166 FERC ¶ 62,150

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

City of Kaukauna, Wisconsin Project No. 1510-018

ORDER ISSUING NEW LICENSE

(Issued March 29, 2019)

INTRODUCTION

1. On March 24, 2017, Kaukauna Utilities filed, on behalf of the City of Kaukauna, Wisconsin (Kaukauna), 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 Kaukauna Hydroelectric Project No. 1510 (Kaukauna Project, or project). The 4.8-megawatt (MW) project is located on the Lower Fox River in the City of Kaukauna, Outagamie County, Wisconsin.[2] The project does not occupy federal land.

2. As discussed below, this order issues a new license for the Kaukauna Project.

BACKGROUND

3. The Federal Energy Regulatory Commission's (FERC, or Commission) predecessor, the Federal Power Commission, issued the original license for the Kaukauna Project on April 1, 1939, with a term of 50 years, which expired on March 31, 1989.[3]

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[1] 16 U.S.C. §§ 797(e) and 808 (2012).

[2] The Lower Fox River is a navigable waterway of the United States. City of Kaukauna Wisconsin, 58 F.P.C. 2452, n. 1 (1977), citing Report on Reexamination of Fox River, Wisconsin, U.S. House of Representatives, 67th Congress (2nd sess.), Document No. 146 (U.S.G.P.O., 1922), p.105 (stating that the entire Fox River is under improvement by the United States for purposes of navigation). See also, City of Kaukauna, Wisconsin, Docket No. DI-146 (1938) (unpublished), as filed to the record of Docket No. P-1510-018 by Commission staff on March 29, 2019. Therefore, section 23(b)(1) of the FPA, 16 U.S.C. § 817(1)(2012), requires the project to be licensed.

[3] 19 F.P.C. ANN. REP, 52-53 (1939).

The Commission issued a new license for the project on January 30, 1989, with an effective date of April 1, 1989, and an expiration date of March 31, 2019.[4]

4. On November 21, 2017, the Commission issued a public notice accepting the application for filing, soliciting motions to intervene and protests, indicating the application was ready for environmental analysis, and soliciting comments, recommendations, terms and conditions, and prescriptions.[5] The notice set January 20, 2018 as the deadline for filing motions to intervene, protests, comments, recommendations, terms and conditions, and prescriptions. No entities filed a notice of intervention or opposition to issuance of a license. Wisconsin Department of Natural Resources (Wisconsin DNR) and National Park Service (Park Service) filed comments and recommendations on the application.

5. Commission staff issued an environmental assessment (EA) on August 7, 2018, analyzing the impacts of the proposed project and alternatives to it. The Park Service and U.S. Environmental Protection Agency (EPA) filed comments on the EA.

6. The comments and recommendations have been fully considered in determining whether, and under what conditions, to issue this license.

PROJECT DESCRIPTION AND OPERATION

A. Project Area

7. The Kaukauna Project is located on the main stem of the Lower Fox River in the City of Kaukauna, Outagamie County, Wisconsin about 39 river miles upstream of Green Bay, Wisconsin. The Lower Fox River originates at the outlet of Lake Winnebago, in northeastern Wisconsin and flows northeast for approximately 39 river miles to Green Bay, on the western shore of Lake Michigan. The Lower Fox River Basin has a total drainage area of about 5,980 square miles. Lower Fox River flow is regulated by a series of 13 dams, nine of which are operated and maintained by the U.S. Army Corps of Engineers (Corps).

8. The project is located between the two hydropower developments that make up the Badger-Rapide Croche Hydroelectric Project No. 2677 (Badger Project): the Badger Development, located immediately upstream of the project at the Corps' Kaukauna dam in the City of Kaukauna, and the Rapide Croche Development, located downstream of the

[4] *City of Kaukauna, Wisconsin*, 46 FERC ¶ 62,102 (1989).

[5] 82 Fed. Reg. 56,595-56,596 (November 29, 2017).

project at the Corps' Rapide Croche dam in the Town of Buchanan.[6] Land in the vicinity of the Kaukauna Project mainly consists of current and former industrial sites, residential areas, and some forest, including the 1000 Islands Nature Conservancy Zone (Conservancy Zone).[7]

B. Project Facilities

9. The Kaukauna Project includes a 3,842-foot-long dam that consists of: (1) a 2,428-foot-long uncontrolled overflow spillway section with a crest elevation of 629.0 feet above mean sea level (msl);[8] (2) a 930-foot-long retaining wall section; (3) a 92-foot-long concrete intake and powerhouse section; (4) a 292-foot-long retaining wall section; (5) a 34-foot-long trash sluice; and (6) a 66-foot-long gated spillway section. The project impoundment has a surface area of approximately 19 acres and a gross storage capacity of 400 acre-feet at a normal maximum water surface elevation of 629.0 feet msl.

10. From the impoundment, water enters the powerhouse through an 88-foot-wide intake structure at the dam that is equipped with seven intake gates and an 88-foot-wide trashrack with 5-inch clear-bar spacing. The powerhouse contains two 2.4-MW Kaplan turbine-generator units, for a total installed capacity of 4.8 MW. Water is discharged from the powerhouse into a 1,200-foot-long excavated tailrace that empties into the Lower Fox River about 3,500 feet downstream of the dam.

11. Two 68-foot-long, 2.4-kilovolt (kV) underground generator leads connect the generator units to a project substation that supplies power to Kaukauna's distribution system. A more detailed description of the project facilities is contained in Ordering Paragraph (B)(2).

C. Current Project Operation

12. The current license requires Kaukauna to operate the project in a run-of-river mode and to minimize fluctuations of the impoundment surface elevation. Kaukauna's staff remotely operate the project to maintain a sufficient discharge such that outflow from the project approximates inflow to the impoundment. During normal operating conditions, Kaukauna maintains the elevation of the impoundment at the crest of the

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[6] *City of Kaukauna, Wisconsin*, 135 FERC ¶ 62,149 (2011). Kaukauna is also the licensee for the Badger Project.

[7] The City of Kaukauna established the 350-acre Conservancy Zone in 1969. See EA at 35 for additional information on the Conservancy Zone.

[8] The elevations referenced in this order are relative to mean sea level, which is 554.0 feet above the local plant datum noted in Exhibit F of the license application.

overflow spillway (629.0 feet msl). The project creates an approximately 3,500-foot-long bypassed reach of the Lower Fox River.

13. The Kaukauna Project generates electricity using flows between the minimum hydraulic capacity of one of the turbines, 470 cubic feet per second (cfs), and the combined maximum hydraulic capacity of both turbines, which is 3,000 cfs. When river flow is less than 470 cfs or greater than 3,000 cfs, water is spilled from the impoundment into the Lower Fox River by passing flows through the spillway gates or directly over the overflow spillway section of the dam.

14. The project's average annual generation is approximately 29,704 megawatt-hours (MWh). Generation at the Kaukauna Project occurs on a year-round basis, and is typically highest during the spring season (March through June) when river flow is highest in the Lower Fox River.

D. Project Boundary

15. The current project boundary encloses 50.25 acres, including the impoundment up to a contour elevation of 629.0 feet msl, the bypassed reach, tailrace, and land associated with the dam, powerhouse, generator lead lines, and appurtenant facilities.

16. Kaukauna proposes to modify the project boundary by removing 25.3 acres of land and water located within the bypassed reach and tailrace.

E. Proposed Operation and Environmental Measures

17. Kaukauna proposes to continue operating the project in a run-of-river mode, with a target normal impoundment elevation at the crest of the overflow spillway (629.0 feet msl), and a minimum impoundment elevation of 628.5 feet msl.

