

112 FERC ¶ 62,130
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Flambeau Hydro LLC

Project No. 2064-004

ORDER ISSUING NEW LICENSE

(August 12, 2005)

INTRODUCTION

1. On November 26, 1999, an application was filed for a new license pursuant to sections 4(e) and 15 of the Federal Power Act (FPA)¹ to continue operation and maintenance of the 600-kilowatt (kW) Winter Project No. 2064. The project is located on the East Fork of the Chippewa River, near the town of Winter, in Sawyer County, Wisconsin. The project occupies about 26 acres of land within the Chequamegon-Nicolet National Forest.² As discussed below, I am issuing a new license to Flambeau Hydro LLC (Flambeau) for the project.

BACKGROUND

2. The current license for the project was issued on November 19, 1951,³ and expired on November 30, 2001. Project operation has continued pursuant to annual licenses, pending disposition of Flambeau's application for a new license.

3. Public notice of the license application was issued on October 10, 2001. Motions to intervene were filed by the U.S. Forest Service (Forest Service), U.S. Department of

¹ 16 U.S.C. §§ 797(e) and 808.

² The project is required to be licensed pursuant to section 23(b) of the Federal Power Act, 16 U.S.C. § 817, because it is located on federal lands.

³ 10 FPC 1530 (1951). Although the project had an installed capacity of 600 kilowatts, the Federal Power Commission issued a major original license for the project, which did not waive sections 14 and 15 of the Federal Power Act. The original license was issued to Winter Electric Light and Power Company (Winter Power). Winter Power changed its name to North Central Power Company in 1959. The license was transferred to Flambeau in 2001. Order Approving Transfer, 94 FERC ¶ 62,060 (2001).

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the Interior (Interior), and Wisconsin Department of Natural Resources (Wisconsin DNR).⁴

4. A December 19, 2003 public notice indicated that the project was ready for environmental analysis and solicited comments, recommendations, and terms and conditions. Responding to this notice, the Forest Service, Interior, and Wisconsin DNR filed comments.

5. On August 23, 2004, Commission staff issued for public comment an environmental assessment (EA). Comments on the EA were filed by the Nature Conservancy, U.S. Fish and Wildlife Service (FWS), the Forest Service, Wisconsin DNR and the River Alliance of Wisconsin.

6. On November 19, 2004, Commission staff issued a final environmental assessment (Final EA). Comments on the Final EA were filed by FWS, the River Alliance of Wisconsin, Lac Courte Oreilles Band of Lake Superior Chippewa (Lac Courte Oreilles Band), and Wisconsin DNR. All motions to intervene and comments have been considered in determining whether, and under what conditions, to issue this license.

PROJECT DESCRIPTION

7. The Winter Project consists of: a 14-foot-high, 140-foot-long concrete stoplog diversion dam; a 49.6-acre reservoir; a 2,100-foot-long power canal; an 18-foot-wide concrete intake structure; two 5.5-foot-diameter, 78-foot-long steel penstocks; a powerhouse containing two generating units with a combined capacity of 600 kW; a 700-foot-long tailrace; a 70-foot-long underground transmission line and appurtenant facilities. The project power canal bypasses about a 2,600-foot reach of the East Fork of the Chippewa River. A more detailed project description is contained in ordering paragraph (B)(2). The current project boundary encloses the dam, power canal, powerhouse, penstocks, tailrace, transmission line, and a portion of the project reservoir.

8. The Winter Project is voluntarily operated in a run-of-river mode. The current project license requires a 50 cubic feet per second (cfs) (or inflow whichever is less)

⁴ The motion filed by the U.S. Department of Agriculture, was timely, unopposed, and granted automatically pursuant to Rule 214(c)(1) of the Commission's Rules of Practice and Procedure. 18 C.F.R. § 375.214(c)(1) (2005). On February 22, 2002, the Commission issued a public notice granting late intervention to Interior and Wisconsin DNR.

minimum flow in the tailrace. It does not specify a mode of operation, nor does it require a minimum flow release to the bypassed reach. Flambeau does not propose any significant new construction or additional capacity at the project.

9. Flambeau proposes to continue to operate the project in a run-of-river mode. Flambeau also proposes to release a seasonally-variable minimum flow to the bypassed reach ranging from 10 cfs to 30 cfs. Flambeau does not propose any significant new construction or additional capacity at the project.

WATER QUALITY CERTIFICATION

10. Under Section 401(a)(1) of the Clean Water Act (CWA)⁵ the Commission may not issue a license for a hydroelectric project unless the state water quality certifying agency either has issued a water quality certification (WQC) for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed 1 year. Section 401(d) of the CWA provides that state certification shall become a condition on any federal license or permit that is issued.⁶ Only a reviewing court can revise or delete these conditions.⁷

11. The licensee originally requested water quality certification (WQC) from the Wisconsin DNR on July 19, 1999. Each year since that date, the licensee has withdrawn and refiled its application. Most recently, Flambeau requested WQC on June 25, 2004. On June 21, 2005, Wisconsin DNR issued a WQC for the Winter Project with 26 conditions.⁸

12. The conditions of the WQC, set forth in Appendix A, are incorporated into this license by ordering paragraph E. The WQC includes requirements for: run-of-river operation; reservoir level management and monitoring; minimum bypassed reach flows ranging from 30 to 50 cfs or inflow, whichever is less; flow monitoring; an outage

⁵ 33 U.S.C. § 1341(a)(1).

⁶ 33 U.S.C. § 1341(d).

⁷ *See American Rivers v. FERC*, 129 F.3d 99 (D.C. Cir. 1997).

⁸ By letter filed June 28, 2005, Flambeau requested that the Commission defer action on its license application pending appeal of the WQC. However, no information has been filed with the Commission indicating the WQC has been appealed.

response plan; a fish passage plan; information collection on aquatic species impinged on trash racks or in the tailrace pool; woody debris management; reservoir drawdown plans (to be submitted prior to non-emergency drawdowns); water quality monitoring; a 200-foot shoreline buffer on licensee-owned lands adjacent to the reservoir, tailrace, and bypassed reach; annual purple loosestrife inspections along shorelines; shoreline erosion monitoring; and various administrative measures. Article 401 requires the licensee to file, for Commission approval, plans required by the WQC.

SECTION 4(e) FINDINGS AND CONDITIONS

13. Section 4(e) of the FPA, 16 U.S.C. § 797(e), provides that the Commission can issue a license for a project located within any reservation only if it finds that the license will not interfere or be inconsistent with the purpose for which such reservation was created or acquired. I have reviewed the Organic Administration Act of 1897,⁹ which established the purposes for forest reservations, and the presidential proclamations that created and expanded the Chequamegon-Nicolet National Forest.¹⁰ There is no evidence or allegation in this proceeding to indicate that relicensing the Winter Project would interfere with the purposes of the Chequamegon-Nicolet National Forest within which the project is located. Therefore, I find that this license, as conditioned, will not interfere or be inconsistent with the purposes for which the Chequamegon-Nicolet National Forest was created.

14. FPA section 4(e) further requires that Commission licenses for projects located within federal reservations include all conditions that the Secretary of the department under whose supervision the reservation falls shall deem necessary for the adequate protection and utilization of such reservation. Approximately one half of the Winter Project dam and reservoir, as well as the upper half of the project power canal, are located

⁹ 16 U.S.C. 473 et seq.

¹⁰ The two forests making up the Chequamegon-Nicolet National Forest were joined in 1993. They were both established in 1933. The Chequamegon National Forest was created by Presidential Proclamation No. 2060 on November 13, 1933. 48 Stat. 1716. The Nicolet National Forest was created by Presidential Proclamation No. 2034 on March 2, 1933. 47 Stat. 2561. At that time, the Organic Administration Act of 1897, 16 U.S.C. § 475, stipulated that all national forest lands were established and administered only for watershed protection and timber production.

within the Chequamegon-Nicolet National Forest which is under the U.S. Forest Service's supervision.

15. The Forest Service timely filed its final section 4(e) conditions on January 24, 2005, and a revised condition 12 on April 22, 2005.¹¹ The final terms and conditions, set forth in Appendix B of this order and incorporated into this license by ordering paragraph F, are summarized below.

16. The Forest Service 4(e) conditions, which are essentially similar to the conditions of the WQC, would require: run-of-river operation; reservoir level management and monitoring; minimum flows in the bypassed reach; flow monitoring; a plan for providing fish passage; collection and reporting of information on turbine mortality and impingement; recreational resource management; woody debris management; water quality monitoring; a Heritage Resources Management Plan; shoreline erosion monitoring; and various administrative measures. Article 401 requires the licensee to file, for Commission approval, plans required by the 4(e) conditions.

SECTION 18 FISHWAY PRESCRIPTIONS

17. Section 18 of the FPA¹² provides that the Commission shall require the construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretary of the Interior or the Secretary of Commerce, as appropriate. By letter filed February 13, 2004, Interior requested that the Commission reserve its authority to prescribe fishways. Consistent with Commission policy, Article 402 of this license reserves the Commission's authority to require fishways that may be prescribed by Interior for the Winter Project.

¹¹ Flambeau filed an appeal of the 4(e) conditions. The Forest Service revised condition 12 was filed subsequent to this appeal.

¹² 16 U.S.C. § 811.

THREATENED AND ENDANGERED SPECIES

18. Section 7(a)(2) of the Endangered Species Act of 1973 (ESA)¹³ requires federal agencies to ensure their actions are not likely to jeopardize the continued existence of federally-listed threatened and endangered species, or result in the destruction or adverse modification of their designated critical habitat.

