer. These flow releases are also coincidental with spawning seasons in the river. This flushing provides increased flows in the bypassed reach, which probably provides a better environment for fish communities in the downstream reach of the river and provides flows for spawning opportunities in the bypassed reach. This may account for the high diversity observed in the bypassed reach fish population. While no change in basic project operations is proposed, historical spillage is not mandated in the current license and there is no recognition of a minimum flow need to protect the baseline fishery. The resource agencies expressed concern that future operation at least guarantee continuation of existing environmental conditions. Inclusion of a minimum flow requirement in the license would protect baseline environmental conditions.

Additional information provided by Wisconsin DNR at the 10(j) teleconference indicates that a minimum flow of 16 cfs or greater

is necessary to allow fish to access all portions of the bypassed reach. Flows of 10 cfs, as proposed by Northern States, may sustain fish in isolated pools but would not allow fishes to move freely throughout the riverine community for spawning. At 16 cfs, gravel and cobbles along the channel perimeter are inundated and fish would be attracted to the bypassed reach for spawning. Interior's recommended 27 cfs discharge from April to November offers greater habitat and water quality benefits than 16 cfs, and coincides with spring and fall spawning periods for warm water fishes and salmonids, respectively. For the fall season, to the extent that historical flows have not provided at least 27 cfs flow during that time, Interior's recommendation would result in a minor fishery enhancement.

The no-action alternative would maintain existing dam leakage and natural inflow to the bypassed reach but this would not guarantee maintenance of the existing baseline fishery.

Historical hydrological conditions have provided for an existing diverse fishery in the bypassed reach and it is appropriate that a license for the White River Project protect the existing fishery through inclusion of a minimum flow requirement.

Staff concurs with Interior that 27 cfs and 16 cfs seasonal minimum flows into the bypassed reach would adequately protect the existing fishery and perhaps provide a minor enhancement.

I am accepting Interior's 10(j) recommendation. Article 405 of this license requires a minimum flow into the bypassed channel of 27 cfs from April 1 to November 30, and 16 cfs from December 1 to March 31.

Run-of-River and Flow Fluctuation

Wisconsin DNR requests run-of-river operation, which it believes requires limiting pool fluctuation to no more than 0.5 feet.

Specifically, Wisconsin DNR requested an operating band set at a maximum pool elevation of 711.45 feet mean sea level (msl) with a downward fluctuation of 0.5 feet.

The Commission and the fish and wildlife agencies agreed on the objective of enforcing run-of-river operations at the White River Project. Staff concluded that the objective of maintaining a run-of-river project would be to benefit the good quality fishery in the impoundment and below the project. Article 401 of this license requires that the licensee operate the project in a run-of-river mode.

Historically, the applicant estimates that it has limited pool

fluctuation to a range of 0.6 feet 75 percent of the time (i.e., during normal hydrological conditions).^{11/} This historical operation has not resulted in peaking, and the impoundment fishery and downstream fishery are considered to be of high quality.

The applicant states that a 1.0-foot operating band is needed to accommodate emergency hydrological conditions.^{12/} Constraining pool fluctuation to 0.5 feet 100 percent of the time would necessitate dam equipment improvements costing an estimated \$50,000 to \$250,000 in capital outlay plus an annualized \$2,000 for operation and maintenance.

The agencies do not disagree fundamentally with how the licensee has been operating the project historically, but the agencies have no way of foreseeing future changes. Therefore, Wisconsin DNR recommended a more restrictive, enforceable band width. Wisconsin DNR states that its proposal offered a restrictive, enforceable limit with an allowance for circumstances that are beyond the control of the applicant. Wisconsin DNR notes that a more restrictive license article would clearly state how the project should be operated. They believe the recommendation in the draft EA is too permissive and would be difficult to enforce.

Staff has examined the issues and concludes that the historical reservoir operating regime forms an appropriate basis to establish an enforceable limit. First, a well-documented high quality fishery at the project and downstream indicates no adverse effects from historical operation.^{13/} Further, the operating regime already reflects the equipment limitations inherent to the project.

Northern States' current reservoir operating plan and the Wisconsin DNR proposal fulfill the intent of run-of-river objectives. Northern States has indicated that they maintain the reservoir elevation between 710.6 and 711.2 about 75 percent of the time, and between 710.4 and 711.4 feet msl the remainder of the time. This practice closely approximates the Wisconsin DNR proposal, and represents a favorable approach. However, the estimate of 75 percent of the time is not substantiated, nor is the Wisconsin DNR proposal based on an interpretation of actual operating data. Therefore, I have insufficient information to conclude that either case

^{11/}Application for a Subsequent License for a Minor Water Power Project, White River Hydroelectric Project (FERC No. 2444), Northern States Power Company, WI, 1991, p. 9.

^{12/}id.

^{13/}See Section V.B.3.c. of the Final Environmental Assessment.

represents an operating regime that can be attained and documented. Thus, Wisconsin DNR's 10(j) recommendations for a 0.5 foot reservoir operating band and a maximum pool elevation of 711.45 feet msl with a downward fluctuation of 0.5 feet are inconsistent with the FPA's Section 313 requirements for substantial evidence.

I am requiring the licensee to develop and submit a reservoir operating plan to include historical operating data. Article 401 requires the licensee to submit to the Commission for analysis and approval within 120 days of license issuance a reservoir operating plan based on and documenting, at a minimum: historical gaging data for the period of the current license; a proposal for reservoir fluctuation operating level; a proposal for compliance monitoring and reporting; and documentation of agency consultation. The licensee shall consult with Wisconsin DNR in preparing the plan. Following the review and analysis of the operating plan, the Commission will establish a permanent reservoir fluctuation level specification. Until the permanent fluctuation level has been established, the project will be required to comply with an interim 1-foot band between elevations 710.4 and 711.4 feet msl.

Land Use

Wisconsin DNR recommended that the licensee retain ownership of lands in the project area and maintain those lands in their current undeveloped state. Wisconsin DNR expressed concern that land-disturbing activities could reduce available habitat for wildlife, including nesting sites for bald eagles. I conclude that this request would be beneficial to wildlife as well as visual resources in the area. Article 407 requires the preparation of a Land Management Plan in consultation with resource agencies, to be filed for Commission approval within one year after issuance of any license. The Land Management Plan must address allowed uses and activities on project lands, and set forth land management principles and practices that will be followed. The Land Management Plan must especially address these aspects in relation to minor conveyances that are exempt from prior Commission approval under the Commission's standard special land use article. The Commission's standard special land use article otherwise adequately provides for prior agency consultation, notification to the Commission, and reserved Commission authority for all land uses and dispositions.

Dam Safety and Floodplain Zoning

Wisconsin DNR recommended that the licensee be subject to the floodplain zoning and dam safety standards contained in Chapters 30 and 31 of the Wisconsin State Statutes and portions of the Wisconsin Administrative Code (NR 330, NR 333, and NR 116). This request is outside the scope of Section 10(j) since it does not specifically

provide for protection and enhancement of fish and wildlife resources. For issues of project safety, federal authority is preemptive. Commission regulations are sufficient to ensure safety at licensed projects.

No specific dam safety and floodplain zoning concerns were expressed by Wisconsin DNR. The White River Project has been classified by the Commission as having a low hazard potential, and its spillway capacity is able to pass the 1,000-year flood. I believe these factors, along with the other requirements of the license, preclude the need for a dambreak analysis and floodplain mapping.

COMPREHENSIVE PLANS

Section 10(a)(2) of the FPA^{14/} requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project. Under Section 10(a)(2), federal and state agencies filed 59 plans that address various resources in Wisconsin. Of these, staff identified 7 plans relevant to the project. ^{15/} The project license is consistent with these comprehensive plans.

COMPREHENSIVE DEVELOPMENT

Sections 4(e) and 10(a)(1) of the FPA, 16 U.S.C. §§ 797(e) and 803(a)(1), require the Commission, in acting on applications for license, to give equal consideration to the power and development purposes and to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of fish and wildlife, the protection of recreation opportunities, and the preservation of other aspects of environmental quality. Any license issued shall be in the Commission's judgment best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration. For the reasons discussed below, I conclude that the White River Project does not conflict with any planned or authorized development and

^{14/}16 U.S.C. § 803(a)(2).

^{15/}*Wisconsin's Statewide Comprehensive Outdoor Recreation Plan, 1986-91 and 1991-96, Wisconsin DNR, Madison, Wisconsin; Lake Superior Basin Areawide Water Quality Management Plan, 1979, Wisconsin DNR, Madison, Wisconsin; Lake Superior Fisheries Management Plan, 1988-98, Wisconsin DNR, Madison, Wisconsin; Wisconsin Water Quality Assessment Report to Congress, 1986 and 1992, Wisconsin DNR, Madison, Wisconsin; The Nationwide Rivers Inventory, 1982, National Park Service, Washington, D.C.*

that it is best adapted to a comprehensive plan for development of the waterway for beneficial public uses.

Recommended Alternative

The final EA analyzes the effects of the White River Project as proposed by the licensee, the Project with staff's recommended environmental measures, and the Project with no action taken. I selected issuing a subsequent license with staff's recommended measures as the preferred alternative because, overall, these measures, along with the standard articles, would protect or enhance environmental resources. Also, the electricity generated from the project would continue to offset the use of fossil-fueled, electrical generating plants, conserve non-renewable energy resources, and reduce atmospheric pollution.

The environmental measures included in this license require the licensee to:

- Prepare in consultation with Wisconsin DNR a reservoir operating plan to include, at a minimum: historical gaging data for the period of the original license; a proposal for reservoir fluctuation operating level; and a proposal for compliance monitoring and reporting. The Commission will establish a permanent reservoir fluctuation level on the basis of the operating plan. Until then the project will be required to comply with an interim 1-foot band between elevations 710.4 and 711.4 feet msl.
- Release a minimum flow of 27 cfs from April 1 through November 30, and 16 cfs from December 1 through March 31 to the bypassed reach.
- Modify the existing staff gage on the spillway according to agency recommendation.
- Implement a draw-down management plan in cooperation with Wisconsin DNR.
- Maintain project land in a natural state for fish and wildlife and aesthetic enhancement consistent with a Land Management Plan, to be approved by the Commission.
- Develop a plan to monitor for purple loosestrife in consultation with the Wisconsin DNR.
- Prepare a management plan outlining steps to enhance habitat and

to protect threatened and endangered species if they become established within the project area in the future.

- Develop a plan to monitor and analyze fly ash/cinder used to seal spillway gates.

Developmental and Nondevelopmental Uses of the Waterway

The project would provide power in a region where there is an identified need. Projections for the Mid-Continent Area Power Pool (MAPP) indicate that load will grow faster than planned capacity.

System load is projected to grow at 1.8 percent per year and planned capacity at only 0.3 percent (North American Electric Reliability Council, 1995). These projections support the long-term need for power produced from the White River Project. Further, the project promotes the displacement of fossil-fueled electric power generation to conserve fossil-fuels and reduce noxious emissions.

Staff evaluated the economic effects of the project alternatives, and the results of the analysis showed all alternatives, even no action, to yield negative net annual benefits.

(The least costly alternative is continued operation at a negative net annual benefit of \$84,000. The most expensive alternative providing for continued operation is staff's recommendation at a negative net annual benefit \$100,000.)^{16/} Because of the marginal economic conditions of the project, staff also examined decommissioning.

The decommissioning alternative considered a range of options from simple shut-down to complete project removal.^{17/} Staff concluded that partial or complete project removal would be undesirable for safety and environmental reasons. Further, staff concluded that partial or complete project removal would be more expensive compared to continued operation.^{18/} Staff examined simple shut-down in considerable detail, and the analysis showed a net annual benefit of -\$144,000, considerably worse than continued operations.

Also, decommissioning would terminate power generation with a value of \$147,000 (as compared to the staff recommended plan), and forecasts show a need for power.

The White River offers significant aesthetic riverine values

^{16/}See Section VI.C., Table 4 of the final environmental assessment.

^{17/}See Section V.C. of the Final Environmental Assessment.

^{18/}id.

and fishery benefits. Maintenance of the dam structure is considered an environmental benefit by resource agencies and staff.^{19/}

Staff evaluated Northern States' application, reviewed agency recommendations and assessed the environmental and economic effects of the project and its alternatives and concluded that the proposed project, with a minimum flow to the bypassed reach and staff's recommended enhancement measures would be best suited to a comprehensive plan for the development of the White River. I agree.

The annualized net benefit of the proposed project is -\$100,000, or -21 mills/kWh. However, as recently explained in Mead Corporation, 72 FERC ¶ 61,027 (1995) and Duke Power Co., 72 FERC ¶ 61,030 (1995), project economics is only one of many public interest factors to be considered in determining whether to issue a license, and where, as here, the Commission concludes that licensing a project is in the public interest, the Commission will offer a license to the applicant, even though there appear to be negative economic benefits. Whether to accept a proffered license under these conditions is a decision to be made by Northern States Power.

PROJECT RETIREMENT

Izaak Walton League of America requested in a letter dated March 28, 1995, that a retirement fund be established for this project. Staff evaluated the need to require such a fund.

In its December 14, 1994, Policy Statement on project decommissioning (RM93-23-000),^{20/} the Commission stated as follows:

In light of the practical problems involved in trying to deal with events far in the future, and because in many cases the time horizon and general financial strength of the licensee may be such that there is no substantial need for pre-retirement funding program, the Commission will not act generically to impose such programs on all licensees. . . There may be particular facts on the record in individual cases, however, that will justify license conditions requiring the establishment of decommissioning cost trust funds in order to assure the availability of funding when decommissioning occurs.