18. To protect aquatic resources in the impoundment, Kaukauna proposes to develop an impoundment drawdown plan.

19. To document that project operation is in compliance with the license's operational requirements, Kaukauna proposes to develop an operation compliance monitoring plan that identifies the monitoring locations and protocol for a headwater gage, and identifies a method for determining flows released from the powerhouse, through the spillway gates, and over the spillway.

20. To protect aquatic resources, Kaukauna proposes to: (1) notify the Commission and resource agencies of any planned or unplanned modifications to run-of-river operation; (2) consult with Wisconsin DNR prior to a planned modification to project operation; and (3) make all reasonable attempts to return to run-of-river operation as soon as possible following any modification that is beyond the licensee's control.

21. To protect aquatic resources, Kaukauna proposes to file a report with the Commission and the Wisconsin DNR within 30 days of any deviation from run-of-river operation or the minimum headwater elevation of 628.5 feet msl, including: (1) an identification of the cause, severity, and duration of the incident and any observed or reported adverse environmental impacts resulting from the incident; (2) operation data necessary to determine compliance with license requirements; (3) a description of any corrective measures implemented at the time of occurrence and measures to ensure that similar incidents do not recur; and (4) comments or correspondence received from the Wisconsin DNR regarding the incident.

22. To maintain downstream aquatic habitat, Kaukauna proposes to develop a woody debris management plan that includes provisions for reducing the effect of removing debris from trashracks on downstream habitat.

23. To facilitate the management of contaminated sediment in the Lower Fox River, Kaukauna proposes to cooperate with Wisconsin DNR on the implementation of the Lower Green Bay Remedial Action Plan[9] by: (1) providing reasonable access to the project area for agencies involved with the implementation of the Remedial Action Plan, and (2) temporarily modifying run-of-river operation as needed during the removal or treatment of contaminated sediments in the Fox River.

24. To minimize the effects of project maintenance on water quality and aquatic resources, Kaukauna proposes to install erosion and siltation controls during any ground disturbing activities at the project.

25. To minimize the spread of invasive species, Kaukauna proposes to develop an invasive species monitoring plan that includes provisions for monitoring and mitigating the spread of invasive species.

26. To protect the federally threatened northern long-eared bat, Kaukauna proposes to: (1) avoid tree removal at the project unless the tree poses a threat to human life or property, or removal occurs outside of the pup season (June 1 through July 31); and (2) only remove live bats from structures within the project boundary after consulting

[9] Wisconsin DNR's Remedial Action Plan outlines actions for cleaning up contaminated river sediments in Green Bay and the Lower Fox River. As part of the Remedial Action Plan, resource agencies and tribal entities collaborate to determine measures necessary to rehabilitate the Lower Fox River and the Green Bay area. *See* EA at 23 for additional information.

with the U.S. Fish and Wildlife Service (FWS) and following recommendations provided by the FWS.

27. To enhance safety for recreation users at the project, Kaukauna proposes to: (1) install boat exclusion cables in the forebay canal, upstream of the powerhouse intake; and (2) continue to maintain existing safety signage and warnings.

28. To protect cultural resources, Kaukauna proposes to implement the statewide programmatic agreement (PA) for Wisconsin and adjacent portions of Michigan,[10] and implement a proposed historic properties management plan (HPMP).

SUMMARY OF LICENSE REQUIREMENTS

29. This license, which authorizes 4.8 MW of renewable energy generation capacity, requires most of the proposed measures noted above, with the staff-recommended modifications and additional measures described below, and with the conditions included in Wisconsin DNR's water quality certification (Appendix A). The license does not require Kaukauna's proposal to install erosion and siltation controls for ground disturbing activities, but does include standard terms and conditions that require the licensee to take reasonable measures to prevent stream sedimentation and soil erosion on lands adjacent to streams and other waters. Combined, these measures will protect and enhance water quality, aquatic resources, terrestrial resources, recreational resources, cultural resources, and threatened and endangered species.

30. To help ensure that Kaukauna reports deviations from run-of-river operation and evaluates the extent of any environmental effects associated with a deviation, the license requires reporting procedures that Kaukauna must follow in the event of planned and unplanned deviations, based on the duration of the event, and any observed or reported effects of the deviation.

31. To protect aquatic resources in the impoundment and the downstream reach of the Lower Fox River during planned and emergency impoundment drawdowns, the license requires the development of an impoundment drawdown and refill plan, as proposed by Kaukauna, with the following provisions: (1) a description of the circumstances that would necessitate a non-emergency impoundment drawdown; (2) estimates of the

[10] 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."

frequency and duration of non-emergency impoundment drawdowns; (3) identification of the maximum drawdown rate, drawdown depth, and refill rates that will be implemented during any drawdown (*i.e.*, non-emergency or emergency); and (4) scheduling non-emergency impoundment drawdowns to minimize the effects of the drawdowns on sensitive life stages of species in project-affected waters.

32. To document that project operation is in compliance with the license's operating requirements, the license requires the development of an operation compliance monitoring plan, as proposed by Kaukauna, with the following provisions: (1) a detailed description of how Kaukauna will document compliance with the operational requirements of the license; (2) installing, operating, and maintaining devices to measure the elevation of the impoundment; (3) a description of the specific locations of all measuring devices; and (4) standard operating procedures to be implemented outside of normal operating conditions.

33. To protect downstream aquatic habitat, the license requires the development of a debris management plan, as proposed by Kaukauna, with provisions for identifying the frequency and methods for removing and sorting debris that collects on project structures, and passing organic debris downstream of the project.

34. To minimize the spread of invasive plant species, the license requires the development of an invasive species control plan with the following provisions: (1) identifying target invasive species; (2) defining the treatment areas in the vicinity of the project; (3) describing the techniques to be used to control invasive species; (4) monitoring treatment areas for invasive species on an annual basis for three consecutive years following invasive species control treatment; and (5) filing a report with the Commission following the 3-year monitoring period, including an analysis of whether additional invasive species control is necessary.

35. To enhance safety for recreation users at the project, the license requires Kaukauna to: (1) install and maintain boat exclusion cables in the forebay canal upstream of the powerhouse intake; (2) install and maintain signage for boaters to indicate the direction and approximate distance to an existing egress point on the shoreline of the impoundment; and (3) continue to maintain existing safety signage and warnings for recreation users in the vicinity of the project.

WATER QUALITY CERTIFICATION

36. Under section 401(a)(1) of the Clean Water Act (CWA),[11] the Commission may not issue a license authorizing the construction or operation of a hydroelectric project unless the state water quality certifying agency has either issued a water quality

[11] 33 U.S.C. § 1341(a)(1) (2012).

certification (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 must become a condition of any federal license for the project.[12]

37. On December 1, 2017, Kaukauna applied to the Wisconsin DNR for a certification for the Kaukauna Project. Wisconsin DNR received the request for certification on December 4, 2017. Wisconsin DNR issued a certification for the project on September 10, 2018. Ten of the eleven conditions (Conditions 1 through 4, and 6 through 11) are general or administrative and are not discussed further. Condition 5 of the certification requires Kaukauna to cooperate with Wisconsin DNR on the implementation of the Lower Green Bay Remedial Action Plan to facilitate the management of contaminated sediment in the Lower Fox River by: (1) providing reasonable access to the project area for agencies involved with the implementation of the remedial action plan; and (2) temporarily modifying run-of-river operation as needed during the removal or treatment of contaminated sediments.

38. The 11 conditions of the certification are set forth in Appendix A of this order and incorporated into the license by Ordering Paragraph (D).

COASTAL ZONE MANAGEMENT ACT

39. Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA),[13] 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.

40. On March 30, 2016, Kaukauna 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, which extends to 15 counties on the state boundary with Lake Superior and Lake Michigan. By letter dated June 8, 2016, the Wisconsin Coastal Resources Management Program stated

[12] 33 U.S.C. § 1341(d) (2012).