19. The federally listed threatened bald eagle (*Haliaeetus leucocephalus*) and the federally listed threatened gray wolf (*Canis lupus*) potentially occur in the project area. In the EA, staff determined that the project as proposed by Flambeau with staff's recommended land and wildlife management plan would not be likely to adversely affect these species. The EA recommends the land and wildlife management plan be developed in consultation with the Forest Service, FWS, and Wisconsin DNR and contain provisions for: conservation and protection of bald eagle and gray wolf and their habitat at the project; monitoring and documenting bald eagle nesting activity and the presence of gray wolf; and consultation with the Forest Service, FWS, Wisconsin DNR, and the Commission prior to conducting land-disturbing activities that could affect bald eagle nesting activity.

20. In a letter dated November 24, 2004, staff requested concurrence from the FWS on its effects determination. The FWS concurred in a letter filed December 23, 2004. Article 404 requires the land and wildlife management plan.

RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES

21. Section 10(j) of the FPA¹⁴ requires the Commission, when issuing a license, to include conditions based on the recommendations of federal and state fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act,¹⁵ to "adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)" affected by the project.

¹³ 16 U.S.C. § 1536(a).

¹⁴ 16 U.S.C. § 803(j)(1).

¹⁵ 16 U.S.C. § 661 et seq.

22. Interior filed 10 recommendations within the scope of section 10(j). Eight of Interior's recommendations (those concerning minimum bypassed reach flows, sturgeon spawning flow releases, run-of-river operation, fish passage, project operation and compliance, water quality monitoring, woody debris management, and purple loosestrife control) are addressed by corresponding WQC and/or 4(e) conditions. Interior's remaining two 10(j) recommendations (concerning land and bald eagle management plans) are addressed in Article 404 which requires a land and wildlife management plan.

23. Interior's recommendation for a fish protection and enhancement fund commensurate with fish kill losses due to impingement and entrainment is outside the scope of FPA section 10(j) because it is not a specific fish and wildlife measure. I have therefore considered it under the comprehensive development standard of FPA section 10(a)(1).¹⁶ It is well-established that the Commission cannot require funding of compensatory mitigation where it has not been shown by substantial evidence that entrainment mortality has had a significant adverse effect on the fishery population.¹⁷ The Final EA found that the fish community is healthy above and below the project. Because there is not a demonstrated significant adverse effect on the fishery population, this measure is not included.

24. Wisconsin DNR's recommendation for a revised project boundary that includes the entire project reservoir and a 200-foot buffer zone on licensee-owned lands adjacent to the project is not within the scope of section 10(j) because it is not a specific fish and wildlife recommendation. The WQC contains a condition requiring a 200-foot shoreline buffer zone on all licensee owned lands "to protect water quality, aesthetics, and ecological functions of the river corridor." The Final EA concluded that there was no clear reason why these lands needed to be in the project boundary to protect the stated resources. The licensee owns very little adjacent land at the project, a substantial portion of the project is bordered by Forest Service land, and no comments have been filed indicating that project lands and waters are subject to developmental pressures. Nevertheless, the 200-foot shoreline buffer zone on licensee-owned lands is a requirement of the WQC.

¹⁶ 16 U.S.C. § 803(a)(1)

¹⁷ See *City of New Martinsville v. FERC*, 102 F.3d 567 (D.C. Cir. 1996); *Allegheny Energy Supply Company*, 109 FERC ¶ 61,028 (2004); *City of Jackson, Ohio*, 105 FERC ¶ 61,136 (2003); *Tower Kleber Limited Partnership*, 91 FERC ¶ 61,172 (2000); *City of New Martinsville v. FERC*, 81 FERC ¶ 61,093 (1997).

COMMENTS ON THE FINAL EA

25. The Lac Courte Oreilles Band of Lake Superior Chippewa requested that tribal concerns for the protection of cultural resources be considered in the relicensing process, and noted their support for the following measures: increased flows in the bypassed reach, continued run-of-river operation and compliance monitoring, seasonal fish passage, maintaining water quality, a shoreline buffer, a land management plan with measures to protect threatened and endangered species, passing organic debris downstream, and controlling exotic species. The Lac Courte Oreilles Band also suggested suspending the licensing process until all viable options, including project retirement, have been assessed.

26. All of the issues above were analyzed in the Final EA and appropriate measures for resource protection and enhancement are included in the license. In addition, the Final EA analyzed all reasonable alternatives, including no-action, the proposed action, and proposed action with additional staff-recommended measures. Regarding project retirement, the Final EA found that project retirement with or without dam removal was not a reasonable alternative because the project provides a viable, safe, and clean renewable source of power, a source of revenue to Flambeau Hydro, and project effects could be addressed while the project remains in operation.

27. Wisconsin DNR stated that the Final EA contained conclusions that were not satisfactorily supported on the subjects of run-of-river operation, leakage through the dam, overall health of the fish community and need for fish passage. The Final EA's analyses of these issues were based in large part on Wisconsin DNR and other resource agency reports. In addition, subsequent to these comments, Wisconsin DNR issued its WQC with conditions that are incorporated in the license by ordering paragraph E.

28. In its comments, the FWS reiterated its recommendation for a fish protection fund and a downstream fishway sized to accommodate lake sturgeon. The FWS did not raise any new issues or introduce any new data that would change the Final EA's analysis or recommendations. As noted above, the Final EA found that the fish community is healthy above and below the project, and the Commission cannot require funding of compensatory mitigation where it has not been shown by substantial evidence that entrainment mortality has had a significant adverse effect on the fishery population. Regarding downstream fish passage, the Final EA found that the fish communities above and below the project are very similar, lake sturgeon populations in the East Fork Chippewa are healthy, and a passage facility designed for lake sturgeon would be considered experimental because little is known about how to design passage for lake

sturgeon. Because of these questions on the need for and efficacy of lake sturgeon passage and its potential cost, the Final EA recommended against requiring downstream passage. However, both the WQC and the 4(e) conditions require up and downstream passage.

OTHER ISSUES

Water Quality Monitoring

29. WQC condition N requires reservoir water quality monitoring three times annually, within three weeks of ice-out and in July and August. The Final EA did not recommend water quality monitoring because water quality monitoring conducted at the project demonstrated that water quality standards are being met. The Final EA noted that, because it is operated in a run-of-river mode and the impoundment is shallow, the project appears to have minimal effect, if any, on water quality. However, because the WQC requires water quality monitoring, it is a requirement of this license.

Bypassed Reach Flows

30. WQC condition F and 4(e) condition 14 require minimum bypass flows of 50 cfs during the sturgeon spawning season and 30 cfs for the remainder of the year. These minimum flow requirements are similar to those recommended in the Final EA which recommended 30 cfs year round, but acknowledged that flows up to 50 cfs might be needed during the sturgeon spawning season. The only difference between the 4(e) minimum flow condition and the WQC minimum flow condition is the time period when flows would be ramped down from 50 cfs to 30 cfs. The 4(e) condition requires that this occur over a 2-week period while under the WQC condition, downramping would occur on a single day. In order to comply with both mandatory conditions, and to minimize the potential for sturgeon standing in the bypassed reach, this license requires the 2-week ramping period as specified in the 4(e) condition.

Bypassed Reach Flow Release Device

31. WQC condition F and Forest Service 4(e) condition 16 require operation and maintenance of an orifice near the sill of the diversion dam to discharge minimum flows to the bypassed reach. The Final EA did not recommend this measure finding it unnecessary because bypassed reach flows could be provided through a combination of leakage and spill. The Final EA further noted that compliance with bypassed reach minimum flow requirements could be ensured through maintenance of a staff gage. However, because the WQC and 4(e) conditions require the orifice, it is a requirement of

this license.

Fish Passage

32. WQC condition J and Forest Service 4(e) condition 12 require a plan for providing seasonal upstream and downstream fish passage at the project. The WQC requires a plan within one year of license issuance for seasonal stoplog removal that would allow the majority of inflow to pass through the project's bypassed reach. The WQC condition allows the licensee the option of proposing alternatives to stoplog removal as long as the alternative is at least as effective. The 4(e) fish passage condition requires a fish passage plan within three years of license issuance for seasonal passage to be implemented within 5 years of license issuance, but does not specify a passage method. The Final EA did not recommend upstream or downstream fish passage because no effect from lack of passage has been demonstrated. However, the WQC and the 4(e) conditions require a plan to provide such facilities and therefore, it is a requirement of this license.

Entrainment and Impingement Mortality Monitoring

33. WQC condition K and Forest Service 4(e) condition 13 require Flambeau to collect data on aquatic species found on the project trash-rack and in the tailrace. The Final EA did not recommend this measure for the same reason that it did not recommend Interior's fish protection and enhancement fund; because there is not a demonstrated significant adverse effect on the fishery population from entrainment or impingement at the project. However, the WQC and the 4(e) conditions require this measure and therefore, it is a requirement of this license.

Reservoir Drawdown Plan

34. WQC condition M requires Flambeau to submit to the Wisconsin DNR a reservoir drawdown management plan at least 60 days in advance of all non-emergency reservoir drawdowns.

35. Drawdowns are a necessary component of project maintenance in many cases and can also be a means of dealing with certain emergencies beyond the control of the licensee. In *PCA Hydro, Inc.*,¹⁸ the Commission noted in the case of emergency drawdowns, that it is important to have a reservoir drawdown plan in place to ensure to

¹⁸ 111 FERC ¶61,191 (2005)

the extent possible the protection of aquatic, wildlife, and recreation resources where there is limited or no time to consult with the Commission or the appropriate resource agencies. Accordingly, Article 403 requires a drawdown plan that includes planning considerations to protect environmental resources during both planned and emergency reservoir drawdowns.

Woody Debris Management Plan

36. Although WQC condition L and Forest Service 4(e) condition 11 require Flambeau to pass woody debris downstream of the project in a reasonably safe manner, the conditions do not specify the method or frequency of this action.

37. The Final EA recommends a woody debris management plan that specifies the frequency and methods used to pass the woody debris downstream of the project, which would ensure that the debris is handled in a safe, effective manner. Accordingly, Article 405 requires a woody debris management plan.

