

163 FERC ¶ 62,139
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Wisconsin Public Service Corporation

Project No. 1940-029

ORDER ISSUING NEW LICENSE

(Issued May 31, 2018)

INTRODUCTION

1. On March 28, 2016, Wisconsin Public Service Corporation (Wisconsin Public Service) filed, pursuant to sections 4(e) and 15 of the Federal Power Act (FPA),¹ an application for a new license to continue operation and maintenance of the Tomahawk Hydroelectric Project No. 1940 (Tomahawk Project or project). The 2.6-megawatt (MW) project is located on the Wisconsin River, downstream of the City of Tomahawk in Lincoln County, Wisconsin.² The project does not occupy federal land.
2. As discussed below, this order issues a new license for the Tomahawk Project.

BACKGROUND

3. The Commission's predecessor, the Federal Power Commission, issued the original license for the Tomahawk Project on June 6, 1946, with an effective date of January 1, 1938, that expired on June 30, 1970.³ On March 30, 1948, the Federal Power Commission issued an order extending the term of the license, with an effective date of January 1, 1937, until December 31, 1986.⁴ The Commission issued a new license for

¹ 16 U.S.C. §§ 797(e) and 808 (2012).

² The Wisconsin River is a navigable waterway of the United States from its source, Lac Vieux Desert (located partly in Michigan and partly in Wisconsin), downstream to its junction with the Mississippi River near the City of Prairie du Chien, Wisconsin. *Wisconsin Public Service Corp. v. F.P.C.*, 147 F. 2d 743, 748 (7th Cir. 1945); cert. den. 325 U.S. 880 (1945). Therefore, section 23(b)(1) of the FPA, 16 U.S.C. §817(1) (2012), requires the project to be licensed.

³ *Wisconsin Public Service Corp.* 5 F.P.C. 548 (1946).

⁴ *Wisconsin Public Service Corp.* 7 F.P.C. 523 (1948).

the project on August 26, 1985, with an effective date of January 1, 1987, that expired on December 31, 2016.⁵ On June 18, 2009, the Commission issued an order extending the term of the license, which expired on April 1, 2018.⁶ Since then, Wisconsin Public Service has operated the project under an annual license pending the disposition of the new license application.

4. On March 1, 2017, the Commission issued a public notice that was published in the *Federal Register* accepting the application for filing, indicating the application was ready for environmental analysis, and setting April 30, 2017 as the deadline for filing motions to intervene, protests, comments, recommendations, preliminary terms and conditions, and preliminary fishway prescriptions.⁷ The Wisconsin Department of Natural Resources (Wisconsin DNR) filed a timely notice of intervention.⁸

5. No entities filed comments, recommendations, or preliminary terms and conditions.

6. Commission staff issued an environmental assessment (EA) on January 24, 2018, analyzing the effects of the proposed project and alternatives to it.⁹ The U.S. Environmental Protection Agency (EPA), Wisconsin Public Service, and River Alliance of Wisconsin (River Alliance) filed comments on the EA.

7. The intervention has been fully considered in determining whether, and under what conditions, to issue this license.

⁵ *Wisconsin Public Service Corp.*, 32 FERC ¶ 62,358 (1985).

⁶ *Wisconsin Public Service Corp.*, 127 FERC ¶ 62,219 (2009).

⁷ 82 Fed. Reg. 12,808 (March 7, 2017). The Commission's Rules of Practice and Procedure provide that if a filing deadline falls on a Saturday, Sunday, holiday, or other day when the Commission is closed for business, the filing deadline does not end until the close of business on the next business day. 18 C.F.R. § 385.2007(a)(2) (2017). Because the 60-day filing deadline fell on a Sunday (i.e., April 30, 2017), the filing deadline was extended until the close of business on Monday, May 1, 2017.

⁸ Under Rule 214(a) of the Commission's Rules of Practice and Procedure, Wisconsin DNR became a party to the proceeding upon timely filing of its notice of intervention. 18 C.F.R. § 385.214(a) (2017).

⁹ The EA also considered the effects of relicensing the Grandfather Falls Hydroelectric Project No. 1966 (Grandfather Falls Project).

PROJECT DESCRIPTION

A. Project Area

8. The Tomahawk Project is located on the Wisconsin River in Lincoln County, in north central Wisconsin. The Wisconsin River originates in Lac View Desert, a spring-fed lake on the border of Wisconsin and the Upper Peninsula of Michigan, and extends 430 miles south to where it joins the Mississippi River. The Wisconsin River has about 390 smaller tributaries and nine major tributaries: the Tomahawk, Rib, Eau Claire, Big Eau Claire, Yellow, Lemonweir, Baraboo, Pine, and Kickapoo Rivers.

B. Project Facilities

9. The Tomahawk Project includes a 27-foot-high, 2,968-foot-long integrated concrete and embankment dam that impounds a 2,773-acre reservoir (Lake Mohawksin) at a normal pond elevation of 1,435.5 feet National Geodetic Vertical Datum 1929 (NGVD). Starting from the southwest end of the dam and moving northeast, the project dam consists of a: (1) a powerhouse section; (2) a sluice gate; (3) a reinforced concrete gated spillway with nine Tainter gates; (4) a reinforced concrete non-overflow slab and buttress section that separates Lake Mohawksin from the Wisconsin River downstream; and (5) an earthen embankment. In addition, a detached embankment is located about 210 feet from the tip of the earthen embankment and extends northeasterly. The dam is bookended by an embankment west of the powerhouse and a saddle dike located about 250 feet northeast of the detachment embankment.

10. The powerhouse contains an integral intake and full depth trashracks, along with two vertical-shaft 1.3-MW turbine-generator units for an authorized installed capacity of 2.6 MW. Water is discharged from the powerhouse to the Wisconsin River via two 9-foot-diameter draft tubes into a tailrace. Project power is transported from the powerhouse to Wisconsin Public Service's 24.9-kilovolt (kV) distribution system through a 2.4-kV electrical bus, a circuit breaker, a step-up transformer, and a 180-foot-long project transmission line. The project generates an average of 9,836 megawatt hours (MWh) annually.

11. There are three project recreation facilities: (1) a reservoir boat landing, located on the southern end of the project reservoir; (2) a tailwater boat landing, located immediately downstream of the project dam; and (3) a 500-foot-long portage around the project dam.

C. Project Boundary

12. The existing project boundary generally corresponds to the 100-year flood elevation surrounding the reservoir and encloses lands necessary for project operation,

including the dam, powerhouse, impoundment, tailrace, appurtenant facilities, and the three project recreational facilities.

D. Current Project Operation

13. The project operates in a peaking mode with a maximum 0.8-foot daily fluctuation between elevations 1,435.5 and 1,434.7 feet NGVD, as required by Article 38 of the current license.¹⁰ The project is automated and remotely operated from Wisconsin Public Service's Energy Supply and Control Center located at Green Bay, Wisconsin, which is staffed 24 hours per day, 365 days per year. During normal peaking operation, the reservoir is drawn down from the maximum pond elevation during the day and refilled at night, providing one peaking cycle per day.

14. Article 38 of the current license also requires Wisconsin Public Service to maintain a minimum flow of 162 cubic feet per second (cfs), or inflow, whichever is less, from the from the project, as measured immediately downstream from the project.

PROPOSED OPERATION AND ENVIRONMENTAL MEASURES

15. Wisconsin Public Service proposes to continue to operate the project in a peaking mode, with the current daily impoundment fluctuation limit of 0.8 foot or less from the normal pool elevation of 1,435.5 feet NGVD.

16. To protect water quality and fishery resources, Wisconsin Public Service proposes to continue to maintain the minimum project outflow of 162 cfs, or inflow, whichever is less, as measured immediately downstream from the project.

17. To protect fishery resources in the reservoir during planned and emergency drawdowns, Wisconsin Public Service proposes to implement the Reservoir Drawdown Management Plan (Reservoir Drawdown Plan), filed on October 28, 2016.

18. To annually fund aquatic enhancement measures that would be identified each year, Wisconsin Public Service proposes to implement the Aquatic Resource Fund Management Plan (Aquatic Resource Fund), filed on October 28, 2016.