[13] 16 U.S.C. § 1456(c)(3)(A) (2012).

that it had no comments on the project and would not be conducting a federal consistency review.[14] Therefore, a coastal zone consistency review is not required.

SECTION 18 FISHWAY PRESCRIPTIONS

41. Section 18 of the FPA[15] 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.

42. No fishway prescriptions or reservations of authority were filed under section 18 of the FPA.

THREATENED AND ENDANGERED SPECIES

43. Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species, or result in the destruction or adverse modification of their designated critical habitat.[16] Based on the FWS's Information for Planning and Consultation (IPaC) website, the northern long-eared bat (*Myotis septentrionalis*) has the potential to occur in the project vicinity.[17]

44. FWS finalized an ESA section 4(d) rule for the northern long-eared bat in January 2016.[18] The ESA section 4(d) rule focuses on minimizing the effects of disturbances on 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. In the programmatic biological opinion for the

[14] Kaukauna's March 24, 2017 license application, Volume 4, Section 3, p. 168.

[15] 16 U.S.C. § 811 (2012).

[16] 16 U.S.C. § 1536(a) (2012).

[17] Commission staff's February 7, 2019 memorandum on Interior's official list of threatened and endangered species, as accessed through the IPaC database (https://ecos.fws.gov/ipac/) on February 7, 2019.

[18] FWS, 2016. Endangered and Threatened Wildlife and Plants; 4(d) Rule for the Northern Long-Eared Bat. 81 Fed. Reg. 9, 1900-1922 (January 14, 2016). 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) (2012).

section 4(d) rule,[19] FWS found that incidental take of the northern long-eared bat is not prohibited unless the action: (1) affects a northern long-eared bat hibernaculum or could alter the entrance or the environment of a hibernaculum; (2) includes the removal of a known, occupied maternity roost tree or any trees within 150 feet of a known, occupied maternity roost tree during the pup season (June 1 – July 31); or (3) includes the removal of any trees within 0.25 mile of a northern long-eared bat hibernaculum at any time of year. In addition, removal of hazardous trees for the protection of human life and property is not prohibited under the section 4(d) rule.

45. In the EA,[20] Commission staff determined that although there is no known northern long-eared bat population within the project boundary, habitat for the northern long-eared bat is present in the project boundary, and maternity roosts could occur in the vicinity of the project. Commission staff concluded that northern long-eared bat could be affected by project maintenance activities that disturb northern long-eared bat habitat, such as activities that require tree removal in the project vicinity.

46. In the EA,[21] Commission staff determined that avoiding the removal of trees at the project from June 1 to July 31 would ensure that prohibited take of northern long-eared bats would not occur during the term of any new license.[22] Article 406 requires that Kaukauna: (1) avoid tree removal within the project boundary unless the tree poses a threat to human life or property, or the removal occurs outside of the northern long-eared bat pup season from June 1 through July 31; and (2) only remove live bats from structures within the project boundary following consultation with FWS and in accordance with FWS recommendations.

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[19] FWS, 2016. Programmatic biological opinion on final 4(d) rule for the northern long-eared bat and activities excepted from take prohibitions. U.S. Fish and Wildlife Service, Midwest Regional Office.

[20] EA at 40.

[21] EA at 42.

[22] On August 21, 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 the Commission's responsibilities under ESA section 7(a)(2) with respect to the northern long-eared bat are fulfilled through FWS's programmatic biological opinion. FWS did not respond to Commission staff's request for concurrence.

NATIONAL HISTORIC PRESERVATION ACT

47. Under section 106 of the National Historic Preservation Act (NHPA)[23] and its implementing regulations,[24] 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, 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 the State Historic Preservation Officer (SHPO) to determine whether and how a proposed action may affect historic properties, and to seek ways to avoid or minimize any adverse effects.

48. 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.[25] The PA requires Kaukauna to implement an HPMP within one year of license issuance to be effective for the term of the license. Execution of the PA demonstrates the Commission's compliance with section 106 of the NHPA.

49. Kaukauna filed an HPMP with its license application on March 24, 2017.[26] Article 408 of this license requires Kaukauna to implement the PA and HPMP when the license takes effect.

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[23] 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).

[24] 36 C.F.R. Part 800 (2018).

[25] The PA is implemented for all hydroelectric projects in Wisconsin and Michigan's Upper Peninsula that may affect properties included in, or eligible for inclusion in, the National Register of Historic Places.

[26] On June 15, 2016, the Wisconsin SHPO determined that the proposed undertaking would have no adverse effects on historic properties with the implementation of the HPMP. *See* Kaukauna's March 24, 2017 license application, Exhibit E, at Appendix E-26.

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

50. Section 10(j)(1) of the FPA[27] 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 Act,[28] to "adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)" affected by the project.

51. No section 10(j) recommendations were filed by federal or state fish and wildlife agencies.

SECTION 10(a)(1) OF THE FPA

52. Section 10(a)(1) of the FPA[29] 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

53. To protect fish and wildlife resources, Kaukauna proposes to continue operating the project in a run-of-river mode (*i.e.*, with outflow from the project approximately equal to inflow to the impoundment) with a target normal impoundment elevation at the crest of the overflow spillway at the dam (629.0 feet msl) and a minimum impoundment elevation of 628.5 feet msl. Kaukauna also proposes to notify the Commission and Wisconsin DNR in advance of temporary, planned modifications to run-of-river operation, and consult with Wisconsin DNR to reduce project impacts on water quality. Kaukauna proposes to file a report with the Commission and resource agencies following a deviation, including: (1) identifying the cause, severity, and duration of the incident and any adverse environmental impacts resulting from the incident; (2) operation data to determine compliance with license requirements; and (3) describing any corrective

[27] 16 U.S.C. § 803(j)(1) (2012).

[28] 16 U.S.C. §§ 661 et seq. (2012).

[29] 16 U.S.C. § 803(a)(1) (2012).

measures implemented at the time of occurrence and measures to ensure that similar incidents do not recur.

54. Continuing to operate the project in run-of-river mode would limit impoundment fluctuations associated with project operation, and would continue to result in minimal to no adverse project effects on the flow regime of the Lower Fox River downstream of the project.[30] Establishing a minimum impoundment elevation of 628.5 feet msl would help ensure that the impoundment elevation does not fluctuate by more than 0.5 foot below the overflow spillway crest of 629.0 feet msl during normal operating conditions.[31] Staff also concluded in the EA[32] that Kaukauna's proposed notification and reporting procedures for deviations would help ensure that Kaukauna documents the reason for the deviation, the duration and magnitude of the deviation, and any environmental effects associated with the deviation.

55. Article 401 requires Kaukauna to operate the project in run-of-river mode with a normal maximum elevation of 629.0 feet msl, and maintain a discharge from the project such that outflows from the project approximate inflows on an instantaneous basis. Article 401 also requires Kaukauna to maintain a minimum water surface elevation of 628.5 feet msl in the impoundment. Article 401 allows planned, short-term deviations from run-of-river operation (*i.e.,* for minor or routine maintenance activities) after mutual agreement among the licensee and the resource agencies. The article specifies reporting procedures the licensee must follow regarding such planned deviations. Article 401 also includes reporting requirements that the licensee must follow in the event of unplanned deviations, based on the duration of the event, and any observed or reported effects of the deviation. Under the article, unplanned deviations that do not exceed three hours in duration (from the time the deviation starts until the time compliance is resumed) and for which there are no observed or reported environmental effects, do not need to be reported to the Commission individually, but can instead be included in an annual report that describes these minor incidents.