The Commission would consider, for example, whether there are factors suggesting that the life of the project may end within the next 30 years, and would also look at the financial viability of the licensee for indications that it would be unable to meet

^{19/}Wisconsin DNR letter dated September 3, 1993.

^{20/}60 Fed. Reg. 339, at pp. 346-347 (footnote omitted) (January 4, 1995).

likely levels of expenditure without some form of advance planning. . . While the Commission has decided not to adopt any generic funding requirements, licensees should not view the Commission's decision as an impediment to ordering whatever decommissioning steps it deems appropriate when the time for decommissioning a particular project arrives. The licensee has the responsibility for project retirement.

No one has requested that the project be decommissioned on environmental grounds or any other grounds.

While staff analysis indicates that the project has negative economic benefits, an independent analysis by the applicant may show that continued operation may be financially desirable for system reliability, load regulation, or other service and financial reasons. It is Northern States' decision whether to continue to operate the project or to seek decommissioning and surrender of its license in light of the conditions of this license.

If the project were decommissioned, the resource agencies and Commission staff agree that the environmentally preferred decommissioning alternative is to leave the dam in place to prevent sea lamprey migration upstream. Therefore, project shutdown costs would be minimal. Northern States is a public utility with financial resources well able to cover estimated shutdown expenses without the administrative burden of establishment of a project retirement fund for these costs. I conclude that the establishment of a project retirement fund is unwarranted in the circumstances of this case.

TERM OF LICENSE

In 1986, the Electric Consumers Protection Act (ECPA)^{21/} modified Section 15 of the FPA to specify that any license issued under Section 15 shall be for a term which the Commission determines to be in the public interest, but not less than 30 years, nor more than 50 years. We are following the same guidelines in issuing subsequent licenses.^{22/} Generally, we issue 30-year relicenses for projects that include no substantial new construction or power-generating expansion. We issue relicenses for 40 years or more for projects that include substantial new construction or capacity increases. We issue licenses of longer-duration to ease the economic impact of the new costs and to encourage better comprehensive development of the renewable power-generating resource. For the same reason, we may issue longer-duration licenses for projects that include substantial or costly environmental mitigation and enhancement measures. Licenses of longer duration in these instances encourage license applicants (1) to be better environmental stewards, and (2) to propose more balanced and comprehensive development of our river basins.

The licensee proposes no new construction nor does this license require enhancement measures that would justify a longer term. Accordingly, the license for the White River Project will be for a term of 30 years.

SUMMARY OF FINDINGS

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

The design of this project is consistent with the engineering standards governing dam safety. The project will be safe if operated and maintained in accordance with the requirements of this license.

Analysis of related issues is provided in the Safety and Design Assessment.^{23/}

^{21/}Pub.L. 102-486.

^{22/}A subsequent license is issued for a minor project whenever Sections 14 and 15 of the FPA were waived in the project's original license.

^{23/}A Safety and Design Assessment was prepared for the White River

Based upon a review of the agency and public comments filed on the project, and on staff's independent analysis pursuant to Sections 4(e), 10(a)(1), and 10(a)(2) of the FPA, I conclude that issuing a license for the White River Project, with the required license conditions, would not conflict with any planned or authorized development, and would be best adapted to a comprehensive plan for development of the waterway for beneficial public uses.

The Director orders:

(A) This license is issued to Northern States Power Company-Wisconsin, for a period of 30 years, effective the first day of the month in which this order is issued, to operate and maintain the White River Hydroelectric Project. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, shown by Exhibit G, filed on December 20, 1991:

<u>Exhibit</u>	<u>FERC No. 2444-002</u>	<u>Showing</u>
G (Drawing 1 of 1)	4	Project Area
(2)	Project works consisting of: (1) two earthen embankments— a 400-foot-long northern section and a 300-foot-long southern section— with a maximum height of 48 feet; (2) a reservoir with a surface area of 56 acres and an estimated 391 acre-feet of total storage volume at the normal maximum surface elevation of 711.2 feet above mean sea level; (3) a 70-foot-long reinforced concrete spillway section consisting of (a) a gated spillway section with two 25-foot-long by 26.5-foot-tall bays, each housing a steel radial gate, and (b) a reinforced concrete non-overflow section, about 20 feet long, with an intake structure for the 7-foot-diameter pipeline; (4) intake and outlet works consisting of (a) a 7-foot-diameter, 1,345 foot-long reinforced concrete pipeline, (b) a steel surge tank, 16 feet in diameter by 62 feet tall, and (c) a 54-inch-diameter steel Y-shaped penstock; (5) a single-story powerhouse constructed of reinforced concrete and brick masonry, 39 feet	

Project, FERC No. 2444, and is available in the Commission's public file for this project.

by 69 feet, containing (a) two horizontal Francis turbines with a combined hydraulic capacity of 280 cubic feet per second (cfs) and (b) two Westinghouse generators rated at 500 kilowatts each for a total of 1.0 megawatt; and (6) appurtenant facilities.

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

Exhibit A--The following sections of Exhibit A filed December 20, 1991:

Section 1, page 8, titled "Number of generating units, their capacities, and provisions for future units"; Section 2, page 8, titled "Type of hydraulic turbines"; and Section 8, pages 10 through 12, titled "Sizes, capacities and construction materials of project components".

Exhibit F--The following Exhibit F drawings filed December 20, 1991:

<u>Exhibit</u>	<u>FERC No.</u> FERC No. 2444-002	<u>Showing</u>
F (1 of 3)	1	Plan profile and elevation of dam and sect. A-A, B-B, C-C
F (2 of 3)	2	Sect. E-E, F-F, G-G
F (3 of 3)	3	Powerhouse

(3) All structures, fixtures, equipment, or facilities used to operate or maintain the project and located in the project area; all portable property that may be employed in connection with the project and located within or outside the project area; 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) The following sections of the FPA are waived and excluded from the license for this minor project:

4(b), except the second sentence; 4(e), insofar as it relates to approval of plans by the Chief of Engineers and the Secretary of the Army; 6, insofar as it relates to public notice and to the acceptance and expression in the license of terms and conditions of the FPA that are waived here;

10(c), insofar as it relates to depreciation reserves; 10(d); 10(f); 14, except insofar as the power of condemnation is reserved; 15; 16; 19; 20; and 22.

(E) This license is subject to the articles set forth in Form L-9 (October 1975), titled "Terms and Conditions of License for Constructed Minor Project Affecting Navigable Waters of the United States" and the following additional articles:

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

For the purpose 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 the purpose is 1,000 kilowatts. Under the regulations currently in effect, projects with authorized installed capacity of less than or equal to 1,500 kW will not be assessed an annual charge.

Article 401. The licensee shall operate the project in a run-of-river mode for the protection of fish in the project impoundment and downstream of the impoundment, riparian vegetation above and below the project, and recreational opportunities in the project impoundment on the White River. The licensee shall at all times act to minimize the fluctuation of the reservoir surface elevation by maintaining a discharge from the project so that, at any point in time, flows, as measured immediately downstream from the project tailrace, approximate the sum of inflows to the project reservoir.

To ensure run-of-river operation, the licensee shall file within 120 days of the license issuance a reservoir operating plan for Commission approval. The plan shall include at a minimum:

- (1) historical gaging data for the period of the current license;
- (2) a proposal for reservoir fluctuation operating level;
- (3) a plan for compliance monitoring and reporting, which shall at a minimum:
 - (a) describe how water surface elevations on the project reservoir and in the tailwater will be measured;
 - (b) provide for maintenance of a staff gage in the project reservoir visible to the public with the prescribed operating

levels clearly marked;

- (c) require the licensee to maintain records of the headwater and tailwater elevations in the form of daily operator logs and continuous circular chart recordings;
 - (d) provide for making operating records described in (c) above to agencies within 30 days upon request;
 - (e) provide for compliance monitoring and reporting as required in Article 406; and
 - (f) provide for the licensee's preparation of an annual operating report which shall be submitted to the Commission for approval.
- (4) documentation of consultation with the U.S. Fish and Wildlife Service and Wisconsin Department of Natural Resources, which shall include:
- (a) copies of agency comments and recommendations on the completed plan after it has been prepared and provided to the agencies;
 - (b) descriptions of how the agencies' comments are accommodated in the plan; and,
 - (c) the licensee's reasons (based on project-specific information) why any agency recommendation is not adopted in the plan;
 - (d) documentation that the licensee has allowed a minimum of 30 days for the agencies to comment before filing the operating plan with the Commission.

The Commission will establish a permanent reservoir fluctuation level specification. 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.

Until a permanent fluctuation level is established, the project must maintain an interim 1-foot reservoir operating band between elevations 710.4 and 711.4 feet mean sea level, as measured immediately upstream from the project dam.

Run-of-river operation and reservoir water surface elevations may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods, upon mutual agreement between the licensee and the Wisconsin Department of

Natural Resources (Wisconsin DNR). If the operation is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident. If run-of-river operation and reservoir water surface elevations are modified during an emergency, the licensee shall notify the Commission and the Wisconsin DNR within 24 hours.

Article 402. The licensee shall manage non-emergency draw-downs so that the project reservoir draw-down rate does not exceed 12 inches per 24 hours for the first 48 hours and 6 inches per 24 hours after that. The draw-down shall be evenly spread such that a 12 inches per 24-hour draw-down rate occurs at 2 inches every 4 hours. The maximum rate of change may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods for project maintenance purposes, upon mutual agreement between the licensee and the Wisconsin Department of Natural Resources (Wisconsin DNR). If the reservoir draw-down rate is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

At least 90 days before any non-emergency draw-down, the licensee shall submit to the Wisconsin DNR a draw-down management plan for comment and recommendations. The licensee shall allow Wisconsin DNR at least 30 days for review and comment before filing the plan to the Commission for approval. The non-emergency draw-down plan filed with the Commission shall include documentation of consultation with Wisconsin DNR. The plan shall describe how the plan accommodates Wisconsin DNR's recommendations, or provide the licensee's reasons, based on project-specific information, for not incorporating an agency recommendation. The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan.

Article 403. Within 180 days from the date of issuance of this license, the licensee shall file with the Commission, for approval, a plan to monitor the fly ash/cinders used during the "cindering" process for sealing the spillway gates.

To ensure that the fly ash/cinders used to seal the spillway gates do not introduce significant levels of contaminants to the White River, the plan shall include provisions for: (1) identifying the trace metals and other elements to be analyzed; (2) analyzing the fly ash/cinders prior to use each year; (3) submitting the results of the analysis to the Wisconsin Department of Natural Resources (Wisconsin DNR), the Bad River Band of Lake Superior Tribe of Chippewa Indians and the Great Lakes Indian, Fish and Wildlife Commission; and (4) the preparation of any reasonable enhancement measures developed in consultation with the Wisconsin DNR to minimize, to

the extent possible, the levels of trace metals and other elements introduced to the White River, and developing a schedule for implementing any or all of the enhancement measures identified in the plan.

The licensee shall prepare the plan after consultation with the Wisconsin DNR. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to 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 404. Authority is reserved to the Commission to require the licensee to construct, operate and maintain, or arrange for the construction, operation and maintenance of, such fishway facilities as may be prescribed by the Secretary of the Interior pursuant to Section 18 of the Federal Power Act.

Article 405. Within one year of the date of this license the licensee shall release from the White River dam to the bypassed reach a minimum flow of 27 cubic feet per second from April 1 through November 30, and 16 cubic feet per second from December 1 through March 31 to allow for additional access into the bypassed reach by all components of the fish community, to provide additional spawning habitat and recreational opportunity.

Article 406. If the flows through the project fail to meet run-of-river requirements provided under Article 401, or if the minimum flow in the bypassed reach fails to meet the requirements of Article 405, the licensee shall file a report with the Commission within 30 days of the incident. The report shall, to the extent possible, identify the cause, severity, and duration of the incident, and any observed or reported adverse environmental impacts resulting from the incident. The report shall also include: (1) operational data necessary to determine compliance with Articles 401 and 405; (2) a description of any corrective measures implemented at the time of occurrence and the measures implemented or proposed to ensure that similar incidents do not recur; and (3) comments or correspondence, if any, received from the resource agencies regarding the incident. Based on the report and the Commission's evaluation of the incident, the Commission reserves the right to require

modifications to project facilities and operations to ensure future compliance.

Article 407. Within one year of the issuance date of this license, the licensee shall file with the Commission, for approval, a land management plan for all the licensee-owned land in the project area. This plan shall be prepared in consultation with the Wisconsin Department of Natural Resources. The licensee shall include with the plan: documentation of consultation; copies of comments and recommendations on the completed plan after it has been prepared and provided to the agency; and specific descriptions of how the agency's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agency to comment and make recommendations before filing the plan with the Commission. If the licensee does not adopt an agency recommendation, the filing shall include the licensee's reasons.

The intent of the plan will be to maintain project lands in their natural state to provide aesthetic benefits and wildlife habitat. Any withdrawal of, or addition to, project lands will require an application for Commission approval of an amendment to this license with prior agency consultation. The plan must include, at a minimum:

- (1) identification of all licensee-owned land in the project area;
- (2) land management goals and objectives;
- (3) allowed uses and activities; and,
- (4) incorporation, as appropriate, of other management plans such as the threatened and endangered species management plan.

The land management plan shall also address these issues in relation to minor conveyances that are exempt from prior Commission approval under the Commission's standard special land use article (Article 411).