19. To document that project operation is in compliance with the license's operating requirements, Wisconsin Public Service proposes to implement the Operation Monitoring Plan, filed on October 28, 2016.

¹⁰ *Wisconsin Public Service Corp.*, 32 FERC ¶ 62,358, at 6-7, amended 75 FERC ¶ 62,174 (1996).

20. To guide the handling of woody debris that accumulates on the project's trashracks, Wisconsin Public Service proposes to implement the Woody Debris Management Plan (Woody Debris Plan), filed on October 28, 2016.
21. To minimize the spread of invasive species, Wisconsin Public Service proposes to implement the Invasive Species Management Plan for terrestrial invasive species, filed on October 28, 2016, which includes provisions for: (1) invasive plant monitoring; (2) training staff on invasive plant identification; and (3) educational signage.
22. To manage wildlife, recreation, and land use at the project, Wisconsin Public Service proposes to implement the Comprehensive Land and Wildlife Management Plan (Wildlife Management Plan), filed on October 28, 2016, which contains provisions for: (1) operating and maintaining existing recreation facilities at the project; (2) managing wildlife and its habitat; (3) protecting the federally listed northern long-eared bat and gray wolf; (4) shoreline management; (5) fire control measures; (6) forest insect and disease control; and (7) wetland management.
23. To enhance recreation resources at the project, Wisconsin Public Service proposes to implement the Recreation Plan, filed on October 28, 2016, which contains provisions for: (1) operating and maintaining existing project recreation facilities; and (2) adding a seasonal portable toilet at the shared parking area for the reservoir and tailwater boat landings.
24. To protect cultural and historic resources, Wisconsin Public Service proposes to implement the statewide programmatic agreement (PA) for Wisconsin, executed in 1993,¹¹ and the proposed Historic Properties Management Plan (HPMP)¹² to protect historic properties.

SUMMARY OF LICENSE REQUIREMENTS

25. The license, which authorizes 2.6 MW of renewable energy generation capacity, requires most of the proposed measures noted above with the staff-recommended

¹¹ The full name of the PA is Programmatic Agreement Among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, the State of Wisconsin, State Historic Preservation Officer, and the State of Michigan, State Historic Preservation Officer, for managing Historic Properties that May Be Affected by New and Amended Licenses Issuing for the Continued Operation of Existing Hydroelectric Projects in the State of Wisconsin and Adjacent Portions of the State of Michigan.

¹² The HPMP was filed on October 28, 2016. Wisconsin State Historic Preservation Office (SHPO) approved the HPMP in a letter filed on February 9, 2016.

modifications and additional measures described below, along with the conditions included in Wisconsin DNR's water quality certification (certification) (Appendix A). The license does not include Wisconsin Public Service's proposed: (1) Aquatic Resource Fund; and (2) Wildlife Management Plan, with the exception of the following components: (a) the northern long-eared bat avoidance and protection measures, and (b) using the U.S. Fish and Wildlife Service's (FWS) May 2007 *National Bald Eagle Management Guidelines*.

26. To minimize the spread of invasive species, the license requires Wisconsin Public Service to modify its proposed Invasive Species Management Plan, to include: (1) a description of the methods to be used for monitoring invasive aquatic plants within the reservoir; (2) the proposed frequency of monitoring; and (3) the criteria to be used to determine when control measures will be implemented.

27. To protect roosting northern long-eared bats, the license requires Wisconsin Public Service to modify its proposed northern long-eared bat protection measures to include a restriction on cutting trees that are equal to or greater than 3 inches in diameter from April 1 through October 31.

28. To protect bald eagles that nest within the project boundary, the license requires Wisconsin Public Service to develop a bald eagle management plan.

WATER QUALITY CERTIFICATION

29. Under section 401(a)(1) of the Clean Water Act (CWA),¹³ the Commission may not issue a license authorizing the construction or operation of a hydroelectric project unless the state water quality certifying agency either has issued water quality certification for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year. Section 401(d) of the CWA provides that the certification shall become a condition of any federal license that authorizes construction or operation of the project.¹⁴

30. On March 17, 2017, Wisconsin Public Service applied to Wisconsin DNR for certification for the Tomahawk Project, which Wisconsin DNR received on March 20, 2017. Wisconsin DNR issued a certification for the project on January 16, 2018, which includes the conditions set forth in Appendix A of this order.

¹³ 33 U.S.C. § 1341(a)(1) (2012).

¹⁴ 33 U.S.C. § 1341(d) (2012).

This license incorporates the conditions required by Wisconsin DNR's certification into the license by ordering paragraph D.

COASTAL ZONE MANAGEMENT ACT

31. Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA),¹⁵ the Commission cannot issue a license for a project within or affecting a state's coastal zone unless the state CZMA agency concurs with the license applicant's certification of consistency with the state's CZMA program, or the agency's concurrence is conclusively presumed by its failure to act within six months of its receipt of the applicant's certification.

32. On February 10, 2016, Wisconsin Public Service requested concurrence from the Wisconsin Coastal Resources Management Program to confirm that a consistency review for the project is unnecessary because it is not located in Wisconsin's designated coastal area. In email correspondence,¹⁶ the Wisconsin Coastal Resources Management Program stated that the Tomahawk Project is outside of Wisconsin's coastal zone and unlikely to affect coastal resources. Therefore, no consistency certification is required.

SECTION 18 FISHWAY PRESCRIPTION

33. Section 18 of the FPA¹⁷ 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.

34. Neither agency filed a fishway prescription, or a reservation of authority to prescribe fishways, under section 18 of the FPA for the project.

THREATENED AND ENDANGERED SPECIES

35. Section 7(a)(2) of the Endangered Species Act of 1973 (ESA)¹⁸ requires federal agencies to ensure their actions are not likely to jeopardize the continued existence of

¹⁵ 16 U.S.C. § 1456(c)(3)(A) (2012).

¹⁶ The license application, filed on March 28, 2016, contains the email correspondence dated February 22, 2016 from the Wisconsin Coastal Resources Management Program.

¹⁷ 16 U.S.C. § 811 (2012).

¹⁸ 16 U.S.C. § 1536(a) (2012).

federally listed threatened and endangered species, or result in the destruction or adverse modification of their designated critical habitat.

36. There are two listed terrestrial species that are known to occur within Lincoln County: (1) the federally endangered gray wolf (*Canis lupus*); and (2) the federally-threatened northern long-eared bat (*Myotis septentrionalis*).

Gray Wolf

37. Staff determined in the EA¹⁹ that relicensing the project would have no effect on the gray wolf because its habitat is not present in the project boundary. Therefore, no further consultation under the ESA is required for this species.

Northern Long-Eared Bat

38. FWS listed a 4(d) rule for northern long-eared bat in January 2016 (i.e., Programmatic Biological Opinion).²⁰ The 4(d) rule focuses on preventing the effects of disturbances to known northern long-eared bat hibernacula and the effects of tree removal on roosting northern long-eared bats, including maternity colonies, located within the zone associated with the spread of white-nose syndrome. Under the 4(d) rule, a take that is incidental to tree removal is permitted if it: (1) occurs more than 0.25 mile from a known, occupied hibernacula; or (2) avoids cutting or destroying known, occupied maternity roost trees or any trees within a 150-foot radius around a known, occupied maternity tree during the pup season (June 1 to July 31).

39. In the EA,²¹ Commission staff determined that although there is no documentation of northern long-eared bat populations within the project boundary, FWS's Information for Planning and Consultation system indicates that the bat has the potential to occur within Lincoln County.²² In addition, habitat for the northern long-eared bat is present in the project boundary; therefore, it is likely that the bat uses project land. Staff concluded that the northern long-eared bat could be affected by tree removal related to Wisconsin Public Service's proposed maintenance of the canoe portage, which will require periodic clearing of vegetation that may include bat habitat.

40. To protect the northern long-eared bat, Wisconsin Public Service proposes to follow FWS's Final 4(d) rule, which includes limiting tree removal during the maternity roost season for the bat. To reduce the likelihood of disturbing the northern long-eared bat, staff recommended in the EA that Wisconsin Public Service's proposed schedule for limiting cutting, trimming, and removal of trees for protecting the bat include prohibiting

¹⁹ EA at 71.