B. Impoundment Drawdown and Refill Plan

56. Drawing down the impoundment could adversely affect aquatic and semi-aquatic resources in the impoundment by dewatering littoral zone habitats, including fish spawning and nursery sites and habitat for benthic macroinvertebrates and other aquatic

[30] EA at 25.

[31] EA at 25 and 72.

[32] EA at 74-75.

organisms.[33] Kaukauna proposes to develop an impoundment drawdown and refill plan in consultation with Wisconsin DNR and FWS to minimize the effects of planned and emergency impoundment drawdowns on aquatic resources. However, Kaukauna's proposal does not contain specific measures that would be implemented.

57. In the EA,[34] Commission staff concluded that an impoundment drawdown and refill plan would allow Kaukauna to schedule drawdowns for maintenance and repairs at times that would be least disruptive to aquatic resources. To minimize the effects of impoundment drawdowns on aquatic resources, Article 402 of this license requires Kaukauna to develop an impoundment drawdown and refill plan that includes: (1) a description of the circumstances that would necessitate a non-emergency impoundment drawdown; (2) an estimate of the frequency and duration of non-emergency impoundment drawdowns in a typical year; (3) scheduling non-emergency impoundment drawdowns during periods that minimize the effects of the drawdowns on sensitive life stages of species in project-affected waters (*e.g.*, fish spawning seasons and waterfowl nesting activities); and (4) identification of the maximum drawdown rate, drawdown depth, refill rates that will be implemented during any drawdown (*i.e.*, non-emergency or emergency), and other measures to be taken to minimize the effects of the drawdown on aquatic and terrestrial resources at the project impoundment and in the downstream reach of the Lower Fox River.

C. Operation Compliance Monitoring Plan

58. To document that project operation is in compliance with the license's operation requirements, Kaukauna proposes to develop an operation compliance monitoring plan that identifies the monitoring locations and protocol for a headwater gage, and identifies a method for determining flows released from the powerhouse, through the spillway gates, and over the spillway.

59. In the EA, Commission staff found that the measures typically included in an operation compliance monitoring plan would document whether Kaukauna is accurately monitoring project inflow and outflow.[35] Commission staff recommended that the operation compliance monitoring plan include: (1) monitoring the impoundment elevation level; and (2) standard operating procedures to be implemented outside of normal operating conditions for the protection of aquatic resources, including during: (a)

[33] EA at 73.

[34] EA at 73-74.

[35] EA at 26.

scheduled facility shutdowns and maintenance; and (b) during emergency conditions, such as unscheduled facility shutdowns and maintenance, in order to minimize project effects on environmental resources.[36]

60. An operation compliance monitoring plan that includes Kaukauna's proposed measures and staff's recommended measures would help document compliance with the operational requirements of the license, and would minimize adverse environmental effects associated with modifications and deviations from run-of-river operation. Therefore, Article 403 requires Kaukauna to develop an operation compliance monitoring plan that includes: (1) a detailed description of how the licensee will document compliance with the operational requirements of the license, including a description of the monitoring frequency for impoundment elevations and a log for documenting impoundment elevations; (2) installing, operating, and maintaining an automatic water level recorder and staff gage in the Kaukauna impoundment, with the staff gage clearly marked to show the minimum impoundment elevation of 628.5-foot msl; (3) a description of the specific locations of all gauges or other measuring devices; (4) standard operating procedures to be implemented outside of normal operating conditions; and (5) a schedule for installing and operating the monitoring equipment.

D. Soil Erosion and Sedimentation

61. To prevent and reduce erosion, sedimentation, and siltation caused by ground disturbing activities associated with routine maintenance activities, and consequently avoid or minimize potential adverse effects on water quality and aquatic resources, Kaukauna proposes to install erosion and siltation controls during any ground disturbing activities within the project boundary.

62. The Commission's standard terms and conditions for a hydropower license require the licensee to take reasonable measures to prevent stream sedimentation and soil erosion on lands adjacent to streams and other waters.[37] These standard terms and conditions are sufficient for routine maintenance activities that could result in erosion and sedimentation. However, any substantial alteration or addition to project facilities, land, or water must first be approved by the Commission before commencement of such activities. The Commission could at that time, consider the need for a separate erosion

[36] EA at 72-73.

[37] See Ordering Paragraph (E), and Article 19 of Form L-3 (Oct. 1975), entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters of the United States."

and sedimentation control plan in response to any substantial soil and sediment-disturbing activities proposed during the term of the license.

E. Debris Management Plan

63. Debris and trash that accumulates at the project's 88-foot-wide trashrack could increase fish entrainment and impingement by increasing the flow velocity at the trashracks.[38] In addition, debris collecting along the 3,842-foot-long dam could present a safety hazard for whitewater boaters paddling near the dam. Kaukauna proposes to develop a debris management plan to help ensure proper project operation and the protection of aquatic resources in the Lower Fox River downstream of the project. However, Kaukauna does not outline the specific measures that would be implemented.

64. In the EA,[39] Commission staff recommended that Kaukauna develop a debris management plan to minimize project effects on aquatic organisms and recreation use, and ensure that desirable organic material is reintroduced to the river downstream of the dam. Staff recommended that the plan include provisions that identify the frequency and methods for managing woody debris and trash at the project, including provisions for: (1) removing and sorting debris that collects on project structures; (2) passing organic debris downstream of the project; and (3) removing and disposing of trash. Article 404 of this license requires Kaukauna to file a debris management plan with these provisions.

F. Trashrack Bar Spacing

65. In comments on the EA, EPA recommends that the Commission consider "optimal spacing options between bars in trash racks to protect fish species."[40] EPA does not define "optimal spacing options" in its comments on the EA. However, in its comments on the scoping document, EPA requested that the Commission consider the installation of trashracks with 1-inch clear bar spacing.[41]

66. The trashracks at the project have 5-inch clear bar spacing. In the EA,[42] Commission staff concluded that the project intake would physically exclude only the

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[38] EA at 75.

[39] EA at 76.

[40] EPA's September 18, 2018 letter at 1.

[41] EPA's July 27, 2017 letter at 2.

[42] EA at 30.

largest fish, including adult lake sturgeon. Based on entrainment studies conducted at 11 other hydroelectric projects in Wisconsin, Commission staff concluded that the majority of fish entrained at the project are most likely small and young fish. Staff found that survival of these fish is expected to be relatively high based on the use of Kaplan turbines at the project.[43] In addition, staff noted that under existing conditions which include the current trashrack configuration with 5-inch clear placing, a diverse and abundant fish population exists at the project, suggesting that any entrainment and mortality that occurs at the project is not adversely affecting the fish population.[44]

67. EPA has not referenced any specific fish mortality events or concerns to support its request to modify the existing trashracks, including any response to Commission staff's conclusions regarding the survival rates of fish through the Kaplan turbines and the diverse and abundant fish population that exists in the project vicinity. Because there is no evidence that the project is significantly affecting fish populations and Kaukauna is not proposing any changes to project operation that would adversely affect fish at the project relative to existing conditions, there is no basis for requiring Kaukauna to replace the existing trashracks with trashracks that have a narrower bar spacing. Accordingly, the license does not require Kaukauna to modify the trashracks at the project.

G. Invasive Species Management

68. Terrestrial and aquatic invasive plants are widespread and established at the project, and have out-competed native plants in the wetland and upland areas in the project vicinity.[45] These invasive plants can adversely affect water quality and displace native plant species that provide high quality food for wildlife. Kaukauna proposes to develop an invasive species monitoring plan, but has not provided the specific measures that would be implemented. Kaukauna states that it would develop the plan to coordinate any future monitoring at the project with the current monitoring requirements at the

[43] In the EA, staff referenced a turbine entrainment and survival database showing that turbine passage survival at hydroelectric projects with Kaplan turbines can be as high as 95 percent for small and moderate-sized fish and 88 percent for larger fish. See EA at 30, citing Electric Power Research Institute (1997). Turbine entrainment and survival database – field tests. Prepared by Alden Research Laboratory, Inc., Holden, Massachusetts. EPRI Report No. TR-108630. October 1997.