Cultural Resources

38. On December 30, 1993, the Wisconsin State Historic Preservation Officer, the Michigan State Historic Preservation Officer, the Advisory Council on Historic Preservation, and the Commission, executed a Programmatic Agreement (PA) for managing historic properties that may be affected by relicensing projects in the state of Wisconsin and adjacent portions of Michigan. Article 406 requires the PA to be implemented. This satisfies the Commission's responsibilities under Section 106 of the National Historic Preservation Act.¹⁹

Recreation Facilities

39. The Final EA recommended recreation facilities consistent with the Forest Service's 4(e) condition number 8. The facilities are to include canoe landing areas at the downstream end of the power canal and in the upper tailrace area, a portage trail between the two landings, fishing access to the bypassed reach and tailrace, a restroom, and signage. Article 401 requires the licensee to provide documentation of providing these facilities.

¹⁹ 16 U.S.C. § 470(f).

Project Boundary

40. As currently licensed, the project boundary for the Winter Project does not enclose the entire project impoundment and only partially encloses the project bypassed reach. In response to a Commission additional information request, Flambeau filed, on August 2, 2004, a revised project boundary map that encloses these features. Based on its revised project boundary map, Flambeau Hydro estimates that the project impoundment is approximately 30 acres in size and that the total amount of National Forest land the project occupies is about 26 acres (15 acres of the impoundment and 11 acres downstream of the project dam). In their comments on the EA, the Forest Service found the surface area to be 49.4 acres. Staff digitized the USGS map of the project area and calculated the surface area of the reservoir. Staff concludes that the reservoir's surface area is 49.6 acres. This is the area that will be included within the project boundary and shown in a revised Exhibit G map required in Article 203.

ADMINISTRATIVE CONDITIONS

A. Annual Charges

41. The Commission collects annual charges from licensees for administration of the FPA. Article 201 provides for the collection of funds for administration of the FPA.

B. Exhibit F Drawings

42. The Commission requires licensees to file sets of approved project drawings on microfilm and in electronic file format. Article 202 requires the filing of these drawings.

C. Headwater Benefits

43. Some projects directly benefit from headwater improvements that were constructed by other licensees, the United States, or permittees. Article 204 requires the licensee to reimburse such entities for these benefits if they were not previously assessed and reimbursed.

D. Use and Occupancy of Project Lands and Waters

44. Requiring a licensee to obtain prior Commission approval for every use or occupancy of project land would be unduly burdensome. Therefore, Article 407 allows the licensee to grant permission, without prior Commission approval, for the use and

occupancy of project lands for such minor activities as landscape planting. Such uses must be consistent with the purposes of protecting and enhancing the scenic, recreational, and environmental values of the project.

COMPREHENSIVE PLANS

45. Section 10(a)(2)(A) of the FPA²⁰ requires the Commission to consider the extent to which a hydroelectric project is consistent with federal and state comprehensive plans for improving, developing, or conserving waterways affected by the project.²¹ Under section 10(a)(2)(A), federal and state agencies filed a total of 66 qualifying comprehensive plans of which staff identified two plans to be applicable.²² No conflicts were found.

APPLICANT'S PLANS AND CAPABILITIES

46. In accordance with sections 10(a)(2)(C) and 15(a) of the FPA,²³ Commission staff evaluated Flambeau 's record as a licensee for these area: (A) conservation efforts; (B) compliance history and ability to comply with the new license; (C) safe management, operation, and maintenance of the project; (D) ability to provide efficient and reliable electric service; (E) need for power; (F) transmission services; (G) cost effectiveness of plans; and (H) actions affecting the public. I accept the staff's findings in each of the following areas.

A. Conservation Efforts

47. Section 10(a)(2)(C) of the FPA requires the Commission to consider the extent of electricity consumption efficiency improvement programs in the case of license applicants primarily engaged in the generation or sale of electric power. Flambeau sells all the power generated by the project on a wholesale basis to North Central Power Company, a utility, and does not serve any retail customers. Given the limits of its ability to influence

²⁰ 16 U.S.C. § 803(a)(2)(A).

²¹ Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2004).

²² Chequamegon-Nicolet National Forest land and resource management plan. Department of Agricultural, Park Falls, Wisconsin. 2004; and Wisconsin Department of Natural Resources. 1991. Wisconsin Statewide Comprehensive Outdoor Recreation Plan (SCORP) for 1991-96. Madison, Wisconsin. October 1991.

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

users of electricity generated by the project, Flambeau complies with section 10(a)(2)(C) of the FPA.

B. Compliance History and Ability to Comply with the New License

48. Commission staff reviewed Flambeau's compliance with the terms and conditions of the existing license. Staff finds that Mosinee's overall record of making timely filings and compliance with its license is satisfactory. Staff concludes that Flambeau has or can acquire the resources and expertise necessary to carry out its plans and comply with all articles and terms and conditions of a new license.

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

49. Flambeau owns and operates the project, which is classified in accordance with Commission standards as having a low hazard potential rating.

50. Commission staff reviewed the licensee's record of management, operation, and maintenance of the project and concludes that the dam and project works are safe, and that the licensee has the ability to manage, operate, and maintain the project safely for future operation. Staff conclude that the dam and other project works would pose no threat to public safety if operated according to the regulations governing hydroelectric licenses.

D. Ability to Provide Efficient and Reliable Electric Service

51. Commission staff reviewed Flambeau's plans and its ability to operate and maintain the project in a manner most likely to provide efficient and reliable electric service. Flambeau has been operating the project in an efficient manner within the constraints of the existing license. Staff conclude that Flambeau is capable of operating the project to provide efficient and reliable electric service in the future.

E. Need for Power

52. To assess the need for power, staff looked at the needs in the operating region in which the project is located. The project is located in the Mid-Continent Area Power Pool (MAPP) region of the North American Electric Reliability Council (NERC). According to the NERC, summer peak demand in the region is expected to increase at an average rate of 1.8 percent per year during the period from 2003-2012 (NERC, 2003). By producing hydroelectricity, the Winter Project displaces the need for other power plants, primarily fossil-fuel facilities, to operate, thereby avoiding some power plant emissions

and creating an environmental benefit. The present and future use of Winter Project power, its displacement of nonrenewable fossil-fired generation, and contribution to a resource-diversified generation mix, support a finding that the power from the project would help meet both the short- and long-term need for power in the MAPP region.

F. Transmission Services

53. The project includes a 70-foot-long underground transmission line that carries electric power generated from the project to the regional grid. Flambeau is proposing no changes that would affect its own or other transmission service in the region.

G. Cost-Effectiveness of Plans

54. Flambeau proposes improvements to recreational facilities and operational changes to enhance water quality and fishery resources. Based on Flambeau's record as an existing licensee, staff conclude that these plans are likely to be carried out in a cost effective manner.

H. Actions Affecting the Public

55. Flambeau pays taxes annually to local and state governments, and the project provides employment opportunities and attracts those interested in various forms of available recreation. Staff conclude that the various environmental and recreational enhancement measures approved in this license would benefit the public.

PROJECT ECONOMICS

56. In determining whether a proposed project will be best adapted to a comprehensive plan for developing a waterway for beneficial public purposes, the Commission considers a number of public interest factors, including the economic benefit of the project power.

57. Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in *Mead Corp.*,²⁴ the Commission employs an analysis that uses current costs to compare the costs of the project and likely alternative power, with no forecasts concerning potential future inflation, escalation, or deflation beyond the license issuance date. The basic purpose of the Commission's economic analysis is to provide a general estimate of the potential power benefits and the costs of a project, and of

²⁴ 72 FERC ¶ 61,027 (1995).

reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

58. As proposed by Flambeau, the annual cost of the project would be about \$90,770 (42.96 mills/kWh). The annual power value,²⁵ for the estimated annual generation of 2,113 MWh, would be \$90,230 (42.70 mills/kWh). To determine whether the proposed project is currently economically beneficial, staff subtracts the project's cost from the value of the power the project produces. The resulting annual net benefit would be -\$550 (-0.26 mills/kWh).

59. As proposed by Flambeau, with additional staff-recommended measures, the annual cost of the project would be about \$92,900 (47.04 mill/kWh). The annual power value, for the estimated annual generation of 1,975 MWh, would be \$84,330 (42.70 mills/kWh). The resulting annual net benefit would be -\$8,570 (-4.34 mills/kWh).

60. If licensed as proposed by Flambeau, with additional staff-recommended measures and the mandatory conditions, the Winter Project would produce an average of 1,960 MWh of energy annually at a cost of about \$118,140 or 60.27 mills/kWh. The annual value of the project's power would be about \$83,690 (42.70 mills/kWh). The resulting annual net benefit would be -\$34,450 (-17.57 mills/kWh).

61. In considering public interest factors, the Commission takes into account that hydroelectric projects offer unique operational benefits to the electric utility system (ancillary service benefits). These benefits include their capacity to provide an almost instantaneous load-following response to dampen voltage and frequency instability on the transmission system, system-power-factor-correction through condensing operations, and a source of power available to help in quickly putting fossil-fuel based generating stations back on line following a major utility system or regional blackout.

62. Although our analysis shows that the project as licensed herein would cost more to operate than our estimated cost of alternative power, it is the applicant who must decide whether to accept this license and any financial risk that entails.

63. Although staff does not explicitly account for the effects inflation may have on the

²⁵ Our estimate of the cost of alternative power is based on the Energy Information Administration's (EIA) reference case estimate of average real fossil fuel costs for electric utilities, as published by EIA in their Annual Energy Outlook for 2004 and its supplemental data on the EIA Internet Homepage.

future cost of electricity, the fact that hydropower generation is relatively insensitive to inflation compared to fossil-fueled generators is an important economic consideration for power producers and the consumers they serve. This is one reason project economics is only one of the many public interest factors the Commission considers in determining whether or not, and under conditions, to issue a license.