²⁰ Section 4(d) of the ESA directs FWS to issue regulations deemed "necessary and advisable to provide for the conservation of threatened species." 16 U.S.C. § 1533(d).

²¹ EA at 70-71.

²² *Id.* at 69-70.

the cutting, trimming, or removal of trees 3 inches or greater in diameter from April 1 through October 31 unless the trees pose an immediate threat to human life or property.²³

41. In its comments on the EA, Wisconsin Public Service states that staff's recommended additional timing restrictions for tree cutting extends beyond that proposed by Wisconsin Public Service and the identical timeframe in FWS' Programmatic Biological Opinion. Wisconsin Public Service states that the additional timing restrictions will require long lead times to implement what is otherwise routine maintenance. Wisconsin Public Service recommends that it either be allowed to remove trees under the Programmatic Biological Opinion or that the license include a provision for allowing tree removal during the time period on a limited, case-specific basis after consultation with FWS if tree removal within the project boundary is necessary from April 1 through May 31 and August 1 through October 31.

42. In Wisconsin, northern long-eared bats emerge from their hibernaculum in late April and early May, and leave their roosts to seek winter hibernation sites in late October and early November.²⁴ Therefore, staff's recommended timeframe to restrict tree removal (i.e., April 1 through October 31) would provide protection for the bats during spring emergence and breeding times. As discussed in the EA,²⁵ the restricted timeframe for tree removal is intended to mitigate any project effects on potential roosting and/or maternity roosting habitats within the project boundary. However, to avoid potential maintenance delays caused by the extended tree removal restrictions, Wisconsin Public Service may consult with, and receive agreement from, FWS prior to the removal of trees that are 3 inches or greater in diameter during the following dates: April 1 through May 31 and August 1 through October 31.²⁶ Commission staff also determined that while continued operation and maintenance of the project may affect the northern long-eared bat, any incidental take that may result is not prohibited per the

²³ *Id.* at 137.

²⁴ Wisconsin Department of Natural Resources, Bureau of Natural Heritage Conservation, *Northern Long-eared bat (Myotis septentrionalis) Species Guidance*, <http://dnr.wi.gov/files/PDF/pubs/er/ER0700.pdf>.

²⁵ EA at 70-71.

²⁶ FWS Final 4(d) rule for the northern long-eared bat requires consultation for tree removal from June 1- July 31 if tree removal occurs within 150 feet of a known occupied maternity roost tree. Because there are no known maternity roost trees, Wisconsin Public Service will not have to consult with FWS from June 1 to July 31.

conservation measures for the species issued by FWS under section 4(d) of the ESA.²⁷ Article 406 requires Wisconsin Public Service to restrict cutting trees from April 1 through October 31 and consult with FWS prior to the removal of trees that are 3 inches or greater in diameter during the following dates: April 1 through May 31 and August 1 through October 31.

NATIONAL HISTORIC PRESERVATION ACT

43. Under section 106 of the National Historic Preservation Act (NHPA)²⁸ and its implementing regulations,²⁹ federal agencies must take into account the effect of any proposed undertaking on properties listed or eligible for listing in the National Register of Historic Places (National Register), defined as historic properties, and afford the Advisory Council on Historic Preservation (Advisory Council) a reasonable opportunity to comment on the undertaking. This generally requires the Commission to consult with SHPO to determine whether and how a proposed action may affect historic properties, and to seek ways to avoid or minimize any adverse effects.

44. To satisfy these responsibilities for licensing actions in Wisconsin and Michigan, the Commission executed a statewide PA with the Advisory Council, the Wisconsin SHPO, and the Michigan SHPO on December 16, 1993.³⁰ Execution of the PA demonstrates the Commission's compliance with section 106 of the NHPA.

²⁷ On January 24, 2018, staff requested concurrence with this determination on the northern long-eared bat in writing within 30 days, noting that if FWS did not respond within 30 days, staff will presume that the determination is informed by the best available information and that our responsibilities under 7(a)(2) with respect to the northern long-eared bat are fulfilled through FWS' January 5, 2016, Programmatic Biological Opinion. FWS did not respond to Commission staff's request for concurrence.

²⁸ Section 106 of the National Historic Preservation Act of 1966, as amended, 54 U.S.C. § 306108, Pub. L. No. 113-287, 128 Stat. 3188 (2017).

²⁹ 36 C.F.R. Part 800 (2017).

³⁰ The PA is implemented for all hydroelectric projects in Wisconsin and Michigan's Upper Peninsula that may affect properties included in, or eligible for the National Register.

45. The PA requires Wisconsin Public Service to implement its HPMP, filed on October 28, 2016, for the term of the license.³¹ Article 410 requires Wisconsin Public Service to implement the PA and HPMP.

RECOMMENDATIONS OF FEDERAL AND STATE FISH AND WILDLIFE AGENCIES PURSUANT TO SECTION 10(j) OF THE FPA

46. Section 10(j)(1) of the FPA³² requires the Commission, when issuing a license, to include conditions based on recommendations submitted by federal and state fish and wildlife agencies pursuant to the Fish and Wildlife Coordination Act³³ to “adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)” affected by the project.

47. No section 10(j) recommendations were filed for the project.

SECTION 10(a)(1) OF THE FPA

48. Section 10(a)(1) of the FPA³⁴ requires that any project for which the Commission issues a license be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce; for the improvement and utilization of waterpower development; for the adequate protection, mitigation, and enhancement of fish and wildlife; and for other beneficial public uses, including irrigation, flood control, water supply, recreation, and other purposes.

A. Project Operation and Reservoir Fluctuations

49. Wisconsin Public Service proposes to continue to operate the Tomahawk Project in a peaking mode. Daily reservoir drawdowns from a peaking operation can cause shoreline erosion. To limit the adverse effects of daily reservoir surface elevation fluctuations on aquatic resources in the project reservoir (e.g., dewatering of shoreline areas), Wisconsin Public Service proposes to continue maintaining the Tomahawk reservoir within a maximum daily fluctuation of 0.8 foot or less from the normal pool elevation of 1,435.5 feet NGVD. In the EA,³⁵ staff determined that the proposed peaking

³¹ *See supra* P 24.

³² 16 U.S.C. § 803(j)(1) (2012).

³³ 16 U.S.C. §§ 661 *et seq.* (2012).

³⁴ 16 U.S.C. § 803(a)(1) (2012).

³⁵ EA at 37-39, and 58.

operation does not adversely affect aquatic resources in the reservoir; therefore, staff recommended that the project continue to operate in this mode. Thus, Article 401 requires Wisconsin Public Service to operate the project with a maximum daily fluctuation of 0.8 foot or less from the normal pool elevation of 1,435.5 feet NGVD in the Tomahawk reservoir.

B. Aquatic Resource Fund

50. Wisconsin Public Service proposes to establish an Aquatic Resource Fund, which would provide up to \$13,500 annually for aquatic and terrestrial-related enhancement activities at the Tomahawk Project. The types of activities to be funded would be decided annually by Wisconsin Public Service, Wisconsin DNR, and FWS. Wisconsin Public Service included the following examples of types of activities that could be funded: (1) an aquatic plant point-intercept survey; (2) the release of *Galerucella* beetles in nearshore areas of the project reservoir to control invasive plants; (3) the control of Eurasian water milfoil using herbicides; (4) a fish survey; and (5) water quality monitoring.

51. Interior recommends that Wisconsin Public Service consult with either FWS or the Park Service on decisions regarding the selection of tasks proposed to be funded.

52. In its comments on the EA, River Alliance recommends the Aquatic Resource Fund and states that other hydropower projects in Wisconsin have had settlement agreements that included aquatic resource funding.³⁶

53. As discussed in the EA,³⁷ continued operation of the Tomahawk Project, with the staff-recommended measures, would provide sufficient protection for aquatic resources in project-affected waters without the need for the Aquatic Resource Fund. Moreover, as noted in the EA, the Commission's Policy Statement on Hydropower Licensing Settlements states that it is the Commission's preference that licenses include specific protection, mitigation, and enhancement measures with a clear nexus to the project, rather

³⁶ River Alliance cites as examples the Wilderness Shores Settlement Agreement on the Menominee River and the Lower Chippewa River Settlement Agreement on the Chippewa River. These settlements each involved several hydropower projects, including the Big Quinnesec Falls Project No. 1980 on the Menominee River and the Holcombe Project No. 1982 on the Chippewa River.

