UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: James J. Hoecker, Chairman; Vicky A. Bailey, William L. Massey, and Donald F. Santa, Jr.

Wisconsin Valley Improvement Company	)	Project Nos. 2113-041, 042 and 047
Tomahawk Power and Pulp Company	)	Project No. 2239-009
Wisconsin Public Service Corporation	)	Project Nos. 2476-003 and 1999-006
Weyerhaeuser Company	)	Project No. 2212-003
Consolidated Water Power Company	)	Project Nos. 2590-004 and 2256-004
Nekoosa Papers, Inc.	)	Project Nos. 2255-005 2291-003 and 2292-003

ORDER ON REHEARING OF ORDER GRANTING
APPLICATIONS FOR NEW LICENSES
AND OF
ORDER ISSUING NEW LICENSE FOR PROJECT NO. 2113

(Issued July 17, 1997)

On July 18, 1996, the Commission issued new licenses for nine hydroelectric projects plus the Wisconsin River Headwaters Project No. 2113, a system of storage reservoirs, all located in the Wisconsin River Basin, together with an order, encompassing all ten licensing proceedings, styled Order Granting Applications for New Licenses (Master Order). 1/ All ten relicense orders were the subject of requests for rehearing by various parties. The rehearing requests on all but Project No. 2113 are addressed in the project-specific rehearing orders issued concurrently with this order. 2/ The rehearing requests for the Project No. 2113

1/ 76 FERC ¶ 61,054.

2/ Among those filing rehearing requests were the licensees for nine of the ten projects at issue, the exception being Tomahawk Power and Pulp Company's Kings Dam Project No. 2239.

relicense order, 3/ as well as the more general portions of the Wisconsin Department of Natural Resources' (Wisconsin) request for rehearing of the Master Order, are the subject of this order. 4/

BACKGROUND

The Wisconsin River originates in Lac Vieux Desert, a lake on the Wisconsin-Michigan border, and flows 430 miles to the Mississippi River at Prairie du Chien. The Wisconsin Valley Improvement Company (Wisconsin Valley) was incorporated in 1907, 5/ and was that same year authorized by the Wisconsin State legislature to acquire, construct, and maintain a system of reservoirs on the Wisconsin River and tributaries, for the purpose of maintaining a uniform flow for downstream beneficial uses. 6/ Today, Wisconsin Valley's Headwaters Project consists of 21 storage reservoirs spanning over 200 miles in Gogebic County, Michigan, and Vilas, Forest, Oneida, Lincoln, and Marathon Counties, Wisconsin.

Benefitting from the flow management provided by the Headwaters Project are, among other uses, the nine hydroelectric projects listed above, which are located on the Wisconsin and Tomahawk Rivers. All these projects operate run-of-river, and combined have an installed capacity of nearly 38 megawatts. 7/

3/ 76 FERC ¶ 61,050.

4/ Wisconsin's request for rehearing of the Master Order, filed August 16, 1996, includes requests for certain revisions to the ten project licenses. Some of these requests will, as appropriate, be addressed in the rehearing orders of the individual relicense orders.

5/ The stock of Wisconsin Valley is held by the various hydropower developers in the river basin.

6/ 21 FPC at 786; July 1991 relicense application at A-1.

7/ Five of these hydroelectric projects were built at the sites of pre-1907 dams, and all nine were in operation before the Commission asserted jurisdiction over them, as well as over the Headwaters Project, and brought them all under license (nine were licensed between 1959 and 1966, the tenth in 1975). See Project No. 1999, 14 FPC 725 (1955); Project No. 2212, 21 FPC 584 (1959); Project No. 2113, 21 FPC 785 (1959); Project No. 2239, 22 FPC 1 (1959); Project No. 2255, 22 FPC 473 (1959); Project No. 2256, 22 FPC 638 (1959); Project No. 2291, 28 FPC 181 (1962); Project No. 2292, 28

(continued...)

The Headwaters Project's 21 storage reservoirs consist of 16 "natural" lakes and five "man-made" reservoirs (collectively, reservoirs). 8/ These reservoirs, feeding both the Wisconsin River and its tributary the Tomahawk River, vary in size from 313 to 7,626 acres in size, with usable storage ranging from 23 to 4,170 million cubic feet (mcf), for a total of 15,601 mcf. 9/ The five man-made reservoirs -- Rainbow, Willow, Rice, Spirit, and Eau Pleine -- contain 73 percent of this usable storage.

Wisconsin Valley historically subjected the 16 lakes to relatively moderate water level fluctuations (several feet), based on draw-down limits imposed by the state in 1911. There is extensive residential and recreational development around most of these lakes. By contrast, the five man-made reservoirs, built between 1911 and 1938, were subject to larger draw-downs (15 to 32 feet). These five reservoirs were originally used primarily for the benefit of downstream hydropower developments. As Wisconsin Valley's operational practices evolved over the years to meet additional public needs, such as by augmenting streamflows on behalf of downstream water quality, these reservoirs were, due to their much greater available storage, heavily used to provide the additional water releases. Except for the Rice Reservoir, there has been little development around these reservoirs.

Under the Headwater Project's prior license, Wisconsin Valley has operated the 21-reservoir system to sustain as uniform a flow regime as practical in the Tomahawk and Wisconsin Rivers while maintaining lake levels within historical parameters. This

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FPC 243 (1962); Project No. 2476, 36 FPC 413 (1966); and Project No. 2590, 53 FPC 146 (1975). The projects were required to be licensed based on their location on navigable waters of the United States.

There are currently 25 hydropower projects downstream of the Headwaters Project. Of the remaining 16, 12 are under Commission licenses expiring a number of years after the 1993 expiration date of the ten projects before us, and four are nonjurisdictional.

8/ The sixteen "natural" reservoirs actually are comprised of 56 lakes, many of which are chains of lakes formed by a single dam but connected by streams or canals.

9/ The Headwaters Project controls 1,931 square miles (16 percent) of the total Wisconsin River drainage basin area of 12,000 square miles.

entails a seasonal release pattern in which water is stored when natural river flows are high (April through June, September and October) and is released when natural river flows are low (in winter, early summer, and late summer/early fall). 10/

The operational decisions made in the half century before the Commission licensed the Headwaters Project 11/ helped shape the development of the Wisconsin River. 12/ When, at relicensing, we seek to adjust a prior era's balancing and trade-offs in order to reflect today's values and priorities, 13/ increased benefits to some uses must sometimes come at the expense of decreased benefits to others. For this project, with its far-reaching effects on a 400-mile waterway, the major (and increasingly competing) public interest priorities today are hydroelectric power, aquatic life habitat, and recreation. Other important uses are for cooling water at thermal plants; wastewater disposal; industrial process water supply (primarily for pulp and paper mills); and water quality.

10/ Wisconsin Valley has developed a water-budget model (the Wisconsin River System Operations Model, or WIRSOM) that simulates headwaters reservoir operations, river flows, hydropower operations, and wastewater assimilation of the entire length of the Wisconsin River. The model is used to determine inflow, outflow, and changes of storage within the system. See 76 FERC at pp. 61,311-12.

11/ See n. 7, supra.

12/ The northern portion of the Wisconsin River Basin is primarily forested and contains numerous lakes, streams, and reservoirs, which provide an abundance of high-quality recreation opportunities. The mid-section of the basin is a classic working waterway, providing extensive power generation, industrial water supply, wastewater assimilation for numerous municipalities and industries (primarily pulp and paper mills) and reservoir recreation. The southern section of the basin is highly valued for its high-quality riverine recreation activities.

13/ Sections 4(e) and 10(a)(1) of the Federal Power Act (FPA), 16 U.S.C. §§ 797(e), 803(a)(1), require us, in analyzing Wisconsin Valley's application for a new license, to determine how the project may best be adapted to a comprehensive plan for improving or developing a waterway for beneficial public purposes, giving equal consideration to developmental uses, such as hydropower, irrigation, and flood control, and to environmental values, such as fish, wildlife, and recreation.

Many of these competing interests were represented in this proceeding. Wisconsin sought more limited draw-downs of the five man-made reservoirs, in order to benefit recreation at these reservoirs. Citizens' organizations intervened to request even more limited draw-downs at some of these five reservoirs, on behalf of residential and recreational development at these sites. A number of downstream municipalities, industries, and utilities filed comments in support of reservoir releases for flow augmentation and protection of water quality during low-flow periods, and a downstream property owners association filed on behalf of flood protection. 14/

The new license for the Headwaters Project is shaped to enhance water quality, 15/ fisheries, and recreation throughout the Wisconsin River Basin. To this end, the new license prescribes minimum and maximum reservoir water elevations, monthly target flows at two control points on the Wisconsin River (Merrill and Wisconsin Rapids), and a somewhat revised system of storage and releases among all 21 project reservoirs. The new license maintains the water levels in the lakes, and preserves the man-made reservoirs' use for flood protection and low-flow augmentation. These requirements, plus certain additional operating adjustments that Wisconsin Valley is required to develop, comprise the project's operating plan (see license Article 421).

The primary differences between operations before and after the new license are higher water levels in the man-made reservoirs in early summer, enhanced stream flow augmentation for the Wisconsin River in late summer, higher minimum water levels in Eau Pleine and Rice reservoirs, a more equitable index level balancing among the five man-made reservoirs, and minimum flow requirements for almost all the reservoirs. The new license accomplishes these objectives by requiring a 45 to 50 percent increase in minimum summer target flows in the Wisconsin River (e.g., from 600 to 900 cubic feet per second (cfs) at Merrill) and a decrease in the river's maximum summer target flows of 200 to 300 cfs, by establishing summer index levels for the five man-made reservoirs (which eliminates the historical "full rapid" draw-down pattern at Spirit Reservoir) and by increasing minimum water levels at Eau Pleine and Rice Reservoirs.

Every five years, Wisconsin Valley must, pursuant to its new license, review the elements of the project operating plan and

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14/ 76 FERC at pp. 61,229-30.

15/ Wisconsin waived water quality certification pursuant to Section 401(a)(1) of the Clean Water Act. See 76 FERC at p. 61,227.

file with the Commission a status report identifying any new information affecting, or needed changes to, the plan. In preparing its report, the licensee shall consult with Wisconsin, the U.S. Fish and Wildlife Service, other interested agencies, parties directly affected by the project, and, with respect to the Lac Vieux Desert Reservoir, the Lac Vieux Desert Band of Lake Superior Chippewa Indians. This requirement will assist interested parties and the Commission in taking regular account of the effects of this project's complex system of reservoirs on the many beneficial uses of the waterway, and to make appropriate adjustments in the public interest over the term of the new license.

We now turn to the requests for rehearing filed by Wisconsin and in the Project No. 2113 proceeding by the Spirit Reservoir Association, Lake Nokomis Concerned Citizens, Inc., Department of the Interior (Interior), and Wisconsin Valley. The various motions filed by the parties are addressed thereafter.

DISCUSSION

A. Wisconsin's Rehearing Request

1. Environmental Analysis

The Commission staff issued public notice and conducted three scoping meetings (in Wausau and Rhinelander, Wisconsin) as part of the process of identifying the major resource issues associated with the ten project relicense applications at issue. A draft Environmental Impact Statement (EIS) was prepared jointly with staff of the Forest Service, on whose lands certain project components are located, and was issued for comment on February 24, 1995. In light of comments received on the draft EIS, the two agency staffs made revisions that were reflected in the final EIS, issued July 5, 1996, pursuant to the terms of the National Environmental Policy Act (NEPA). 16/

The EIS studied the ten projects' cumulative effects on the environmental resources in the river basin, and provided detailed analyses of important resources such as water quality, fish, vegetation, and recreation, and examined reasonable alternatives as well as possible mitigation and enhancement measures.