[44] *Id.*

[45] EA at 38-39.

Badger Project, due to the location of the Badger and Rapide Croche Developments upstream and downstream of the Kaukauna Project, respectively.[46]

69. In the EA,[47] Commission staff concluded that because vegetation in the project vicinity is already dominated by non-native invasive species, solely monitoring for invasive species would not mitigate the spread of invasive species or reduce the impact of invasive species on aquatic and terrestrial resources. Therefore, Commission staff recommended an invasive species control plan that includes provisions for: (1) identifying target species; (2) defining the treatment area(s) in the vicinity of the project; (3) describing the techniques to be used to control invasive species, including the frequency of treatments; (4) monitoring treatment areas to evaluate the success of invasive species control efforts; and (5) filing a report with the Commission following the monitoring period, including an analysis of whether additional invasive species control is necessary. To protect native plant communities, improve habitat quality for fish and wildlife in disturbed areas, and reduce the potential for new invasive species to become established on project land, Article 405 requires an invasive species control plan with Commission staff's recommended measures.

H. Recreation Facilities

70. There are no licensed recreation facilities at the project, but recreation use occurs within the project boundary and in the Conservancy Zone immediately downstream of the dam. A 1.5-mile whitewater stretch passes from the bypassed reach of the upstream Badger Development, through the project impoundment, over the project spillway, and through the bypassed reach of the project.[48] Whitewater boating occurs at the project during scheduled releases and other times when there are high flows.

[46] *See supra* P 8, note 6. The license order for the Badger Project required measures to identify and control the spread of invasive weeds. *Kaukauna*, 135 FERC ¶ 62,149 at P 31 and 47.

[47] EA at 76-77.

[48] *See supra* P 8, note 6.

71. Kaukauna proposes to maintain existing safety signage and warnings for recreation users "as required."[49] Kaukauna also proposes to install boat exclusion cables in the forebay canal, upstream of the powerhouse intake.[50]

72. In the EA,[51] Commission staff concluded that Kaukauna's proposal to install boater exclusion cables would increase safety for boaters by providing a barrier to the forebay canal and the powerhouse intake. Staff also recommended installing signs on the exclusion cables to inform boaters of the danger of the powerhouse intakes and direct them to a safe exit at the existing Elm Street recreation site that is part of the Badger Project.[52] Due to safety hazards associated with whitewater boating at the project,[53] staff also recommended installing signs at four locations in the project impoundment to direct boaters to the egress at the existing Elm Street access site.

73. In the EA, staff concluded that the Elm Street access site provides a safe exit for boaters from the impoundment and that additional exits from the whitewater reach were not needed as long as exclusion cables and directional signage were installed at the project.[54] The Elm Street access site includes an accessible path from the impoundment to nearby Elm Street, picnic tables, impoundment fishing access, a lifeguard ring on a

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[49] Kaukauna maintains instrumentation at the dam to detect movement of the forebay wall and provide early warning of safety issues to downstream areas. Kaukauna also coordinates with the Corps and the National Weather Service to monitor river flows, and provides notification of flood events to Outagamie County Emergency Management, Kaukauna Police Department, and Kaukauna Fire Department.

[50] The boat exclusion cable will only span across the forebay canal immediately upstream of the powerhouse intake, and will not extend across the entire 3,842-foot-long dam.

[51] EA at 78.

[52] Pursuant to its license for the Badger Project, Kaukauna provides access to the project impoundment via an access site located off of Elm Street in the City of Kaukauna.

[53] The Kaukauna Project dam and overflow spillway present an obstacle for whitewater boaters as they progress along the stretch of whitewater located in the project vicinity, and could be safety hazards for boaters depending on the individual boater's experience, flow levels, and debris loading at the project. See EA at 51 for additional information on the potential hazards of whitewater boating at the project.

[54] EA at 52.

throw rope, two trash cans, nearby parking, and a kiosk. Take-out areas for hand-carry boats are available at the eastern end of the site where the bedrock shelf dips into the Kaukauna impoundment. The Elm Street access site is approximately 0.25 mile downstream of a boat put-in and parking area. The entire route between the boat put-in and take-out areas has sidewalks.

74. In its comments on the EA, Park Service recommends that the licensee collaborate with a local representative of American Whitewater to develop effective tools to guide boaters to a safe exit, including determining the exact location of the boater exclusion cable and the design of the staff-recommend safety signs. Park Service also recommends that the licensee "review the recreation/safety facilities" every six years in consultation with interested local stakeholders such as American Whitewater.[55]

75. Consulting on the exact location of the boater exclusion cable and the design of the staff-recommend safety signs could provide Kaukauna with additional insight into the safety needs of recreation users at the project. However, American Whitewater has not provided any comments during the relicensing proceeding for the project, or indicated that it desires to consult with Kaukauna on these issues. Park Service has filed multiple comments pertaining to whitewater recreation during the relicensing process and has demonstrated itself to be knowledgeable about local whitewater conditions. Therefore, Kaukauna should consult with Park Service to determine the site of the boat exclusion cable attachments and the design of exit signage.

76. Park Service's request to "review the recreation/safety facilities" every six years is unclear and ambiguous. To the extent Park Service is requesting a periodic review of the adequacy of recreation opportunities in the project vicinity, Commission staff explained in the EA that there is an abundance of recreation opportunities in the immediate project vicinity, and additional recreation facilities are not necessary to meet recreation demand.[56] Park Service has not raised any issues with staff's conclusions regarding the adequacy of recreation facilities. To the extent Park Service is concerned with the adequacy of the staff-recommended safety features for recreation users during the term of the license, the license requires that Kaukauna maintain safety features to protect recreation users throughout the term of the license. The licensee must adhere to the Commission's regulations,[57] including 18 C.F.R. § 12.42, which requires licensees to install, operate, and maintain safety devices to warn the public of fluctuations in flow and to protect the public in the use of project lands and waters. In this regard, Article 303 of the license requires the development of a public safety plan that includes a description of

[55] National Park Service's September 4, 2018 comments at 2.

[56] EA at 51.

[57] Ordering Paragraph (A).

all safety devices and signage needed to protect the public. Also, as detailed below, Article 407 requires Kaukauna to maintain safety signage and warnings for recreation users, and to install and maintain boat exclusion cables during the term of the license. These requirements will help ensure the safety of recreation users for the term of the license. Accordingly, this license does not require a periodic review of the recreation/safety facilities.

77. Article 407 requires Kaukauna to implement the following measures in consultation with the Park Service: (1) install and maintain boat exclusion cables in the forebay canal upstream of the powerhouse intake; (2) install and maintain signage on the exclusion cables to indicate the direction and approximate distance to the egress at the Elm Street access point; (3) continue to maintain existing safety signage and warnings at the project, including warnings for recreation users in the project boundary; and (4) install and maintain signs in the project boundary indicating the direction and approximate distance to the existing Elm Street access point.

I. Climate Change

78. In its comments on the EA, the EPA recommends that the Commission consider resiliency and adaptation measures or plans to ensure that the project will maintain its structural integrity and safe operating conditions under changing heat and precipitation conditions over the life of the license.

79. An analysis of the available mean annual flow data from the Lower Fox River[58] shows that the mean annual flow has not changed significantly in the last 20 years. For example, the 5-year average of mean annual flow from 1992 to 1996 is 5,530 cfs, compared to 5,462 cfs from 2013 to 2017. This suggests that there is no ongoing long-term effect, including changing precipitation conditions, on the mean annual flow in the Lower Fox River.