³⁷ EA at 58-59.

than broad, open-ended funding measures, like those proposed in the Aquatic Resource Fund.³⁸ Therefore, this license does not require the fund.

C. Reservoir Drawdowns

54. Reservoir drawdowns can adversely affect aquatic resources in reservoirs and downstream from a project's powerhouse and dam. Wisconsin Public Service proposes to implement a Reservoir Drawdown Plan for the project to protect aquatic resources during maintenance and emergency drawdowns. As discussed in the EA,³⁹ while reservoir drawdowns have historically been infrequent, future reservoir drawdowns for maintenance activities could be more likely under a new license given the age of the project facilities. The proposed Reservoir Drawdown Plan includes procedures for minimizing adverse effects on aquatic resources in the project reservoir and downstream, including a drawdown rate of no greater than one foot per day; methods for passing minimum flows downstream during drawdowns; and a reservoir refill plan, schedule, and refill rate. In the EA, staff recommended that the proposed Reservoir Drawdown Plan be included in the license.⁴⁰ Article 404 requires Wisconsin Public Service to implement the proposed Reservoir Drawdown Plan.

D. Operation Monitoring Plan

55. Wisconsin Public Service proposes to implement an Operation Monitoring Plan to ensure that the project complies with its project operation requirements. As discussed in the EA,⁴¹ staff determined that the proposed Operation Monitoring Plan would be a reasonable measure for verifying that the project is operating in accordance with the requirements of any new license. Therefore staff recommended that the plan be included in this license.⁴² Thus, Article 403 requires Wisconsin Public Service to implement the proposed Operation Monitoring Plan.

E. Minimum Downstream Flow

³⁸ Settlements in Hydropower Licensing Proceedings under Part I of the Federal Act, 116 FERC ¶ 61,270 (2006).

³⁹ *Id.* at 40-42.

⁴⁰ *Id.* at 133.

⁴¹ *Id.* at 44-45.

⁴² *Id.* at 133.

56. Wisconsin Public Service proposes to continue providing a minimum project outflow of 162 cfs, or inflow if less, as measured immediately downstream from the project, to protect aquatic resources in the Wisconsin River. As discussed in the EA,⁴³ the current release of 162 cfs from the project supports an active sport fishery in the project-affected reach of the Wisconsin River downstream from the project. In the EA, staff recommended that the minimum flow of 162 cfs be continued.⁴⁴ Article 402 requires this measure.

F. Woody Debris Management

57. Wisconsin Public Service's proposes a Woody Debris Plan whereby it would continue to sluice the woody debris after it is removed from the project trashracks, and place the debris back into the Wisconsin River downstream of the project. As discussed in the EA,⁴⁵ placing the large woody debris downstream of the project benefits aquatic resources because large woody debris can provide aquatic habitat. Article 405 requires Wisconsin Public Service to implement the Woody Debris Plan.

G. Invasive Species Monitoring

58. Invasive plants can displace native plant species, adversely affect water quality, and interfere with access to recreation facilities. Terrestrial and aquatic invasive plants, including Eurasian water milfoil, curly-leaf pondweed, and purple loosestrife occur within the project boundary.

59. Wisconsin Public Service's proposed Invasive Species Management Plan includes measures for monitoring terrestrial invasive plants, but does not include measures for aquatic invasive plants. Due to the variety of invasive plants at the project, in the EA,⁴⁶ staff recommended that the plan be modified to include the following: (1) the monitoring methods to be used for aquatic invasive species; (2) the frequency of monitoring; and (3) the criteria to be used to determine when control measures would be implemented. Article 407 requires Wisconsin Public Service to implement the proposed plan with the additional staff-recommended measures.

⁴³ *Id.* at 33-34 and 58.

⁴⁴ *Id.* at 133.

⁴⁵ *Id.* at 59.

⁴⁶ *Id.* at 65-66.

H. Wood Turtle

60. Wood turtles, which are present in Lincoln County, inhabit the edge of wooded riparian corridors near open water, wooded upland habitats adjacent to open meadows, and forest openings. Wisconsin Public Service proposes to consult with Wisconsin DNR prior to conducting ground disturbing activities within habitat suitable for wood turtles. The measure is included in Wisconsin Public Service's proposed Wildlife Management Plan.

61. As discussed in the EA,⁴⁷ staff determined that project operation and maintenance would not affect the wood turtle because it is not known to be present within the project boundary. For this reason, this license does not require the proposed Wildlife Management Plan or measures to protect the wood turtles.

I. Bald Eagle Protection

62. Bald eagles are known to nest on the northern end of the project reservoir. Maintenance of the project recreational facilities could require tree removal that could disturb eagles during nest building, incubation, and fledging. Wisconsin Public Service proposes to follow FWS National Bald Eagle Management Guidelines and consult with FWS if the nests are encountered during project maintenance. This measure is included in Wisconsin Public Service's proposed Wildlife Management Plan.

63. In the EA,⁴⁸ Commission staff recommended that Wisconsin Public Service develop a bald eagle management plan with measures to avoid or mitigate effects to nesting bald eagles within the project boundary. Staff determined that the plan would help ensure that any effects to bald eagles and their habitats caused by project maintenance would be minimized. Article 408 requires the plan.

J. Recreation Plan

64. Recreation facilities at the project include the reservoir boat landing, tailwater boat landing, and portage. To enhance recreation opportunities, Wisconsin Public Service proposes a Recreation Plan that contains provisions for: (1) continuing to operate and maintain the project's existing recreation facilities; and (2) adding a portable toilet at the shared parking area from Memorial Day to Labor Day. In the EA,⁴⁹ staff determined that

⁴⁷ *Id.* at 67.

⁴⁸ *Id.* at 67-68 and 137-138.

⁴⁹ *Id.* at 80-81.

Wisconsin Public Service's proposed Recreation Plan would enhance recreation resources at the project and recommended that the proposed plan be implemented. Article 409 requires Wisconsin Public Service to implement the Recreation Plan.

65. In its comments on the EA, River Alliance states that Wisconsin Public Service should update its existing recreation brochure and locate it in off-site locations where the public would be able to access it. Wisconsin Public Service does not currently have a brochure for the project, and it does not propose to develop one. River Alliance did not provide any evidence that there is a need for a brochure; therefore, this license does not require the development of a recreation brochure.

K. Shoreline Management

66. As part of Wisconsin Public Service's Wildlife Management Plan, Wisconsin Public Service proposes to conduct visual inspections of the shoreline every 6 years and to remove or halt any non-conforming structures and/or uses that are identified within the project boundary. The Park Service and Interior recommend visual inspections of the shoreline every 6 years. River Alliance recommends a provision for a 200-foot-wide, no-cut shoreline buffer zone in which only diseased wood would be removed to protect the shoreline/riparian zone.

67. In the EA,⁵⁰ staff noted that the standard land use article included in all licenses would require Wisconsin Public Service to monitor project property for non-conforming structures to ensure that no unauthorized project and non-project uses or occupancies occur within the project boundary. Therefore, staff determined that including a separate license condition requiring visual inspections every 6 years would be redundant and unnecessary. Further, River Alliance did not provide any evidence that project operation and maintenance is causing an adverse effect within the 200 feet of the shoreline. Therefore, this license does not require these additional measures.

L. Forest Management

68. Wisconsin Public Service proposes to implement forest resources management practices, including: (1) implementing forest management practices consistent with Wisconsin DNR's Public Forest Lands Handbook 2416.5; (2) reporting tree damage, diseases, and other pests to Wisconsin DNR; (3) reporting unusual tree damage or insect outbreaks to Wisconsin DNR's Forest Health Specialist; and (4) consulting with Wisconsin DNR and the local fire entity regarding fire prevention and detection if

⁵⁰ *Id.* at 100.

needed. The proposed measures are part of Wisconsin Public Service's Wildlife Management Plan.