Wisconsin argues that the EIS which underlay the licensing decisions is flawed, assertedly because it presents a one-sided view of environmental impacts of hydropower, and concentrates on the project reservoirs instead of the impact of dams, hydropower

16/ 42 U.S.C. § 4321 et seq.

projects, and river regulation on the Wisconsin River. 17/ Wisconsin therefore seeks an analysis of the reservoirs' effects on the river with respect to sediment transport; loss of woody debris, energy transport, riffles and rapids, and water due to evaporation; changes in stream orders, riverine fisheries, nitrogen and phosphorus, flood flow, and downstream water temperature; and floodplain herpetiles and fisheries.

It would appear from this catalog of riverine dynamics that Wisconsin seeks a complete reexamination of the uses to which the river has been put over the last century and more. While in the abstract such a massive undertaking might produce interesting data, it would not add any reasonable alternatives to this proceeding's environmental review process. No one, not even Wisconsin, has proposed dam removal -- one alternative Wisconsin wants studied -- or other alterations to the projects significant enough to warrant the expensive and time-consuming collection of such data. 18/ In any event, while we recognize the need to

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17/ Wisconsin also makes the following curious argument (rehearing request at 13):

> NEPA is narrowly focused by the Commission's interpretation of the primacy of the Federal Power Act. Consequently, the only possible outcomes are those which are preordained to be consistent with the Commission's interpretation of the Federal Power Act. As a result, NEPA is violated because there is no balancing of interests.

To the extent this argument goes to the range of alternatives examined in the EIS, we address the matter below. Beyond that, we can only note that the Commission is mandated by the FPA to undertake a "balancing of interests" -- see FPA Sections 4(e) and 10(a)(1) -- and to license projects in the manner best adapted to a comprehensive plan for the development of the waterway for beneficial public purposes. See also U.S. Department of the Interior v. FERC, 952 F.2d 538, 454 (D.C. Cir. 1992) (discussing the Commission's role of reconciling all competing interests).

18/ Wisconsin also decries (rehearing request at 12) the lack of examination, as "alternatives that could minimize or mitigate adverse environmental impacts," of energy conservation and the use of other renewable sources of energy, and fish passage. No party to the proceeding argued, and no evidence in the record supports, the view that conservation or alternative renewable energy sources could displace the hydropower projects in question, much

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consider past impacts of a project (including, as here, impacts that occurred before the commencement of Commission regulation) when examining measures for protection, mitigation, and enhancement of environmental resources, we are not required to try to reconstruct, as our "environmental baseline," pre-project conditions. 19/

Wisconsin asserts that the EIS understates the cumulative impacts of hydropower projects on the Wisconsin River, because it did not include every project, both developed and undeveloped. It argues that, had the EIS included all existing projects, it would have addressed the barrier impacts of the lowermost dams on lake sturgeon, paddlefish, and other species.

The EIS properly considered the cumulative environmental impacts of relicensing the ten projects (nine of which are run-of-river) then before the Commission. 20/ Where other proposals are not yet pending before the Commission (or ready to be acted on), then, rather than unduly delay action on the pending relicenses and attendant new environmentally beneficial requirements, the Commission will act on those relicenses, reserving its authority to adjust the licenses as warranted in light of future circumstances. 21/

18/(...continued)
less the multi-purpose Headwaters Project. As to fish passage, the Department of the Interior, which has authority under Section 18 of the FPA to prescribe mandatory fish passage facilities, requested that the licenses reserve this authority. The Commission's analysis of downstream fish entrainment is discussed below.

19/ See City of Tacoma, 67 FERC ¶ 61,152 (1994). Wisconsin claims that in this proceeding the Commission has not followed procedures outlined in an internal staff memorandum on Section 10(j). The Commission speaks through its issued orders, which must stand or fall on the evidence, application of pertinent statutes and regulations, and reasoning contained therein.

20/ An EIS is required only for proposed action pending before an agency; should less imminent contemplated actions later become pending proposals, impact statements on them will take into account the effect of their approval upon the existing environment. See Kleppe v. Sierra Club, 427 U.S. 390, 410 n. 20, 414 n. 26 (1976).

21/ See Policy Statement on Use of Reserved Authority in Hydropower Licenses to Ameliorate Cumulative Impacts, 59
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Wisconsin faults the EIS for its failure to discuss the physical condition of the projects, the status of their emergency action plans, and the effects of "catastrophic" failures of one or more projects, analyses which it suggests might have led to an examination of dam removal or replacement as a reasonable alterative. These matters were reviewed in the publicly available Safety and Design Assessments for the projects in question. Moreover, project safety is continuously monitored, pursuant to Part 12 of our regulations, 18 C.F.R. §§ 12.1 et seq.

Finally, Wisconsin asserts that the Commission did not allow 30 days after Federal Register notice of the EIS availability before acting on the license applications, 22/ as required by the Council of Environmental Quality regulations, 40 C.F.R. 1506.10(2). However, as Wisconsin concedes, an agency can allow less than 30 days between these actions if there is a formal administrative appeal procedure for the agency decision. The rehearing provisions of the FPA, 16 U.S.C. § 313, establish a formal appeal procedure, of which Wisconsin has availed itself. 23/

21/(...continued)
Fed. Reg. 66714 (December 28, 1994), FERC Statutes and Regulations, Regulations Preambles ¶ 31,010 at p. 31,218 (December 14, 1994).

22/ We issued the final EIS on June 30, 1996, and notice of their availability appeared in the Federal Register on July 5, 1996. 61 Fed. Reg. 35210. The license orders were issued on July 18, 1996.

23/ See 40 C.F.R. 1506.10(b), which states in pertinent part:

> An exception to the rules on timing may be made in the case of an agency decision which is subject to a formal internal appeal. Some agencies have a formally established appeal process which allows other agencies or the public to take appeals on a decision and make their views known, after publication of the final environmental impact statement. In such cases, where a real opportunity exists to alter the decision, the decision may be made and recorded at the same time the environmental impact statement is published. This means that the period for appeal of the decision and the 30-day period prescribed in paragraph (b)(2) of this section may run concurrently.

2. Fisheries Resources

In the relicensing proceeding, entrainment and mortality studies were conducted by the licensees of three of the hydroelectric projects (Rothschild Project No. 2212, Wisconsin River Division Project No. 2590, and Centralia Project No. 2255). We used the results of these studies to estimate entrainment at the other six hydroelectric projects. 24/ As explained in detail in the EIS, 25/ based on our analysis of these studies, we estimate that around 4.3 million fish each year are entrained at the nine hydroelectric projects. 26/ The most sought-after gamefish in the Wisconsin River -- walleye, smallmouth bass, and northern pike -- were found to be not as susceptible to entrainment as other species. We estimate the turbine mortality rate for entrained fish to be fairly low -- approximately six percent (260,000 fish annually). 27/ Almost all (97 percent) of the fish lost are small (less than four inches long), and at least 90 percent are young-of-year fish that experience a high natural mortality rate (over 90 percent natural mortality in the first year and 99 percent mortality to adulthood for most species in the river).

The EIS examined the effect that this entrainment mortality rate has on the adult fish population, 28/ and concluded that it

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24/ See 76 FERC at p. 61,309.

25/ See EIS section 4.3.3.1.

26/ At the Wisconsin River Division Project No. 2590, fish entrained in nine hydromechanical turbines and one hydroelectric turbine.

27/ Mortality ranges from around 2,000 fish at the Jersey Project No. 2476 up to 50,000 at the Centralia Project No. 2255. For a detailed discussion of how the EIS arrived at the six-percent mortality estimate, see Appendix C of the EIS.

28/ Given, inter alia, the high natural mortality of young-of-year fish, a six-percent turbine mortality rate does not mean a corresponding six-percent reduction in the fish population, or in fish production or catch rates. See EIS section 4.3.3.1. at p. 4-136.

had little, if any, impact on the fishery. 29/ The Wisconsin River fishery is very diverse, supporting a complex mix of both warmwater and coolwater fish communities with many game species desirable to the angler. 30/ The project reservoirs support healthy and productive fisheries comparable to other waters in Wisconsin, with no apparent deficiencies or problems with either the quality or quantity of fish in the Wisconsin River. Growth rates and the condition 31/ of gamefish in the project reservoirs compare favorably to those of gamefish in non-project waters in Wisconsin. Population densities of gamefish in project waters are similar to, and in some cases exceed, those of non-project waters. 32/ Angler catch rates are on a par with those for other fisheries in the area. 33/

Finding no evidence to suggest that entrainment is causing adverse impacts to the fish populations in the project waters, the Commission declined to adopt Wisconsin's recommendation that the nine licenses be conditioned to require the installation of nets, screens, or other structures to prevent or minimize fish entrainment at the projects. 34/ Instead, the Commission included a provision in each of the nine licenses requiring the licensees to collectively contribute $40,400 per year, adjusted annually, to fund measures to compensate for the project-induced mortality of fish at the nine projects.

On rehearing, Wisconsin argues that the license orders do not adequately address the protection of fishery resources at the projects. It reiterates arguments it made in the relicensing proceeding that there are significant entrainment mortality impacts on individual fish and ultimately on fish populations in

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29/ EIS section 5.2.2.1. at p. 5-20.

30/ There are 51 known species of fish in the stretch of the Wisconsin River where the nine projects are located. See EIS section 3.3.

31/ See EIS section 4.3.3.1. at pp. 4-132 through 4-135.

32/ The term "non-project waters," as used in the EIS, refers to lakes and storage reservoirs in Wisconsin other than the licensed projects addressed in this proceeding. The EIS analysis addressed a number of game species and fishery quality indicators. The data are in section 4.3.3 of the EIS, at p. 4-133 et seq.

33/ See 76 FERC at p. 61,309, and EIS section 3.3.

34/ See EIS at p. 4-136.

the Wisconsin River. 35/ Wisconsin maintains that, rather than imposing funding requirements for compensatory resource measures, the Commission should require the licensees to install fish protection devices to reduce or eliminate fish mortality at the projects. 36/ Alternatively, Wisconsin argues that, if the funding of compensatory mitigation in lieu of prevention is required, the funding should be much greater than that required by the Commission and should be based on the recreational values of fish lost, rather than on their replacement costs. 37/

The licensees also seek rehearing of the compensatory mitigation funding requirement of their licenses, 38/ arguing that the record (described above) does not support the need for such a measure.

Upon further consideration of the record in this proceeding, we agree that a compensatory mitigation funding requirement is not warranted for these nine licenses, inasmuch as there is no project-caused resource loss that needs to be mitigated. We

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35/ Wisconsin argues that fish entrainment mortality rates at the projects are 20-22 percent, but does not provide persuasive evidence to support this conclusion.

36/ Wisconsin argues, without elaboration, that the fact that hydroelectric project owners in other river basins in Wisconsin have negotiated a settlement whereby they agree to implement certain fish protection measures is proof that there are effective devices that are economically and technically feasible. However, settlements have no precedential value, and cannot be used to support the imposition of fish protection requirements in the absence of a record supporting such requirements. See Kelley v. FERC, 96 F.3d 1482, 1489-90 (D.C. Cir. 1996). The Wisconsin River EIS examined various fish protection devices and could find none that were well-defined, and economically and technically feasible. The various devices would have an estimated capital cost of from $1.5 million to $13.3 million per project (in 1995 dollars), yet their effectiveness for the Wisconsin River fishery is questionable. EIS at pp. 4-139 through 4-142.