COMPREHENSIVE DEVELOPMENT

64. Sections 4(e) and 10(a) of the FPA²⁶ require the Commission to give equal consideration to power development purposes and to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of fish and wildlife, the protection of recreational opportunities, and the preservation of other aspects of environmental quality. Any license issued shall be such as in the Commission's judgment would be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

65. Based on my independent review and evaluation of the Winter Project, mandatory conditions from the resource agencies and recommendations from other stakeholders, and the no-action alternative, as documented in the EA, I have selected the staff-recommended alternative for the Winter Project, including the WQC and 4(e) conditions from the agencies because they are mandatory, and find that it is best adapted to a comprehensive plan for improving or developing the East Fork of the Chippewa River.

66. I selected this alternative because: (1) issuance of a new license would serve to maintain a beneficial, dependable, and inexpensive source of electric energy; (2) the required environmental measures would protect and enhance fish and wildlife resources, water quality, recreational resources and historic properties; and (3) the 600 kW of electric energy generated from renewable resources would continue to offset the use of fossil-fueled, steam-electric generating plants, thereby conserving nonrenewable resources and reducing atmospheric pollution.

²⁶ 16 U.S.C. §§ 797(e) and 803(a)(1).

LICENSE TERM

67. Section 15(e) of the FPA,²⁷ provides that any new license issued shall be for a term that the Commission determines to be in the public interest, but not less than 30 years or more than 50 years. The Commission's general policy is to establish 30-year terms for projects with little or no redevelopment, new construction, new capacity, or environmental mitigation and enhancement measures; 40-year terms for projects with a moderate amount of such activities; and 50-year terms for projects with extensive measures.²⁸

68. This license authorizes a moderate amount of new environmental enhancement measures. Therefore, this license is being issued for a term of 40 years.

The Director orders:

(A) This license is issued to Flambeau Hydro LLC (licensee), effective the first day of the month in which this order is issued, for a period of 40 years, to operate and maintain the Winter Project. This license is subject to the terms and conditions of the FPA, which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, enclosed by the project boundary specified in the project boundary discussion of this order:

(2) Project works consisting of: (1) a 14-foot-high, 140-foot-long concrete stoplog diversion dam; (2) a 49.6-acre reservoir with a normal storage capacity of 165 acre-feet, at a normal pool elevation of 1,367.7 feet mean sea level (msl); (3) a 2,100-

²⁷ 16 U.S.C. § 808(e).

²⁸ See Consumers Power Company, 68 FERC ¶ 61,077 at 61,383-84 (1994).

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foot-long power canal; (4) an 18-foot-wide concrete intake structure; (5) two 5.5-foot-diameter, 78-foot-long steel penstocks; (6) a powerhouse containing two generating units with a combined capacity of 600 kW; (7) a 700-foot-long tailrace; (8) a 70-foot-long underground transmission line; and (9) appurtenant facilities.

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

Exhibit A: Pages A-1 and A-2 filed on November 26, 1999.

Exhibit F: The following Exhibit F drawings filed November 26, 1999.

<u>Exhibit F Drawings</u>	<u>FERC No. 2064-</u>	<u>Description</u>
Sheet 1	1001	General Plan
Sheet 2	1002	Diversion Structure Plan
Sheet 3	1003	Diversion Structure Plan and Profile
Sheet 4	1004	Diversion Structure Pier Section
Sheet 5	1005	Powerhouse and Intake Plans and Sections

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

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

(D) The following sections of the FPA are waived and excluded from the license for this minor project:

Section 4(b), except the second sentence; section 4(e), insofar as it relates to approval of plans by the Chief of Engineers and the Secretary of the Army; section 6, insofar as it relates to public notice and to the acceptance and expression in the license of terms and conditions of the Act that are waived here; section 10(c), insofar as it relate to depreciation reserves ; sections 10(d);10(f); 14, except insofar as the power of condemnation is reserved; and sections 15; 16; 19; 20; and 22.

(E) This license is subject to the conditions of the water quality certification issued by the Wisconsin Department of Natural Resources pursuant to Section 401(a) of the Clean Water Act, as those conditions are set forth in Appendix A to this order.

(F) This license is subject to the conditions submitted by the Forest Service under section 4(e) of the Federal Power Act; as those conditions are set forth in Appendix B to this order to the extent those conditions apply to project lands and facilities located within the Chequamegon-Nicolet National Forest.

(G) This license is subject to the articles set forth in Form L-16 (October 1975), entitled "Terms and Conditions of License for Constructed Minor Project Affecting Lands of the United States" (see 54 FPC 1799 et seq.), and the following additional articles:

Article 201. The licensee shall pay the United States the following annual charges:

(a) For the purposes of reimbursing the United States for the Commission's administrative costs, pursuant to Part I of the Federal Power Act, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time. The authorized installed capacity for that purpose is 600 kilowatts. Under the regulations currently in effect, projects with authorized installed capacity of less than or equal to 1,500 kW will not be assessed an annual charge.

(b) Recompensing the United States for the use, occupancy and enjoyment of 26.0 acres of its lands, other than for transmission line right-of-way.

Article 202. *Exhibit Drawings.* Within 45 days of license issuance, the licensee shall file the approved exhibit drawings in aperture card and electronic file formats.

a) Three sets of the approved exhibit drawings shall be reproduced on silver or

gelatin 35mm microfilm. All microfilm shall be mounted on type D (3-1/4" X 7-3/8") aperture cards. Prior to microfilming, the FERC Project Drawing Number (i.e., P-1234-#### through P-1234-####) shall be shown in the margin below the title block of the approved drawing. After mounting, the FERC Drawing Number shall be typed on the upper right corner of each aperture card. Additionally, the Project Number, FERC Exhibit (i.e., F-1, etc.), Drawing Title, and date of this license shall be typed on the upper left corner of each aperture card.

Two of the sets of aperture cards shall be filed with the Secretary of the Commission, ATTN: OEP/DHAC. The third set shall be filed with the Commission's Division of Dam Safety and Inspections Chicago Regional Office.

b) The licensee shall file two separate sets of exhibit drawings in electronic raster format with the Secretary of the Commission, ATTN: OEP/DHAC. A third set shall be filed with the Commission's Division of Dam Safety and Inspections Chicago Regional Office. Exhibit F drawings must be identified as critical energy infrastructure information (CEII) material under 18 CFR §388.113(c). Each drawing must be a separate electronic file, and the file name shall include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this license, and file extension in the following format [P-1234-####, F-1, Description, MM-DD-YYYY.TIF]. Electronic drawings shall meet the following format specification:

IMAGERY - black & white raster file
FILE TYPE – Tagged Image File Format, (TIFF) CCITT Group 4
RESOLUTION – 300 dpi desired, (200 dpi min)
DRAWING SIZE FORMAT – 24" X 36" (min), 28" X 40" (max)
FILE SIZE – less than 1 MB desired

Article 203. Exhibit G Drawings. Within 90 days of license issuance, the licensee shall file, for Commission approval, revised Exhibit G drawings that include the shoreline buffer zone required by condition O in Appendix A of this order, enclosing all the principal project works necessary for operation and maintenance of the project within the project boundary line, including the entire 49.6 acre project reservoir as indicated on Exhibit G, Figure G-2 filed on August 2, 2004. The project boundary data shall be provided in a geo-referenced electronic format, having three control points with latitude and longitude or state plane coordinates, and stamped by a Registered Land Surveyor pursuant to 18 CFR sections 4.39 and 4.41.

Article 204. Headwater Benefits. If the licensee's project was directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the original license (including extensions of that term by annual licenses), and if those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the licensee shall reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed, in the same manner as for benefits received during the term of this new license.

Article 401. Commission Approval and Reporting.

(a) Requirement to File Plans for Commission Approval

The Wisconsin Department of Natural Resources (Wisconsin DNR) WQC and Forest Service 4(e) conditions (Appendix A and B, respectively) require the licensee to operate the project with specific requirements, develop plans, and implement programs and report the results of monitoring studies without prior Commission approval. The plans listed below do not include prior Commission approval within the conditions themselves, but now shall also be submitted to the Commission for approval.

WQC Condition No.	4(e) Condition No.	Plan or Name	Due Date
H		Outage response plan	Within 6 months of license issuance
J	12	Fish passage plan	Within 1 year of license issuance
M		Drawdown management plan	60 days in advance of all non-emergency reservoir drawdowns
	15	Run-of-river operation plan	Within 1 year of license issuance
T		Hazardous Substance Plan	Within 1 year of license issuance

(b) Requirements to File Documentation of Completion

The license shall also file with the Commission documentation of completion of the following activities.

WQC Condition No.	4(e) Condition No.	Activity	Due Date
D		Notification of temporary modification of reservoir level	Within 5 days of each incident
E	17	Run-of-river compliance demonstration records	Annually by December 31
G	17	Minimum flow compliance demonstration records	Annually by December 31
K	13	Trash rack aquatic species collection report	Twice annually by July 1 and December 31
P		Purple loosestrife inspection report	Annually by December 31
Q		Erosion monitoring report	Annually by December 31
W		Annual operational compliance reports for 3 year test period	Annually by December 31
	8	Recreation Facilities	Within 6 months of license issuance

For each plan, the licensee shall submit to the Commission documentation of its consultation with the Wisconsin DNR and Forest Service, copies of comments and recommendations made in connection with the plan or report, and a description of how the plan or report accommodates the comments or recommendations. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to make changes to any plan or report. Upon Commission approval, the plan or report becomes a requirement of the license, and the

licensee shall implement the plans or report or changes in project operations or facilities, including any changes required by the Commission.

Article 402. *Reservation of Authority-Fishways.* Authority is reserved by the Commission to require the licensee to construct, operate, and maintain, or to provide for construction, operation, and maintenance of, such fish passage facilities as may be prescribed by the Secretary of the Interior under section 18 of the FPA.