69. As discussed in the EA,⁵¹ the Tomahawk Project does not contain forests in the project boundary; therefore, staff determined that it is not necessary for Wisconsin Public Service to implement the proposed forests management practices. Therefore, this license does not require the proposed Wildlife Management Plan or forest management practices.

M. Effects of Potential Increased Precipitation on Project Operation

70. In its comments on the EA, EPA recommends that the EA consider the effects of potential future increases in precipitation, flooding, and temperatures on the project, and recommends that adaptive measures be implemented to address these concerns.

71. The EA analyzes project effects on aquatic resources based on observed⁵² hydrologic and water quality conditions using a flow record that includes 35 years of monitoring. Standard Article 15 of Form L-3, which is reproduced at the end of this license, allows the Commission on its own motion or upon the recommendation of a fish and wildlife agency, to reopen the license to consider any changes to the project needed to mitigate unforeseen adverse effects on fish and wildlife resources. Therefore, there is no need to revise the EA's aquatic resources analysis or to include adaptive management requirements in this license.

ADMINISTRATIVE PROVISIONS

A. Annual Charges

72. 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 and G Drawings

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

⁵¹ *Id.* at 143-144.

⁵² *Id.* at 29-32.

C. Amortization Reserve

74. The Commission requires that for new major licenses, non-municipal licensees set up and maintain an amortization reserve account upon license issuance. Article 203 requires the establishment of the account.

D. Headwater Benefits

75. 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.

E. Use and Occupancy of Project Lands and Waters

76. Requiring a licensee to obtain prior Commission approval for every use and occupancy of project land would be unduly burdensome. Therefore, Article 411 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.

F. Modification of Project Facilities

77. Article 301 requires the licensee to coordinate with the Commission's Division of Dam Safety and Inspections – Chicago Regional Office about any proposed modifications resulting from environmental requirements that would affect project works, dam safety, or project operation.

STATE AND FEDERAL COMPREHENSIVE PLANS

78. Section 10(a)(2)(A) of the FPA,⁵³ requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project.⁵⁴ Under section 10(a)(2)(A), staff identified 13 comprehensive plans that are relevant to this project.⁵⁵ No conflicts were found.

⁵³ 16 U.S.C. § 803(a)(2)(A) (2012).

⁵⁴ Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2017).

⁵⁵ The list of applicable plans can be found in section 5.4 of the EA.

APPLICANT'S PLANS AND CAPABILITIES

79. In accordance with sections 10(a)(2)(C) and 15(a) of the FPA,⁵⁶ staff evaluated Wisconsin Public Service's record as a licensee for these areas: (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. This order adopts staff's findings in each of the following areas.

A. Conservation Efforts

80. Section 10(a)(2)(C) of the FPA requires the Commission to consider the electricity consumption improvement program of the applicant, including its plans, performance, and capabilities for encouraging or assisting its customers to conserve electricity cost-effectively, taking into account the published policies, restrictions, and requirements of state regulatory authorities. Wisconsin Public Service provides funding to the Wisconsin Focus on Energy Program which is designed to assist residents of the State of Wisconsin in implementing energy savings to their homes, businesses, and community. The Wisconsin Focus on Energy Program is a coordinated group of programs among electric and natural gas utilities of Wisconsin designed to help citizens make energy choices that yield the most value for the energy while protecting the environment.

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

81. Based on a review of Wisconsin Public Service's compliance with the terms and conditions of the existing license, Wisconsin Public Service's overall record of making timely filings and complying with its license is satisfactory. Therefore, Wisconsin Public Service can satisfy the conditions of a new license.

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

82. Commission staff reviewed Wisconsin Public Service's record of management, operation, and maintenance of the Tomahawk Project pursuant to the requirements of Part 12 of the Commission's regulations and the Commission's Engineering Guidelines. Staff concludes that the dam and other project works are safe and that there is no reason to believe that Wisconsin Public Service cannot continue to safely manage, operate, and maintain these facilities under a new license.

⁵⁶ 16 U.S.C. §§ 803(a)(2)(C) and 808(a) (2012).

D. Ability to Provide Efficient and Reliable Electric Service

83. Staff has reviewed Wisconsin Public Service's plans and its ability to operate and maintain the project in a manner most likely to provide efficient and reliable electric service. Staff's review indicates that Wisconsin Public Service regularly inspects the project's turbine-generator units to ensure they continue to perform in an optimal manner, schedules maintenance to minimize effects on energy production, and since the project has been in operation, has undertaken several initiatives to ensure the project is able to operate reliably into the future. Therefore, Wisconsin Public Service is capable of operating the project to provide efficient and reliable electric service in the future.

E. Need for Power

84. To assess the need for power, staff looked at the need for power in the operating region in which the project is located. The Tomahawk Project serves the Midcontinent Independent System Operator, Inc. (MISO) a sub-region entity of the Midwest Reliability Organization (MRO), a region of the North American Electric Reliability Corporation (NERC) by providing 2.6 MW of capacity for local and regional power demand.

85. NERC annually forecasts electrical supply and demand on a national and regional level for a 10-year period. NERC's most recent annual supply and demand projection for the MISO sub-region indicates that generation resources are projected to fall below the target of a 15.2 percent Anticipated Reserve Margin (i.e., the primary metric used to evaluate the adequacy of projected generation resources to serve forecasted peak load) to an Anticipated Reserve Margin of 13.89 percent in 2022 and continue to decrease to 9.07 percent by the year 2026. MISO will need approximately 8 gigawatts of additional generation resources by the end of the 10-year forecast to be able to maintain its planning reserve margin of 15.2 percent (NERC, 2016). Therefore, the project's power will help meet the regional need for power.

F. Transmission Services

86. The Tomahawk Project is interconnected with Wisconsin Public Services' existing 24.9-kV distribution system. The project incorporates two hydroelectric generators that are connected to a common 2.4-kV electrical bus. The common 2.4-kV electrical bus is connected to a transformer that steps up the 2.4-kV generator voltage to 24.9 kV to match the voltage on the electrical distribution system. The primary transmission line, including appurtenances, between the powerhouse and step-up transformer is about 100 feet long, and approximately 80 feet long between the step-up transformer and the interconnection point to the distribution grid. Power from the step-up transformer is connected to the distribution grid via underground lines.

G. Cost Effectiveness of Plans

87. Wisconsin Public Service does not propose to change project operation or add new project facilities, but it does propose measures to enhance environmental resources affected by the project. Based on Wisconsin Public Service's record as an existing licensee, these plans are likely to be implemented in a cost-effective manner.

H. Actions Affecting the Public

88. Wisconsin Public Service provided opportunities for public involvement in the development of its application for a new license for the Tomahawk Project. In addition, during the previous license period, Wisconsin Public Service operated the project in a manner that supported recreation opportunities and facilities to the surrounding community and visitors to the area.

PROJECT ECONOMICS

89. In determining whether to issue a new license for an existing hydroelectric project, the Commission considers a number of public interest factors, including the economic benefits of project power. Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in Mead Corp.,⁵⁷ the Commission 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 reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license. In applying this analysis to the Tomahawk Project, staff considered three options: the no-action alternative, Wisconsin Power Service's proposal, and the project as licensed herein.

90. Under the no-action alternative, the project would continue to operate as it does now. The project has an installed capacity of 2.6 MW and generates an average of 9,975.6 MWh of electricity annually. The average annual cost of producing this power, including depreciation, operation and maintenance costs, and taxes would be about \$386,854 or \$38.78/MWh. When an estimate of average generation is multiplied by the alternative power cost of \$31.79/MWh,⁵⁸ the total value of the project's power is

⁵⁷ 72 FERC ¶ 61,027 (1995).

⁵⁸ The alternative power cost of \$38.78/MWh is based on a base energy rate of \$31.79/MWh obtained from the Energy Information Administration 2017 Annual Energy (*continued ...*)

\$317,124. To determine whether the proposed project is currently economically beneficial, the project's cost is subtracted from the value of the project's power.⁵⁹ Therefore, the project would produce power at a cost that is \$69,729, or \$6.99/MWh, more than the cost of alternative power.