37/ The court has found our use of replacement cost to be reasonable in circumstances comparable to the fishery status in these proceedings. See Kelley v. FERC, supra n. 36, 96 F.3d at 1490-91.

38/ As noted, Tomahawk Power and Pulp Company did not seek rehearing of the new license for its Kings Dam Project No. 2239.

reject the concept, as argued by Wisconsin, that the licensees must mitigate for any unavoidable fish losses resulting from project operations, regardless of whether there is a resulting adverse impact to the fishery resource. Part I of the FPA does not impose a "no net loss" requirement. 39/ Moreover, as the court recently said in the City of New Martinsville case, "entrainment losses that have no appreciable impact on fish populations can hardly be characterized as losses to the fishery." 40/ Accordingly, we are deleting from the hydropower licenses the article requiring compensatory mitigation funding.

3. Zebra Mussels

On rehearing, Wisconsin raises concerns that zebra mussels may be introduced into the Wisconsin River 41/ by work barges and other watercraft used to repair and maintain project dams, 42/ and asks that we condition the licenses to require licensees to

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39/ See, e.g., Wisconsin Power and Light Co., 79 FERC ¶ 61,181 at p. ___ (1997); and Ohio Power Company, 71 FERC ¶ 61,092 at p. 61,314 (1995).

40/ City of New Martinsville, W.Va. v. FERC, 102 F.3d 567 at 571 (D.C. Cir. 1996).

A continuing safeguard of the public interest is the Commission's general reserved authority, in the standard "L-Form" articles contained in each license. If the project is found to have unanticipated, serious impacts on fishery resources, the Commission can reopen the license to determine what, if any, additional mitigation measures are required in the public interest, after notice and opportunity for hearing. See Ohio Power Co., supra. The Project No. 2113 license incorporated by reference (76 FERC at p. 61,237, ordering paragraph D) Form L-5, published at 54 FPC 1832-42 (1975). Article 15 addresses the modification of project works and operations on behalf of fish and wildlife resources.

41/ Zebra mussels are not currently present in the Wisconsin River.

42/ Zebra mussels (Dreissena polymorpha) are a prolific non-native nuisance species that were accidentally introduced into United States waters; they have spread throughout the Great Lakes and have been reported in the Mississippi River from Duluth, Minnesota, south to New Orleans. Zebra mussels are known to obstruct water resource facilities, greatly increasing operation and maintenance costs. They also compete with native species for food.

ensure that any repair and maintenance craft performing work at the project be free of larval zebra mussels.

Wisconsin's proposed license condition would be unduly burdensome to the licensees and of questionable effectiveness in controlling any potential spread of zebra mussels in the river, inasmuch as the risk of introduction from maintenance craft is miniscle compared to the risk of introduction from recreational craft. We accordingly deny rehearing on this issue. If necessary, the Commission may in the future require appropriate measures through the exercise of its reserved authority. 43/

4. Draw-down Program

As discussed above, the Headwaters Project's new operating plan, which is shaped to enhance water quality, fisheries, and recreation throughout the Wisconsin River Basin, prescribes minimum and maximum reservoir water elevations and monthly target flows at two control points on the Wisconsin River. Primary differences between operations under the prior and the new license are higher water levels in the man-made reservoirs in early summer, enhanced stream flow augmentation for the Wisconsin River in late summer, higher minimum water levels in Eau Pleine and Rice reservoirs, a more equitable index level balancing among the five man-made reservoirs, and minimum flow requirements for almost all the reservoirs.

In the relicensing proceeding, we declined to adopt Wisconsin's proposal for more limited draw-downs of the five man-made reservoirs. 44/ Wisconsin asked that summer draw-downs of the man-made reservoirs be limited to a maximum of four feet and winter draw-downs be limited to no less than 25 percent of full volume. Under this proposal, when these operating limits interfere with the licensee's ability to meet the other requirements of its license (minimum flow requirements, for example), Wisconsin, in consultation with the licensee, would determine the operating regime. On rehearing, Wisconsin reiterates its request that we place such limits in the license's operating plan. Wisconsin has, however, provided no rule curves or other operating criteria that would define how the system would operate before or after its draw-down limits were reached. As we explained in the license order, we cannot adopt a plan that is too undefined to allow us to fully assess its adverse and

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43/ See n. 40, supra.

44/ See 76 FERC at pp. 61,229-31.

beneficial impacts. 45/ We accordingly deny rehearing on this issue. 46/

B. Rehearing Requests of Lake Nokomis Concerned Citizens and the Spirit Reservoir Association

1. Reservoir Levels

The Lake Nokomis Concerned Citizens, Inc. (Nokomis) and the Spirit Reservoir Association (Association) take exception to the effects of the new license terms on Rice and Spirit Reservoirs, respectively, two of the five man-made reservoirs in the Headwaters Project.

Under the prior license, water levels in Rice Reservoir fluctuated by as much as 15 feet. The new license provides for a 13-foot fluctuation range. The new license also reduces the water level fluctuations at Rice Reservoir. While the percent of time in summer that the water level is within 2.33 feet of maximum water level (Nokomis' threshold level for "optimal" levels) will be slightly reduced, 47/ the amount of time summer levels are within four feet of maximum water level is increased from 85 to 95 percent.

For Spirit Reservoir, the prior and the new license both provide for a 17-foot fluctuation range. Under the new license, however, there will be a more limited draw-down in the summer months, resulting in higher summer water levels (of almost a two-foot increase in the median summer water level compared to historical operation) for a longer period of time (20 percent increase in the percent of time that the reservoir is within 4 feet of full in the summer, i.e., from 50 to 70 percent) than under the prior license.

Nokomis and the Association each assert, as to their respective reservoirs, that the new operating regime will result

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45/ Id. at p. 61,231.

46/ However, we understand Wisconsin's concerns about the potential environmental effects of drawing down the reservoirs more than four feet in summer and below the 25 percent storage level in winter. Therefore, before initiating such draw-downs, the licensee should consult with Wisconsin to see if any other alternative could meet the requirements of downstream flow levels while preserving the desired water levels in the reservoirs and natural lakes. We will revise Article 412 accordingly.

47/ See EIS Table 4-19 at page 4-107.

in serious adverse impacts to fishery and recreation resources. Nokomis asks the Commission to limit summer draw-downs at Rice Reservoir to no more than 2.33 feet and winter draw-downs to 5 feet. The Association asks the Commission to limit summer draw-downs at Spirit Reservoir to no more than four feet, and winter draw-downs to no less than 25 percent of the reservoir's full volume.

Nokomis notes that currently summer water levels at Rice Reservoir are optimal for recreation 61 percent of the time, but that under the new license this number will drop to 52 percent. 48/ It asserts that low summer water levels create dangerous conditions for boating and water skiing, stranded boats and piers, erosion, fish kills, 49/ and foul-smelling, swampy shorelines, and that these conditions threaten the tourist economy and quality of life of the area. Nokomis protests that the interests of recreation at Rice Reservoir were not given consideration equal to that accorded the downstream commercial interests, for which greater flow releases from the Headwater Project mean less expense in meeting wastewater assimilation standards.

Nokomis argues that, for purposes of water levels in the project's 21 reservoirs, the Commission should have categorized Rice Reservoir with the natural lakes, whose water levels continue to be regulated for the benefit of residential and receational uses, rather than with the other four man-made reservoirs, which will continue to experience large fluctuations, with concomitant adverse effects on property values and recreation. Nokomis points out that Rice Reservoir is comparable to the natural lakes with regard to shoreline and recreational development, whereas the other four man-made reservoirs remain sparsely developed and little used for recreation.

The Association protests that the fishery and recreation resources at Spirit Reservoir were not given consideration equal to that accorded the other man-made reservoirs. According to the Association, Spirit Reservoir is drawn down faster and earlier than the other reservoirs, 50/ thereby inflicting serious adverse

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48/ See EIS at p. 4-108.

49/ Vegetation and fisheries resources at the reservoirs appear to have adjusted to the historical pattern of reservoir draw-downs. See EIS sections 4.2.3.1 and 4.2.4.1.

50/ The Association mistakenly argues that Spirit is the only man-made reservoir that is subject to a "full rapid draw-down." Under the new license, Spirit Reservoir is now

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impacts on the reservoir's fishery and recreational resources. Walleye spawning grounds are exposed during spawning season, fish are stranded in pools on the reservoir bottom, and in the winter the small amount of water left in the reservoir turns to ice. Low summer water levels create dangerous conditions for boating, strand boats and piers, and create swampy shorelines, threatening the tourist economy and quality of life of the area. The Association asserts that, because Spirit Reservoir is the smallest of the man-made reservoirs, representing only six percent of the total storage capacity of the five reservoirs, the draw-down limits it advocates would have minimal impacts on downstream flows and power generation. 51/

The five man-made reservoirs of the Headwaters Project were constructed for the specific purpose of storing and releasing water for the benefit of a variety of purposes in the downstream Wisconsin River Basin. 52/ While we recognize the special characteristics of Rice and Spirit Reservoirs (for example, the extent of residential and recreational development that has occurred around Rice Reservoir despite its historical fluctuations, and the size, depth, and bottom contours of Spirit Reservoir), altering the reservoirs' roles in the manner sought by Nokomis and the Association would require reducing water levels or flows elsewhere in the system. Nor are Nokomis and the Association the only parties seeking higher levels for a particular man-made reservoir: the Big Eau Pleine Citizens Organization has championed more water for the Eau Pleine Reservoir, and other parties, such as Wisconsin, seek more water for other uses, for example for more downstream flow augmentation. Unfortunately, as we discussed in the relicense order, 53/ no party has come forward with a substantiated explanation of how the additional water to serve these needs would be obtained, while still serving the major objectives of the headwaters system.

In fact, in order to provide any part of the system with more water, such as higher water levels in Rice or Spirit Reservoir, some other part of the system must forego that water.

50/(...continued)
subject to a more limited draw-down in the summer months.

51/ Spirit Reservoir, however, contains the sixth largest portion of the overall usable storage in the Headwaters Project's 21-reservoir system.

52/ See EIS at page 4-109. Rice Reservoir alone contains 11 percent of the system's usable storage.

53/ 76 FERC at pp. 61,229-32.

In giving equal consideration to developmental and environmental (including recreational) public purposes, 54/ we concluded that it was appropriate to maintain the water level regimes of the 16 natural lakes, inasmuch as they provide ninety percent of summer recreation and have 75 percent of the shoreline residential development at the Headwaters Project, but account for only about 27 percent of the project's total usable storage. 55/ In addition, keeping the water levels in the man-made reservoirs higher would, aside from reducing hydropower revenues, compromise the system's flood control capacity and downstream water quality and wastewater assimilation capacity, and adversely affect downstream water quality, fish and wildlife resources, and flood control. 56/

In sum, while we recognize the merits of Nokomis' and the Association's arguments, in balancing their interests with other, competing interests, we have concluded that the overall public interest in management of the entire Wisconsin River waterway is best served by the operational regime adopted in the new license. We accordingly deny rehearing on this issue.

Nokomis argues that the new license contains no effective mechanism to ensure that Wisconsin Valley operates the project as required. It therefore asks that the license be amended to require a status report on Rice Reservoir within two years of the new license. We will not adopt this proposal, inasmuch as the new license, as amended herein, requires Wisconsin Valley to submit annual operating reports to the Commission, with copies provided to interested parties, including Nokomis. 57/

54/ Equal consideration does not necessarily mean equal treatment; at bottom, it is the Commission's task to balance the often conflicting beneficial uses of a waterway. See, e.g., California v. FERC, 966 F.2d 1541, 1550 (9th Cir. 1992). We note that northern Wisconsin, around the project area, has no dearth of lakes and streams; there are many lakes within a short drive of Rice Reservoir. Thus, no participant asserts that the project area has inadequate recreational development; rather, the concern of Nokomis and the Association is to revise operations at Rice and Spirit Reservoirs in order to benefit recreation at those particular locations.