Article 408. The licensee shall, in consultation with the Wisconsin Department of Natural Resources (Wisconsin DNR), develop a plan to monitor purple loosestrife (*Lythrum salicaria*) in project waters. The plan shall include, but is not limited to: (a) the method of monitoring, (b) the frequency of monitoring, and (c) documentation of transmission of monitoring data to the Wisconsin DNR. The plan shall be filed with the Commission for approval. If at any time during the period of the license, the Wisconsin DNR deems it necessary to control or eliminate purple loosestrife, the licensee shall cooperate in this measure. The Commission reserves the right to require changes to the plan.

The licensee shall include documentation of consultation with the Wisconsin DNR before preparing the plan, copies of the Wisconsin DNR comments and recommendations on the completed plan after it has been prepared and provided to the Wisconsin DNR, and specific descriptions of how the Wisconsin DNR comments were accommodated by the plan. The licensee shall allow a minimum of 30 days for the Wisconsin DNR to comment and to make the recommendations prior to 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.

Article 409. Within two years of license issuance, the licensee shall file with the Commission, for approval, a plan to protect state and federally listed threatened or endangered species and their critical habitat. The plan shall include, but not be limited to, the following:

- (1) measures to protect any listed species in the project area;
- (2) an implementation schedule for the protective measures; and,
- (3) a monitoring plan to identify when the listed species establish themselves on project lands and waters.

The licensee shall prepare the plan after consultation with the Wisconsin Department of Natural Resources. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agency, and specific descriptions of how the agency's comments and recommendations are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agency 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 410. Before the commencement of any construction or development of any project works or other facilities at the project, the licensee shall consult and cooperate with the Wisconsin State Historic Preservation Officer (SHPO) to determine the need for, and extent of, any archaeological or historic resource surveys and any mitigating measures that may be necessary. The licensee shall provide funds in a reasonable amount for such activity. If any previously unrecorded archaeological or historic sites are

discovered during the course of construction, construction activity in the vicinity shall be halted, a qualified archaeologist shall be consulted to determine the significance of the sites, and the licensee shall consult with the SHPO to develop a mitigation plan for the protection of significant archaeological or historic resources. If the licensee and the SHPO cannot agree on the amount of money to be expended on archaeological or historic work related to the project, the Commission reserves the right to require the licensee to conduct, at the licensee's own expense, any such work found necessary.

In addition, the licensee shall periodically search all eroded shoreline areas of the reservoir for any visible traces of artifacts, objects, or remains of potential archaeological significance. The surveys shall be completed 5 and 10 years after license issuance and the results forwarded to the SHPO for review within 3 months of survey completion. After the 10-year survey, the licensee and the SHPO shall evaluate the need to continue the periodic surveys.

Should any artifacts, objects, or remains of potential archaeological significance be discovered, the licensee shall employ the services of a professional archaeologist to survey the site and evaluate its significance pursuant to 36 C.F.R. § 800.4(c). Upon recommendation by the SHPO, the licensee shall take steps to protect, recover, or relocate any historic property that may be adversely affected by project operations.

Article 411. (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 noncomplying 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) noncommercial 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 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-kV or less); and
- (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir.

No later than January 31 of each year, the licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for:

- (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained;
- (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or

permits have been obtained;

- (3) other pipelines that cross project lands or waters but do not discharge into project waters;
- (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained;
- (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina;
- (6) recreational development consistent with an approved Exhibit R or approved report on recreational resources of an Exhibit E; and
- (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year.

At least 60 days before conveying any interest in project lands under this paragraph (d), the licensee must submit a letter to the Director, Office of 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.

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

(G) This order is issued under authority delegated to the Director and constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of this order, pursuant to 18 C.F.R. §§ 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.

Fred E. Springer
Director, Office of
Hydropower License

FINAL ENVIRONMENTAL ASSESSMENT
FOR HYDROPOWER LICENSE

White River Hydroelectric Project

FERC Project No. 2444
Wisconsin

Federal Energy Regulatory Commission
Office of Hydropower Licensing
Division of Project Review
825 North Capitol Street, NE
Washington, D.C. 20426

Contents

Section	Page
Summary	iii
I. Application	1
II. Purpose and Need for Action	1
A. Purpose of Action.....	1
B. Need for Power.....	2
III. Proposed Action and Alternatives	2
A. Applicant's Proposal.....	2
1. Project Facilities.....	2
2. Proposed Environmental Measures.....	3
B. Staff-Recommended Modifications to the Applicant's Proposal.....	4
C. Decommissioning.....	5
D. No-Action Alternative.....	5
E. Alternatives Considered but Eliminated from Detailed Study.....	6
IV. Consultation and Comments	7
A. Agency Consultation.....	7
B. Interventions.....	8
C. Section 18 Fishway Prescription.....	8
D. Water Quality Certification Conditions.....	8
E. Coastal Zone Management Act.....	9
F. Scoping.....	9
V. Environmental Analysis	9
A. General Description of the Locale.....	9
1. White River Basin.....	9
2. Proposed and Existing Hydropower Development....	10
3. Cumulative Impacts.....	10
B. Environmental Resources.....	11
1. Geology and Soils.....	11
2. Water Resources.....	11
3. Fishery Resources.....	16
4. Terrestrial Resources.....	20
5. Aesthetic Resources.....	23
6. Cultural Resources.....	24
7. Recreation and Other Land and Water Uses.....	25
C. Decommissioning Alternative.....	27
D. No Action Alternative.....	28

VI. Comprehensive Development and Recommended Alternative ...	29
A. Developmental Resources.....	29
B. Recommended Alternative.....	30
C. Developmental and Nondevelopmental Uses of the Waterway.....	31
D. Comprehensive Plans.....	33
VII. Recommendations of Fish and Wildlife Agencies	33
VIII. Finding of No Significant Impact	36
IX. Literature Cited	36
X. List of Preparers	38
Appendix A. Letters from agencies, organizations and individuals	

Tables

Number		Page
1	Comparison of Minimum Flow Recommendations.....	18
2	Summary of Decommissioning Alternative Costs	27
3	Costs for Various Proposed Environmental Measures	30
4	White River Hydroelectric Project Summary of Economic Analysis	33
5	Analysis of Fish and Wildlife Agency Recommendations	34

Figures

	Follows Page
1 White River Dam Site Layout	1
2 White River Dam Location Map.....	9

SUMMARY

Northern States Power Company-Wisconsin (NSPW), applicant for a subsequent minor license, proposes to continue operation of its hydroelectric project on the White River, near Ashland in Ashland County, Wisconsin. The proposed project has an installed capacity of 1.0 megawatt (MW) and would generate about 5,190 megawatt-hours (MWh) of electrical energy annually.

In this final environmental assessment (EA) we look at the environmental and economic effects of (1) the project as proposed by NSPW, (2) the project as proposed by NSPW with additional staff-recommended enhancement measures, (3) decommissioning the project, and (4) taking no action. Under the no-action alternative the project would continue to operate under the terms and conditions of the existing license, and no new environmental protection or enhancement measures would be implemented. We evaluated project decommissioning because the project's net power benefits (the annual cost of the project's power compared with annual cost of alternative energy) under each alternative action are negative.

In the "Comprehensive Development and Recommended Alternative" section, we study both the environmental resources and the power and economic benefits of the project. We recommend that any license issued for the White River Project include the measures proposed by NSPW along with the following staff-recommended modifications:

- Prepare a reservoir operating plan. The Commission will establish a permanent reservoir fluctuation level on the basis of the operating plan. Until then, the project will be required to comply with an interim 1-foot reservoir operating band between elevations 710.4 and 711.4 feet msl.
- Release a minimum flow of 27 cfs from April 1 through November 30, and 16 cfs from December 1 through March 31 to the bypassed reach.
- Modify the existing staff gage on the spillway according to agency recommendation.
- Prepare a Land Management Plan with a specific objective to maintain project lands in a natural state for fish and wildlife and aesthetic enhancement.
- Develop a plan to monitor for purple loosestrife in consultation with the Wisconsin Department of Natural Resources.

- Prepare a management plan outlining steps to enhance habitat and to protect threatened and endangered species if they become established in the project boundary in the future.
- Develop a plan to monitor and analyze fly ash/cinders used to seal the spillway gates.

Consistency with Fish and Wildlife Recommendations

There are two recommendations made by the Wisconsin Department of Natural Resources (WDNR) pursuant to Section 10(j) of the Federal Power Act (FPA) that we determined to be inconsistent with the FPA: run-of-river operation as defined by the WDNR; and that the reservoir water surface elevation be maintained at a target elevation of 711.2 feet msl with a fluctuation of ± 0.25 feet (a 0.5-foot band). Further, WDNR requested an operating band based on a maximum pool elevation of 711.45 feet msl with a downward fluctuation of 0.5 feet. We treat these two 10(j) recommendations jointly.

The agencies, staff, and NSPW agree that historical operation satisfies run-of-river objectives. However, neither WDNR's recommendation nor NSPW's operating proposal are based on documented operating data. Therefore, we have insufficient information to conclude that either case represents an operating regime that can be attained and documented. Thus, we recommend that NSPW, within 120 days of the license issuance, submit to the Commission for analysis and approval a reservoir-operating plan based on documented historical operating data, to be developed in coordination with WDNR.

Following Commission review and analysis of the plan, staff will establish a permanent reservoir operating level consistent with run-of-river objectives to protect aquatic systems. See Section V.B.2.

Conclusion

On the basis of our independent environmental analysis, we conclude that issuance of a license for the project would not constitute a major federal action significantly affecting the quality of the human environment.

FINAL ENVIRONMENTAL ASSESSMENT

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

White River Hydroelectric Project FERC Project No. 2444-Wisconsin

I. APPLICATION

On December 20, 1991, Northern States Power Company-Wisconsin (NSPW) filed an application for a subsequent license for the existing White River Hydroelectric Project, a minor project with a generating capacity of 1.0 megawatt (MW). The White River Project is located on the White River near Ashland, in Ashland County, Wisconsin (Figure 1). It is the only hydropower project on the White River. The project does not occupy any United States lands.

II. PURPOSE AND NEED FOR ACTION

A. Purpose of Action

The Federal Power Act (FPA) provides the Federal Energy Regulatory Commission (FERC) with the exclusive authority to license nonfederal water power projects, such as the White River Project, on navigable waterways for a term of up to 50 years.^{24/} In deciding whether to issue a license, the Commission must determine that the project will be best adapted to a comprehensive plan for improving a waterway (Section 10(a) of the FPA). In addition to the power and developmental purposes for which licenses are issued, under Section 4(e) of the FPA the Commission must give equal consideration to the purposes of energy conservation; the protection, mitigation of damage to, and enhancement of fish and wildlife; the protection of recreational opportunities; and the preservation of other aspects of environmental quality.

This environmental assessment (EA) analyzes and evaluates the impacts associated with continued operation of the White River Hydroelectric Project, assesses alternatives to the proposed project, recommends whether the Commission should issue a license, and recommends terms and conditions to become part of any license issued. We, the Commission staff, provided a draft EA to agencies, tribes, and interested parties to ensure full public participation in the licensing process. We revised the draft EA in response to comments received. The Commission will consider the final EA and comments on the draft EA in its licensing decision.

B. Need for Power

^{24/16} U.S.C. Sec. 791(a)-825(r).

The North American Electric Reliability Council (NERC) annually forecasts electricity supply and demand within the region and the nation. The latest forecast spans a 10-year period from 1995 to 2004. The NERC consists of 10 regions that encompass the 48 contiguous states, Canada, and Alaska. The White River Hydroelectric Project is within the NERC's Mid-Continent Area Power Pool (MAPP). The annual supply and demand projections for the MAPP and the 48 states over the 10-year period indicate that loads will grow faster than planned capacity, reducing the reserve capacity margin. Within the MAPP region, system demand is projected to grow at 1.8 percent per year, whereas planned capacity will grow at only 0.3 percent (NERC 1995). These projections support the long-term need for the power produced by the White River Hydroelectric Project.

Energy from the White River Project is delivered to either the local rural distribution system or NSPW's interconnected transmission system that supplies electricity to customers in its five-state service territory. In either case, it helps to supply the demand in the MAPP. Power generation at the White River Project averaged 5,326 megawatt-hours (MWh) annually between 1981 and 1990.

III. PROPOSED ACTION AND ALTERNATIVES

A. Applicant's Proposal

1. Project Facilities

The White River Hydroelectric Project has been in operation since 1907. The dam originally was constructed before 1884 to provide power for a sawmill. The dam was reconstructed and a powerhouse was built in 1907 to produce electricity. A flood destroyed the dam in 1926, and it was rebuilt in 1927. NSPW operates the hydroelectric project in a run-of-river mode and plans to continue operation of the existing facilities with environmental enhancements.²⁵

²⁵Operating the project in a run-of-river mode minimizes 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.

The project consists of: (1) two earthen embankments— a 400-foot-long northern section and a 300-foot-long southern section— with a maximum height of 48 feet; (2) a reservoir with a surface area of 56 acres and an estimated 391 acre-feet of total storage volume at the normal maximum surface elevation of 711.2 feet above mean sea level (msl);²⁶ (3) a 70-foot-long reinforced concrete spillway section consisting of (a) a gated spillway section with two 25-foot-long by 26.5-foot-tall bays, each housing a steel radial gate, and (b) a reinforced concrete non-overflow section, about 20 feet long, with an intake structure for the 7-foot-diameter pipeline; (4) intake and outlet works consisting of (a) a 7-foot-diameter reinforced concrete pipeline, 1,345 feet long, (b) a steel surge tank, 16 feet in diameter by 62 feet tall, and (c) a 54-inch steel y-shaped penstock; (5) a powerhouse constructed of reinforced concrete and brick masonry, 39 feet by 69 feet and one story tall, containing (a) two horizontal Francis turbines with a combined hydraulic capacity of 280 cubic feet per second (cfs) and (b) two Westinghouse generators rated at 500 kilowatts (kW) each for a total of 1.0 MW; and (6) appurtenant facilities.