91. As proposed by Wisconsin Public Service, the levelized annual cost of operating the project is \$402,416 or \$40.34/MWh. The proposed project would generate an average of 9,975.6 MWh of energy annually. When an estimate of average generation is multiplied by the alternative power cost of \$31.79/MWh, the total value of the project's power is \$317,124, in 2017 dollars. Therefore, in the first year of operation, the project would cost \$85,291 or \$8.55/MWh, more than the likely alternative cost of power.

92. As licensed herein with mandatory conditions and staff measures, the levelized annual cost of operating the project will be about \$393,537, or \$39.45/MWh. The project will generate an average of 9,975.6 MWh of energy annually. Multiplying the estimate of average generation by the alternative power cost of \$31.79/MWh yields a total value of the project's power of \$317,124, in 2017 dollars. Therefore, in the first year of operation, project power will cost \$76,413, or \$7.66/MWh, more than the likely alternative cost of power.

93. 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 the ability to help maintain the stability of the power system, such as by quickly adjusting power output to respond to rapid changes in the system load; and to respond rapidly to a major utility system or regional blackout by providing a source of power to help restart fossil-fuel based generating stations and put them back on line.

94. 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.

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

Outlook.

⁵⁹ Details of staff's economic analysis for the project as licensed herein, and for the various alternatives, are included in the EA.

only one of the many public interest factors the Commission considers in determining whether or not, and under what conditions, to issue a license.

COMPREHENSIVE DEVELOPMENT

96. Sections 4(e) and 10(a)(1) of the FPA⁶⁰ require the Commission to give equal consideration to the 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 must be such as in the Commission's judgment will 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.

97. The EA for the project contains background information, analysis of effects, and support for related license articles. Based on the record of this proceeding, including the EA and the comments thereon, licensing the Tomahawk Project as described in this order would not constitute a major federal action significantly affecting the quality of the human environment. The project will be safe if operated and maintained in accordance with the requirements of this license.

98. Based on staff's independent review and evaluation of the Tomahawk Project, recommendations from the resource agencies and other stakeholders, and the no-action alternative, as documented in the EA, the project as licensed herein, is best adapted to a comprehensive plan for improving or developing the Wisconsin River.

99. This alternative was selected because: (1) issuance of a new license will serve to maintain a beneficial and dependable source of electric energy; (2) the required environmental measures will protect or enhance fish and wildlife resources, water quality, recreation, and cultural resources; and (3) the 2.6 MW of electric capacity comes from a renewable resource that does not contribute to atmospheric pollution.

LICENSE TERM

100. Section 15(e) of the FPA⁶¹ 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. On October 19, 2017, the Commission established a 40-year default

⁶⁰ 16 U.S.C. §§ 797(e) and 803(a)(1) (2012).

⁶¹ 16 U.S.C. § 808(e) (2012).

license term policy for original and new licenses, effective as of October 26, 2017.⁶² The Policy Statement provides for exceptions to the 40-year default license term under certain circumstances: (1) establishing a shorter or longer license term if necessary to coordinate license terms for projects located on the same river basin; (2) deferring to a shorter or longer license term explicitly agreed to in a generally-supported comprehensive settlement agreement; and (3) establishing a longer license term upon a showing by the license applicant that substantial voluntary measures were either previously implemented during the prior license term, or substantial new measures are expected to be implemented under the new license.

101. In a letter filed on December 19, 2017, Wisconsin Public Service requests a 50-year license term for the project. Wisconsin Public Service states that a 50-year license is necessary for the Tomahawk Project to ensure coordination of its license term with the Grandfather Falls Project.⁶³

102. The *Order Issuing New License*, issued on May 17, 2018, denied Wisconsin Public Service's request for a 50-year license for the Grandfather Falls Project.⁶⁴ As a result, there is no need to depart from the default 40-year term to coordinate the two projects' license terms.

ORDERING PARAGRAPHS AND PROJECT DESCRIPTION

The Director Orders:

(A) This license is issued to Wisconsin Public Service Corporation (licensee) to operate and maintain the Tomahawk Hydroelectric Project, effective May 1, 2018, for a period of 40 years. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

⁶² *Policy Statement on Establishing License Terms for Hydroelectric Projects*, 160 FERC 161 ¶ 61,078 (2017) (Policy Statement); 82 Fed. Reg. 49,501 (2017).

⁶³ Wisconsin Public Service is also the licensee for the Grandfather Falls Project, and the operation of the Tomahawk Project is coordinated with the Grandfather Falls Project.

⁶⁴ *Wisconsin Public Service Corp.*, 163 FERC ¶ 62,100, at P 144 (2018).

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, enclosed by the project boundary shown by Exhibits G-1001 to G-1005 filed on October 28, 2016:

<u>Exhibit G Drawing</u>	<u>FERC Drawing Number</u>	<u>Description</u>
G-1	P-1940 – 1001	Tomahawk Hydroelectric Project Boundary Map
G-2	P-1940 – 1002	Tomahawk Hydroelectric Project Boundary Map
G-3	P-1940 – 1003	Tomahawk Hydroelectric Project Boundary Map
G-4	P-1940 – 1004	Tomahawk Hydroelectric Project Boundary Map
G-5	P-1940 – 1005	Tomahawk Hydroelectric Project Boundary Map

(2) Project works consisting of: (1) Lake Mohawksin, the project reservoir, with a surface area of 2,773 acres and 1,367 acre-feet of usable storage at the maximum full pool elevation of 1,435.5 feet National Geodetic Vertical Datum 1929; (2) a 27-foot-high and 2,968-foot-long reinforced concrete and embankment dam that includes: (a) a 400-foot-long saddle dike, (b) a 1,400-foot-long detached embankment, (c) a 400-foot-long earthen embankment, (d) a 125-foot-long concrete non-overflow slab and buttress section, (e) a 267-foot-long concrete gated spillway section, (f) a 9-foot-long concrete sluice gate section, (g) a 300-foot-long right embankment, and (h) a 67-foot-long powerhouse housing two generating units with a total installed capacity of 2.6 megawatts, (3) a 67.5-foot-wide, 18-foot-high intake and ten 6-foot-wide sections of steel trashracks with clear bar spacing of 2.5 inches that is integral with the powerhouse; (4) two 27.25-foot-long, 31.75-foot-wide, 9.25-foot-high draft tubes that discharges into a 34-foot-long, 60-foot-wide tailrace; (5) a 180-foot-long, combined 2.4-kilovolt (kV)/24.9-kV transmission power line; and (6) appurtenant facilities.

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

Exhibit A: The revised Exhibit A, pages 3 through 6 of the final license application, filed on October 28, 2016.

Exhibit F: The following Exhibit F drawings filed on March 28, 2016:

<u>Exhibit F Drawing</u>	<u>FERC Drawing Number</u>	<u>Description</u>
F-1	P-1940 – 1006	General Dam Design and Cross Section

<u>Exhibit F Drawing</u>	<u>FERC Drawing Number</u>	<u>Description</u>
F-2	P-1940 – 1007	General Design Drawing of Powerhouse and Substation
F-3	P-1940 – 1008	General Layout Plan and Cross Sections

(3) All of the structures, fixtures, equipment or facilities used to operate or maintain the project, 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, F, and G described above are approved and made part of the license.

(D) This license is subject to the conditions submitted by the Wisconsin Department of Natural Resources under section 401(a)(1) of the Clean Water Act, 33 U.S.C. § 1341(a)(1) (2012), as those conditions are set forth in Appendix A to this order.

(E) This license is also subject to the articles set forth in Form L-3, (October 1975), entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters of the United States" (*see* 54 F.P.C. 1792 *et seq.*), as reproduced at the end of this order, and the following additional articles:

Article 201. Administrative Annual Charges. The licensee must pay the United States annual charges, effective the first day of the month in which the license becomes effective, and as determined in accordance with provisions of the Commission's regulations in effect from time to time, for the purposes of reimbursing the United States for the cost of administration of Part I of the Federal Power Act. The authorized installed capacity for that purpose is 2.6 megawatts.

Article 202. Exhibit Drawings. Within 45 days of the effective date of this license, as directed below, the licensee must file two sets of the approved exhibit drawings and geographic information system (GIS) data in electronic file format on compact disks.