55/ See EIS section 4.2.2.2.

56/ See 76 FERC at pp. 61,229-32; EIS section 4.2.2.4.

57/ See new license Article 412, infra.

The Association's rehearing request presents data that suggest a juvenile walleye recruitment problem. The source of the problem is unclear but could be a combination of factors, including the project's early spring drawdown regime. In addition, the Association raises concerns that the fish-stranding problem in Spirit Reservoir may have been underestimated.

Article 413 of the new license requires Wisconsin Valley to prepare, and update every five years, a fish and wildlife plan, which is to include recommendations for needed changes. 58/ The plan is to be prepared in consultation with the resource agencies and must, among other things, address walleye populations and the effect of the new operating plan on walleye spawning in Spirit Reservoir, and evaluate stranding at each of the man-made reservoirs. Based on the results of these studies, the licensee will recommend mitigative measures, as appropriate. 59/

2. Accuracy of the WIRSOM Computer Model

As noted, WIRSOM is a water-budget model developed by the licensee that simulates the flow of water from the headwaters of the Wisconsin River to its confluence with the Mississippi River. It simulates headwater reservoir operations, river flows, hydropower operations, and wastewater assimilation. Reservoir inflows are based on U.S. Geological Survey (USGS) gaging and the licensee's operational data. WIRSOM uses records from 1950-89 to simulate flows and reservoir levels for different operating plans.

The Association challenges the accuracy of the WIRSOM computer model, highlighting what it believes are substantial differences in surface area and storage volumes for the headwaters reservoirs as contained in the licensee's data submitted with its application and in the WIRSOM model.

The EIS describes in detail the model and how Commission staff validated its ability to simulate and provide essential information to compare operational scenarios for the headwater

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58/ 76 FERC at pp. 61,249-50.

59/ In addition, the Commission may in the future, if circumstances warrant, exercise its reserved authority to order changes in project operations or facilities (after notice and opportunity for hearing) necessary for the protection of fish and wildlife resources. See n. 40, supra.

reservoirs. 60/ Staff reviewed the WIRSOM user manuals, model calibration and verification, and input and output data for calibration runs and operation runs. Commission staff, the licensee, Wisconsin DNR, Interior, and the Izaak Walton League of America participated in several technical discussions to assess the adequacy and appropriateness of the WIRSOM model. The parties also participated in the evaluation of alternative input assumptions and values and resulting operating scenario outcomes. 61/ The Association chose not to participate in these technical discussions on WIRSOM modeling.

Commission staff evaluated the accuracy of model predictions by comparing predicted water levels to observed conditions. The staff made comparisons by season and by decade for the period 1950 to 1989. The period of record includes a range of years from very dry (drought conditions) to very wet. No specific decade bias was observed in the model, implying that the current operations are not significantly different from past operations. The model was found to perform reasonably well for different hydrologic conditions. The Commission thus concluded that the WIRSOM characterizes the long-term operational record of the projects and the river system reasonably well and that model predictions are adequate and useful for comparisons of different operating plans for the headwaters project. The real utility of the model is in comparing the relative effects of different operational alternatives.

Contrary to the Association's assertions, surface area and storage volume discrepancies between the license application and the WIRSOM 62/ were identified and examined by Commission staff

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60/ See Appendix E of the EIS.

61/ This material was placed in the record of this proceeding.

62/ Although there are discrepancies, the values that the Association presents and the alleged difference it reports, are incorrect, inasmuch as they compare gross storage values from the application with useable storage values from the model. See Association's rehearing request, Attachment 6, entitled "WIRSOM Model Input Data, Current FERC License Requirements." This is evident by looking at the Lac Vieux Desert Reservoir, which has gross storage of more than 2,000 million cubic feet (mcf). The value of 652 mcf listed in Attachment 6 obviously is not gross storage. We also note that the value of 652 mcf is at elevation 1682.53 National Geodetic Vertical Datum (NGVD), which is historical maximum reservoir elevation. The proposed operation was a maximum of 1681.53 feet NGVD, which provides 398 mcf useable storage

(continued...)

in the relicensing proceeding. 63/ Reservoir surface area is neither a WIRSOM model input parameter nor an output option. Reservoir surface area is not used in the model at all, because the net inflow calculation described below already accounts for direct precipitation and evaporation on the reservoirs through changes in storage. Consequently, any surface area discrepancies have no effect on the model's accuracy in predicting flows at the project and downstream along the Wisconsin River.

The WIRSOM model's reservoir storage values were developed over a long historical period, based primarily on operational data of the project. The natural inflow files developed for the model for each storage reservoir were based on these same operational data and derived volumes. This is accomplished using a simple water balance in which net reservoir inflow for a given time period is equal to the outflow plus or minus the change in storage ("plus" if the reservoir is filling and "minus" if the reservoir is draining). The licensee explained that, when the

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62/(...continued)
according to the application and 435 mcf useable storage according to the model. Below is a correct comparison of usable storage values used in the license application and in the WIRSOM.

Usable Storage	Rainbow	Willow	Rice	Spirit	Eau Pleine
WIRSOM model, mcf	2,185	3,302	1,808	756	4,457
Applicat'n mcf	1,987	2,809	1,698	666	4,170
Difference mcf	198	493	110	90	287
Percent difference	9	15	6	12	6

63/ Telephone conference between Commission staff and the licensee on April 6, 1996. A summary of this telephone conversation was placed in the official record of this proceeding by Commission staff on April 10, 1996. The question of storage volumes was also discussed at a technical session on July 20 and 21, 1993. All parties to the proceeding were given an opportunity to participate in discussions on the WIRSOM model.

application for the new license was later prepared, it used reservoir area and other data provided by the Wisconsin DNR rather than the data in the WIRSOM model. The licensee believes that the Wisconsin DNR data underestimates reservoir surface area and storage because the data does not account for adjacent wetland areas. 64/

The licensee did not change the reservoir volumes in the WIRSOM model, because it would have required recreating the reservoir inflow files. This was not necessary, because the model remained internally consistent with respect to inflows and volumes. Because the model accurately predicts historical downstream flows, the WIRSOM model was employed to analyze alternatives in the NEPA process.

For the reasons discussed above, we deny the Association's rehearing request on this issue. 65/

C. Wisconsin Valley's Rehearing Request

1. Applicability of Section 4(e)

Section 4(e) of the FPA provides in pertinent part that licenses for projects within any reservation: 66/

64/ The reservoir storage values used in the WIRSOM are consistently greater than the volume's reported in the licensee's application. The Association is incorrect that WIRSOM storage values are greater than the application's storage values for four reservoirs and less than the application's value for one reservoir.

65/ The Spirit Association alleges in its rehearing that the contractor may have a conflict of interest because it "developed the 'watershed model' for [the licensee]." The WIRSOM model is a proprietary Black & Veatch/Wisconsin Valley Improvement Company product. The Commission's staff and contractor did not develop this computer model, have no proprietary interest in the model, and do not possess the actual program code. The Association provides no evidence, and we find none, to support its allegation that a conflict of interest exists.

66/ Section 3(2) of the FPA defines "reservations" as:

> national forest[s], tribal lands embraced within Indian reservations, military reservations, and other lands and interests in lands owned by the United States, and withdrawn, reserved, or

(continued...)

> shall be subject to and contain such conditions as the Secretary of the department under whose supervision such reservation falls shall deem necessary for the adequate protection and utilization of such reservation.

The Commission's order issuing a new license for the Headwaters Project states that the project occupies 617.3 acres, mostly submerged, of the Nicolet and Ottawa National Forests and about ½ acre of the Lac Vieux Desert Indian Reservation along the shore of the Lac Vieux Desert Reservoir. Accordingly, the new license applied to these reservations the Section 4(e) conditions submitted by the Forest Service and Interior, respectively,67/ and required annual charges to be paid for the project's occupancy of these federal lands. 68/

On rehearing, Wisconsin Valley argues that the Commission incorrectly interprets Section 4(e) as applying at relicensing, instead of only at original licensing. The Commission's ruling that Section 4(e) applies at relicensing has been upheld on judicial review. See Southern California Edison Company v. FERC, __ F.3d ____ (D.C. Cir. 1997).

Wisconsin Valley next repeats its argument, rejected in the relicense order, that, since the reservations at issue are all subject to its pre-existing flowage rights, no part of the Headwaters Project is "within" a federal reservation for purposes of Section 4(e), and therefore the Forest Service and Interior have no authority to submit mandatory license conditions for these reservations. For this proposition, Wisconsin Valley attempts to distinguish the Commission's holding in Town of Estes Park, Colorado, 75 FERC ¶ 61,245 (1996). In that case, Interior acquired title to a portion of project land, subject to a pre-existing right-of-way for operation of the project. The Interior portion was then incorporated into (as relevant here) a federal reservation. The issue before the Commission was whether the project was required to be licensed pursuant to Section 23(b)(1)

66/(...continued)

> withheld from private appropriation and disposal under the public land laws; also lands and interests in lands acquired and held for any public purposes; but shall not include national monuments or national parks.

67/ These conditions are set forth as Appendix A to the new license, 76 FERC at pp. 61,256-60.

68/ 76 FERC at pp. 61,225-26, and annual charge provisions at p. 61,237, Articles 201 and 202.

of the FPA, 69/ which requires the licensing of, inter alia, a project "upon any part of the public lands and reservations of the United States." The Commission held that "if the federal government holds fee title to certain lands, the lands qualify as lands owned by the United States for FPA purposes, even if someone else has a continuing right to use them pursuant to an easement." 75 FERC at p. 61,802.

Wisconsin Valley's claim that Estes Park does not decide the issue here is based on the argument that its project, while located "upon" reservation lands, is not "within" any reservations, because the maintenance and operation of the project depends, not on the use and occupancy of any federal interest in lands, but only on the use and occupancy of its own, pre-existing rights of use. However, we do not see any distinction between this case and Estes Park, in that the distinction Wisconsin Valley draws between property rights comprising the "project" 70/ and the property rights comprising the reservation in question exists in both cases. We therefore deny rehearing on this point.

In any event, Wisconsin Valley's characterization of its property interests in project lands is disputed by the Forest Service, which asserts that only 7.63 percent of National Forest land within the project boundary is subject to flowage easements. 71/

2. Legitimacy of the Section 4(e) Conditions

Wisconsin Valley argues in the alternative that the Section 4(e) conditions submitted in this proceeding should be rejected because they are not reasonably related to the purposes for which the Nicolet or Ottawa National Forests were created. It states that these National Forests were not created for recreational, environmental, or wildlife-preservation purposes, 72/ and that such purposes were not added to these

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69/ 16 U.S.C. § 817(1).

70/ Section 3(12) of the FPA, 16 U.S.C. § 796(12), defines "project" as including all rights-of-way and "interest[s] in lands the use and occupancy of which are necessary or appropriate in the maintenance and operation of" the project.

71/ See the Forest Service's January 19, 1996 filing in this proceeding.