Article 403. *Reservoir Drawdown Plan.* Within six months of license issuance, the licensee shall file for Commission approval a plan for emergency and planned drawdowns. The plan shall be prepared after consultation with the Wisconsin Department of Natural Resources and the U.S. Fish and Wildlife Service.

The reservoir drawdown plan shall include considerations to protect environmental resources during scheduled and emergency drawdowns of the project reservoir. The plan shall include, at a minimum, the timing, duration, and rate of drawdown and measures to minimize effects on water quality, recreation, and fish and wildlife resources.

The licensee shall include with the reservoir drawdown plan documentation of agency consultation, including copies of agency comments and recommendations on the draft plan, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations, before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. The reservoir drawdown plan shall not be implemented until the licensee is notified that the plan is approved. Upon approval, the licensee shall implement the plan according to the approved schedule, including any changes required by the Commission.

Article 404. *Land and Wildlife Management Plan.* Within six months of license issuance, the licensee shall file for Commission approval a plan to manage land and wildlife at the project. The plan shall be prepared after consultation with the Wisconsin Department of Natural Resources (Wisconsin DNR), the U.S. Forest Service, and the U.S. Fish and Wildlife Service (FWS). Measures to protect threatened and endangered species (i.e., bald eagle, gray wolf) at the project, as well as other wildlife habitat of concern, shall be included in the land and wildlife management plan. In addition, the plan shall

include guidelines for the managing vegetation, habitat, and ground-disturbing activities in accordance with condition 10 in appendix B of this license, and shall be consistent with the bald eagle and gray wolf management guidelines of the FWS, Forest Service, and Wisconsin DNR.

The plan shall include, at a minimum, the following:

1. procedures for obtaining and documenting bald eagle nesting activity and the presence of gray wolves on an annual basis, and for maintaining the information on project maps for use when planning land disturbing activities such as vegetation control or recreation facility development;
2. consultation with the Wisconsin DNR, Forest Service, and FWS prior to conducting land disturbing activities that could affect any of the threatened and endangered species using project land;
3. measures to protect Regional Forester Sensitive Species and Management Indicator Species; and
4. measures to control erosion from trails, parking lots and shoreline areas; and annual consultation with the resource agencies to allow for periodic management plan updates and to obtain agency input regarding proposed management decisions.

The licensee shall include with the land and wildlife management plan documentation of agency consultation, including copies of agency comments and recommendations on the draft plan, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations, before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. The land and wildlife management plan shall not be implemented until the licensee is notified that the plan is approved. Upon approval, the licensee shall implement the plan according to the approved schedule, including any changes required by the Commission.

Article 405. Woody Debris Management Plan. Within six months of license issuance, the licensee shall file for Commission approval a plan to pass woody debris below the project according to condition L in Appendix A of this order and condition 11 in appendix B of this order). The plan shall be prepared after consultation with the Wisconsin Department of Natural Resources and the U.S. Forest Service and specify the frequency and method for woody debris management.

The licensee shall include with the woody debris management plan documentation of agency consultation, including copies of agency comments and recommendations on the draft plan, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations, before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. The woody debris management plan shall not be implemented until the licensee is notified that the plan is approved. Upon approval, the licensee shall implement the plan according to the approved schedule, including any changes required by the Commission.

Article 406. Programmatic Agreement. Within one year of license issuance, the licensee shall file with the Commission an historic properties management plan (HPMP) for the project, prepared in accordance with Forest Service 4(e) condition number 9 and the "Programmatic Agreement Among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, and the State of Wisconsin, State Historic Preservation Officer, and the State of Michigan, State Historic Preservation Officer, For Managing Historic Properties That May Be Affected By New And Amended Licenses Issuing For The Continued Operation Of Existing Hydroelectric Projects in the State of Wisconsin and Adjacent Portions Of The State of Michigan", executed on December 30, 1993. The HPMP shall be developed in consultation with the Wisconsin State Historic Preservation Officer (SHPO), the Lac Courte Oreilles Band of the Lake Superior Chippewa, the Red Cliff Band of the Lake Superior Chippewa, Bad River Band of the Lake Superior Chippewa, St. Croix Band of the Lake Superior Chippewa, and the Lac Du Flambeau Band of the Lake Superior Band of the Chippewa. In the event that the Programmatic Agreement (PA) is terminated, the licensee shall implement the provisions of the HPMP. The Commission reserves the authority to require changes to the HPMP at any time during the term of the license. If the PA is terminated prior to SHPO approval of the HPMP, the licensee shall obtain approval before engaging in any ground-disturbing

activities or taking any other action that may affect any historic properties within the project Area of Potential Effect.

Article 407. Use and Occupancy. (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the use and occupancies, for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The types of use and occupancy of project lands and waters for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 water craft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the reservoir shoreline. To implement this paragraph (b),

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

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

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 water craft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved exhibit R or approved report on recreational resources of an exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is 5 acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 60 days before conveying any interest in project lands under this paragraph (d), the licensee must

file a letter with the Director, Office of Energy Projects, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

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

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

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

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

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

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G or K drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this

article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance; flowage; recreation; public access; protection of environmental resources; and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised exhibit G or K drawings would be filed for approval for other purposes.

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

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

(I) This order is issued under authority delegated to the Director and is final unless a request for rehearing is filed within 30 days from the date of its issuance, as provided in Section 313(a) of the FPA. The filing of a request for rehearing does not operate as a stay of the effective date of this license or of any other date specified in this order, except as specifically ordered by the Commission. The licensee's failure to file a request for rehearing of this order shall constitute acceptance of this license.

J. Mark Robinson
Director
Office of Energy Projects

APPENDIX A

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
CERTIFICATION UNDER SECTION 401 OF THE
FEDERAL CLEAN WATER ACT

For the protection of water quality, fish, and wildlife resources in the East Fork Chippewa River.

- A. The licensee shall comply with all federal, state, and local permit requirements.
- B. The licensee shall meet the most current water quality standards adopted under s. 281.15, Wis. Stats. and 33 USC 1313, as well as any revised water quality standards that may be adopted over the term of the license.
- C. The licensee shall operate the Winter Hydroelectric Project in a run-of-river mode. The licensee shall act at all times to minimize fluctuation of the reservoir surface elevation by maintaining a discharge from the Project so that, at any point in time, flows, as measured immediately downstream from the confluence of the tailrace and the bypassed channel, approximate the sum of inflows to the project reservoir. Project operation may be temporarily modified if required by operating emergencies beyond the licensee's control or for short periods with the Department's approval. If project operation is temporarily modified due to circumstances beyond the licensee's control, the licensee must make all reasonable attempts to return to authorized operation as soon as possible.
- D. The licensee shall maintain a target reservoir elevation of 1367.7 ± 0.3 feet mean sea level (MSL) at all times, except as authorized in Paragraph J below. The licensee shall act at all times to minimize fluctuations in headwater elevation, and the allowable range of reservoir level should not be used on a daily basis. If the reservoir elevation is temporarily modified due to uncontrollable circumstances, the licensee shall notify the Department's office in Park Falls, Wisconsin as soon as possible, but no later than 5 days after each incident.
- E. The licensee shall demonstrate compliance with the requirements in Paragraphs C and D in the following manner. The licensee shall install and maintain automatic water level sensors that continuously measure and record headwater and tailwater elevation. The licensee shall also maintain staff gauges that are visible to the public in the

impoundment and tailwaters along with a daily log record of project operation. Operators should record in the project log daily staff gauge readings, generation, flow releases through the powerhouse and spillway updated whenever changes are made, the daily minimum and maximum discharge through the project as calculated from accurate measurements of gate openings and the ratings curves for all outlets, comments to explain circumstances for equipment adjustments (e.g. snow melt, heavy precipitation, etc.), and a detailed description of the duration and circumstances of unexpected outages that interrupt flow through the turbines. All project log records, including comments, should be keypunched into electronic spreadsheet format. The electronic data should be permanently archived and provided to the resource agencies upon request.

Performance standards to demonstrate compliance with run-of-river operation will follow a phased approach, first by using operational data (i.e. headwater elevation, tailwater elevation, generation, tailrace discharge, spillway discharge) and descriptive definitions, then if necessary, by comparing inflow and discharge measurements from gage stations. The objective of run-of-river operation is to maintain a stable reservoir elevation and to match discharge as closely as possible to inflow at each project. In managing reservoir levels operators should strive to minimize variations from the target elevation within the allowable range. The allowable band of ± 0.3 feet around the target reservoir levels should not be used on a daily basis. Similarly, under run-of-river operation, changes in discharge through the turbines and spillway should follow the rate of changing inflow. Operators should adjust turbine and gate settings to achieve smooth transitions when inflow increases and decreases. For manually operated projects like this one, small adjustments made more often are generally preferred over larger adjustments made less frequently. Minimizing the percent change in discharge during periods of stable inflow is also important. Cycling a turbine on and off in response to changing reservoir level would not meet the Department's expectations for run-of-river operation at these projects. Because individual turbines can pass a substantial proportion of the streamflow in the system, cycling a unit on and off would cause unacceptable fluctuations in discharge. Run-of-river operation that closely mimics the natural hydrograph will minimize adverse impacts of project operations on aquatic resources and recreation.

If the Department determines, at the end of the 3-year test period required by Condition W below, that the licensee has not documented its ability to meet the descriptive compliance standard outlined in the preceding paragraph, and that the licensee has not proposed acceptable alternatives to achieve the compliance standard, then the licensee

shall consult with the U. S. Geological Survey (USGS) to install and maintain two USGS-type gages in the East Fork Chippewa River, one upstream of the project reservoir and one in the riverine tailwaters immediately downstream from the confluence of the tailrace and bypassed channel. The gages must be operational within one year from the end of the 3-year test period. The gages shall be equipped with the "telemark" type system, with sufficient memory to allow instantaneous and short-term data retrieval via phone lines or the Internet. Discharge from the Winter Hydro Project shall differ no more than $\pm 10\%$ from inflow to the Project reservoir in concurrent measurements after appropriate corrections for travel time, gains and losses between the gages, and measurement error. Appropriate corrections shall be determined in consultation with the Department and USGS within one year following activation of the new gages.