(1) Digital images of the approved exhibit drawings must be prepared in electronic format. Prior to preparing each digital image, the FERC Project-Drawing Number (i.e., P-1940-1001 through P-1940-1008) must be shown in the margin below the title block of the approved drawing. The licensee must file two separate sets of exhibit drawings in electronic format on compact disks with the Secretary of the Commission, ATTN: OEP/DHAC. Exhibit F drawings must be segregated from other project exhibits, and identified as **Critical Energy Infrastructure Information (CEII) material under 18 C.F.R. §388.113(c)**. Each drawing must be a separate electronic file, and the file

name must include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this license, and file extension in the following format [e.g., P-1940-1001, F-1006, General Dam Design and Cross Section, MM-DD-YYYY.TIF]. All digital images of the exhibit drawings must meet the following format specification:

IMAGERY – black & white raster file

FILE TYPE – Tagged Image File Format (TIFF) CCITT Group 4 (also known as T.6 coding scheme)

RESOLUTION – 300 dots per inch (dpi) desired, (200 dpi minimum)

DRAWING SIZE FORMAT – 22” x 34” (minimum), 24” x 36” (maximum)

FILE SIZE – less than 1 megabyte desired

Each Exhibit G drawing that includes the project boundary must contain a minimum of three known reference points (i.e., latitude and longitude coordinates, or state plane coordinates). The points must be arranged in a triangular format for GIS georeferencing the project boundary drawing to the polygon data, and must be based on a standard map coordinate system. The spatial reference for the drawing (i.e., map projection, map datum, and units of measurement) must be identified on the drawing and each reference point must be labeled. In addition, each project boundary drawing must be stamped by a registered land surveyor.

(2) The licensee must file two separate sets of the project boundary GIS data on compact disks with the Secretary of the Commission, ATTN: OEP/DHAC. The data must be in a georeferenced electronic file format (such as ArcView shape files, GeoMedia files, MapInfo files, or a similar GIS format). The filing must include both polygon data and all reference points shown on the individual project boundary drawings. An electronic boundary polygon data file(s) is required for each project development. Depending on the electronic file format, the polygon and point data can be included in single files with multiple layers. The georeferenced electronic boundary data file must be positionally accurate to ± 40 feet in order to comply with National Map Accuracy Standards for maps at a 1:24,000 scale. The file name(s) must include: FERC Project Number, data description, date of this license, and file extension in the following format [P-1940, boundary polygon/or point data, MM-DD-YYYY.SHP]. The data must be accompanied by a separate text file describing the spatial reference for the georeferenced data: map projection used (i.e., UTM, State Plane, Decimal Degrees, etc.), the map datum (i.e., North American 27, North American 83, etc.), and the units of measurement (i.e., feet, meters, miles, etc.). The text file name must include: FERC Project Number, data description, date of this license, and file extension in the following format [P-1940, project boundary metadata, MM-DD-YYYY.TXT].

Article 203. Amortization Reserve. Pursuant to section 10(d) of the Federal Power Act, a specified reasonable rate of return upon the net investment in the project must be used for determining surplus earnings of the project for the establishment and

maintenance of amortization reserves. The licensee must set aside in a project amortization reserve account at the end of each fiscal year one half of the project surplus earnings, if any, in excess of the specified rate of return per annum on the net investment. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year, the licensee must deduct the amount of that deficiency from the amount of any surplus earnings subsequently accumulated, until absorbed. The licensee must set aside one-half of the remaining surplus earnings, if any, cumulatively computed, in the project amortization reserve account. The licensee must maintain the amounts established in the project amortization reserve account until further order of the Commission.

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

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 prior 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 must 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. The benefits will be assessed in accordance with Part 11, Subpart B, of the Commission's regulations.

Article 301. *Project Modification Resulting from Environmental Requirements.* If environmental requirements under this license require modification that may affect the project works or operation, the licensee must consult with the Commission's Division of Dam Safety and Inspections—Chicago Regional Engineer. Consultation must allow sufficient review time for the Commission to ensure that the proposed work does not adversely affect the project works, dam safety, or project operation.

Article 401. *Project Operation.* The licensee must at all times, except as otherwise permitted by the Reservoir Drawdown Management Plan approved by Article 404, maintain the Tomahawk Reservoir within a maximum daily fluctuation of 0.8 foot or less from the normal pool elevation of 1,435.5 feet National Geodetic Vertical Datum 1929.

The operational requirement may be temporarily modified if required by operating emergencies beyond the control of the licensee or for short periods upon mutual agreement between the licensee and Wisconsin Department of Natural Resources. If the operational requirement is so modified, the licensee must notify the Commission as soon as possible, but no later than 10 days, after each such incident.

Article 402. Minimum Flow in Project Tailrace. The licensee must operate the project to maintain a minimum flow of 162 cubic feet per second, or inflow, whichever is less, immediately downstream of the project to protect water quality and fishery resources in the Wisconsin River.

The minimum flow requirement may be temporarily modified if required by operating emergencies beyond the control of the licensee or for short periods upon mutual agreement between the licensee and Wisconsin Department of Natural Resources. If the minimum flow is so modified, the licensee must notify the Commission as soon as possible, but no later than 10 days, after each such incident.

Article 403. Operation Monitoring Plan. The Operation Monitoring Plan, filed October 28, 2016, is approved, made part of this license, and may not be amended without prior Commission approval. Upon license issuance, the licensee must implement the Operation Monitoring Plan.

If there are any deviations with the operational requirements of the license, the licensee must notify the Commission as soon as possible, but no later than 10 days, after each such incident.

Article 404. Reservoir Drawdown Management Plan. The Revised Reservoir Drawdown Management Plan, filed October 28, 2016, is approved, made part of this license, and may not be amended without prior Commission approval. Upon license issuance, the licensee must implement the Revised Reservoir Drawdown Management Plan.

Article 405. Woody Debris Management Plan. The Revised Woody Debris Management Plan, filed October 28, 2016, is approved, made part of this license and may not be amended without prior Commission approval. Upon license issuance, the licensee must implement the Revised Woody Debris Management Plan.

Article 406. Northern Long-eared Bat Protection Measures. The licensee must implement the following measures to protect northern long-eared bat habitat:

(1) avoid the cutting, trimming, or destruction of trees of 3 inches or greater in diameter within the project boundary from April 1 through October 31, unless they pose an immediate threat to human life or property;

(2) if tree cutting, trimming, or destruction is required for project maintenance from April 1 through May 31 or August 1 through October 31, Wisconsin Public Service

must consult with, and receive approval from, the United States Fish and Wildlife Service prior to the proposed action; and

(3) where trees need to be removed, only remove trees between November 1 and March 31.

Article 407. Invasive Species Monitoring Plan. Within one year of the date of issuance of this license, the licensee must file with the Commission, for approval, an Invasive Species Monitoring Plan that includes the provisions of the Invasive Species Management Plan, filed on October 28, 2016, with the following additional provisions:

(1) a description of the methods to be used for monitoring aquatic invasive plant species;

(2) the frequency of monitoring for aquatic invasive plant species;

(3) the criteria to be used to determine when control measures will be implemented; and

(4) a schedule for filing monitoring reports with Wisconsin Department of Natural Resources (Wisconsin DNR).

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

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Article 408. Bald Eagle Management Plan. Within one year of the date of issuance of this license, the licensee must file with the Commission, for approval, a Bald Eagle Management Plan to avoid or minimize effects of project maintenance of recreation sites, as required by Article 409, to nesting bald eagles in the project boundary. The plan must include, but not necessarily be limited to, the following:

(1) a description of measures that will be used to avoid or minimize the effects to nesting bald eagles within the project boundary; and

(2) an explanation of how the plan considers United States Fish and Wildlife Service's (FWS) *2007 Bald Eagle Management Guidance*.

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

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Article 409. Recreation Plan. The Recreation Plan filed on October 28, 2016, is approved, made part of this license, and may not be amended without prior Commission approval. Upon license issuance, the licensee must implement the Recreation Plan.