72/ These National Forests were created by Presidential

(continued...)

forests by any subsequently enacted legislation, such as the Multiple-Use Sustained-Yield Act of 1960. 73/ The licensee's position on this issue has been affirmed in Keating v. FERC, 114 F.3d 1265 (D.C. Cir. 1997). 74/ However, the companion decision, Southern California Edison, supra, added the holding that land-administering agencies' Section 4(e) conditions are not restricted to a reservation's original purpose, so long as they do not conflict with those original purposes. __F.3d at__. As we see no such conflict in this proceeding, we deny Wisconsin Valley's rehearing request on this point. 75/

72/(...continued)
proclamation in 1931 and 1933 pursuant to the Creative Act of 1891 (46 Stat. 3044) and the Weeks Act of 1911 (47 Stat. 2561), which, respectively, authorized the President to reserve public lands "bearing forests" and as "necessary to the regulation of the flow of navigable streams." Additionally, the Organic Administration Act of June 4, 1897, 16 U.S.C. § 475, authorized new National Forests only to "improve and protect the forest within the boundaries, or for the purpose of securing favorable conditions of water flow, and to furnish a continuous supply of timber for the use and necessities of the citizens of the United States . . . ." See United States v. New Mexico, 438 U.S. 696, 705-11 (1978).

73/ This legislation directed the Forest Service to manage National Forests "for outdoor recreation, range, timber, watershed, and wildlife and fish purposes." 16 U.S.C. § 528.

74/ The Keating court moreover stated that it was "in agreement with" Rainsong Co. v. FERC, 106 F.3d 269, 274 (9th Cir. 1997). This puts in question the correctness of the Commission's order on remand from the Rainsong decision, where we construed Rainsong as including among the purposes of all National Forests the objectives of the Multiple-Use Sustained-Yield Act of 1960. See 78 FERC ¶ 61,352 n. 17 (1997), reh'g denied, 79 FERC ¶ 61,338 (1997).

75/ The Southern California Edison decision also ruled that the Forest Service's standard consultation and construction-approval conditions (Articles 102-104 in Southern California's license, Articles 103 and 104 in the Project No. 2113 license) are merely procedural in nature, and that the agency's actions thereunder could be challenged by seeking review, in the court of appeals, of a Commission order reflecting such actions. __ F.3d at ____.

(continued...)

Finally, Wisconsin Valley disputes the Forest Service's and Interior's assertion of authority to impose requirements on entire project reservoirs on the basis that less than one percent of any such reservoir occupies reservations administered by these agencies. 76/ Wisconsin Valley argues: 77/

> Section 4(e) was not intended to grant concurrent jurisdiction over a hydroelectric project to a federal land management agency simply by virtue of its acquisition of any interest in any land inside the project boundary. Section 4(e) was intended to ensure that projects licensed on federal lands would not interfere with federal management of those lands.

Wisconsin Valley consequently argues that the Forest Service and Interior cannot dictate reservoir elevations and flow releases (Articles 110, 114), or mandate a wild rice enhancement plan that will cost the licensee hundreds of thousands of dollars (Article 114), or require the licensee to fund off-project recreation facilities (Article 118).

In Escondido, 78/ the Supreme Court stated that Section 4(e):

> Imposes no obligation on the Commission or power on the [land-administering] Secretary with respect to reservations that may somehow be affected by, but will contain no part of, the licensed project works.

We have held that an agency may not impose Section 4(e) conditions on project components that are not located on the agency's reservation, simply because activities on these non-

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75/(...continued)
Wisconsin Valley recognizes the Commission's position, based on Escondido Mutual Water Co. v. La Jolla Band of Mission Indians, 466 U.S. 765 (1984), that only a reviewing court has authority to reject a Section 4(e) condition as not supported by substantial evidence. The licensee makes its case for the Commission's authority to reject Section 4(e) conditions in order to preserve this argument for potential appellate review.

76/ Wisconsin Valley notes that Interior acquired ½ acre of land on the shoreline of Lac Vieux Desert reservoir in 1994.

77/ Rehearing request at 17-21 (emphasis in the original).

78/ Supra n. 75, 466 U.S. at 780-81.

reservation components may affect the reservation. 79/ A far harder Section 4(e) issue is presented here, which concerns regulating operations of, and activities at, a particular reservoir, only a fraction of which occupies a federal reservation. However, this question appears related to the appropriate limits of the Section 4(e) conditions. Under the circumstances of this case, we believe that this matter is best left for any reviewing court to determine.

D. Department of Agriculture's Appeal Proceeding for its Section 4(e) Conditions, and Interior's Motion to Supplement the Evidentiary Record to Support its Section 4(e) Condition

1. Licensee's Appeal of the Regional Forester's Section 4(e) Conditions

On August 23, 1996, Wisconsin Valley filed an appeal with the Forest Service seeking reversal of the Regional Forester's July 8, 1996 conditions pursuant to Section 4(e) of the FPA for the Wisconsin River Headwaters Project No. 2113. 80/ On

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79/ See Minnesota Power & Light Co., 75 FERC ¶ 61,131 at p. 61,448 (1996), appeal docketed, No. 96-1219 (D.C. Cir. July 3, 1996), a case in which Interior was asserting Section 4(e) authority, based on one upstream project reservoir's partial occupancy of a reservation, to dictate water elevations and flow releases from all nine project reservoirs and operations at the four project hydropower plants. (This case also discusses the Commission's trust responsibility to Indian tribes, to which Interior has referred in this proceeding.)

The Forest Service asserts its authority to regulate conduct on non-federal lands to protect adjacent public lands, citing Kleppe v. New Mexico, 426 U.S. 529 (1976); Minnesota v. Block, 660 F.2d 1240 (8th Cir. 1981), cert. denied, 455 U.S. 1007 (1982); Duncan Energy Co. v. U.S. Forest Service, 50 F.3d 584 (8th Cir. 1995); and similar cases (Forest Service filing of February 28, 1996, at p. 12). However, none of the court decisions construing such authority has involved potential conflicts between the regulatory roles of two federal agencies. We therefore consider Escondido to be the governing holding.

80/ Wisconsin Valley filed its appeal pursuant to 36 C.F.R. § 215, which contains the procedures for filing an appeal of the Regional Forester's Decision Notice with the U.S.

(continued...)

October 10, 1996, the Forest Service Appeals Officer issued a Letter Ruling remanding the Section 4(e) conditions to the Regional Forester. 81/ The Regional Forester issued his findings on remand on February 19, 1997, and Wisconsin Valley filed an administrative appeal of this issuance. Pending a final decision by the Department of Agriculture on the Section 4(e) conditions submitted by the Forest Service in this proceeding, the conditions submitted by the Forest Service on July 8, 1996, remain in effect.

On February 3, 1997, Interior filed a motion to supplement the record with evidence to support the wild rice planting requirement of license Article 114, separately filed as a Section 4(e) condition by both the Forest Service and Interior. 82/ Interior justifies its request by citing the pending administrative appeal of the Forest Service's Section 4(e) conditions and the "new requirements" imposed by the

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80/(...continued)
Department of Agriculture's Review Board.

81/ The Letter Ruling required the Regional Forester to modify the conditions to make clear that they pertain only to project effects on National Forest Service lands; substantiate the benefits to the Nicolet and Ottawa National Forests' resources that would be provided by water quality monitoring (Article 113) and wild rice propagation (Article 114); eliminate requirements redundant to the Commission's license conditions; delete the bald eagle protection plan (Article 115); make certain corrections to Article 110; revise Article 114 to provide for a demonstration that suitable habitat exists for the establishment of wild rice at the Lac Vieux Desert Reservoir; and demonstrate that the recreation requirements of Article 118 are linked to project-induced needs.

82/ See 76 FERC at p. 61,226 n. 14. Interior also seeks to make certain minor ministerial modifications to Article 114, to which we have no objection.

On May 12, 1995, Wisconsin Valley had appealed Interior's Section 4(e) condition for Project No. 2113 with Interior's Office of Hearings and Appeals. By letter dated June 19, 1995, Interior's Office of the Solicitor advised the licensee that "there are no Departmental regulations providing for a right of appeal of Section 4(e) conditions," and on October 16, 1996, the Office of Hearings and Appeals dismissed the licensee's appeal for lack of jurisdiction.

March 1996 decision in Bangor Hydro-Electric Co. v. FERC, 83/ which held that mandatory fishway prescriptions pursuant to Section 18 of the FPA (16 U.S.C. § 811) must be supported by substantial evidence in the record before the Commission. On February 18, 1997, Wisconsin Valley filed an answer opposing Interior's motion as unjustified, in that any attempt to cure defects in Interior's condition was many years late, and inasmuch as the legal requirement that there be record evidence substantiating any and all license conditions was patent before the Bangor Hydro ruling.

The deadline for submittal of Section 4(e) conditions in this proceeding was June 18, 1993. 84/ Because Interior acquired its ½ acre reservation in this project the following year, the Commission accepted Interior's "preliminary" prescription of Aptil 12, 1995, as well as its superseding prescription of July 15, 1996, which adopted the language of the Forest Service's wild rice plan with respect to Lac Vieux Desert. Article 114 thus reflects the two separate Section 4(e) filings.

Interior is concerned that its separate, albeit identical, condition "may be detrimentally affected by" the results of the Forest Service appeal proceeding. To the extent Interior sought to piggy-back on the Forest Service's evidentiary support, we suppose there is that potential. However, even if the Forest Service were to withdraw its wild rice condition entirely, Article 114 would remain in the license with respect to Lac Vieux Desert, pursuant to Interior's separate Section 4(e) authority. Moreover, whatever evidence substantiating Article 114 is currently in the record of the Commission's proceeding would not be removed by whatever determination the Forest Service makes. In this regard, Interior asserts, even in its February 3, 1997 motion, that Article 114 "is supported by substantial evidence currently in the Commission record." 85/ Nor do we find that

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83/ 78 F.3d 659 (D.C. Cir. 1996).

84/ See 18 C.F.R. § 4.34(b), which establishes the deadline as 60 days after the Commission issues public notice that a license application is ready for environmental analysis. Such notice was issued in this proceeding on April 19, 1993.

85/ February 3, 1997 motion at 7, 11. In support of its motion, Interior cites Niagara Mohawk Power Corp., 76 FERC ¶ 61,073 (1996), where the Commission granted Interior's motion to supplement a Section 18 fishway prescription. However, not only did the prescription in question pre-date the Bangor decision, but Interior acknowledged -- something it does not do here -- that the Commission record lacked evidentiary

(continued...)

Interior's reference to the Bangor decision justifies its motion, inasmuch as Bangor was issued four months before the relicense order in this proceeding. We therefore conclude that Interior has not justified its motion to supplement the record, and we deny the motion.

On October 9, 1996, the licensee filed a motion for stay of Articles 103, 104, 110, 113, 114, 115, 118, 161, 201, 202, 404, 412, 412, and 418, of the new license, pending rehearing or, in the alternative, an extension of the deadlines to comply with these articles. On October 24, 1996, Interior filed in opposition to the licensee's stay request of Article 114. On March 3, 1997, the Commission issued an order extending until January 17, 1998, the deadline for compliance with Articles 113, 114, 115, and 118. 86/ This request was granted with Forest Service concurrence. Because Wisconsin Valley's request to defer requirements pursuant to these articles was handled through extensions, there is no need to stay these articles, and we accordingly deny the licensee's request for stay. However, we will amend Article 418 to allow the licensee an additional six months to file the recreation plan called for thereunder.

On November 20, 1996, Wisconsin Valley filed a motion for leave to submit the Forest Service's October 10, 1996 Letter Ruling and to strike license Articles 110, 113, 114, 115, and 118, based on the Letter Ruling's finding (described above, n. 81) that a number of the Forest Service's Section 4(e) conditions lack evidentiary support. Interior filed an answer to the motion on December 4, 1996. Inasmuch as the administrative appeals process for the Forest Service's conditions is not yet completed, we deny the licensee's motion.