- F. The licensee shall discharge to the bypassed channel the following instantaneous minimum flows, or inflow, whichever is less. Minimum flows shall be released through an orifice near the sill of the diversion dam, and the dimensions of the orifice shall be calculated from an accepted hydraulic formula, based on the lowest reservoir elevation in the authorized range. The licensee shall inspect and maintain the orifice daily to ensure that it remains unobstructed and free of debris.

Period	Discharge (cfs)
May 1 to May 31	50
June 1	40
June 2 to April 30	30

These ramping rates may be modified upon implementation of the fish passage plan as required in Condition J.

The licensee shall discharge from the powerhouse to the tailrace an instantaneous minimum flow of 5 cfs. If inflow to the project reservoir is less than 35 cfs, then ten percent of inflow shall be discharged to the tailrace and the remainder to the bypassed channel below the diversion dam.

- G. The licensee shall demonstrate compliance with the requirements in Paragraph F in the following manner. Minimum flow to the tailrace, as determined from wicket gate opening and rating curve, or from the dimensions of a debris-free orifice and reservoir elevation, shall be documented in the project log daily. The licensee shall demonstrate

compliance with discharge requirements to the bypassed channel by one of the following options, depending on whether the licensee opts to include leakage and spillage as part of the minimum flow.

Option 1—If the licensee elects to include leakage and spillage as part of the minimum flow, then within one year of license issuance the licensee shall install and operate a streamflow gauging station in the bypass channel. The station shall include a staff gage, a stilling well, and a water level recorder capable of recording stage data at hourly or shorter intervals. The design and location of the gauging station will be subject to Department approval. The licensee shall develop an accurate stage-discharge relationship for the gauging station and provide an annual record of discharge in the bypassed channel to the Department by December 31 each year or within two weeks upon request.

Option 2—If the licensee opts to exclude leakage and spillage from the minimum flow, the licensee shall record the opening of the orifice(s) at the diversion dam at least daily and calculate discharge to the bypassed channel, based on hourly reservoir elevation measurements and an accurate rating curve. The licensee shall develop an accurate rating curve for the orifice(s) and provide an annual record of discharge to the Department by December 31 each year or within two weeks upon request. The licensee shall obtain Department approval for the design, placement, and dimensions of the orifice(s) prior to construction and operation.

- H. Within six months of license issuance, the licensee shall prepare an Outage Response Plan in consultation with the Department to ensure that discharge is promptly restored following unexpected outages that interrupt flow through the turbines.
- I. The licensee shall maintain all operational monitoring equipment in serviceable condition and calibrate, repair, or replace it as necessary. The licensee shall retain all electronic and paper records of project operations for the life of the project. The licensee shall allow the Department to access the project and its operational records at any time to monitor compliance with certification conditions.
- J. The licensee shall provide safe and effective upstream and downstream passage for aquatic life annually in spring and fall. The goal is to pass as many aquatic organisms as possible. Target fish species include lake sturgeon, walleyes, native redhorse species, smallmouth bass, and channel catfish. Passage will be provided at the diversion dam by temporarily raising gates and removing stoplogs down to the sill to

allow the majority of flow to run through the natural channel. Passage will occur in spring from April 15th to May 31st. Passage in fall will occur from September 15th to Oct 1st.

Within one year of license issuance, the licensee shall submit to the Department for approval a fish passage plan prepared in consultation with the Department and other resource agencies, including the USDA Forest Service and the U.S. Fish and Wildlife Service. The plan shall describe the details for providing fish passage by the open bay alternative, including an implementation schedule, reservoir drawdown notification, ramping rates for reservoir level and discharge, gate and stoplog management, and minimum flows during reservoir refill. To determine how many bays should be opened for optimal passage under various flow conditions, the plan shall incorporate information from the report *Evaluation of Fish Passage via the Open Bay Alternative, Winter Hydroelectric Project, FERC No. 2064*. The plan shall include a monitoring component to evaluate the effectiveness of this condition in providing passage for target species. The licensee shall cooperate in monitoring activities by providing reasonable assistance and participation, such as visual observations, equipment maintenance, and in-kind services. The plan shall also include provisions for reasonable modifications that are necessary to achieve objectives for passage. Based on monitoring results, necessary measures for adaptive management shall be developed by consensus among the licensee, the Department, and other resource agencies.

At any time during the term of the license, the licensee may submit to the Department for approval, detailed plans and design drawings for practical alternatives that provide fish passage. Preferred alternatives include those which promote multiple objectives, including power generation, year round fish passage, and reliable delivery of minimum flow to the bypassed channel. Alternative plans for fish passage must be at least as effective as the open bay concept. Alternative plans should be developed in consultation with the Department, and the plan should include a monitoring component to evaluate the effectiveness of the alternative design with cooperation from the licensee as describe above. Until the Department approves and the licensee implements an alternative plan, the licensee shall continue to provide fish passage by temporarily opening the dam.

- K. The Licensee shall collect detailed information on all aquatic species (fish, reptiles, amphibians, waterfowl, furbearers, etc.) found on the trash rack and in the tailrace pool immediately below the powerhouse. Records should include species, size

(length), date, time, and general condition of the organism (i.e. alive, injured, freshly dead, or decomposed). The trash rack and tailrace pool should be visually inspected at least three times weekly from April 15 to June 15 and September 15 to November 15 and at least weekly in the remaining time. The licensee shall compile all records in a summary report submitted to the Department by December 31 each year.

- L. To the extent practicable the licensee shall pass downstream all woody and organic debris that accumulates near the diversion dam, canal, and trash racks. Large woody debris found near the diversion dam shall be conveyed through or over the diversion dam to the bypassed channel. To prevent navigational obstruction at the canoe portage landing, large wood should not be conveyed to the tailrace. For the purposes of this condition, large wood is defined as any natural woody material greater than 3 feet long by 4 inches in diameter. Smaller wood and other organic material can be deposited either in the tailrace or in the bypassed channel at the bridge. Wood and organic debris should be conveyed downstream on a regular basis similar to the rate of accumulation to avoid depositing large volumes at one time. All trash and other synthetic materials shall be removed before organic material is transported downstream, and all trash shall be disposed by approved methods.
- M. The licensee shall submit to the Department a reservoir drawdown management plan at least 60 days in advance of all non-emergency reservoir drawdowns scheduled for any activity which requires that the reservoir elevation is lowered below 1367.0 feet MSL, including maintenance, inspection, renovation, resource management, etc. Excluded from this requirement are reservoir drawdowns resulting from the requirements in Paragraph J to facilitate fish passage. The drawdown management plan shall include detailed information on the objectives of the drawdown, seasonal timing, scheduled dates for drawdown and refill, drawdown and refill rates, minimum pool elevation, duration at drawdown level, minimum discharge during reservoir refill, agency and public notification procedures, and a discussion of the alternatives that the licensee evaluated to avoid a reservoir drawdown.
- N. The licensee shall monitor water quality of the reservoir three times annually within 3 weeks of ice-out and in July and August. A profile of dissolved oxygen concentration and temperature shall be recorded at one-meter intervals from surface to bottom in the deepest portion of the reservoir. Water samples should be collected at a depth of 1.0 meter at the same site. Secchi disk depth should be measured with each sample collection, and water samples should be analyzed for total phosphorus, chlorophyll a, and true color (Pt-Co units) using procedures approved by the U.S. Environmental

Protection Agency. The limit of detection for the total phosphorus analysis should not exceed 7 micrograms per liter.

- O. The licensee shall establish a shoreline buffer extending at least 200 feet landward from the ordinary high water elevation on all licensee-owned lands adjacent to the reservoir, tailrace, and bypassed channel at the Winter Hydroelectric Project. The primary objective of the shoreland buffer is to protect water quality, aesthetics, and ecological functions of the river corridor. The recommended and preferred management approach is to maintain the buffer zones in a natural state, leave the land wild, and allow natural vegetative succession to determine the composition of the plant community. Limited management activity can take place for control of invasive species. No timber harvest should occur within the buffer zone, and any trees that fall into project waters should be anchored to shore and left in the water, unless they conflict with project or recreational uses. Recreational activities, which do not conflict with those objectives, should be permitted within the buffer zone.
- P. The licensee shall annually inspect the entire shoreline of the project waters for purple loosestrife (*Lythrum salicaria*) and map its distribution and relative abundance. Inspections should be scheduled in August while plants are flowering so purple loosestrife can be readily identified. The licensee should submit a report of the monitoring results to the Department by December 31 each year. If the Department deems it necessary to initiate or expand efforts to control purple loosestrife in the East Fork Chippewa River, the licensee shall provide reasonable cooperation in those efforts.
- Q. The licensee shall monitor the shoreline of the project reservoir, power canal, tailrace, and bypassed channel for erosion, and if necessary, prepare an erosion control plan in consultation with the Department. Inspections should be conducted at three-year intervals in spring before vegetation develops, so eroded areas can be readily identified. The licensee shall submit to the Department a report of monitoring results by December 31 in the year of each inspection.
- R. Before engaging in any activity that may introduce zebra mussels into project waters, the licensee shall provide or demand (through contract clause or other binding agreement) evidence of effective decontamination of barges, tools, boats, construction equipment, or other items capable of transferring water containing larval or adult zebra mussels. Effective decontamination may include steam-cleaning, chemical treatment, physical treatment, or other suitable procedures.