Article 410. Programmatic Agreement and Historic Properties Management Plan. The licensee must implement the "Programmatic Agreement Among the Federal Energy Regulatory Commission, Advisory Council on Historic Preservation, the State of Wisconsin, State Historic Preservation Officer, and the State of Michigan, State Historic Preservation Officer, for Managing Historic Properties that may be Affected by New and Amended Licenses Issuing for Continued Operation of Hydroelectric Projects in the State of Wisconsin and Adjacent Portions of the State of Michigan," executed on December 16, 1993, and including, but not limited to, the Historic Properties Management Plan (HPMP) for the project, filed on October 28, 2016, and approved herein. In the event that the Programmatic Agreement is terminated, the licensee shall continue to implement the provisions of its approved HPMP. The Commission reserves the authority to require changes to the HPMP at any time during the term of the license.

Article 411. 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 type 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 watercraft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap will be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and will not change the basic contour of the impoundment 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 impoundment. No later than January 31 of each year, the licensee shall file a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that

discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved 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 Commission, 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 Commission's authorized representative, 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 report on recreational resources of an Exhibit E; or, if the project does not have an 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 lands and 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 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 drawings will be filed for approval for other purposes.

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

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

(G) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the Federal Power Act, 16 U.S.C. § 8251 (2012), and section 385.713 of the Commission's regulations, 18 C.F.R. § 385.713 (2017). 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. The licensee's failure to file a request for rehearing must constitute acceptance of this order.

Terry L. Turpin
Director
Office of Energy Projects

Form L-3
(October, 1975)

FEDERAL ENERGY REGULATORY COMMISSION

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

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

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

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

Article 4. The project, including its operation and maintenance and any work incidental to additions or alterations authorized by the Commission, whether or not conducted upon lands of the United States, shall be subject to the inspection and

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

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

Article 6. In the event the project is taken over by the United States upon the termination of the license as provided in Section 14 of the Federal Power Act, or is transferred to a new licensee or to a nonpower licensee under the provisions of Section 15

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

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

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

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

Article 10. The Licensee shall, after notice and opportunity for hearing, coordinate the operation of the project, electrically and hydraulically, with such other

projects or power systems and in such manner as the Commission may direct in the interest of power and other beneficial public uses of water resources, and on such conditions concerning the equitable sharing of benefits by the Licensee as the Commission may order.

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

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

Article 13. On the application of any person, association, corporation, Federal agency, State or municipality, the Licensee shall permit such reasonable use of its reservoir or other project properties, including works, lands and water rights, or parts thereof, as may be ordered by the Commission, after notice and opportunity for hearing, in the interests of comprehensive development of the waterway or waterways involved and the conservation and utilization of the water resources of the region for water supply or for the purposes of steam-electric, irrigation, industrial, municipal or similar uses. The Licensee shall receive reasonable compensation for use of its reservoir or other project properties or parts thereof for such purposes, to include at least full reimbursement for any damages or expenses which the joint use causes the Licensee to incur. Any such compensation shall be fixed by the Commission either by approval of an agreement between the Licensee and the party or parties benefiting or after notice

and opportunity for hearing. Applications shall contain information in sufficient detail to afford a full understanding of the proposed use, including satisfactory evidence that the applicant possesses necessary water rights pursuant to applicable State law, or a showing of cause why such evidence cannot concurrently be submitted, and a statement as to the relationship of the proposed use to any State or municipal plans or orders which may have been adopted with respect to the use of such waters.

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

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

Article 16. Whenever the United States shall desire, in connection with the project, to construct fish and wildlife facilities or to improve the existing fish and wildlife facilities at its own expense, the Licensee shall permit the United States or its designated agency to use, free of cost, such of the Licensee's lands and interests in lands, reservoirs, waterways and project works as may be reasonably required to complete such facilities or such improvements thereof. In addition, after notice and opportunity for hearing, the Licensee shall modify the project operation as may be reasonably prescribed by the Commission in order to permit the maintenance and operation of the fish and wildlife facilities constructed or improved by the United States under the provisions of this article. This article shall not be interpreted to place any obligation on the United States to construct or improve fish and wildlife facilities or to relieve the Licensee of any obligation under this license.

Article 17. The Licensee shall construct, maintain, and operate, or shall arrange for the construction, maintenance, and operation of such reasonable recreational facilities, including modifications thereto, such as access roads, wharves, launching ramps, beaches, picnic and camping areas, sanitary facilities, and utilities, giving consideration

to the needs of the physically handicapped, and shall comply with such reasonable modifications of the project, as may be prescribed hereafter by the Commission during the term of this license upon its own motion or upon the recommendation of the Secretary of the Interior or other interested Federal or State agencies, after notice and opportunity for hearing.

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

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

Article 20. The Licensee shall clear and keep clear to an adequate width lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which results from the clearing of lands or from the maintenance or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. All clearing of the lands and disposal of the unnecessary material shall be done with due diligence and to the satisfaction of the authorized representative of the Commission and in accordance with appropriate Federal, State, and local statutes and regulations.

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

Article 22. Whenever the United States shall desire to construct, complete, or improve navigation facilities in connection with the project, the Licensee shall convey to

the United States, free of cost, such of its lands and rights-of-way and such rights of passage through its dams or other structures, and shall permit such control of its pools, as may be required to complete and maintain such navigation facilities.

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

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

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

Article 26. If the Licensee shall cause or suffer essential project property to be removed or destroyed or to become unfit for use, without adequate replacement, or shall abandon or discontinue good faith operation of the project or refuse or neglect to comply with the terms of the license and the lawful orders of the Commission mailed to the record address of the Licensee or its agent, the Commission will deem it to be the intent of the Licensee to surrender the license. The Commission, after notice and opportunity for hearing, may require the Licensee to remove any or all structures, equipment and power lines within the project boundary and to take any such other action necessary to restore the project waters, lands, and facilities remaining within the project boundary to a condition satisfactory to the United States agency having jurisdiction over its lands or the Commission's authorized representative, as appropriate, or to provide for the continued operation and maintenance of nonpower facilities and fulfill such other obligations under the license as the Commission may prescribe. In addition, the Commission in its discretion, after notice and opportunity for hearing, may also agree to the surrender of the license when the Commission, for the reasons recited herein, deems it to be the intent of the Licensee to surrender the license.

Article 27. The right of the Licensee and of its successors and assigns to use or occupy waters over which the United States has jurisdiction, or lands of the United States under the license, for the purpose of maintaining the project works or otherwise, shall absolutely cease at the end of the license period, unless the Licensee has obtained a new license pursuant to the then existing laws and regulations, or an annual license under the terms and conditions of this license.

Article 28. The terms and conditions expressly set forth in the license shall not be construed as impairing any terms and conditions of the Federal Power Act which are not expressly set forth herein.

APPENDIX A

Wisconsin Department of Natural Resources
Water Quality Certification Conditions
Issued January 16, 2018

1. The licensee shall obtain and comply with all federal, state, and local permits; if obtaining such permits does not conflict with FERC license requirements.
2. The licensee shall meet current State of Wisconsin water quality standards applying to this project.
3. The licensee shall allow the Department to inspect the project area at any time upon reasonable notification to monitor compliance with certification conditions.
4. The licensee shall work with the Department to ensure proper compliance with the state endangered species law.
5. When FERC issues the new license, the licensee shall consult with the Department concerning any changes or modifications to the following management plans: Aquatic Resource, Woody Debris, Invasive Species, Recreation, Operations and Drawdown Plan.
6. The Department may modify or revoke this certification if the project is not completed and maintained according to the terms of the certification, or if the Department determines the activity is detrimental to the public interest.
7. Your acceptance of this certification signifies that you have read, understood and agreed to follow all conditions of this certification.
8. This certification does not authorize any activities other than what is included in the FERC approved license articles and management plans.
9. Licensee development within the FERC project boundary shall conform to the local zoning ordinances and the standards for floodplain and shoreland development contained in Chapters NR 115, NR 116, NR 117, Wis Adm. Code, as long as these requirements do not conflict with FERC license requirements.
10. This State Water Quality Certification is valid for the term of the license. This State Water Quality Certification may be updated or modified throughout the term of the license, as deemed necessary by the Department.