The physical configuration of the White River Project dewateres a 1300-foot reach of the river (referred to as the bypassed reach) between the dam and powerhouse (see Figure 1). In this reach the bottom substrate is predominantly bedrock and rubble which creates a series of small pools and riffles that are sustained by spillway gate leakage, natural seeps and springs along the bank.

The present operational procedures for run-of-river operation were implemented during fall 1991. The hydroelectric generating equipment is set up for automatic operation based on headwater elevation. The annual maximum reservoir fluctuation is a 1-foot band between elevation 711.4 feet mean sea level (msl) and 710.4 feet msl.

Project lands are maintained in a natural state, and provide wildlife habitat and recreational opportunities. NSPW provides the following recreational facilities at the project site: (1) a boat launch and parking area north of dam, (2) a canoe takeout and portage, and (3) a tailwater fishing area.

2. Proposed Environmental Measures

The applicant proposes, or has recently completed, the following project enhancements for recreation, aesthetic, and fishery resources:

- Release a minimum flow of 10 cfs from the project dam into the bypassed reach between April 15 and May 30 and between

²⁶All elevations in this report are given as feet above mean sea level.

September 15 and November 30; and release 5 cfs between June 1 and September 14 and between December 1 and April 15.

- Improve the existing boat landing and parking area upstream of the dam. [completed]
- Establish bald eagle management practices on project lands if the species nests there in the future.
- Improve shoreline access in the powerhouse tailrace. [completed]
- Implement a draw-down management plan in cooperation with the WDNR.

We discuss these proposals under the individual resources in Section V.B.

B. Staff-Recommended Modifications to Applicant's Proposal

An alternative to licensing the project as proposed is to license the project with additional measures for resource protection and enhancement. We recommend the following modifications to the applicant's proposal:

- Prepare a reservoir operating plan to include, at a minimum: historical gaging data for the period of the original license; a proposal for reservoir fluctuation operating level; and a proposal for compliance monitoring and reporting. The Commission will establish a permanent reservoir fluctuation level on the basis of the operating plan. Until then the project will be required to comply with an interim 1-foot reservoir operating band between elevations of 710.4 and 711.4 feet msl.
- Release a minimum flow of 27 cfs from April 1 through November 30, and 16 cfs from December 1 through March 31 to the bypassed reach.
- Modify the existing staff gage on the spillway according to agency recommendation.
- Prepare a Land Management Plan with a specific objective to maintain project land in a natural state for fish and wildlife and aesthetic enhancement.
- Develop a plan to monitor for purple loosestrife in consultation with WDNR.
- Prepare a management plan outlining steps to enhance habitat and

to protect threatened and endangered species if they become established in the project area in the future.

- Develop a plan to monitor and analyze fly ash/cinders used to seal the spillway gates.

These staff recommendations would supplement NSPW's proposal for recreational improvements (See III.A.2), and implementation of a reservoir draw-down management plan with WDNR.

We discuss each of these recommendations under the individual environmental resources in Section V.B.

C. Decommissioning

The existing White River Project's annualized cost of producing power exceeds the annualized cost of alternative energy (see Section VI.C.). Consequently, in light of the modest size of the project we have analyzed project decommissioning as a reasonable alternative to licensing.

The decommissioning alternative can range from a simple shut-down of the power operation to complete removal of the project works. The White River decommissioning alternative would involve project shut-down with measures to provide for facility maintenance and safety. Under this alternative, power generation would cease and the powerhouse would be secured to prevent entry and vandalism. The turbines and generators would be either removed or disabled. Similarly, the 7-foot-diameter pipeline connecting the dam and the powerhouse would be disabled and sealed with concrete plugs. The flow from the dam to the bypassed reach would be equal to the river flow into the reservoir. The electrical tie between the powerhouse and the nearby transmission line would be removed. Lastly, long-term maintenance would be provided to the dam embankments, spillway section, and radial gates.

In its December 14, 1994, Policy Statement on project decommissioning,²⁷ the Commission states that the licensee is responsible for project retirement. The licensee's estimated cost for the decommissioning alternative is presented in Section VI. Section V.C. addresses the environmental effects of the decommissioning alternative. Ultimately, the supervision of a decommissioned project would become the responsibility of a state or other governmental agency.

D. No-Action Alternative

²⁷ 60 Fed. Reg. 339 (January 4, 1995).

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

E. Alternatives Considered but Eliminated from Detailed Study

In examining decommissioning alternatives for this uneconomical project, we analyzed and eliminated from further consideration complete or partial removal of project works.

In its December 14, 1994, Policy Statement on project decommissioning, the Commission declined to impose a generic decommissioning requirement and instead decided to address the issue on a case-by-case basis. In some cases there are compelling environmental or safety reasons for considering either complete or partial removal of hydroelectric project works.

For the White River Project, no agency, individual or interest group has recommended project decommissioning or dam removal.

Fish and wildlife resource agencies state that the dam serves as an important barrier to the migration of sea lamprey into the upper White River reach. Resource agencies value the upper reach as a good trout fishery that they believe has never been stocked; also it has "outstanding water quality". For these reasons the reach from the impoundment to the source is listed on the Department of the Interior's National Wild and Scenic Rivers Inventory, and the agencies believe retention of the dam would be desirable. In addition, the upstream and downstream fisheries are unrelated, both are good fisheries, and fishing, canoeing and other recreational opportunities are unimpaired by project works over the length of the river (see Sections V.B.3 and V.B.7). The aesthetic impacts of the powerhouse and dam are minor in this forested watershed. Natural flows to the dewatered bypassed reach would be reinstated with decommissioning.

This is a low hazard dam with no downstream development in the watershed. The project works are in safe condition and decommissioning would result in supervisory regulation of the project by a state or other governmental agency to ensure maintenance of safety.

We costed three different decommissioning scenarios: 1) Partial Removal—involving removal of the pipeline and powerhouse; 2) Partial Removal—involving removal of the pipeline, powerhouse, and concrete spillway section of the dam, and; 3) Complete Removal—involving removal of the pipeline, powerhouse, dam embankments and concrete spillway section, and State Trunk Highway (STH) 112 restoration. We estimated the current cost of each alternative to be \$340,000, \$2,300,000, and \$4,000,000 to \$5,000,000, respectively. Each of

these alternatives is uneconomical compared to the no-action scenario (the project operating under the terms of the existing license), where the project's annualized cost of energy exceeds the annualized cost of alternative-fuels energy by \$84,000. For example, the annualized benefit of the scenario 1 alternative would be \$-144,000, and significantly more uneconomical for scenarios 2 and 3.

We conclude that partial or complete removal of project works would be more expensive relative to shutdown or continued operation alternatives. More importantly, partial or complete removal is unnecessary and even undesirable from environmental or safety standpoints.

IV. CONSULTATION AND COMMENTS

A. Agency Consultation

The following agencies provided comments and recommended terms and conditions for the White River Hydroelectric Project in response to our notice that the application was ready for environmental analysis on July 13, 1993. All comments are part of the record for the project, and we considered them in our environmental analysis.

Commenting Agencies	Date of Letter
WDNR	9/3/93 and 8/5/94
U.S. Department of the Interior (DOI)	9/10/93 and 8/1/94

NSPW responded to the WDNR and DOI comments and recommendations in letters dated October 21, 1993, and September 9, 1994.

The Commission issued the draft environmental assessment (DEA) for comment on February 17, 1995. In letters to the agencies dated February 23, 1995, staff made a preliminary determination that certain recommendations made pursuant to Section 10(j) were inconsistent with the FPA. We considered all timely responses and comments on the DEA (see Appendix A) in preparing this environmental assessment.

The respondents commenting on the DEA are as follows:

Respondent	Date of Letter
Izaak Walton League of America	3/28/95
Great Lakes Fish and Wildlife Commission	4/3/95
Bad River Band of Lake Superior Tribe of Chippewa Indians	4/3/95
WDNR	4/5/95
DOI	4/7/95
Richard Spotts	4/7/95

Commission staff held a teleconference pursuant to Section 10(j)

of the FPA with WDNR and DOI on April 13, 1995, to attempt to resolve preliminarily identified inconsistencies between the agencies' Section 10(j) recommendations and the FPA. A discussion of the results of this teleconference, and the inconsistencies remaining are contained in Section VII of this EA. This final environmental assessment reflects all timely additional information, comments and recommendations submitted within the 10(j) process.

B. Interventions

Organizations and individuals may petition the Commission to intervene and become a party to any subsequent licensing proceedings.

On August 14, 1992, the WDNR filed a motion to intervene in the proceeding. The Commission granted intervenor status to the WDNR.

No organization or individual filed a motion to intervene in opposition to the project.

C. Section 18 Fishway Prescription

In its letter of September 10, 1993, the DOI requested reservation of its authority to prescribe fishways pursuant to Section 18 of the FPA.²⁸

Section 18 of the FPA, 16 U.S.C. §811, states that the Commission should require construction, maintenance, and operation by a licensee of such fishways as the Secretaries of the Commerce and the Interior may prescribe. Interior recommends that Northern States Power Company be required to provide fishways at the White River Project when prescribed by the Secretary of the Interior under Section 18 of the FPA. Although fishways have not been prescribed by Interior at this time for the project, the Commission has included a license article which reserves Interior's authority to prescribe fishways in the future. We recognize that future fish passage needs and management objectives cannot always be predicted when the license is issued. Therefore, Article 404 would reserve Interior's authority to prescribe fishways.

²⁸Section 18 of the FPA states "The Commission shall require the construction, maintenance, and operation by a licensee at its own expense of . . . such fishways as may be prescribed by the Secretary of the Interior or the Secretary of Commerce, as appropriate."

D. Water Quality Certification Conditions

Section 401(a)(1) of the Clean Water Act (CWA) requires an applicant for a federal license or permit for any activity that may result in a discharge into navigable waters of the United States to provide the licensing or permitting agency a certification from the state in which the discharge originates that such discharge will comply with the CWA.

On August 28, 1990, NSPW applied to the WDNR for Section 401 water quality certification, as required by the CWA. In a letter dated December 3, 1990, the WDNR waived the need for a water quality certificate.

E. Coastal Zone Management Act

Because the project lies in a coastal zone and may affect coastal resources, the Wisconsin Department of Administration (WDA) reviews the proposed project for consistency with the Wisconsin Coastal Management Program. In its letter of October 19, 1993, the WDA waived the right to review the applicant's consistency certification for the White River Hydroelectric Project, and so state concurrence with the certification is presumed.

F. Scoping

We reviewed public and agency comments filed with the Commission; visited the project area on December 15, 1993; and issued a Scoping Document on January 13, 1994, describing the environmental issues we proposed to address in this EA. No agencies or individuals commented on the Scoping Document.

V. ENVIRONMENTAL ANALYSIS

A. General Description of the Locale

1. White River Basin

The project site is 4.5 miles directly south of the city of Ashland where State Trunk Highway (STH) 112 crosses the White River (see Figure 2). The dam is 13 miles upstream of the confluence of the White River with the Bad River and about 18 miles upstream from the mouth of the Bad River at Lake Superior. The White River flows for about 43 miles from its origin near the Village of Delta in Bayfield County, Wisconsin, to its confluence with the Bad River. The White River drains an area of 301 square miles above the project dam.

The river is free-flowing for 30 miles from its origin to the White River dam. At the dam a buried conduit conveys water 1,345 feet to the powerhouse, thus bypassing the original river channel. The

bypassed channel consists of a series of shallow riffles and pools created by leakage from the dam and natural seepage from the river bank. Downstream of the powerhouse, the river continues to flow freely for 13 miles to its confluence with the Bad River.

Upstream of the dam, the White River reservoir covers 56 acres at a normal full pool elevation of 711.2 feet. NSPW has flowage rights for the entire reservoir. The maximum width of the reservoir is 1,000 feet, the average depth is 7 feet, and the length of the reservoir is 1 mile. Because of its small size, the reservoir provides little to no flood control downstream of the dam.

The project area is primarily forest land. A few scattered dairy farms represent the only development in the area. Lands adjacent to the reservoir are entirely undeveloped. NSPW owns 101 acres adjacent to the reservoir, which represents roughly 25 percent of the shoreline. The rest of the land is privately owned, and NSPW has flowage rights to the high water mark. Most of NSPW's land is adjacent to the dam and powerhouse on the north side of the river.

In addition to the project works, the project lands are primarily used for recreation and wildlife habitat.

The population of Ashland County in 1990 was 16,307, with 8,695 people residing in the city of Ashland. The only other city in the county is Mellen, with a population of 935.

2. Proposed and Existing Hydropower Development

There are no other existing or proposed hydropower projects in the White River Basin.

3. Cumulative Impacts

An action may cause cumulative impacts on the environment if its impacts overlap in space and/or time with the impacts of other past, present, or reasonable foreseeable future actions. Individual minor impacts of multiple actions, when added together in space and time, may amount to collectively significant cumulative impacts. The existing environment shows the effects of past and present actions and provides the context for determining cumulative impacts of future actions.

The White River Hydroelectric Project is the only hydropower project in the basin. The rest of the basin is generally undeveloped, primarily forest land with some scattered farm land. No other projects have been identified that could collectively produce cumulative effects. Although there is potential for other activities, such as logging, specifics regarding their extent or location are unknown. Moreover, since no fundamental change in project operations is being considered, the foreseeable cumulative impacts of the proposed project relicensing are very limited.