E. Annual Charges

Section 10(e) of the FPA provides: 87/

> When licenses are issued involving the use of . . . tribal lands embraced within Indian reservations the Commission shall . . . in the case of such tribal lands, subject to the approval of the Indian tribe having jurisdiction of such lands . . . , fix a reasonable annual charge for the use thereof . . . .

85/(...continued)
support for the prescription.

86/ Order issued by Acting Director, Office of Hydropower Licensing.

87/ 16 U.S.C. § 803(e).

Accordingly, Article 202 of the new license for Project No. 2113 states:

> The Licensee shall, subject to approval by the Commission, negotiate with the Lac Vieux Desert Band of Chippewa Indians a reasonable annual charge for the use of tribal lands at Lac Vieux Desert.

On rehearing, Interior asserts that the Commission erred by failing to "fix" the annual charge before issuing the new license, or even to establish a process and timetable for the determination of the charge.

The Commission's regulations provide that annual charges for use of tribal lands within Indian reservations will be determined on a case-by-case basis. 88/ General Commission practice today is that annual charges for such use are based on agreements between the parties, whose terms (unless patently unreasonable) the Commission then incorporates into the license. 89/

We will, however, amend Article 202 to require Wisconsin Valley to attempt to reach agreement with the Tribe on a reasonable annual charge within six months of the date of this order.

For its part, Wisconsin Valley argues that it cannot be assessed for the project's use of any federal reservation lands, based on its assertion that all the reservation lands within the project boundary are subject to the company's prior rights of use, which it states are sufficient to carry out project purposes. 90/ However, the record in this proceeding does not support Wisconsin Valley's claim of the requisite property rights, inasmuch as we understand the Forest Service to be

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88/ See 18 C.F.R. § 11.4(a).

89/ See Wisconsin Power and Light Co., 79 FERC ¶ 61,181 (1997); Public Utility District No. 1 of Pend Oreille County, Washington, 77 FERC ¶ 61,146 at p. 61,553 (1996). In a few cases where agreement could not be reached, the Commission has set the matter for hearing.

90/ See Consumers Power Co., 73 FERC ¶ 61,093, reconsideration, 73 FERC ¶ 61,295 (1995) (Commission does not assess annual charges for a licensed project's occupancy of government lands, if the licensee retained all rights sufficient to carry out project purposes).

contesting the licensee's possession of such rights. 91/ Therefore, unless and until these rights are confirmed by an appropriate state or federal authority, Articles 201 and 202 remain in the license. 92/

F. Modifications to the New License

The licensee claims that several corrections to the new license are necessary. We agree with most of its suggestions, and will amend the new license accordingly.

1. Sugar Camp reservoir maximum winter elevation

The licensee claims that Section (B)(9) of the new license, 93/ incorrectly states that the maximum winter elevation at the Sugar Camp development is 1597.32 feet NGVD. The licensee is correct on this point. The maximum winter elevation is actually 1597.82 feet NGVD, and the new license will be amended to correct that error.

2. Article 404: The Eau Pleine Reservoir minimum flow

Article 404 requires the licensee to release a continuous minimum flow from the Eau Pleine Reservoir by maintaining a one-inch opening in a taintor gate in the dam. The licensee points out that the sills of the taintor gate in the Eau Pleine dam are at 1129.93 feet NGVD, but that according to Article 403 the minimum allowable water level is 1118.00 feet NGVD. Consequently, the taintor gates cannot provide a minimum flow at all times. The licensee suggests that we amend Article 404 to allow it to achieve the Eau Pleine minimum flow by maintaining a one-inch opening in the sluice gate. The sluice gate in the Eau Pleine dam is at 1112.93 feet NGVD and can provide the required minimum flow at all times.

The river downstream of the Eau Pleine dam backs up all the way to the dam, such that there is no free-flowing section of the river there. The main purpose of releasing the minimum flow from Eau Pleine is to prevent stagnant backwater, not to wet otherwise dry sides of the river bed. Our calculations show that a one-inch opening in the sluice gate would provide 10 to 20 cubic feet per second (cfs), depending on reservoir elevation, which is a

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91/ See Forest Service filings of January 19 and February 28, 1996.

92/ The Commission does not adjudicate property rights.

93/ 76 FERC ¶ 61,050 at p. 61,235.

reasonable flushing flow for that location. Therefore, we will amend Article 404 accordingly.

3. Article 412: operating rules

The new license included a reservoir system operation plan that is defined by a process of setting flow goals, or target flows, at the Merrill and Wisconsin Rapids United States Geological Service (USGS) gaging stations, that are based on reservoir storage and time of year. Reservoir storages are then balanced by use of "index levels." Article 412 translates the reservoir system operation plan into enforceable compliance and operation rules. In its rehearing request, the licensee proposes seven modifications to Article 412 which it believes will ensure that compliance with the operation rules is accurately determined by the Commission. We generally agree with the changes recommended by the licensee.

First, our omission of the upper and lower bounds on target flows and reservoir storage points was an oversight. These bounds are important elements of the operation and will be included in Article 412. The licensee's second recommended modification concerning the use of real numbers instead of integers for the index levels accomplishes the same purpose we intended, and is more consistent with how the licensee internally

operates the system. 94/ Therefore, we will modify Article 412 to reflect this change.

The licensee's third concern with Article 412 is with reporting requirements. Article 412 requires the licensee to report any daily flow at the USGS gage at Merrill and Wisconsin Rapids that deviates by greater than 15 percent above or less than 15 percent below the applicable target flow within 30 days of the deviation. This reporting language is fairly standard and is routinely used by the Commission in cases where deviations are expected to be uncommon or when the Commission believes that deviations will have significant consequences individually. The licensee states that the target flow and index level "compliance" criteria contained in the new license will likely cause numerous reportable "noncompliance" events each year due to conditions that are beyond the licensee's control. The licensee recommends that reportable deviations be reported annually. It claims that annual reports will still permit the Commission and the resource agencies sufficient opportunities to evaluate the licensee's operational compliance.

We agree that annual reports are suitable for the Commission and agency compliance evaluations. In the instant case, the

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94/ Index levels are used in the new license to enable all observers, including the public, to understand the relative impact of the draw-down scheme on particular reservoirs.

We interpret the licensee's request to mean that it releases water from, or holds water in, particular reservoirs to try to balance index levels to at least two decimal places. For example, if Rice Reservoir is at storage volume level 543 million cubic feet (mcf) in September, this is the mid-point between index levels 2 and 3 (see Rice Reservoir index level table in Article 412) and would be tracked by the licensee as index level 2.50. We thus also infer that decimal values are determined by linear interpolation between respective storage values; e.g., Rice Reservoir index level 2.50 is 543 mcf, level 2.75 is 633.5 mcf, level 3.00 is 724 mcf, etc.

Consequently, on rehearing the licensee requests that real numbers (i.e., decimal values) also be used to track compliance with index level balancing. This will be done by replacing the language in Article 412 that states, "all reservoirs are within the same index level" with the following language that the licensee recommends: "maximum range of index levels for all reservoirs is less than 1.00." This clarifies that if one reservoir is at level 2.50, none of the other reservoirs should be above 3.50 or below 1.50 on a weekly average basis.

licensee's data show that deviations may well be frequent enough in some years to be inconvenient for the Commission as well as the licensee. The intent of reporting deviations is to allow the Commission and others to evaluate performance under the new operating plan and to make refinements over the long term as needed. The only compelling reason to retain the 30-day notification period for these types of events is for cases where the licensee will not be able to meet the minimum target flows, which approximate the 7Q10 flows. 95/ However, such conditions are only likely to occur during severe droughts, and notification and actions to be taken in these cases will be addressed in the drought contingency plan required by Article 409 of the new license. We also think it appropriate that these deviation reports be submitted to other interested parties directly affected by project operations. This will allow other groups, such as the Association and Nokomis, to track the licensee's performance in addition to the Commission and the resources agencies. Thus, Article 412 will be modified accordingly.

The licensee also proposes that deviations from weekly flows, rather than from daily average flows as currently required by Article 412, be used to monitor compliance. According to the licensee, this will reduce reporting of unavoidable deviations that are caused by day-to-day changes in flow that result from upstream hydroplant operations, ice jams, and ice effects at the Merrill and Wisconsin Rapids gaging stations.

As discussed below, we agree that the daily limits in maximum target flows will be frequently exceeded during high flow periods, and have modified Article 412 accordingly. We do not, however, agree with the licensee that the frequency of unavoidable deviations below the minimum target flows warrants a weekly averaging period. Data that the licensee submitted on rehearing (Appendix 10) show that there were a total of about 15 such deviations in all of 1995 and only one in the first seven months of 1996. Given that any such deviations now only need to be reported and explained on an annual basis, this does not represent a major burden for the licensee or the Commission. In addition, the low-flow periods are most critical for water quality and other aquatic resources in the river basin. Therefore, we deny the licensee's request for weekly average reporting for target flow deviations.

The fifth concern expressed by the licensee is with the unavoidable impacts of snowmelt and rainfall run-off. The licensee states that in a normal year, it is common for the

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95/ The 7Q10 represents the lowest flow that is expected to occur once every ten years for seven consecutive days. See 76 FERC at p. 61,230 n. 26.

observed flows to be greater than 15 percent above the target flow for approximately two months in spring during snowmelt and spring rains, for several weeks following large summer rain storms, and for one to two months during the wet fall period. The licensee states that legitimate concerns about deviations from target flows should only arise when observed flows are above the target flow range and, at the same time, reservoir storage is dropping, because only these conditions would indicate that the licensee was augmenting flows that are already higher than the target flows.

We agree that the primary concern with target flows that exceed 15 percent of the goal is to prevent more reservoir release than needed to meet flow targets when reservoir storage is falling (i.e., not efficiently conserving water in storage for later augmentation purposes). We also agree that deviations greater than 15 percent can commonly occur during high flow periods and would not need to be tracked from an operational or environmental standpoint. Therefore, we will grant the licensee's rehearing request and amend Article 412 to reflect the changes requested.

The licensee notes that in Article 412 the phrase "more than," used previously for the upper limit of the index level deviation limit, should also be used for the lower limit. We will make the requested change to Article 412.

Finally, the licensee states that the requirement to document all index level deviations of more than one will result in frequent reports for conditions that are beyond its control. The licensee explains that there will be two primary causes of these deviations: (1) run-off occurring in the drainage basins of some reservoirs and not others; and (2) the relative size of various reservoirs compared to their drainage areas and the run-off characteristics of each drainage area. The licensee states that an analysis of WIRSOM output for a 40-year (1950-1989) simulation of the proposed licensee operation showed that the range of index levels is greater than one for 46 percent of the time.

We believe that the new annual reporting requirement, as described above, will suffice for long-term assessment of the licensee's operational performance. Thus, no further modifications are required.

4. Articles 418 and 419: Recreation improvements

In its application for new license, the licensee proposed specific facility enhancements at recreation sites that it owned. The licensee also proposed a 10-year $10,000 annual recreation fund to assist in recreation improvements at sites owned by

others. In the new license we adopted the licensee's general approach for recreation facilities, but extended the annual fund to the full 30-year license term. We did not, however, identify in the EIS or the new license the specific funding mechanism for the particular non-licensee owned sites at issue in the licensee's rehearing request.