80. Should conditions change in the future, the Commission's regulations and the requirements of this license include measures that will help ensure the project maintains its structural integrity and safe operating conditions over the term of the license. Under the Commission's regulations, licensees are required to use sound and prudent engineering practices in any action relating to the design, construction, operation,

[58] Flow in the Lower Fox River is recorded by the U.S. Geological Survey gage no. 04084445, which is located in Appleton, Wisconsin, approximately 7 miles upstream of the project.

maintenance, use, repair, or modification of a water power project or project works.[59] In addition, the Commission's regulations require that licensees develop an emergency action plan to provide early warning to upstream and downstream inhabitants, property owners, operators of water-related facilities, recreational users, and other persons in the vicinity who might be affected by a project emergency.[60]

J. Project Boundary

81. Project boundaries enclose the project works that are to be licensed and include "only those lands necessary for operation and maintenance of the project and for other project purposes, such as recreation, shoreline control, or protection of environmental resources."[61]

82. As noted above, the existing project boundary encloses 50.25 acres, including the impoundment up to a contour elevation of 629.0 feet msl, the bypassed reach, tailrace, and land associated with the dam, powerhouse, generator lead lines, and appurtenant facilities.

83. Kaukauna proposes to remove 25.3 acres of land and water from the existing project boundary downstream of the dam and powerhouse that it indicates are no longer serving a project purpose.[62] As stated in the EA,[63] the land and water proposed for removal is located entirely within the bypassed reach and tailrace area, and is not used for project operation and maintenance, or the protection of environmental resources.

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[59] 18 C.F.R. § 12.5 (2018).

[60] 18 C.F.R. §§ 12.20 and 12.22 (2018). The Commission's regulations also require that licensees install, operate, and maintain any signs, lights, sirens, barriers, or other safety devices that may reasonably be necessary or desirable to warn the public of fluctuations in flow from the project or otherwise to protect the public in the use of project lands and waters. 18 C.F.R. § 12.42 (2018). Kaukauna currently maintains an emergency action plan that specifies a pre-planned notification sequence to be followed in the event of dam failure. Kaukauna also maintains existing warning and safety devices that are capable of detecting movement of the forebay wall to provide for early warning to downstream areas.

[61] 18 C.F.R. § 4.41(h)(2) (2018).

[62] On August 23, 2017, Kaukauna filed a revised Exhibit G map that includes a total of 24.95 acres of project land and waters, which is consistent with Kaukauna's proposal to remove the 25.3 acres from the 50.25-acre project boundary.

[63] EA at 53.

Removal of this land would create a new project boundary that would cover the area needed for project operation and maintenance, and would eliminate land and water that are not needed for project purposes.

ADMINISTRATIVE PROVISIONS

A. Annual Charges

84. 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 A Project Description

85. Commission regulations require that licensees file an Exhibit A that is a description of the project. The Exhibit A, pages A-1 through A-10, filed on August 23, 2017, is approved in Ordering Paragraph (C).

C. Exhibit F and G Drawings

86. Commission regulations require that licensees file sets of approved drawings in electronic format. Article 202 requires the filing of these drawings.

D. Headwater Benefits

87. Some projects directly benefit from headwater improvements that were constructed by other licensees, the United States, or permittees. Article 203 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

88. Requiring a licensee to obtain prior Commission approval for every use and occupancy of project land would be unduly burdensome. Therefore, Article 409 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

89. 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.

G. Review of Final Plans and Specifications

90. Article 302 requires the licensee to submit plans and specifications for installing the boat exclusion cables to the Commission's Division of Dam Safety and Inspections – Chicago Regional Office for review and comment prior to installation of the cables.

STATE AND FEDERAL COMPREHENSIVE PLANS

91. Section 10(a)(2)(A) of the FPA[64] 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.[65] Under section 10(a)(2)(A), Commission staff identified nine comprehensive plans that are relevant to this project.[66] No conflicts were found.

APPLICANT'S PLANS AND CAPABILITIES

92. In accordance with sections 10(a)(2)(C) and 15(a) of the FPA,[67] staff evaluated Kaukauna'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

93. Section 10(a)(2)(C) of the FPA[68] requires the Commission to consider the extent of electricity consumption efficiency improvement programs in the case of license applicants primarily engaged in the generation or sale of electric power, like Kaukauna. Kaukauna maintains a number of programs designed to manage electric loads and reduce projected capacity and energy requirements. Kaukauna's New Construction Program educates prospective building owners and developers on the design and construction of energy efficient buildings with load reduction capabilities. Kaukauna's Efficiency Improvement Incentive Program educates businesses on energy efficiency improvements

[64] 16 U.S.C. § 803(a)(2)(A) (2012).

[65] Comprehensive plans are defined at 18 C.F.R. § 2.19 (2018).

[66] The list of applicable plans can be found in section 5.4 of the EA.

[67] 16 U.S.C. §§ 803(a)(2)(C) and 808(a) (2012).

[68] *Id.* § 803(a)(2)(C).

and provides cash incentives to reduce energy consumption and power demand. In collaboration with Wisconsin Public Power, Inc. (WPPI), Kaukauna provides funds to incentivize large commercial and industrial utility customers to make energy efficiency improvements. Kaukauna also offers programs to improve energy use management in school facilities, provide upfront capital for businesses to invest in energy efficient improvements, and encourage large retail customers to reduce energy consumption and improve energy efficiency. These programs show that Kaukauna is making an effort to conserve electricity and has made a satisfactory good faith effort to comply with section 10(a)(2)(C) of the FPA.

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

94. Based on a review of Kaukauna's compliance with the terms and conditions of the existing license, Commission staff finds that Kaukauna's overall record of making timely filings and compliance with its license is satisfactory. Therefore, Commission staff believes that Kaukauna can satisfy the conditions of a new license.

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

95. Commission staff has reviewed Kaukauna's record of management, operation, and maintenance of the Kaukauna Project pursuant to the requirements of 18 C.F.R. Part 12 and the Commission's Engineering Guidelines and periodic Independent Consultant's Safety Inspection Reports. Commission staff concludes that the dam and other project works are safe, and that there is no reason to believe that Kaukauna cannot continue to safely manage, operate, and maintain these facilities under a new license.

D. Ability to Provide Efficient and Reliable Electric Service

96. Commission staff has reviewed Kaukauna's plans and its ability to operate and maintain the project in a manner most likely to provide efficient and reliable electric service. Commission staff's review indicates that Kaukauna 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. Commission staff concludes that Kaukauna is capable of operating the project to provide efficient and reliable service in the future.

E. Need for Power

97. Kaukauna meets the demand for electricity of its customers using a mix of power purchased from WPPI and power generated by its own generating facilities. Approximately 75 percent of Kaukauna's power demand is met by purchasing power from WPPI. In recent years, WPPI has met its energy requirements through a power supply portfolio that includes ownership of generation as well as purchase power

arrangements. Most of WPPI's power purchase arrangements are intermediate or long-term arrangements designed to provide WPPI with competitively priced energy.

98. The Kaukauna Project would provide hydroelectric generation to meet part of Kaukauna's power requirements, resource diversity, and capacity needs. The project as licensed herein would have an installed capacity of 4.8 MW and generate approximately 29,704 MWh of electricity annually.

99. The Kaukauna Project is located within the Midcontinent Independent System Operator, Inc. (MISO) assessment area and the Midwest Reliability Organization region of the North American Electric Reliability Corporation (NERC). The Kaukauna Project provides capacity for local and regional power demand in the MISO assessment area.