Our analysis of existing cumulative impacts shows a strong relationship between the White River Project and the fishery above the dam. The upstream fishery is a quality warmwater and coldwater fishery, and the dam keeps sea lamprey, which have invaded nearby Lake Superior, from damaging the fishery.

The project complements the low intensity, outdoor recreational opportunities in the basin. Recreational facilities at the project provide a convenient location for canoeists and kayakers to either access or leave the river. Similarly, the project provides fishermen with shoreline and boat fishing opportunities. The facilities adequately provide for the limited use that does occur.

B. Environmental Resources

We have reviewed the proposed project in relation to the environmental resources in the area affected by the project. We have considered comments and recommendations presented by the agencies and NSPW in our analysis below.

1. Geology and Soils

Affected Environment: The immediate project area is formed from flat glacial lake bottom deposits overlying sandstone and shale. The unconsolidated material is composed of red clay about 50 feet thick. The river has eroded through the clay layer, exposing hard sandstone and some underlying shale along the river bed.

Environmental Impacts and Recommendations: Erosion along the reservoir's shoreline occurs at a slow rate. The combination of dense vegetation and the reservoir operating regime have stabilized the banks and minimized erosion. Historically, there has been no record of significant erosion around the reservoir, nor have any erosion control measures ever been required. Further, no agencies have reported erosion as a concern.

The proposed project, with our recommendations, would maintain a reservoir operating regime with minimal water level fluctuation. Therefore, we do not expect any change in erosional activity along the reservoir shoreline. Thus, we recommend no specific protection or enhancement measures for erosion control.

Unavoidable Adverse Impacts: None.

2. Water Resources

Affected Environment: The WDNR classifies the White River from its mouth up to the dam as a Class II trout stream.²⁹ In addition,

²⁹Wisconsin trout streams are placed into three classes for fish management purposes. Class II streams may have some natural reproduction but not enough

the National Park Service (NPS) includes the White River, from the project impoundment at the STH 112 crossing to its source, on the Nationwide Rivers Inventory because of its scenic and recreational (canoeing and trout fishing) value. The NPS also describes the White River as having "outstanding water quality in upper reaches."

The U.S. Geological Survey (USGS) has maintained stream gage No. 04027500 at the downstream side of the project powerhouse since 1948. Mean annual river flow measured at the gage through September 1992 is 281 cfs. Peak runoff flows typically occur in April and May as winter snowmelt combines with spring rain. April has the highest mean monthly flow, 573 cfs. Flows are generally lowest in the winter. January has the lowest mean monthly flow, 188 cfs. The highest recorded instantaneous flow (8,100 cfs³⁰) at the project site occurred on July 1, 1953 (USGS 1993).

No flow is released to the bypassed natural channel unless the flow into the project exceeds the project's hydraulic capacity of 280 cfs. On average, flows at the project exceed the plant's hydraulic capacity 24 percent of the time (EarthInfo 1992). Historically, in most years, this has resulted in 200-300 cfs flow discharged over the dam into the bypassed reach during spring months. Leakage from the dam and seepage from the river bank produces a flow of about 1-2 cfs, which creates shallow riffles and pools in the bypassed reach when no flow is released from the dam.

The WDNR requires that the White River and its flowage meet state water quality standards for body-contact recreation, fish, and other aquatic life. In addition the project waters immediately downstream of the dam must meet the requirements for a Class II trout stream. These standards are published in Chapter NR 102 of the Wisconsin Administrative Code. The WDNR requires that dissolved oxygen in trout streams and coldwater fisheries be no lower than 6 milligrams per liter (mg/l) at all times and no lower than 7 mg/l during the fall spawning season. The WDNR also requires that temperature not be raised above natural background levels (levels if the dam were not present) to the extent that it adversely affects the trout population and that pH remain between 6.0 and 9.0. There are few historical water quality data for the White River. Water quality in the project reservoir and tailrace measured between May 1989 and March 1990 meets state standards.

Water diverted through the turbines is used exclusively for hydropower generation and then returned to the White River. There are no consumptive uses of the project water. Therefore, the project does not affect any existing water rights.

to utilize available food and space. Therefore, stocking is sometimes required to maintain a desirable sport fishery.

³⁰Extrapolated from rating curve that extended above 3,000 cfs.

Environmental Impacts and Recommendations:

a. Project operations

Operating the project in the run-of-river mode minimizes water level fluctuations upstream and downstream of the project and benefits aquatic resources in the river. NSPW and the WDNR believe the project should continue to operate in the run-of-river mode. We agree that run-of-river operation should continue.

The WDNR requested an operating band based on a maximum pool elevation of 711.45 feet msl with a downward fluctuation of 0.5 feet. It recommends that NSPW not operate over the full range of the band on a daily basis. The WDNR understands that the water level may fluctuate outside this range because of hydrological conditions beyond NSPW's control.

According to NSPW, limitations in the hydraulic capabilities of the turbines and load control equipment make it impossible to operate so that outflow from the project equals inflow on an instantaneous basis. Therefore, under normal operating conditions, the water surface elevation in the reservoir fluctuates. NSPW believes that WDNR's recommendation for reservoir fluctuation limits would be impossible to achieve with the existing project equipment. NSPW proposes to maintain a reservoir water surface elevation with a maximum operating range of 710.4 to 711.4 feet msl (1.0-foot operating band). NSPW points out that the 711.45 foot maximum normal operating level under the WDNR proposal is only 0.15 feet below the elevation at which the spillway gates are opened.

We agree the project should be operated in a run-of-river mode with an objective to protect the aquatic resources in the reservoir and downstream. We believe this objective is best accomplished with reservoir operations regulated by an enforceable fluctuation limit with allowances for circumstances beyond the control of NSPW.

We have examined the issue and conclude the historical reservoir operating regime forms a basis to establish an enforceable limit. First, a well-documented high quality fishery at the project and downstream indicates no adverse effects from historical operations. Further, the operating regime already reflects the equipment limitations inherent to the project.

In concept, NSPW's current reservoir operating plan and the WDNR proposal fulfill the intent of a run-of-river mode. NSPW has indicated they maintain the reservoir elevation between 710.6 and 711.2 feet msl about 75 percent of the time, and between 710.4 to 711.4 feet msl the remainder of the time. This practice closely approximates the WDNR proposal, and represents a favorable approach. We know, however, that the estimate of 75 percent of the time is not substantiated, nor is the WDNR proposal based on an interpretation

of actual operating data. Therefore, we have insufficient information to conclude that either case represents an operating regime that can be attained and documented. Thus, we recommend that within 120 days of the license issuance, NSPW submit to the Commission for analysis and approval a reservoir-operating plan to include, at a minimum: historical gaging data for the period of the current license; a proposal for reservoir fluctuation operating level; a proposal for compliance monitoring and reporting; and documentation of agency consultation. The plan shall be coordinated with WDNR. Following the review and analysis of the operating plan, the Commission will establish a permanent reservoir fluctuation level.

b. Reservoir draw-down

Non-emergency draw-downs of the project reservoir for maintenance and other purposes can affect water quality if the reservoir is drawn down too quickly. The WDNR recommends that the license require a draw-down management plan. The WDNR also recommends that complete draw-downs be avoided in the reservoir and provides ramping rates to be followed. The WDNR proposes the pond not be lowered more than 2 inches every 4 hours for the first 48 hours and no more than 6 inches per 24 hours after that. The WDNR requests that modifications to the draw-down plan be permitted only upon agency concurrence. NSPW has developed a draw-down management plan for inclusion in the license.

We agree with the WDNR and NSPW and recommend the draw-down management plan be included in the license. To protect water quality and prevent fish stranding during non-emergency draw-downs, the pond should not be lowered more than 2 inches every 4 hours for the first 48 hours and no more than 6 inches per 24 hours after that. We also recommend that modifications to the draw-down management plan for non-emergency draw-downs be permitted only after consultation with the WDNR and that the modifications be subject to Commission approval.

c. Gaging

NSPW maintains staff gages at the headwater and tailwater of the project as recommended by the WDNR. Hourly water surface elevations are documented on a continuous recording circular chart. NSPW will forward this information to agencies upon request. In addition, there is a USGS stream gage located in the tailwater area of the powerhouse.

The WDNR requests that NSPW maintain a staff gage with its operating range clearly marked upstream of the project in a location easily visible to the public. NSPW agrees either to modify the existing headwater gage on the spillway to conform to the U.S. Fish and Wildlife Service (FWS) design, as recommended by the WDNR, or to indicate the operating range clearly on the existing gage. We recommend NSPW either modify the existing headwater gage to conform to the FWS design or to indicate the operating range on the gage.

The current USGS gage and the existing headwater monitoring gage are adequate to ensure compliance with the operating levels recommended previously. Therefore, we recommend that NSPW continue to monitor headwater and tailwater surface elevations and provide records to agencies within 30 days upon request.

d. Spillway gate "cindering"

The highest leakage rates through the dam spillway gates occur when the gates are opened and then closed. NSPW adds cinders, or ashes, to the water upstream of the gates to reduce leakage through the gates by sealing the small holes. The WDNR has requested NSPW annually analyze a sample of the cinders for bulk chemistry of contaminants and submit the results to the WDNR. The WDNR states it may restrict the practice of cindering if environmental harm is likely. The WDNR also states that it is evaluating cindering as part of the operation of all dams, and that the state may soon regulate the practice to avoid the introduction of contaminants into state waterways. NSPW has submitted the results of a chemical analysis of the cinders used to reduce gate leakage to the WDNR's Bureau of Solid Waste for review. In letters dated April 3, 1995, the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) and the Bad River Band of Lake Superior Tribe of Chippewa Indians also express concerns about the impact of cindering on water quality (see Appendix A).

The practice of cindering gates to prevent leakage is a long-established practice in the hydropower industry. Cindering is essential to the operation of many projects to prevent lost power generation and ice buildup due to leaking gates. Leakage from the radial gates can cause serious safety concerns if ice builds up on the gate mechanisms and access routes to the gates, rendering them inoperative. The practice of cindering is not currently regulated, nor are there any proven adverse effects to water quality. Nonetheless we recognize that the practice does introduce materials into the water and that the WDNR has a legitimate regulatory responsibility to ensure that such materials do not impair water quality. Therefore we recommend that NSPW submit for Commission approval a plan for monitoring and analyzing fly ash/cinders used to seal the spillway gates. The plan shall provide for annual analysis of bulk chemistry of contaminants. We recommend that NSPW submit the results of the analysis to the Wisconsin Department of Natural Resources and a summary of the findings to the Bad River Band of Lake Superior Tribe of Chippewa Indians and the Great Lakes Indian, Fish and Wildlife Commission. The plan shall also provide for implementation of any reasonable enhancement measures to minimize, to the fullest extent possible, levels of trace metals and other elements.

Unavoidable Adverse Impacts: None.

3. Fishery Resources

Affected Environment: The impoundment and flowage above the dam provide good habitat for a mixed warmwater/coldwater fishery. Game species include northern pike, largemouth bass, bluegill, black crappie, pumpkinseed, and brown trout. The forage species consist mainly of white sucker, common shiner, bluntnose minnow, and young shorthead redhorse. The fisheries community in the impoundment and flowage is considered a natural reproducing population. There has been no known stocking of warmwater or coldwater species in this segment of the river. The habitat in the flowage is generally shallow, with a rock and cobble bottom, whereas that of the impoundment is shallow with softer sediments near shore that support an abundant growth of emergent and submergent vegetation. The rock and cobble areas and the vegetation provide spawning and nursery habitat for the fishery. Fishing occurs both in the reservoir and the river below the dam. The estimated fishing user-days at the project are low, about 200 annually.

The approximately 1,300-foot-long bypassed reach below the dam has a fairly steep gradient. Under spill flow conditions the reach produces many cascades and rapids. The composition of the bottom substrate is about 80 percent bedrock, 10 percent boulder, and only 10 percent gravel. Downstream of the plunge pool at the base of the dam, the irregular stream-channel bottom produces a number of small pools separated by shallow rivulets when no water is spilling from the dam, or about 76 percent of the time. During this time, the stream reach is maintained by about 0.5 cfs leakage from the dam, plus accretion from natural seeps and springs along the channel, bringing the total estimated flow to 1 to 2 cfs. This reach supports many forage species such as longnose dace, white sucker, common shiner, creek chub, fathead minnow, horneyhead chub, and shorthead redhorse. Game species found but not common to this reach are brown trout, rainbow trout, largemouth bass, and northern pike. A high gradient stream bed, lack of vegetation, and dewatering preclude the use of the area by game species most of the year. Small pools and rivulets in the reach are better suited for forage species such as chubs, daces, and shiners. Interestingly, when the WDNR sampled the White River Flowage, the bypassed reach, and the powerhouse tailwater areas in cooperation with NSPW in 1989-1990, the bypassed reach produced the highest diversity of fish species (21) of the sample location. Only three species of gamefish found downstream were not found in the bypassed reach. The fish included smallmouth bass, rock bass, and walleye, which generally require a more stable river environment than the bypassed reach offers.

The fishery in the river below the powerhouse is dominated by forage species such as common shiner, longnose dace, white sucker, and shorthead redhorse. Game species noted in the reach are brown trout, northern pike, smallmouth bass, pumpkinseed, and walleye. The fishery in the lower reach of the river is influenced by Lake Superior fish that may move up the river to spawn.

Overall, the WDNR characterizes the fishery above the White River Project as a quality warmwater and coldwater fishery. Further, the WDNR describes the fishery below the project as markedly different from the one above the project. The management goals for the river do not recommend the introduction of an anadromous fish run from Lake Superior. Therefore, WDNR does not desire fish passage at the project. It appears that the barrier-effect of the existing project best serves the management goals for either fishery.