In Article 418 of the new license, we indicated improvements to recreation sites 2, 3, 4, and 5 at the Spirit Reservoir and site 7 at the Eau Pleine Reservoir. These sites are not owned by the licensee. According to the licensee, its ability to fund recreational improvements at these facilities is contingent upon the cooperation of the owners of the facilities. However, based on information contained in the record of the new license proceeding, these sites are high-priority items that are appropriate for the licensee to address. The total estimated cost associated with these recreation enhancements is $17,200 in 1992 dollars (escalating by 2.5 percent per year brings the cost to about $20,000 in 1997 dollars). Providing these improvements through the annual fund would, therefore, consume only two years (or seven percent) of the 30-year annual fund. We will amend Article 418 to make the funding mechanism for these sites more clear. In addition, the recreation site enhancements will be identified as specific improvement priorities to be implemented in the first five years of the licensee's recreation fund. 96/

The Commission orders:

(A) The request for rehearing filed by the Spirit Reservoir Association is denied.

(B) The request for rehearing filed by the Lake Nokomis Concerned Citizens, Inc. is denied.

(C) The request for rehearing filed by the Wisconsin Department of Natural Resources is granted to the extent provided in this order, and is otherwise denied.

96/ We note that it will be necessary for the licensee to coordinate with the owners of these facilities. Owners of the specific sites are as follows. Spirit site 2: Town of Tomahawk; Spirit site 3: Town of Bradley; Spirit site 4: Packaging Corporation of America, now Tenneco (in particular, the licensee has agreed to extend at least one boat ramp to 85 percent usability at each of the man-made reservoirs; the licensee identified site 4 on Spirit Reservoir as the only location where this could occur); Spirit site 5: Town of Tomahawk; Eau Pleine site 7: Town of Green Valley.

(D) The request for rehearing filed by the U.S. Department of the Interior seeking modification of Article 202 of the new license for Project No. 2113, establishing the procedures for setting a reasonable annual charge for the use of tribal lands at Lac Vieux Desert, is granted, and Article 202 is amended to read as follows:

> Article 202. The Licensee shall, subject to approval by the Commission, negotiate with the Lac Vieux Desert Band of Chippewa Indians a reasonable annual charge for the use of tribal lands at Lac Vieux Desert. Within 180 days after the date of issuance of the order on rehearing of the new license order, the Licensee shall file, for Commission approval, the negotiated agreement that stipulates the annual charge for use of tribal lands. The Commission reserves the right to make changes to this annual charge. If no agreement is reached, the Commission will institute proceedings to establish an annual charge. The charge, once approved, will be effective as of the effective date of the license, and will be subject to the Licensee's payment of interest on the period from the effective date to the payment date.

(E) The U.S. Department of the Interior's Motion to Supplement the Evidentiary Record is denied.

(F) The Motion for Stay of Contested Portions of Commission's July 18, 1996 Order Issuing License filed by the Wisconsin Valley Improvement Company, licensee of the Wisconsin River Headwaters Project No. 2113, is denied.

(G) The Motion for Leave to Submit United States Forest Service's Letter Ruling and to Strike License Articles 110, 113, 114, 115, and 118 filed by the Wisconsin Valley Improvement Company is denied.

(H) The Request for Rehearing filed by the Wisconsin Valley Improvement Company, is granted, in part. Paragraph (B)(9) in the new license order is amended as follows:

> (B) The project consists of:
>
> * * *
>
> (9) . . . (d) a reservoir consisting of five interconnected lakes with a combined surface area of 1,857 acres and a gross storage capacity of 1,120 mcf at the maximum winter elevation of 1,597.82 feet NGVD;

The following license articles are amended to read in pertinent part as follows:

Article 404.

* * *

The Licensee shall release from Eau Pleine Reservoir into the Dubay Hydroelectric plant impoundment a continuous minimum flow by maintaining a one-inch opening in the sluice gate year-round for the protection and enhancement of water quality and aquatic resources in the backwater downstream of the dam.

Article 412. The Licensee shall operate the headwaters system consistent with the operating rule curves established in this license. Specifically, the Licensee shall operate the system within the prescribed minimum and maximum levels specified in Article 403 and provide continuous minimum releases from the reservoirs as specified in Article 404.

The Licensee shall operate the system to maintain an approximate target flow in the Wisconsin River at Merrill from April 1 to October 31, dependent on storage as defined as the total amount of water in all natural lakes and all man-made reservoirs except Eau Pleine reservoir, measured in mcf, according to the following parameters:

Apr: Target flow (cfs) = 0.12 x storage (mcf) + 1,779;
Maximum: 3,000 cfs, Minimum: 1,900 cfs.
May: Target flow (cfs) = 0.23 x storage (mcf) - 199;
Maximum: 2,100 cfs, Minimum: 900 cfs.
Jun: Target flow (cfs) = 0.18 x storage (mcf) - 13;
Maximum: 2,100 cfs, Minimum: 900 cfs.
Jul: Target flow (cfs) = 0.18 x storage (mcf) + 49;
Maximum: 2,100 cfs, Minimum: 900 cfs.
Aug: Target flow (cfs) = 0.18 x storage (mcf) + 103;
Maximum: 2,100 cfs, Minimum: 900 cfs.
Sep: Target flow (cfs) = 0.22 x storage (mcf) + 77;
Maximum: 2,300 cfs, Minimum: 900 cfs.
Oct: Target flow (cfs) = 0.18 x storage (mcf) + 415;
Maximum: 2,300 cfs, Minimum: 900 cfs.

The Licensee shall operate the system to maintain an approximate target flow in the Wisconsin River at Wisconsin Rapids from April 1 to October 31, dependent on strage as defined as the total amount of water in Eau Pleine and Dubay reservoirs, measured in million cubic feet (mcf), according to the following parameters:

Apr: Target flow (cfs) = 0.64 x storage (mcf) - 654;
Maximum: 3,300 cfs, Minimum: 1,300 cfs.

May: Target flow (cfs) = 0.54 x storage (mcf) - 462;
Maximum: 2,850 cfs, Minimum: 1,300 cfs.
Jun: Target flow (cfs) = 0.58 x storage (mcf) - 486;
Maximum: 2,850 cfs, Minimum: 1,300 cfs.
Jul: Target flow (cfs) = 0.64 x storage (mcf) - 556;
Maximum: 2,850 cfs, Minimum: 1,300 cfs.
Aug: Target flow (cfs) = 0.70 x storage (mcf) - 618;
Maximum: 2,850 cfs, Minimum: 1,300 cfs.
Sep: Target flow (cfs) = 0.93 x storage (mcf) - 1,079;
Maximum: 3,150 cfs, Minimum: 1,300 cfs.
Oct: Target flow (cfs) = 1.05 x storage (mcf) - 1,192;
Maximum: 3,150 cfs, Minimum: 1,300 cfs.

The Licensee shall operate the system from November 1 to March 31 with the goal of reaching minimum storage in each reservoir by March 31. The Licensee may adjust this goal as necessary depending on annual hydrologic conditions.

The Licensee shall operate the system from June 1 to September 30 with the goal that, at any given point in time, the maximum range of index levels for all reservoirs is less than 1.00. The Licensee shall operate the system from November 1 to May 31 with the goal that at any given point in time, the maximum range of index levels for all man-made reservoirs is less than 1.00. Index level and associated storage volume remaining in each reservoir (in mcf) are as follows, with index level decimal values between those given determined by linear interpolation with storage:

Lac Vieux Desert

Level	Jun	Jul	Aug	Sep
1.00	5	5	5	5
2.00	306	306	306	306
3.00	407	407	407	407
4.00	408	408	408	408
5.00	409	409	409	409
6.00	435	435	435	435

Twin Lakes

Level	Jun	Jul	Aug	Sep
1.00	52	52	52	52
2.00	226	226	226	226
3.00	285	285	285	285
4.00	286	286	286	286
5.00	287	287	287	287
6.00	313	313	313	313

Buckatahpon

Level	Jun	Jul	Aug	Sep
1.00	5	5	5	5
2.00	89	89	89	89
3.00	114	114	114	114
4.00	115	115	115	115
5.00	116	116	116	116
6.00	130	130	130	130

Long-on-Deerskin

Level	Jun	Jul	Aug	Sep
1.00	68	68	68	68
2.00	203	203	203	203
3.00	248	248	248	248
4.00	249	249	249	249
5.00	250	250	250	250
6.00	277	277	277	277

Little Deerskin

Level	Jun	Jul	Aug	Sep
1.00	4	4	4	4
2.00	15	15	15	15
3.00	19	19	19	19
4.00	20	20	20	20
5.00	21	21	21	21
6.00	22	22	22	22

Seven Mile

Level	Jun	Jul	Aug	Sep
1.00	5	5	5	5
2.00	67	67	67	67
3.00	86	86	86	86
4.00	87	87	87	87
5.00	88	88	88	88
6.00	93	93	93	93

Lower Nine Mile

Level	Jun	Jul	Aug	Sep
1.00	5	5	5	5
2.00	89	89	89	89
3.00	118	118	118	118
4.00	119	119	119	119
5.00	120	120	120	120
6.00	121	121	121	121

Burnt Rollways

Level	Jun	Jul	Aug	Sep
1.00	309	309	309	309
2.00	620	620	620	620
3.00	724	724	724	724
4.00	725	725	725	725

5.00	726	726	726	726
6.00	779	779	779	779

Sugar Camp

Level	Jun	Jul	Aug	Sep
1.00	242	242	242	242
2.00	364	364	364	364
3.00	405	405	405	405
4.00	406	406	406	406
5.00	407	407	407	407
6.00	422	422	422	422

Little St. Germain

Level	Jun	Jul	Aug	Sep
1.00	5	5	5	5
2.00	53	53	53	53
3.00	70	70	70	70
4.00	71	71	71	71
5.00	72	72	72	72
6.00	79	79	79	79

Big St. Germain

Level	Jun	Jul	Aug	Sep
1.00	77	77	77	77
2.00	137	137	137	137
3.00	157	157	157	157
4.00	158	158	158	158
5.00	159	159	159	159
6.00	169	169	169	169

Pickerel

Level	Jun	Jul	Aug	Sep
1.00	245	245	245	245
2.00	266	266	266	266
3.00	273	273	273	273
4.00	274	274	274	274
5.00	275	275	275	275
6.00	290	290	290	290

North Pelican

Level	Jun	Jul	Aug	Sep
1.00	119	119	119	119
2.00	128	128	128	128
3.00	132	132	132	132
4.00	133	133	133	133
5.00	134	134	134	134
6.00	139	139	139	139

South Pelican

Level	Jun	Jul	Aug	Sep
1.00	228	228	228	228

2.00	264	264	264	264
3.00	276	276	276	276
4.00	277	277	277	277
5.00	278	278	278	278
6.00	305	305	305	305

Minocqua

Level	Jun	Jul	Aug	Sep
1.00	346	346	346	346
2.00	439	439	439	439
3.00	470	470	470	470
4.00	471	471	471	471
5.00	472	472	472	472
6.00	628	628	628	628

Squirrel

Level	Jun	Jul	Aug	Sep
1.00	18	18	18	18
2.00	130	130	130	130
3.00	168	168	168	168
4.00	169	169	169	169
5.00	170	170	170	170
6.00	182	182	182	182

Rainbow Reservoir

Level	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.00	5	5	5	0	298	298	298	298	5	5	5	5
2.00	437	437	437	437	798	798	798	798	437	437	437	437
3.00	874	874	874	874	1469	1469	1469	912	874	874	874	874
4.00	1311	1311	1311	1311	1707	1707	1707	1336	1311	1311	1311	1311
5.00	1748	1748	1748	1748	1946	1946	1946	1760	1748	1748	1748	1748
6.00	2185	2185	2185	2185	2185	2185	2185	2185	2185	2185	2185	2185