100. NERC forecasts annual electrical supply and demand nationally and regionally for a 10-year period. NERC's 2017 Long-Term Reliability Assessment designates summer as the peak season for the reserve margin in the MISO assessment area. The anticipated reserve margin is forecasted to range from 19.23 percent in 2018 to 14.56 percent in 2027. The MISO assessment area is forecasted to meet MISO's reference margin level of 15.8 percent through the year 2022, but fall below the reference margin level beginning in 2023 and continuing through 2027.

101. The project's power can continue to meet Kaukauna's customer's needs as well as meeting part of the regional need for power.

F. Transmission Services

102. Project power is transmitted to the licensee's local distribution system through two 68-foot-long, 2.4-kV generator leads. Kaukauna proposes no changes that would affect its own or other transmission services in the region. The project and project transmission lines are important elements in providing power and voltage control to local Outagamie County communities and the region.

G. Cost Effectiveness of Plans

103. Kaukauna does not propose to change project operation or add new project facilities, but it does propose to develop and implement a number of measures to enhance environmental resources affected by the project. Based on Kaukauna's record as an existing licensee, Commission staff concludes that these plans are likely to be carried out in a cost-effective manner.

H. Actions Affecting the Public

104. Kaukauna provided opportunity for public involvement in the development of its application for a new license for the Kaukauna Project. The project provides employment opportunities and Kaukauna uses the project to help meet local power needs.

PROJECT ECONOMICS

105. 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 Corporation*,[69] 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 effective 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.

106. In applying this analysis to the Kaukauna Project, Commission staff considered three options: a no-action alternative, Kaukauna's proposal, and the project as licensed herein.[70]

107. Under the no-action alternative, the project would continue to operate as it does now. The project has an installed capacity of 4.8 MW and generates an average of 29,704 MWh of electricity annually. The average annual project cost is about $491,304, or about $16.54/MWh. When the estimate of average generation is multiplied by the alternative power cost of $42.04/MWh,[71] the total value of the project's power is $1,248,756 in 2018 dollars. To determine whether the proposed project is currently economically beneficial, the project's cost is subtracted from the value of the project's power. Therefore, the project costs $757,452, or $25.50/MWh, less to produce power than the likely alternative cost of power.

108. As proposed by Kaukauna, the levelized annual cost of operating the project is $541,207, or about $18.22/MWh. The proposed project would generate an average of 29,704 MWh of energy annually. When the estimate of average generation is multiplied by the alternative power cost of $42.04/MWh, the total value of the project's power is

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[69] 72 FERC ¶ 61,027 (1995).

[70] Details of Commission staff's economic analysis for the project as licensed herein, and for the other two alternatives, are included in section 4 of the EA.

[71] The energy portion of the power cost ($28.25/MWh of the $42.04 per MWh) is based on the Annual Energy Outlook 2018 published by the Energy Information Administration, June 2018 ($28.25/MWh). The capacity portion of the power value is based on the annual cost of the hydro-equivalent combined-cycle capacity, which staff estimated to be about $195/kilowatt-year.

$1,248,756, in 2018 dollars. Therefore, in the first year of operation, the project would cost $707,549, or $23.82/MWh, less than the likely alternative cost of power.

109. As licensed herein with Commission staff measures, the levelized annual cost of operating the project is $541,801, or about $18.24/MWh. The proposed project would generate an average of 29,704 MWh of energy annually. When the estimate of average generation is multiplied by the alternative power cost of $42.04/MWh, the total value of the project's power is $1,248,756, in 2018 dollars. Therefore, in the first year of operation, the project would cost $706,955, or $23.80/MWh, less than the likely alternative cost of power.

110. 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 a power system, such as by quickly adjusting power output to respond to rapid changes in 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 online.

COMPREHENSIVE DEVELOPMENT

111. Sections 4(e) and 10(a)(1) of the FPA[72] 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.

112. 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 Kaukauna 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.

113. Based on Commission staff's independent review and evaluation of the Kaukauna 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 selected and

[72] 16 U.S.C. §§ 797(e) and 803(a)(1) (2012).

found to be best adapted to a comprehensive plan for improving or developing the Lower Fox River.

114. This alternative is selected because: (1) issuance of a new license will serve to maintain a beneficial, dependable, and inexpensive source of electric energy; (2) the required environmental measures will protect or enhance fish and wildlife resources, water quality, recreational resources, and historic properties; and (3) the 4.8 MW of electric capacity comes from a renewable resource that does not contribute to atmospheric pollution.

LICENSE TERM

115. Section 15(e) of the FPA[73] 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.

116. On October 19, 2017, the Commission established a 40-year default license term policy for original and new licenses, effective as of October 26, 2017.[74] 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.

117. In a letter filed on December 18, 2017, Kaukauna requests that the license term for the project be coordinated with the license term for the Badger Project.[75]

118. The Kaukauna Project is located approximately 1 mile downstream and 4 miles upstream of the two hydropower developments that make up the Badger Project. The Badger Project has a license term that expires on April 30, 2061. As explained in the Policy Statement, it has been the Commission's policy to coordinate, to the extent feasible, license terms for projects in the same river basin to maximize consideration of cumulative impacts when the projects are due to be relicensed. Therefore, in order to

[73] 16 U.S.C. § 808(e) (2012).

[74] Policy Statement on Establishing License Terms for Hydroelectric Projects, 161 FERC ¶ 61,078 (2017) (Policy Statement); 82 Fed. Reg. 49,501 (Oct. 26, 2017).

[75] *See supra* P 8, note 6.

coordinate the license terms for the Kaukauna and Badger projects, it is appropriate to grant a license term of 42 years and 1 month for the Kaukauna Project, with a license expiration date of April 30, 2061.

119. Because the term of the current license does not expire until March 31, 2019, this license order is not effective until April 1, 2019.[76]

The Director orders:

(A) This license is issued to the City of Kaukauna, Wisconsin (licensee), to operate and maintain the Kaukauna Hydroelectric Project No. 1510, effective April 1, 2019, for a period of 42 years and 1 month. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in these lands, enclosed by the project boundary shown by the revised Exhibit G filed August 23, 2017:

Exhibit G Drawing	FERC P-1510-	Title
Sheet G-1	1001	Project Boundary

(2) Project works consisting of: (a) a 3,842-foot-long dam that includes: (i) a 930-foot-long, 14-foot-high masonry retaining wall section (left forebay dam) with a 4-foot-wide trash sluice; (ii) a 92-foot-long, 25-foot-high concrete intake and powerhouse section; (iii) a 292-foot-long, 26- to 30-foot-high masonry and concrete retaining wall section (right forebay dam); (iv) a 34-foot-long, 11-foot-high trash sluice; (v) a 66-foot-long, 18-foot-high gated spillway section with two 30-foot-wide, 8.8-foot-high spillway gates with a lower elevation of approximately 622 feet above mean sea level (msl) and an upper elevation of approximately 631 feet msl; and (vi) a 2,428-foot-long, 0.5- to 10-foot-high concrete and natural rock overflow ogee spillway with a crest elevation of 629.0 feet msl that includes: (1) a 1,305-foot-long, 10-foot-high concrete spillway section; (2) a 32-foot-long, 7-foot-high concrete spillway section; (3) a 125-foot-long, 6-foot-high concrete spillway section; (4) a 75-foot-long natural rock section; (5) a 569-foot-long, 5-foot-high concrete spillway section; and (6) a 322-foot-long, 5-foot-high concrete spillway section; (b) a 92-foot-long, 47.5-foot-high concrete and brick

[76] For this reason, the various deadlines in the license articles are measured from the April 1, 2019 effective date of this license, rather than from the order issuance date.

powerhouse; and (c) a 19-acre,1.5-mile-long impoundment with a total storage capacity of 400 acre-feet at a normal maximum surface elevation of 629.0 feet msl.