Environmental Impacts and Recommendations:

a. Impoundment fluctuations

Under V.B.2.a-Water Resources, we recommend NSPW submit to the Commission for analysis and approval within 120 days of the license issuance a reservoir-operating plan to include, at a minimum: historical gaging data for the period of the current license; a proposal for compliance monitoring and reporting; a proposal for reservoir fluctuation operating level; and documentation of agency consultation. The plan shall be developed in coordination with WDNR. Following the review and analysis of the operating plan, the Commission will establish a permanent reservoir fluctuation level specification.

b. Fish Passage

The White River dam acts as a barrier to upstream migration of walleye and several salmonid species. It is also an important barrier to migration of the sea lamprey, which the WDNR considers a nuisance species that has affected the lake trout population in the Great Lakes. The WDNR considers restricting the sea lamprey from potential spawning areas as well as potential parasitic infestations in upstream waters desirable. Also, WDNR and DOI management goals for the White River do not call for the introduction of anadromous fish runs from Lake Superior. We agree with the WDNR and DOI that fish passage facilities are not appropriate at this time. Therefore we are not recommending the construction of fish passage facilities at the White River Project.

The DOI has requested that its authority be reserved to prescribe the installation of fishways pursuant to Section 18 of the FPA. We recognize that future fish passage needs and management objectives cannot always be predicted when a license is issued. Although the DOI is not recommending that fish passage facilities be installed at this time, we recommend including a license article reserving the DOI's prescription authority under Section 18 of the FPA.

c. Fish entrainment

The WDNR describes the types of fisheries above and below the project as markedly different in character (WDNR, 1993). Further, they describe the fishery upstream as having good quality. For this reason, the WDNR has not requested a fish entrainment and mortality study in connection with the White River Project. They have stated that their management goals for the upstream fishery would not be served by a reduction in numbers of entrained fish. Other agencies such as DOI and U.S. Environmental Protection Agency in their correspondence dated March 31, 1990, and March 13, 1990, respectively, support a position for no fish entrainment and mortality study.

We concur with the agencies that project fishery goals would not be served by an entrainment/mortality study. Existing conditions provide a high quality fishery in the impoundment and upper and lower reaches of the river. There are no desirable anadromous fish species involved, and the upstream and downstream fisheries are unrelated.

d. Instream flows in the bypassed reach

NSPW, in consultation with the WDNR and DOI, performed a minimum flow study at the White River Project in spring 1994. The purpose of the study was to qualitatively evaluate a series of minimum flow releases and the effects on fishery resources. This study and other considerations were used by the resource agencies and NSPW to develop recommended minimum flow releases (Table 1).

Table 1. Comparison of minimum flow recommendations

Proposer	Flow Release	Annual Lost Power Generation (MWh)
NSPW	10 cfs (Apr. 15-May 30, Sep. 15-Nov. 30) 5 cfs (June 1-Sep. 14, Dec. 1-April. 15)	136
WDNR	16 cfs (year-round)	347
DOI	27 cfs (Apr. 1-Nov. 30) 16 cfs (Dec. 1-Mar. 31)	492
No-Action	Existing Dam Leakage <0.5 cfs with natural springs for a total of 1-2 cfs. 200-300 cfs spillage in spring and early summer.	-

In making a preliminary determination of inconsistency between WDNR and DOI's Section 10(j) minimum flow recommendations (letters dated February 23, 1995), we concluded that the no-action condition provided adequate protection for a diverse fishery in the bypassed reach and that the WDNR and DOI recommendations would result in only marginal enhancement of an existing marginal and limited fishery, while resulting in a significant cost to this already uneconomical project. However, as a result of discussions at the April 13, 1995, 10(j) teleconference, staff developed additional information based on further investigation into hydrological conditions at the project, and also WDNR provided additional information on the functional fishery impacts of each of the three recommended alternative minimum flows.

Additional staff analysis identified that, historically, in most years, the 1-2 cfs instream flow from dam leakage and natural spring seepage was augmented by spillage of between 200-300 cfs over the dam into the bypassed reach when flows exceeded the project's hydraulic capacity. This spillage historically has occurred during spring and early summer spawning months. While similar hydrological conditions can be expected in the future, there is no flow guarantee for the bypassed reach in the existing license, and consequently, no protection or recognition of the baseline fishery condition. We conclude that a minimum flow guarantee for the bypassed reach is required to protect the baseline fishery condition.

We analyzed the alternative minimum flow recommendations and concluded that NSPW's proposal to release 10 cfs or less would not protect the existing fishery. At a flow of 10 cfs, the predominant substrate of the wetted channel is bedrock, which has marginal value as fish habitat. Additional information from WDNR indicates, according to their observations during the minimum flow study, that 10 cfs may be adequate to sustain fish in isolated pools, but is insufficient to allow fishes to move freely throughout the riverine community.

WDNR's recommendation for a continuous discharge of 16 cfs would allow fish to access all portions of the bypassed reach and the rest of the White River system. This would replicate historical spillage functions that promoted the mixing of fishery populations in various sections of the White River system with the bypassed reach fishery. Also, whereas historical flows provided sufficient discharge in spawning months to allow spawning, a 16 cfs minimum flow could inundate gravel and cobbles along the channel and fish could be expected to be attracted to the bypassed reach for spawning. A minimum flow of 16 cfs also provides significantly more wetted habitat for fish and invertebrates than 10 cfs.

DOI's proposal is the same as WDNR's except that it would provide 27 cfs discharge from April to November. These higher flows would coincide with the spring and fall spawning periods for warm water fishes and salmonids, respectively. DOI believes that these flows are most conducive to spawning, providing greater habitat and water quality benefits. DOI's recommendation for 27 cfs discharge would guarantee adequate flows for spring spawning where historical spillage has provided such flows. The 27 cfs discharge for fall spawning would represent a minor enhancement over the no-action condition.

We have also examined the financial impact of the minimum flow releases to the project (see Section VI). The annual lost power generation (see Table 1) ranges from 136 to 496 MWh for the various flow proposals. The estimated impact to the project would be an annual cost of about \$6,000 for the NSPW proposal, \$10,000 for the WDNR proposal, and \$16,000 for the DOI proposal.

We believe a minimum flow release requirement in any license issued for this project is necessary to protect the baseline fishery condition in the bypassed channel. We concur with DOI that a minimum flow of 27 cfs from April 1 through November 30, and 16 cfs from December 1 through March 31, would provide adequate protection of fishery resources in the bypassed channel.

Unavoidable Adverse Impacts: There would be unavoidable losses of fish to entrainment and turbine mortality. As discussed in Section V.B.3.c (above) we conclude these losses would have an insignificant effect on fishery resources.

4. Terrestrial Resources

Affected Environment: The terrestrial resources within the project area are typical of areas adjacent to Lake Superior. The forest land is dominated by mixed northern hardwoods with some scattered conifers. The principal hardwood species are sugar and red maple, large-toothed aspen, white birch, red oak, box elder, basswood, yellow birch, black ash, and some black cherry. Conifers include red and white pine, balsam fir, white and black spruce, eastern hemlock, and white cedar.

The riparian community adjacent to the water's edge is dominated by scrub/shrub vegetation. Riparian plant species include tag alder, osier dogwood, willow species, and some sumac.

There are three wetland areas within the project area, two greater than 5 acres and one less than 5 acres. The two larger wetlands, 6 and 8 acres, encompass the upper one-third of the flowage and confluence with the river. The smallest wetland is about 400 feet downstream of the dam. It is a primarily scrub/shrub and emergent aquatic community growing along the fringe of the river. The smaller wetland downstream of the dam is the only wetland on NSPW-owned lands.

Wildlife resources at the project site include species associated with undeveloped forested areas. Common mammals include white-tailed deer; black bear; red, gray, and fox squirrels; bobcat; coyote; red and gray fox; raccoon; woodchuck; short-tailed weasel; chipmunk; striped skunk; snowshoe hare; beaver; and river otter. Common birds include blue heron, crows, vireos, blue jays, woodpeckers, nuthatches, chickadees, migratory waterfowl, owls, woodcock, ruffed grouse, and raptors (e.g., broad-winged hawk, osprey, bald eagle). Many species of reptiles and amphibians inhabit the area including the state-threatened wood turtle.

DOI has identified the bald eagle (*Haliaeetus leucocephalus*) as a threatened (state and federal) species present in Ashland County.

DOI has located a nesting site about 3 miles upstream of the project dam, outside the project area. The habitat in the area is conducive to nesting by bald eagles and ospreys (*Pandion haliaetus*) (state threatened). Habitat of the timber wolf (*Canis lupus*), state and federally endangered, also occurs within and adjacent to the project area, although no wolves have been observed. The wood turtle (*Clemmys insculpta*), a state threatened species, was observed downstream of the project area. The WDNR identified a triploid morph of the blue-spotted salamander, also known as Tremblay's salamander, in the project vicinity. Tremblay's salamander is not recognized as a distinct species, but has been considered a state threatened species in the past and could be again in the future.

Environmental Impacts and Recommendations:

a. Property ownership and development

NSPW currently owns 101 acres of undeveloped forest land bordering the reservoir and the river below the dam. Resource agencies have expressed concern that land-disturbing activities such as timber harvesting could reduce available habitat for wildlife, including nesting sites for bald eagles. The WDNR requests that NSPW retain ownership of lands in the project area and maintain those lands in their current undeveloped state. NSPW has agreed to comply with the WDNR request.

We conclude that maintaining project lands in their natural state would provide aesthetic benefits and suitable future wildlife habitat. Therefore, as discussed in Section III.B, we recommend that NSPW maintain its project lands in a natural state. Any withdrawal of, or addition to project lands would require an application for Commission approval of an amendment to the license with prior agency consultation. We recommend that NSPW prepare a Land Management Plan in consultation with resource agencies, to be filed for Commission approval within one year after issuance of any license. The Land Management Plan should address allowed uses and activities on project lands, and set forth land management principles and practices that will be followed. The Land Management Plan should especially address these aspects in relation to minor conveyances that are exempt under the Commission's standard land use article from prior Commission approval. The Commission's standard land use article otherwise adequately provides for prior agency consultation and Commission approval for all land uses and dispositions.

b. Purple loosestrife

Purple loosestrife (*Lythrum salicaria* and *L. virgatum*) is an introduced plant considered a nuisance weed. Loosestrife is generally found in wetlands where it crowds out more desirable native species that provide food and habitat for aquatic life. Loosestrife thrives in recently disturbed wetlands, which means that water level fluctuations may enhance the spread of purple loosestrife. The WDNR requests that the applicant monitor the project area for purple loosestrife and eradicate any plants within the project area using the best possible methods. Eradicating an established stand of purple loosestrife is difficult because each plant produces many seeds, and at this time there is no effective method to eradicate an established stand. For small stands of purple loosestrife, uprooting the plant or using an herbicide is possible, but no proven eradication method exists.

NSPW agrees to monitor the project area for purple loosestrife and report any findings to the WDNR. NSPW does not believe that implementation of a control plan for purple loosestrife should be included as a license article. NSPW recommends that the responsibility for eradicating purple loosestrife be assigned to an agency.

We recommend that NSPW develop a plan to monitor purple loosestrife in consultation with WDNR. This plan should include, but is not limited, to the method of monitoring, the frequency of monitoring, and the submission of monitoring data to WDNR.

c. Impoundment fluctuations

The WDNR and NSPW agree that reservoir fluctuations should be minimized to encourage a more diverse emergent and submergent aquatic plant community. In addition, minimizing water level fluctuations would provide resting, feeding, and brood habitat for waterfowl and enhance other components of the aquatic system.

We recommend the reservoir elevation strategy listed in Section V.B.2—Water Resources for minimizing water level fluctuations and effects on terrestrial resources.

d. Threatened and endangered species

NSPW proposes to maintain the project lands in their current undisturbed state, which would preserve large canopy trees that could provide future nesting areas for bald eagles. DOI has concluded that the proposed project will not affect the bald eagle or gray wolf. Thus it is not requesting Section 7 consultation under the Endangered Species Act.

We agree that proposed facility operations and resource management activities at the project site should not adversely affect any threatened or endangered species in the area. However, we recommend that NSPW prepare a management plan that includes maintaining and enhancing habitat at NSPW-owned lands in their current natural state and describes the steps that would be taken to protect state and federally listed threatened or endangered species, if they become established in the project area in the future.

Unavoidable Adverse Impacts: None.

5. Aesthetic Resources

Affected Environment: The project is in an area of northern Wisconsin of visual diversity and interest. The region offers moderate relief and forested areas with a mix of open landscape.

The White River reservoir is set in a well-defined river valley with an undeveloped shoreline forested with mature trees. The project area offers a pleasing setting with appealing land and water relationships, although none of the project area scenic features are unique or unusual for northern Wisconsin. The site has visual appeal in spring with its rushing water through the bypassed reach, fall with the color change, and summer with full foliage.

The visual quality of the area is largely intact, interrupted only by the presence of the project dam, the powerhouse, the powerhouse access road, and STH 112. STH 112 traverses the project's dam and provides scenic views of the reservoir to passersby and recreationists using the area.

Environmental Impacts and Recommendations: The proposed project with our recommendations would not change the visual character of the area. Although, the project features and operations generally blend with the surroundings, we examined possible visual enhancement opportunities at the project site. We concluded that there were two opportunities to potentially improve the visual quality of the area: enhancements to the powerhouse access road and the bypassed reach. Both share the same corridor and provide a long 1,300-foot axial view from STH 112 that lacks visual appeal.