- S. To continue the current practice of introducing cinders to seal leakage at project structures, the licensee must request and obtain a conditional grant of exemption to permit beneficial use of low hazard substances under Section 289.43(8) of Wisconsin Statutes. Within six months of license issuance, the licensee should initiate consultations with staff in the Waste Management Program at the Department's Service Center in Superior, Wisconsin on procedures to request an exemption from regulation. The licensee shall not deposit into the East Fork Chippewa River any deleterious substances and materials, such as plastic sheeting, carpeting, carpet padding, weighted feed sacks, and manure, for sealing leakage or for any other purpose.
- T. Within one year of license issuance, the licensee shall prepare a Hazardous Substance Spill Prevention, Control, and Countermeasures Plan for the Winter Hydroelectric Station.
- U. The licensee shall cooperate with the Department to implement reasonable resource management practices, including but not limited to measures for controlling exotic populations, restoring endangered or threatened populations, and protecting or enhancing water quality, fish and wildlife populations, and their habitat.
- V. The licensee shall notify the Department and the public at least two weeks in advance of any scheduled activity that will substantially change reservoir elevation or discharge from normal project operations, including the full-range gate tests that FERC requires and the provisions in Paragraph J to facilitate fish passage.
- W. A three-year test period shall be used to determine the licensee's ability to maintain compliance with the above conditions. The licensee shall prepare and submit annual reports to the Department documenting its ability to maintain operational compliance standards and, if necessary, its proposals to achieve the compliance standards.
- X. At least 60 days before undertaking any proposed change to the project or its operation, which would have a significant or material effect on the findings, conclusions, or conditions of this certification, the licensee shall submit the proposal to the Department for review and written approval.
- Y. The Department may request, at any time, that FERC consider modifications to the license to assure compliance with Wisconsin Water Quality Standards.

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- Z. On the date of submittal to the Commission, the licensee shall provide to the Department a complete copy of any application to transfer this license, including all attachments and schedules.

APPENDIX B

Forest Service Final 4(e) Conditions

Condition No. 1 – Compliance with USDA Regulations and Other Laws:

The Licensee shall comply with the regulations of the Department of Agriculture and all Federal, State, county, and municipal laws, ordinances, or regulations in regard to the area or operations covered by this license, to the extent federal law does not preempt ordinances or regulations.

Condition No. 2 - Changes to As-Licensed Project Works and Operation on National Forest System lands:

The Licensee shall consult with the USDA Forest Service regarding any proposed changes to as-licensed project works or operations on National Forest System (NFS) lands or directly impacting NPS lands. The Licensee shall not commence or implement any changes to as-licensed project works or operations on National Forest System lands without written approval from the USDA Forest Service.

Condition No. 3 - Consultation:

At least once during each calendar year after licensing, the Licensee shall consult with the Forest Service with regard to measures needed to ensure protection and utilization of the National Forest System lands and resources (e.g. changes in laws, regulations, sensitive species, noxious weeds, etc.) affected by the Project. Within 60 days following such consultation, the Licensee shall file with the Commission evidence of the consultation with any recommendations made by the Forest Service. The Forest Service reserves the right, after notice and opportunity for comment and administrative review, to require changes in the project and its operation through revision of the 4(e) conditions that require measures necessary to accomplish protection and utilization of National Forest lands and resources.

Condition No. 4 - Non-Hydropower related Activities within Project Boundaries.

The Forest Service reserves the right to use or permit others to use National Forest System lands within the FERC licensed project boundary for any purpose, provided such use does not interfere with the rights and privileges authorized by this license or the

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Federal Power Act.

Condition No. 5 – Maintenance of Improvements:

The Licensee shall maintain the improvements and premises on National Forest System lands to standards of repair, orderliness, neatness, sanitation, and safety. For example, trash, debris, unusable machinery, etc., will be disposed of separately; other materials will be stacked, stored neatly, or within buildings. Disposal will be at an approved existing location, except as otherwise agreed to by the Forest Service.

Condition No. 6 - Hazardous Substances Plan:

Within one year of license issuance, the Licensee shall file with Commission, a Hazardous Substances Plan (Plan) approved by the Forest Service for oil and hazardous substances storage, spill prevention and cleanup. At a minimum, the Plan shall:

- Outline the Licensee's procedures for reporting and responding to releases of hazardous substances, including names and phone numbers of all emergency response personnel and their assigned responsibilities,
- Require a cache of spill cleanup equipment, suitable to contain any spill from the project, be maintained in the project area,
- Require the Forest Service be immediately informed of the nature, time, date, location, and action taken for any spill affecting National Forest System lands and Licensee adjoining fee title property.

Condition No. 7 - Pesticide Use Restrictions Plan:

Pesticides may not be used to control undesirable woody and herbaceous vegetation, aquatic plants, insects, and rodents on National Forest System lands without the prior written approval of the Forest Service. The Licensee shall submit a request for approval of planned use of pesticides. The request must cover annual planned use and be updated as required by the Forest Service. The Licensee shall provide information essential for review in the form adequate for and made subject to the decision-making process required by the National Environmental Policy Act (NEPA) and the administrative appeal process specified. Exceptions to this schedule may be allowed only when unexpected outbreaks of pests require control measures that were not anticipated at the time the request was submitted. In such an instance, an emergency request and approval may be made subject to the decision-making process required by the National Environmental Policy Act

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(NEPA) and the administrative appeal process. On National Forest System lands the Licensee shall use only those materials registered by the U. S. Environmental Protection Agency for the specific purpose planned. The Licensee must strictly follow label instructions in the preparation and application of pesticides and disposal of excess materials and containers.

Condition No. 8 - Recreation Resources:

The Licensee shall provide and continuously maintain a simple landing dock at a safe location near the downstream end of the power canal, a simple landing area at a safe location near the upstream end of the tailrace, a trail between the two landings suitable for transportation of canoes and other boats customarily used on the river, and all appropriate reflectorized signage for the portage route and dock locations. The Licensee shall continue to provide for the fishing recreation opportunity at the junction of the tailrace and the bypass reach. The Licensee shall insure that any of its facilities that are open to the public meet minimum safety requirements - including the trail to the fishing spot. All trails shall be brushed on an annual basis and trash along the trail shall be picked up regularly.

The Licensee shall also provide and continuously maintain a public restroom facility, in compliance with the Americans with Disabilities Act of 1990, for the recreational users of the portage trail as well as for users of the existing fishing trail.

The Forest Service must approve any additional plans for recreational facilities activities on National Forest Lands subject to the NEPA process and the administrative appeal process. Plans could include modification, operation and/or updating of existing recreational facilities, including compliance with the Americans with Disabilities Act, and operation and maintenance of new or existing facilities.

Condition No. 9 – Heritage Resources Management Plan:

The Licensee shall immediately cease work in the area affected if, prior to or during ground-disturbing activities or as a result of project operations, items of potential cultural, historical, archeological, or paleontological value are reported or discovered, or a previously identified deposit of such items is disturbed on or immediately adjacent to National Forest System lands and Licensee fee title property. The Licensee shall then notify the Forest Service and shall not resume work on ground-disturbing activity until it receives written approval from the Forest Service.

If deemed necessary, the Forest Service may require the Licensee to perform recovery, excavation, and preservation of the site and its artifacts at the Licensee's expense through provisions of an Archaeological Resources Protection Act permit issued by the Forest Service. Also, if upon discovery of items of potential cultural historical, archeological, or paleontological value, or a previously identified deposit of such items, the Licensee shall complete a Heritage Resources Management Plan (HRMP) within 1 year. The HRMP shall be developed in consultation with Wisconsin SHPO, the Lac Courte Oreilles Band of the Lake Superior Chippewa, the Red Cliff Band of the Lake Superior Chippewa, Bad River Band of the Lake Superior Chippewa, St. Croix Band of the Lake Superior Chippewa, and the Lac Du Flambeau Band of the Lake Superior Band of the Chippewa. The HRMP shall be approved by the Forest Service and the Federal Energy Regulatory Commission (FERC). The HRMP will be incorporated into the FERC Programmatic Agreement by reference.

The HRMP, as appropriate, shall accurately define the area of potential effects, including effects of implementing Section 4(e) conditions, and take into account project effects on National Register properties; American Indian traditional cultural values; and Project impacts to archaeological properties on National Forest System lands. The HRMP shall also provide measures to mitigate the identified impacts, a monitoring program, and management protocols for the ongoing protection of archaeological properties.

The HRMP will include interpretation. At a minimum, the HRMP shall include an inventory of resources affected by the project or its operation with potential for interpretation (e.g., heritage resources, energy benefits); and delivery, i.e., target audience, message, and media.

Condition No. 10 – Vegetation, Habitat and Ground-disturbing Activities on National Forest System Lands;

Within one year of license issuance or at least 90 days prior to vegetation, habitat, and/or ground-disturbing activity, whichever comes first the Licensee shall file with the Commission a Vegetation, Habitat, and Ground-Disturbing Management Plan (Plan) that is approved by the Forest Service. The Plan shall be site specific and be prepared in consultation with the appropriate Federal and State resource agencies for all tree or vegetation removal, habitat, and/or ground-disturbing activities on, or effecting, National Forest System lands.

The Plan shall implement measures to prevent the Spread of non-native invasive species;

minimize erosion as well as sedimentation; protect, mitigate, or enhance terrestrial and fisheries habitat; and provide for adaptive management measures based on prescribed monitoring objectives over the life of the license. The Licensee shall not file any such plans with the Commission or commence any such activities without written approval from the USDA Forest Service.