Willow Reservoir

Level	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.00	5	5	5	0	184	184	184	184	5	5	5	5
2.00	660	660	660	660	998	998	998	998	660	660	660	660
3.00	1321	1321	1321	1321	1854	2094	2094	1854	1321	1321	1321	1321
4.00	1981	1981	1981	1981	2337	2496	2496	2337	1981	1981	1981	1981
5.00	2642	2642	2642	2642	2819	2899	2899	2819	2642	2642	2642	2642
6.00	3302	3302	3302	3302	3302	3302	3302	3302	3302	3302	3302	3302

Rice Reservoir

Level	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.00	70	70	70	70	907	749	598	457	70	70	70	70
2.00	362	362	362	362	1087	1205	1205	1205	362	362	362	362
3.00	723	723	723	723	1205	1255	1255	1255	724	723	723	723
4.00	1085	1085	1085	1085	1305	1305	1305	1305	1085	1085	1085	1085
5.00	1446	1446	1446	1446	1405	1405	1405	1405	1447	1446	1446	1446
6.00	1808	1808	1808	1808	1808	1808	1808	1808	1808	1808	1808	1808

Spirit Reservoir

Level	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.00	5	5	5	0	71	71	71	71	5	5	5	5
2.00	155	155	155	155	374	374	374	374	155	155	155	155
3.00	230	230	230	230	441	441	441	441	230	230	230	230

4.00	380	380	380	380	546	546	546	546	380	380	380	380
5.00	530	530	530	530	651	651	651	651	530	530	530	530
6.00	756	756	756	756	756	756	756	756	756	756	756	756

Eau Pleine Reservoir

Level	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1.00	118	118	118	118	490	490	490	490	118	118	118	118
2.00	986	986	986	1650	1091	1091	1091	1091	986	986	986	986
3.00	1854	1854	1854	3182	3182	3182	3182	3182	1854	1854	1854	1854
4.00	2721	2721	2721	3607	3607	3607	3607	3607	2721	2721	2721	2721
5.00	3589	3589	3589	4032	4032	4032	4032	4032	3589	3589	3589	3589
6.00	4457	4457	4457	4457	4457	4457	4457	4457	4457	4457	4457	4457

The Licensee shall file an annual report within 30 days of the end of each calendar year which documents daily flow at the USGS gages at Merrill and Wisconsin Rapids. If these flows are either: (1) greater than 15 percent above the applicable target flow and at the same time reservoir storage for the calendar week in which the flow deviation occurred decreased more than 2 percent, or (2) more than 15 percent below the applicable target flow, the Licensee shall explain this deviation in the annual report to the Commission. The Licensee shall also document in the annual report the index level range in all reservoirs on a weekly average basis. If index levels are more than 1.00 index level above the index level that any other reservoir is in at that point in time, or alternatively, more than 1.00 index level below the index level that any other reservoir is in at that point in time, the Licensee shall explain this deviation in the annual report to the Commission. The report shall include an explanation of the circumstances of any deviation and the effects on environmental resources, if any. The Licensee shall also provide copies of the report to the U.S. Fish and Wildlife Service, Michigan Department of Natural Resources, Wisconsin Department of Natural Resources, and other interested parties directly affected by project operations, within 30 days of the end of each calendar year. Based on the report and the Commission's evaluation of the deviations, the Commission reserves the right to require modifications to project facilities and operations to ensure future compliance.

The Licensee shall consult with Wisconsin Department of Natural Resources prior to drawing down the five man-made reservoirs below the following water surface elevations:

From May 1 through August 31:

Rainbow:	1,593.05 feet National Geodetic Vertical Datum (NGVD)
Willow:	1,525.35 feet NGVD
Rice:	1,459.25 feet NGVD
Spirit:	1,433.88 feet NGVD
Eau Pleine:	1,141.43 feet NGVD

From September 1 through April 30:

Rainbow:	1,586.00 feet NGVD
Willow:	1,518.50 feet NGVD
Rice:	1,453.00 feet NGVD
Spirit:	1,429.00 feet NGVD
Eau Pleine:	1,130.70 feet NGVD

The Licensee shall summarize the results of this consultation in its annual reports to the Commission described above.

The requirements of this article comprise, in part, the long-term Operating Plan for the headwaters reservoir system. (See Article 421.)

Article 418. Within 24 months of license issuance, the Licensee shall file with the Commission, for approval, a Recreation Plan describing existing recreation facilities, evaluating whether the existing recreation facilities are meeting public recreation demand, and proposing specific recreation improvements to address the need for new public recreation facilities and improvements at the project's developments. The Recreation Plan shall provide for implementing specific new recreation facilities and improvements as already agreed to by the Licensee in consultation with federal and state fish and wildlife agencies, the U.S. Forest Service, and other providers of public recreation at the project. These specific agreed-upon recreation facilities and improvements are described below. The Recreation Plan shall be consistent with the protection of federal and state-listed threatened and endangered species.

The Licensee shall also file with the Commission, for approval, reports updating the Recreation Plan consistent with every sixth year due date in the Form 80 reporting cycle, for the term of the license, pursuant to Part 8 of the Commission's regulations. The first such update report will be due April 1, 2009.

The update reports shall identify changes to the Recreation Plan.

The Recreation Plan and update reports shall include, at a minimum, the following:

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

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

(3) final site plans for proposed new recreation facilities, if any, to be funded in part or in whole by the Licensee;

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

(5) an identification of the entity or entities responsible for the construction, operation, and maintenance of existing or proposed facilities and, if this is not the Licensee, documentation of the Licensee's construction, operation, and maintenance agreement with the entity or entities;

(6) the implementation schedule for proposed new recreation improvements;

(7) the detailed proposed policies and procedures governing the Recreation Fund described in Article 419; and

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

The Licensee shall prepare the Recreation Plan and update reports in consultation with the Wisconsin Department of Natural Resources, the Michigan Department of Natural Resources (Lac Vieux Desert only), the U.S. Fish and Wildlife Service, the U.S. Forest Service, affected citizens organizations, other providers of public recreation at the project, and local agencies having land management or planning/zoning authority in the area. The Licensee shall make the Recreation Plan and update reports available to consulted entities for comment at least 30 days prior to filing the Recreation Plan and update

reports with the Commission for approval. The Licensee's documentation of consultation shall include copies of the consulted entities' comments and recommendations on the completed plan or plan updates and a discussion of how the entities' comments are specifically accommodated by the Recreation Plan or update reports. If the Licensee does not adopt a recommendation made by one of the consulted entities, the Licensee shall include the Licensee's reasons, based on project-specific information.

The Recreation Plan filed pursuant to this article shall provide for implementing the specific recreation facilities and improvements described below:

Natural Lake Reservoirs

(1) Lac Vieux Desert

Site 4: Open shoreline, upgrade bridge, sign portage route, provide directional signage and barrier-free facilities including shoreline fishing pier, rest rooms, trail, and ten parking spaces.

(2) Long on Deerskin

Site 3: Provide access signage.

(3) Burnt Rollways

Site 9: Provide interpretive signage.

(4) Sugar Camp

Site 4: Install "pedestrian only" gate to restrict "all terrain vehicles" (ATVs).

(5) Big St. Germain

Site 3: Provide portage signage, bank fishing, and carry-in boat access and parking; construct portage stairs; secure dam.

(6) Pickerel

Site 2: Provide signage.

(7) North Pelican

Site 2: Provide signage, construct portage stairs.

(8) Minocqua

Site 9: Construct concrete boat ramp for access to Kawaguesaga Lake, five car/trailer parking spaces, five parking spaces for cars for fishing, and provide two signs.

Man-Made Reservoirs

(9) Rainbow

(a) Site 1: provide signage.

(b) Site 3: provide entrance improvements and barrier-free restrooms, extend boat ramp to 85 percent useability (to elevation 1,585.1 feet NGVD), provide interpretive signage.

(c) Site 4: provide signage.

(d) Site 7: provide signage.

(e) Site 9: provide 30 additional parking spaces, interpretive signage, picnic area, and barrier-free rest rooms, extend boat ramp to provide 97.5 percent useability (to elevation 1,580.2 feet NGVD), barrier-free fishing pier, and canoe portage signage.

(10) Willow

(a) Site 1/7: provide interpretive signage, picnic facilities, barrier-free fishing area, five car parking area, extend boat ramp to provide 97.5 percent useability (to elevation 1,512.6 feet NGVD).

(b) Site 2: provide access signage, ten car/trailer parking, roadway and parking improvements, and hiking trail.

(c) Site 3: provide signage.

(11) Rice

(a) Site 2: provide access signage, extend boat ramp to provide 85 percent useability (to elevation 1,457.0 feet NGVD), improve parking, rest rooms, picnic area, and nature trail.

(b) Site 4: coordinate with officials about road relocation and additional parking; restore picnic area; provide barrier-free trails to rest rooms; extend boat ramps to 60 feet.

(c) Site 5: define parking area; maintain site for bankfishing, as a canoe portage, and as a carry-in boat access; provide signage.

(d) Site 7: develop new handicapped-accessible boat and day use area.

(e) Block public access to boat launch area in the Rice dam tailrace due to safety concerns.

(12) Spirit

(a) Highway "O" bridge: place warning signs.

(b) Site 1: provide signage, organized parking, and barrier-free rest rooms; develop into primary deep water landing, relocate boat landing, and increase parking.

(c) Site 2: extend boat landing to provide greater useability (this site enhancement is to be funded with the annual recreation fund monies as specified under Article 419 within the first five years of license issuance).

(d) Site 3: repair boat landing (this site enhancement is to be funded with the annual recreation fund monies as specified under Article 419 within the first five years of license issuance).

(e) Site 4: extend boat landing to provide 85 percent useability (to elevation 1,428.2 feet NGVD) and double plank (this site enhancement is to be funded with the annual recreation fund monies as specified under Article 419 within the first five years of license issuance).

(f) Site 5: remove signage (this site enhancement is to be funded with the annual recreation fund monies as specified under Article 419 within the first five years of license issuance).

(g) Site 6: install control gate and signage.

(h) Site 8: provide signage; secure dam site; provide canoe portage and signage, and barrier-free fishing area.

(i) Future Site 9: provide carry-in boat access, parking for four vehicles, and signage.

(13) Eau Pleine

(a) Install navigational lights and markers at bridges and remove signage.

(b) Site 1: regrade rest room area, improve bank fishing, and provide signage.

(c) Site 7: provide picnic area, extend boat landing, provide parking and rest rooms (this site enhancement is to be funded with the annual recreation fund monies as specified under Article 419 within the first five years of license issuance).

(d) Future Site 20: construct boat ramp to provide 97.5 percent useability (to elevation 1,124.4 feet NGVD), parking areas, and picnic areas; provide bank fishing and interpretive signage.

The Commission reserves the right to require changes to the Recreation Plan and update reports. No land-disturbing or land-clearing activities for recreational facilities shall begin until the Licensee is notified that the plan is approved. Upon Commission approval, the Licensee shall implement the plan, including any changes required by the Commission.

Within 90 days of completion of construction, the Licensee shall file as-built drawings of the recreation facilities with the Commission.

(I) The requests for rehearing filed by the licensees of Project Nos. 2476, 1999, 2212, 2590, 2256, 2255, 2291, and 2292 with respect to the license articles requiring the funding of

compensatory mitigation are granted. The individual license rehearing orders, issued concurrently with this order, amend the licenses to delete these articles.

By the Commission.

(S E A L)

Linwood A. Watson, Jr.,
Acting Secretary.