The recommendation for minimum flows to the bypassed reach (see Section V.B.3) would create the sight and sound of a free-flowing river for those who might stop along STH 112 or visit the accompanying recreation areas. The costs of the minimum flow release are measured in terms of the value of lost power. A minimum flow of 27 cfs (Apr. 1 through Nov 30) and 16 cfs (Dec. 1 through Mar. 31) as the DOI and staff propose would have an annualized cost of \$16,000.

We also considered enhancements for the access road that would soften its linear form, such as roadway realignment or well placed clusters of trees. We examined the merits of these enhancements by weighing their benefits against the potential costs. Landscaping and road realignment have estimated construction or installation costs of \$25,000 and \$50,000, respectively.

We considered the viewer population in the area to determine the potential benefits of visual enhancement. For example, we considered whether the viewers are stationary or transient, and whether there would be a notable viewer response to the improvements.

The majority of viewers in the project area are transient—predominantly in automobiles passing by on STH 112. Only about 300 individuals use the project area annually for recreational purposes, and they typically stay less than 6 hours. Also, the transient viewer, moving through the area at 50 miles per hour, forms an areawide impression rather than reacts to specific scenes.

We conclude, therefore, that improvements to either the bypassed reach or the access road would go unnoticed by the majority of the viewers in the area. For the remaining viewers, the visual resources in the area are generally common to northern Wisconsin. Therefore, we conclude that the costs of any further improvements far exceed the possible benefits. We recommend no visual improvements for the access road. We do, however, recommend retaining project-owned lands in a natural state, which would benefit the long-term visual quality of the project area—see Section V.B.4.a.

Unavoidable Adverse Impacts: None.

6. Cultural Resources

Affected Environment: In 1991 NSPW retained the Burnett County Historical Society to survey and evaluate the project areas. It identified no significant cultural resources at that time. The Wisconsin State Historical Preservation Officer (SHPO) reviewed the study results submitted by NSPW in its application and concurred with the methods and conclusions.

The project facilities (i.e., the powerhouse, surge tank, pipeline, substation, and dam/highway bridge) are representative of the region's hydroelectric development history, but they are not unique. The integrity of the project works is poor historically because of various replacements and maintenance actions since the original construction in 1907.

The archaeological studies included a literature search and a field survey that encompassed relevant shoreline areas. The field survey identified some areas of potential archaeological importance, but it did not reveal any specific sites.

Environmental Impacts and Recommendations: The project would not affect any known potentially historic sites. Consistent with recommendations by the Wisconsin SHPO, we recommend that NSPW be required to consult and cooperate with the Wisconsin SHPO before undertaking any ground-disturbing activities or developing any project works or other facilities. Furthermore, we recommend that NSPW periodically search all eroded reservoir shoreline areas for visible traces of artifacts, objects, or remains of potential archaeological significance. We also recommend consultation with the state SHPO before construction or development activities are undertaken and periodic surveys (at 5 and 10 years after relicensing) of eroded reservoir shoreline areas for cultural resources.

Unavoidable Adverse Impacts: None.

7. Recreation and Other Land and Water Uses

Affected Environment: The project site is within one of Wisconsin's prime recreation areas. Ashland County, along with nearby Bayfield and Iron counties, provides more than 200,000 acres of land for recreational use in the region, including large natural lakes and wetlands. Much of the undeveloped forest lands, which constitute the dominant land type in the area, are in public ownership and are used for recreational activities like camping, fishing, swimming, hunting, hiking, boating, skiing, snowmobiling, and sightseeing. In Ashland County, the primary recreational activities are boating, fishing, swimming, and sightseeing. On an average summer weekend, more than 24,000 people participate in these

activities.

Recreational opportunities at the project are limited to two areas: the reservoir and the tailwater area below the powerhouse. The primary activities in these areas are fishing (shoreline and boat fishing) and canoeing/kayaking. NSPW provides a boat launch, canoe takeout, parking, and a canoe portage totaling about one acre on the north side of the dam. In the tailwater area, NSPW provides access for fishing and kayaking. Parking for the tailwater area is available at the boat launch and along the powerhouse access road.

Overall, the recreational usage in the project area is low. This is largely attributed to the availability of larger, more developed recreational resources in the area. The total number of recreational users observed by NSPW personnel in a 6-month period during 1989 was 160. We estimate the year-round user-days to be about 300. The NSPW user survey indicates that 65 percent of the use is fishing. A small number of recreationists canoe in the area. Most canoeists who arrive at the project from upstream conclude their trip at the dam. NSPW provides a canoe portage trail, however, for those wishing to continue their trip below the dam.

Environmental Impacts and Recommendations:

a. Recreation facilities

Recently, NSPW provided recreational enhancements in the project area including: 1) improvements to the boat launch area in 1991 and 2) improved access to the tailwater area in 1992. These improvements are associated with the primary recreational activities at the project site.

NSPW also explored the possibility of providing sufficient flow in the bypassed reach to support canoeing. NSPW examined flows at 50, 100, and 628 cfs (total stream flow) and concluded that canoeing was unsuitable at any flow. At flows of 50 and 100 cfs, NSPW observed rocky areas with low depths that would require portaging, and at 628 cfs the rocks created rapids that would be extremely dangerous.

There is only a moderate amount of canoeing in the White River compared to other nearby rivers. Further, more than 20 miles of free-flowing river are both upstream and downstream of the bypassed reach. We conclude there is no justifiable reason to provide flows in the bypassed reach for canoeing considering the availability of canoeing waters in the area and the high cost in power benefits foregone that would result.

We have examined the demand for recreation in the project area and the capacity of present facilities to satisfy future demand. Recreational growth in Ashland County is increasing at a rate of about 3 percent yearly. Assuming a similar growth rate in

recreational use at the project site, about 800 people would visit the site annually at the end of this license period. The capacity of the resources and the facilities at the project site is estimated to be over 3,000 user-days annually, a figure that far exceeds the actual and forecasted use. The WDNR stated in its initial consultation with NSPW that "public usage of this small reservoir should not be encouraged much beyond present levels." We conclude that the present facilities with NSPW's recent improvements adequately meet current and future demand, and recommend no further recreational enhancements.

b. Access for the disabled

The NPS asked NSPW to consider the need for barrier-free access in a letter dated September 11, 1991. NSPW states that the boat launch on the site is barrier-free without improvement, and it has no plans to install additional barrier-free recreational facilities because of the site's low usage factor. We agree that the existing boat launch configuration appears to provide reasonable accommodation for people with disabilities; therefore we do not recommend additional barrier-free facilities.

Unavoidable Adverse Impacts: None.

C. Decommissioning Alternative

The White River decommissioning alternative would involve the shutdown of the power generation operation, with measures to provide for long term facility maintenance and safety. Under this alternative, power generation would cease, the powerhouse would be secured to prevent entry and vandalism, and the pipeline would be sealed. Long-term maintenance would be provided to ensure the integrity and operation of the dam embankments, spillway section, and radial gates—see Section III.C. for details. The decommissioning alternative would reestablish natural flows to the bypassed reach; therefore, the flow to the bypassed reach would be equal to the river flow into the reservoir. Also, we would expect the long-term supervision of the project to be transferred to a responsible state agency. The costs of the decommissioning alternative are provided in Table 2.

Table 2. Summary of Decommissioning Alternative Costs

	1993 Capital Cost	1993 O&M Annual Cost	1996 30-year Annualized Value
Net Investment	\$694,900		\$82,300
Relicensing Cost	24,200		3,000
Plug Pipeline	50,000		6,200
Secure Powerhouse	100,000		12,500
Operation & Maintenance		\$40,000	40,000
Total Cost	\$869,100	\$40,000	\$144,000

The primary adverse impact of the decommissioning alternative would be the termination of power generation with an annual value of about \$147,000 under staff's recommended proposal. The forecasts show a demonstrated need for the power. A source of replacement power, therefore, would be required. Replacement power from thermal generation would cost more and would have a greater adverse impact on the environment. Other cost impacts of the decommissioning alternative include amortizing the remaining project debt, providing long term maintenance, and securing the facilities. Our economic analysis shows a significant annualized cost of \$144,000, or a net annual benefit equal to -\$144,000. See Table 4 for a comparison of the decommissioning alternative to all other alternatives.

The decommissioning alternative would offer minor benefits to the environment including:

- Resumption of natural streamflow to the bypassed reach, providing limited benefit to the aquatic resources.
- Visual improvement to the bypassed reach provided by reestablishing the natural streamflow.

The decommissioning alternative would not include any resource enhancements, but several measures may be appropriate to ensure the long-term maintenance of the facility and protection of environmental resources:

- Maintenance of the reservoir level at approximately the existing normal pool elevation to minimize erosion, provide stable fish habitat, protect wetland habitat, and reduce the likelihood of purple loosestrife.
- A draw-down management plan to protect water quality and prevent fish stranding during periods of maintenance.

- A plan to revegetate any areas disturbed by retirement construction activities.
- A management action plan to identify applicant and agency responsibilities for long-term maintenance and operation of the facility.

The most significant cost measure, maintaining the reservoir level, has been included in the operations and maintenance cost in Table 2. The cost to prepare the plans are not included in Table 2, however, the costs associated with these plans are minor and would not measurably increase the overall cost of the decommissioning alternative.

D. No-Action Alternative

Under the no-action alternative, the project would continue to operate under the terms and conditions of the existing license. Therefore, this alternative would result in no changes to the existing environment. The project would continue to operate in a run-of-river mode that has had no significant adverse effect on shoreline erosion, fish habitat, or shoreline habitat. Under the no-action alternative, dam leakage would continue to provide about 0.5 cfs flow to the bypassed reach. Recreational enhancements that NSPW has already provided would serve the recreational demand for the long term, and the fishery above and below the dam would not be altered. Finally, this alternative would continue to provide 5,326 MWh of needed power annually.

VI. COMPREHENSIVE DEVELOPMENT AND RECOMMENDED ALTERNATIVE

Sections 4(e) and 10(a)(1) of the FPA require the Commission to give equal consideration to all uses of the waterway on which a project is located. When the Commission reviews a hydropower project, fish and wildlife and other nondevelopmental values of the waterway are considered equally with its electric energy and other developmental values. In deciding whether and under what conditions to issue a hydropower license, the Commission must weigh various economic and environmental tradeoffs involved in the decision.

A. Developmental Resources

The White River Project historically has generated an average of 5,326 MWh of electric energy annually. Given a generating capacity of 1.0 MW, the White River Project operates at a plant capacity factor of 0.61. The total hydraulic capacity at the project is 280 cfs. The flow-duration curve for the White River at the project indicates that the White River exceeds 280 cfs about 24 percent of the time. It would not be economically feasible to increase the plant's capacity.

The White River Hydroelectric Project carries a relatively high undepreciated debt that limits its economic viability. Furthermore, it is not a large source of revenue relative to the cost of operation.

Consequently the operating margin of revenue over cost is very narrow and the project economics are very sensitive to cost and economic assumptions. As shown in Table 4, even the no-action alternative (Case A) has a negative annualized net benefit of \$84,000. As discussed in Mead Paper, 72 FERC 61,027 (1995), and Duke Power, 72 FERC 61,030 (1995), a finding that a project has negative annual benefits does not preclude issuance of a license.

NSPW, the WDNR, DOI, and the Commission staff have proposed several environmental enhancements in conjunction with the licensing process. Table 3 lists the costs for the environmental measures. The costs for specific management plans and monitoring programs are not included in the table. See Section III.B for staff recommended enhancements.

Table 3. Costs for various proposed environmental measures (Source: staff and NSPW).

Proposed Enhancement	Proposer	1995 Capital Cost	30-Year Annualized Cost ¹
Boat Landing Improvements	NSPW	\$2,000	\$200
Tailrace Fishing Improvements	NSPW	\$5,000	\$500
Minimum Flow Release 10 cfs (Apr. 15-May 30 and Sept. 15-Nov. 30) 5 cfs (June 1-Sept. 14 and Dec. 1-Apr. 15)	NSPW	\$12,200 ²	\$6,000
Minimum Flow Release 16 cfs (year-round)	WDNR	\$12,200 ²	\$10,000
Minimum Flow Release 27 cfs (Apr. 1-Nov. 30) 16 cfs (Dec. 1-Mar. 31)	DOI	\$22,000 ²	\$16,000

¹Annual cost for minimum flow releases is the cost of alternative power, which we estimate to currently be about 19 mills per kWh.

² Installation cost for a minimum flow outlet facility.

B. Recommended Alternative

From our evaluation of NSPW's application, review of agency recommendations, and assessment of the environmental and economic effects of the project and its alternatives, we conclude that the proposed project with a minimum flow release to the bypassed reach and our recommended enhancement measures (see Section III.B) would be best suited to a comprehensive plan for the development of the White River. Therefore, we recommend that any new license issued for the White River Project include a minimum flow release of 27 cfs from April 1 through November 30, and 16 cfs from December 1 through March 31, the enhancements proposed by NSPW and the staff-recommended enhancement measures.

The proposed project with a minimum flow release and our recommended enhancements would provide several benefits. An estimated 4,834 MWh of relatively low-cost electrical energy worth about \$147,000 annually would continue to be generated by a clean, domestic, reliable, and renewable energy resource for use by electricity consumers. The electricity generated by the project

would be equivalent to the energy produced by burning 8,100 barrels of oil or 2,300 tons of coal annually in a steam-electric power plant.