At a minimum, and where relevant, the Plan shall include the following provisions:

- Notification to the Chequamegon-Nicolet National Forest before the Licensee begins any vegetation or ground disturbing work;
- The Licensee's plan shall comply with USDA Forest Service and Chequamegon-Nicolet National Forest sensitive species and non-native invasive species management guidelines and protocols, including prevention, control, and monitoring protocols;
- Identification of methods for prevention and control of non-native invasive species. Treatment of existing infestations of highest priority non-native invasive species shall be initiated immediately upon completion of appropriate National Environmental Policy Act (NEPA) documentation and approval of the Plan by the Commission;
- Notification to the Chequamegon-Nicolet National Forest upon the Licensee finding new locations for any listed non-native invasive species and/or prior to any independent actions at non-native invasive species control efforts;
- Timing to establish vegetation of disturbed soils as soon as possible; Identification and prioritization of any erosion areas to be re-vegetated or rehabilitated; Procedures for identification of additional measures that the Licensee shall implement if monitoring reveals that re-vegetation and vegetation control is not successful or does not meet intended objectives;
- Disclosure of any temporary habitat and/or ground-disturbing measures the Licensee will use;
- A list of species to be used, planting location, and site preparation methods. Emphasis shall be to use native species and to follow the Forest's Land and Recourse Management Plan as well as the Wisconsin's Forestry Best Management practices for Water Quality,
- Identification of measures the Licensee will use to mitigate project effects on terrestrial and aquatic habitat including any identified habitat threats, as well as measures designed to enhance habitat, including restoration of wetland, riparian, and aquatic systems;
- Be updated to meet standards and guidelines that are applicable to the

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- Chequamegon-Nicolet National Forest;
- Be updated as new information is obtained in consultation with the agencies and submit the updated plan to the Forest Service and Commission for approval;
- A monitoring program to evaluate the effectiveness of re-vegetation, vegetation control and/or non-native invasive species control measures; and
- Identify a timeline for accomplishing plan objectives.

Condition No. 11 -Debris and Large Wood Management:

To the extent practicable the Licensee shall, within 30 days of license issuance, pass all woody and organic debris that collects near the project diversion dam, canal and trash racks. Large-woody debris found in the canal or near the diversion dam shall pass through or over the diversion dam to the downstream reach (Snaptail Rapids). Large wood that collects near the trash rack should be passed over the bridge (below Snaptail Rapids) and not in the tailwaters. This prevents build up of large wood near the portage landing in the tailwaters which may pose a navigation problem. Large wood is defined as anything greater than 3 feet in length by 4 inches in diameter. Other organic material can be deposited either in the tailwaters or in the downstream river reach. Materials need to be deposited on a regular basis similar to the rate of accumulation. This is to avoid stockpiling of the material and dumping in large volumes at one time. All human made trash shall be removed before organic material is passed downstream. Removed human made trash shall be disposed of in an appropriate refuse facility.

Condition No. 12 – Fish Passage:

In order to connect aquatic habitats, the licensee shall design, construct, operate and maintain safe and effective upstream and downstream fish passage for native fish species in the East Fork of the Chippewa River within 5 years of the date of license issuance. Within three years of issuance of the license, the licensee shall submit to the Commission for its approval, a fish passage plan, developed in consultation with the Forest Service, Wisconsin Department of Natural Resources, and US Fish & Wildlife Service. The plan shall include: (a) detailed design drawings for necessary facilities or a detailed description of a passage program to provide safe and effective upstream and downstream fish passage; (b) thresholds that define safe and effective fish passage, based on the best available technology emphasizing lake sturgeon and greater redhorse, as determined by the US Fish and Wildlife Service in cooperation with the Forest Service and Wisconsin Department of Natural Resources, (c) the operations and maintenance schedule; (d) anticipated passage effectiveness; (e) protocols for testing and monitoring the

effectiveness of the passage facilities or program; (f) a schedule for constructing the facilities or implementing the program; and (g) comment letters of the Forest Service, Wisconsin Department of Natural Resources, and US Fish & Wildlife Service on the proposed plan. The fish passage facilities or passage program shall operate and/or be implemented to coincide with the key upstream and downstream migration periods of the native fish species, especially accounting for migration periods of the lake sturgeon (*Acipenser fulvescens*) and greater redhorse (*Moxostoma valenciennesi*), and shall overlap with the flow release schedule targeting migration required in Condition No. 14. The Forest Service may file with the Commission, comments on the results of effectiveness monitoring required by this condition and Condition No. 13 and recommend to the Commission proposed changes to project facilities or operations to achieve passage effectiveness defined in the fish passage plan in order to adequately protect and utilize National Forest lands and resources.

Condition No. 13 – Turbine Mortality and Impingement:

The Licensee shall, within 30 days of license issuance, collect detailed information on all aquatic species (fish, turtles, waterfowl, etc) found on the trash rack and in the tailrace immediately below the powerhouse. To the extent possible information collected should include but is not limited to: species, size (length), date, time, and general condition of the organism (i.e. alive, fresh or heavily decomposed). Trash rack and pool should be checked at a minimum on a weekly basis. During peak fish movement periods, areas will be checked a minimum of three times a week. Unless directed otherwise by the Forest Service peak fish movement periods shall be defined as fall (mid September- mid November) and spring (late April - mid June). The Licensee shall provide reports by July 1 and Dec 31 of each year to the Forest Service and other Agencies (Wisconsin Department of Natural Resources and US Fish and Wildlife Service) that contain all information collected. The Forest Service reserves the right, to require changes in the project and its operation, as related to impingement and turbine mortality, through the revision of this 4(e) condition that whenever necessary for the adequate protection and utilization of National Forests lands and resources.

Condition No. 14 – Instream Flow Requirements:

During operation of the facilities authorized by this license, the Licensee shall maintain the following instantaneous minimum flows or the inflow, whichever is less, in the bypassed reach of the East Fort Chippewa River (known as Snaptail Rapids) below the diversion dam.

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Time Period

5/1-5/31 50 cfs

6/1 40cfs

6/2-4/30 30 cfs

Ramping rates as specified here may be modified upon implementation of the Fish Passage Plan as required in Condition No. 12 - Fish Passage.

During operation of the facilities authorized by this license, the Licensee shall maintain an instantaneous minimum flow of 5 cfs in the tailrace. If project inflow is less than 35 cfs, then ten percent will be allocated to the tailrace minimum flow and the remainder to the by-passed channel minimum flow (Snaptail Rapids) below the diversion dam.

Condition No. 15 – Reservoir and Run-of-River Operation Plan

Within one year of license issuance, the Licensee shall file with the Commission a Reservoir and Run-of-River Operation Plan that is approved by the Forest Service. The licensee shall operate in accordance to the plan provisions. At a minimum the Plan must address:

- How the reservoir is to be operated to maintain water levels within 0.3 feet of the normal pool elevation as specified in the project license, except as modified by implementation of the Fish Passage Plan,
- Procedures to assure that the hydroelectric facility is operated in a run-of-river mode,
- Procedures for drought conditions,
- Procedures when the hydroelectric facilities are shut clown to assure that flows below the project continue to approximate inflows,
- Procedures for operations during flood or emergency conditions,
- Procedures for operations during project maintenance, including reservoir drawdown and ramping rates,
- An implementation and maintenance schedule.

Reservoir operations may be temporarily modified if required by operating emergencies beyond the control of the Licensee. If reservoir operation is so modified, the Licensee shall notify the Commission and the agencies as soon as possible, but not later than 10 days after each incident.

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Condition No. 16 - Minimum Flow Bypass Device

The Licensee shall operate, and maintain an orifice at the sill level of the diversion dam to guarantee minimum stream flows in the bypassed reach, as specified in Condition No. 14. The orifice must be designed to maintain the prescribed flows. The orifice must be inspected daily to ensure it is clear of debris and flowing freely. Forest Service approval must be obtained for the design and operation of the orifice before use.

The Licensee shall file a report of the operational changes made to meet the flow requirements of Condition 14 by December 31, of each year for the preceding water year (October 1-September 30). The report must be filed with the Chequamegon-Nicolet National Forest and the Commission.

Condition No. 17 - Reservoir Elevation and Flow Monitoring:

The Licensee shall monitor and report hourly reservoir elevations, tailwater elevations, tailrace outflows, bypass channel outflows and project inflows. The Licensee shall file a report of these hourly values by December 31 of each year for the proceeding water year (October 1-September 30). The report will explain any deviations from the instream flows required by Condition No. 14 - Instream Flow Requirements, water level elevations required under Condition No. 15 - Reservoir and Run-of-River Operation Plan and measures taken to prevent future deviations.

Tailrace outflows can be calculated from headwater and tailwater elevations and records of project generation. Project inflows can be calculated from outflows plus change in reservoir storage. The Licensee shall provide the Forest Service with the reservoir elevation-storage curve in the annual report. The reservoir level monitoring must be capable of recording the full range of water surface elevations (i.e., down to the sill). The Licensee shall use one of the two following options for determining outflows down the bypass channel.

Option I for Bypass Channel Outflows: The Licensee shall install and operate a streamflow gauging station at a stable control section in the bypass channel a short distance downstream from the diversion dam. The station shall include a staff gage, stilling well and a water level recorder capable of recording at hourly (or shorter) intervals. An accurate stage-discharge curve shall be developed and maintained for the control section for use in calculating discharge from water level. The rating curve shall be

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provided to the Forest Service in the annual report. Forest Service approval must be obtained for the design and location of the gauging station prior to construction.

Option 2 for Bypass Channel Outflows: For the minimum flow, the Licensee shall record the opening of the orifice(s) at least once per day and calculate outflows from these openings and hourly head measurements (obtained from the hourly reservoir elevations). The Licensee shall verify and maintain an accurate rating curve for the orifice(s) and provide it to the Forest Service in the annual report. For spillage exceeding the minimum flow, the Licensee shall record gate openings each time they are changed and calculate outflow from these openings and hourly head measurements using commonly accepted hydraulic methods. This option does not measure leakage through the stoplogs, therefore, only flow through the orifice would demonstrate compliance with minimum flow requirements. Forest Service approval must be obtained for the design of the orifice(s) prior to construction or operation.

Notwithstanding the annual report, within 15-days of request, the Licensee shall provide the Forest Service with a report of water level information and project inflows and outflows. Real-time availability of water levels and streamflows via the Interact is preferred.