We recommend the following measures to protect and enhance the environment:

- Prepare a reservoir operating plan in coordination with WDNR. Following the review and analysis of the operating plan, the Commission will establish a permanent reservoir fluctuation level specification. Until then, the project should be required to comply with an interim 1-foot operating band between elevations 710.4 and 711.4 feet msl.
- Release a minimum flow of 27 cfs from April 1 through November 30, and 16 cfs from December 1 through March 31 to the bypassed reach.
- Modify the existing staff gage on the spillway according to agency recommendation.
- Maintain project land in a natural state for fish and wildlife and aesthetic enhancement consistent with a Commission approved Land Management Plan.
- Develop a plan to monitor for purple loosestrife in consultation with WDNR.
- Prepare a management plan outlining steps to enhance habitat and to protect threatened and endangered species if they become established within the project area in the future.
- Develop a plan to monitor and analyze fly ash/cinders used to seal the spillway gates.

In addition, we recommend that any license adopt NSPW's proposals for recreational improvements (see III.A.2), and implementation of a draw-down management plan with WDNR.

C. Developmental and Nondevelopmental Uses of the Waterway

We analyzed the economic effects of five scenarios containing varying environmental enhancements:

- Case A.** No action
- Case B, NSPW proposal.** Minimum flow release of 10 cfs (April 15-May 30, and September 15-November 30) and 5 cfs (June 1-September 14, and December 1-April 15)

- Case C, WDNR proposal.** Minimum flow release of 16 cfs year-round
- Case D, Staff and DOI proposal.** Minimum flow release of 27 cfs (April 1–November 30) and 16 cfs (December 1–March 31)
- Case E.** Project decommissioning (includes shutdown of power operations with minimum expense at an estimated annualized cost of \$144,000).

The results of our economic analysis are shown in Table 4. Case A is the baseline (no-action) case with no minimum flow release. Cases B through D include minimum flow releases for the enhancement of the fishery in the bypassed reach. Case E, decommissioning, would have the greatest cost impact on the project's annualized benefit.

As shown, all cases yield negative net benefits. Case A provides no minimum flow release for the purposes of fishery enhancement. Cases B through D include variations in proposed flow releases, with lost energy reflected in reductions in power benefits. As expected, the net benefits decrease (become more negative), as the amount of the flow release increases. Implementing any of the minimum flow release recommendations would increase the net costs between 7 to 19 percent compared to Case A.

We concluded in our earlier analysis (Section V.B.3.d) that a guaranteed minimum flow is required to ensure the benefits of historical spillage into the bypassed channel and protect the baseline fishery condition. We determined on the basis of additional information provided by WDNR during the 10(j) meeting that 16 cfs was the minimum flow required to allow fishes free access to all parts of the bypassed reach. Historical spillage of 200 to 300 cfs has occurred during the critical spring spawning season. The spawning season for warm water fish and salmonids that presently inhabit the bypassed reach is in spring and fall, respectively. Therefore, we concur with DOI that a discharge of 27 cfs during spring and fall spawning seasons would adequately guarantee continuation of the benefits of historical spillage and protect the baseline fishery resources. We conclude that Case D (the staff and DOI recommendations) provides adequate protection for fish resources in the bypassed reach. The recommended minimum flow regime would reduce net benefits by an estimated \$16,000 compared to the no-action alternative.

Despite the negative annualized benefit, we conclude that decommissioning is not warranted. The cost of the decommissioning alternative (Case E) is high, and that alternative would provide no apparent benefit. Based on the energy forecasts, we agree that the power can be used to meet existing and anticipated demand.

Table 4. White River Hydroelectric Project summary of economic analysis in 1995 dollars. (Source: staff).

	No-Action Case A	NSPW Case B	WDNR Case C	USDOI/ Staff Case D	Decomm. Case E
Annual Generation (MWh)	5,326	5,190	4,979	4,834	0
Annualized Alternative Power Cost (\$1,000)	156	153	149	147	0
Annualized Project Cost (\$1,000)	240	243	243	247	144
Net Annual Benefit (\$1,000)	-84	-90	-94	-100	-144
Discount rate (cost of money) 10 percent					
Economic life 30 years					

D. Comprehensive Plans

Section 10(a)(2) of the FPA requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project. Under Section 10(a)(2), 59 plans were filed by various federal and state agencies that address various resources in Wisconsin. Of those we identified, seven are relevant to the project.³¹ The recommended project is consistent with these comprehensive plans.

VII. RECOMMENDATIONS OF FISH AND WILDLIFE AGENCIES

Under the provisions of Section 10(j) of the FPA, as amended by the Electric Consumers Protection Act of 1986, each hydroelectric license issued by the Commission shall include conditions based on recommendations provided by federal and state fish and wildlife agencies for the protection, mitigation, and enhancement of such resources affected by the project.

³¹Wisconsin's Statewide Comprehensive Outdoor Recreation Plan, 1986-91 and 1991-96, WDNR, Madison, Wisconsin; Lake Superior Basin Areawide Water Quality Management Plan, 1979, WDNR, Madison, Wisconsin; Lake Superior Fisheries Management Plan, 1988-98, WDNR, Madison, Wisconsin; Wisconsin Water Quality Assessment Report to Congress, 1986 and 1992, WDNR, Madison, Wisconsin; The Nationwide Rivers Inventory, 1982, National Park Service, Washington, D.C.

Section 10(j) of the FPA further states that whenever the Commission believes that any fish and wildlife agency recommendation is inconsistent with the purpose and the requirements of the FPA or other applicable law, the Commission and the agency shall attempt to resolve any such inconsistency, giving due weight to the recommendations, expertise, and statutory responsibilities of such agency.

Recommendations considered to be outside the scope of Section 10(j) are considered under 10(a) of the FPA. Table 5 summarizes recommendations made pursuant to Section 10(j) and indicates whether they are within the scope of 10(j) and whether they are adopted under the staff-recommended alternative.

Table 5. Analysis of fish and wildlife agency recommendations (Source: staff).

Recommendation	Agency	Within Scope of 10(j)	Conclusion
Run-of-river operation	WDNR	Yes	Partially adopted. Recommended 1.0 ft interim operating band until a permanent level is established.
Target reservoir operating levels	WDNR	Yes	Not adopted-Recommend an interim operating band of 710.4 to 711.4 feet msl until a permanent level is established.
Agency consultation during drought events	WDNR	Yes	Adopted
Headwater and tailwater gages	WDNR	Yes	Adopted
Draw-down management plan	WDNR	Yes	Adopted
Non-emergency draw-down rates	WDNR	Yes	Adopted
Staff gage visible to public	WDNR	Yes	Adopted
Comprehensive plan compliance	WDNR	No-not specific measure to protect fish and wildlife	Adopted

Table 5. Analysis of fish and wildlife agency recommendations (Source: staff).

Recommendation	Agency	Within Scope of 10(j)	Conclusion
Minimum flow release	WDNR DOI	Yes	Adopted- see Section VI.D.
Chemical analysis of cinders	WDNR	Yes	Adopted
Retain land ownership and maintain land undeveloped	WDNR	Yes	Adopted—as required under the standard license article, subject to Land Management Plan
Purple loosestrife monitoring and eradication	WDNR	No—not specific measure to protect fish and wildlife	Adopted
Comply with Chapters 30 and 31 of state statutes	WDNR	No—not specific measure to protect fish and wildlife	Not adopted—Commission's regulations are sufficient to ensure safety
Comply with portions of NR 330, NR 333, and NR 116 of Wisc. Admin. Code; perform dambreak analysis	WDNR	No—not specific measure to protect fish and wildlife	Not adopted—Commission's regulations are sufficient to ensure safety
Reopener clause	WDNR	No—not specific measure to protect fish and wildlife	Adopted

We have identified two 10(j) agency recommendations that we consider inconsistent with the FPA: run-of-river operation as defined by the WDNR, and a target reservoir operating level. We reject two other recommendations relating to Wisconsin State Statutes that are outside the scope of Section 10(j). Following is a summary of our reasons for not adopting these recommendations.

WDNR requests run-of-river operation, which it believes requires limiting pool fluctuation to no more than 0.5 feet. Specifically, WDNR requested an operating band set at a maximum pool elevation of 711.45 feet mean sea level (msl) with a downward fluctuation of 0.5 feet. We concur with the WDNR that the project should continue to operate in a run-of-river mode. We also agree

with the WDNR that if the applicant were to use a wide operating band to peak the project operation, adverse effects on the downstream fishery may result. Therefore, we conclude that the objective of maintaining a run-of-river project would be to benefit the good quality fishery in the project impoundment and downstream of the project.

The historical reservoir operating regime forms a basis to establish an appropriate reservoir fluctuation limit. The well-documented high quality fishery at the project and downstream indicates no adverse effects from historical operations. Further, the operating regime already reflects the equipment limitations inherent to the project.

NSPW has indicated that they maintain the reservoir elevation between 710.6 and 711.2 feet msl about 75 percent of the time, and between 710.4 and 711.4 feet msl the remainder of the time. While this practice closely approximates the WDNR proposal, the estimate of 75 percent of the time is not substantiated, nor is the WDNR proposal based on actual operating data. Therefore, we have insufficient information to conclude that either case represents an operating regime that can be attained and documented.

We are recommending that NSPW develop and file with the Commission a reservoir operating plan to include: historical gaging data for the period of the current license; a proposal for reservoir fluctuation operating level; a proposal for compliance monitoring and reporting, and documentation of agency consultation. Following review and analysis of the operating plan, the Commission will establish a permanent reservoir fluctuation level specification (see Section V.B.2).

Due to the lack of substantial evidence that either reservoir fluctuation band can be attained, and the absence of any determination of a benefit to WDNR's recommended higher pool operating range, we find these 10(j) recommendations inconsistent with the Section 313 requirements for substantial evidence and the Section 10(a) comprehensive planning standard of the FPA.

The WDNR also recommended that NSPW be subject to the floodplain zoning and dam safety standards contained in Chapters 30 and 31 of the Wisconsin State Statutes and portions of the Wisconsin Administrative Code (NR 330, NR 333, and NR 116). This request is outside the scope of Section 10(j) since it does not specifically provide for protection and enhancement of fish and wildlife resources. For issues of project safety, federal authority is preemptive. We believe that Commission regulations are sufficient to ensure safety at its licensed projects.

VIII. FINDING OF NO SIGNIFICANT IMPACT

Implementing the staff-recommended enhancement measures described in this final environmental assessment would ensure that the environmental effects of continued project operation would be insignificant.

On the basis of our independent analysis, issuance of a license with conditions incorporating our environmental recommendations, would not constitute a major federal action significantly affecting the quality of the human environment.

IX. LITERATURE CITED

- EarthInfo, Inc. United States Geological Survey daily values. 1992.
- National Park Service. *The Nationwide Rivers Inventory*. Department of the Interior, Washington, D.C. January 1982.
- North American Electric Reliability Council. *Electricity Supply & Demand 1993-2002*. Princeton, New Jersey. June 1993.
- Northern States Power Company-Wisconsin. 1993a. Additional information for license application, White River Hydroelectric Project, FERC Project 2444, Eau Claire, Wisconsin. May 26, 1993.
- . 1993b. Reply comments to recommended terms and conditions, White River Hydroelectric Project, FERC Project 2444, Eau Claire, Wisconsin. October 21, 1993.
- . 1993c. Additional Information for License Application, White River Hydroelectric Project, FERC Project 2444, Eau Claire, Wisconsin. November 17, 1993.
- . 1992a. Letter from Lloyd D. Everhart, Administrator, Hydro Licensing & Environmental Studies, Eau Claire, Wisconsin, to Richard Dexter, Chief, Compliance & Archeological Section, State Historical Society of Wisconsin. June 5, 1992.
- . 1992b. Additional Information for License Application, White River Hydroelectric Project, FERC Project 2444, Eau Claire, Wisconsin. November 13, 1992.
- . Application for a Subsequent License for a Minor Water Power Project, White River Hydroelectric Project, FERC Project No. 2444, Eau Claire, Wisconsin. December 1991.
- Scholl, Dennis K. A Biological Survey of the White River, Flowage and Tailwater. Wisconsin Department of Natural Resources, Brule, Wisconsin. 1993.

State Historical Society of Wisconsin. 1992. Letter from Richard W. Dexter, Chief, Compliance Section, Madison, Wisconsin. July 8, 1992.

Wisconsin Department of Administration. 1993. Letter waiving consistency certification for Wisconsin Coastal Management Program, Madison, Wisconsin. October 19, 1993.

Wisconsin Department of Natural Resources. *Wisconsin Water Quality Assessment Report to Congress 1992*. Madison, Wisconsin. April 1992.

———. *Wisconsin Statewide Comprehensive Outdoor Recreation Plan*. Madison, Wisconsin. October 1991.

———. *Lake Superior Fisheries Management Plan, 1988-1998*. Administrative Report No. 28 Bureau of Fisheries Management, Madison, Wisconsin. September 1, 1988.

———. *Wisconsin Trout Streams*. Publication 6-3600(80). Madison, Wisconsin. Undated.

United States Geological Survey. *Water resources data-Wisconsin, water year 1992*. Water Resources Division, Madison, Wisconsin. March 1993.

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APPENDIX A

Responses to Comments on Draft EA	Page No.
1. Letter from the Department of the Interior Fish and Wildlife Commission	A-1
2. Letter from the Wisconsin Department of Natural Resources	A-3
3. Letter from the Great Lakes Indian Fish and Wildlife Commission	A-9
4. Letter from the Izaak Walton League of America	A-11
5. Letter from the Bad River Band of Lake Superior Tribe of Chippewa Indians	A-14
6. Letter from Richard Spotts	A-16