The powerhouse and its associated facilities include: (a) a 25-foot-high, 88-foot-wide intake structure with seven 11-foot-high, 7-foot-wide head gates and a continuous 25-foot-high, 88-foot-wide trashrack with 5-inch clear-bar spacing; (b) two 2.4-MW vertical Kaplan turbine-generator units for a total installed capacity of 4.8 MW; and (c) a 440-foot-wide, 49-foot-deep, 1,200-foot-long excavated tailrace.

Other project facilities include: (a) two 68-foot-long, 2.4-kilovolt (kV) generator leads; (b) two 2.4/12-kV transformers to connect the generator leads to the City of Kaukauna's local distribution system; and (c) appurtenant facilities.

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

Exhibit A: Pages A-1 through A-10 of the Exhibit A filed on August 23, 2017.

Exhibit F: The following drawings filed on March 24, 2017:

Exhibit F Drawing	FERC P-1510-	Title
Sheet F-1	1002	Plan and Sections of Dam
Sheet F-2	1003	Plan of Powerhouse
Sheet F-3	1004	Powerhouse Downstream Elevation
Sheet F-4	1005	Powerhouse Section

The following drawing filed on August 23, 2017:

Exhibit F Drawing	FERC P-1510-	Title
Sheet F-5	1006	Sections and Elevations of Dam

(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 subject to the articles set forth in Form L-3 (Oct. 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 is issued, 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 4.8 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.

(a) 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-1510-1001 through P-1510-1006) 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**. 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-1510-1001, G-1, Project Boundary, 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.

(b) 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 ArcGIS 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-1510, boundary polygon and/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-1510, project boundary metadata, MM-DD-YYYY.TXT].

Article 203. *Headwater Benefits.* If the licensee's project was directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the original license (including extensions of that term by annual licenses), and if those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the licensee 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 operations, 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 302. *Contract Plans and Specifications*. At least 60 days prior to installation of the boat exclusion cables required by Article 407, the licensee must submit one copy of its plans and specifications to the Commission's Division of Dam Safety and Inspections (D2SI)- Chicago Regional Engineer, and two copies to the Commission (one

of these must be a courtesy copy to the Director, D2SI). The licensee may not begin construction until the D2SI- Chicago Regional Engineer has reviewed and commented on the plans and specifications, determined that all preconstruction requirements have been satisfied, and authorized start of construction.

Article 303. *Public Safety Plan*. Within 60 days from the installation of boater exclusion cables and signs, the licensee must submit one copy to the Commission's Division of Dam Safety and Inspections (D2SI)- Chicago Regional Engineer and two copies to the Commission (one of these copies shall be a courtesy copy to the Commission's Director, D2SI) of a Public Safety Plan. The plan must include a description of all safety devices and signage needed to warn the public of fluctuations in flow from the project or otherwise protect the public in the use of project lands and waters. The plan must also include a map showing the location of all public safety measures. For guidance on preparing public safety plans the licensee can review the *Guidelines for Public Safety at Hydropower Projects* on the FERC website.

Article 401. *Project Operation*. The licensee must operate the project in a run-of-river mode with a normal maximum elevation of 629.0 feet mean sea level (msl). In doing so, the licensee must act to minimize the fluctuation of the impoundment surface elevation by maintaining a discharge from the project so that all outflows approximate the sum of inflows to the project on an instantaneous basis. In addition, the licensee must at all times maintain a minimum water surface elevation of 628.5 feet msl.

Planned Deviations

Run-of-river operation may be temporarily modified for short periods, of up to 3 weeks, after mutual agreement among the licensee and the U.S. Fish and Wildlife Service and the Wisconsin Department of Natural Resources (collectively, resource agencies). After concurrence from the agencies, the licensee must file a report with the Secretary of the Commission as soon as possible, but no later than 14 calendar days after the onset of the planned deviation. Each report must include: (1) the reasons for the deviation and how project operations were modified, (2) the duration and magnitude of the deviation, (3) any observed or reported environmental effects, and (4) documentation of consultation with the agencies. For planned deviations exceeding 3 weeks, the licensee must file an application for a temporary amendment of run-of-river operation, and receive Commission approval prior to implementation.

Unplanned Deviations

Run-of-river operation may be temporarily modified if required by operating emergencies beyond the control of the licensee (*i.e.*, unplanned deviations). For any unplanned deviation that lasts longer than 3 hours ***or*** results in visible environmental effects such as a fish kill, turbidity plume, bank erosion, or downstream flooding, the licensee must file a report as soon as possible, but no later than 14 days after each such incident. The report must include: (1) the cause of the deviation, (2) the duration and

magnitude of the deviation, (3) any pertinent operational and/or monitoring data, (4) a timeline of the incident and the licensee's response, (5) any comments or correspondence received from the resource agencies, or confirmation that no comments were received from the resource agencies, (6) documentation of any observed or reported environmental effects, and (7) a description of measures implemented to prevent similar deviations in the future.

For unplanned deviations lasting 3 hours or less that do not result in visible environmental effects, the licensee must file an annual report, by March 1, describing each incident that occurred during the prior January 1 through December 31 time period. The report must include for each 3 hours or less deviation: (1) the cause of the deviation, (2) the duration and magnitude of the deviation, (3) any pertinent operational and/or monitoring data, (4) a timeline of the incident and the licensee's response to each deviation, (5) any comments or correspondence received from the resource agencies, or confirmation that no comments were received from the resource agencies, and (6) a description of measures implemented to prevent similar deviations in the future.

Article 402. *Impoundment Drawdown and Refill Plan.* Within six months of the effective date of the license, the licensee must file for Commission approval, a plan for emergency and planned impoundment drawdowns that includes, but is not necessarily limited to, the following:

(1) a description of the circumstances that would necessitate a non-emergency impoundment drawdown;

(2) an estimate of the frequency and duration of non-emergency impoundment drawdowns in an average year;

(3) a provision for scheduling non-emergency impoundment drawdowns during periods that minimize the effects of the drawdowns on sensitive life stages of species in project-affected waters (*e.g.*, fish spawning seasons and waterfowl nesting activities); and

(4) identification of the maximum drawdown rate, drawdown depth, and refill rates that will be implemented during any drawdown (*i.e.*, non-emergency or emergency), and other measures to be taken to minimize effects of the drawdown on aquatic and terrestrial resources at the project impoundment and in the downstream reach of the Lower Fox River.

The plan must be developed in consultation with Wisconsin Department of Natural Resources and the U.S. Fish and Wildlife Service. 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 the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the agencies to comment and to provide 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. Implementation of the plan must not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Article 403. *Operation Compliance Monitoring Plan.* Within six months of the effective date of the license, the licensee must file with the Commission, for approval, a plan that describes how the licensee will document compliance with the operational requirements of this license.

The plan must include, but not necessarily be limited to, the following provisions:

(1) a detailed description of how the licensee will document compliance with the operational requirements of the license (as required by Articles 401 and 402), including a description of the monitoring frequency for impoundment elevations and a log for documenting impoundment elevations;

(2) installing, operating, and maintaining an automatic water level recorder and staff gage in the Kaukauna impoundment, with the staff gage clearly marked to show the minimum impoundment elevation required by Article 401;

(3) a description of the specific locations of all gages or other measuring devices;

(4) a description of the procedures for maintaining and calibrating monitoring equipment;

(5) standard operating procedures to be implemented outside of normal operating conditions, including during: (a) scheduled facility shutdowns and maintenance; and (b) emergency conditions such as unscheduled facility shutdowns and maintenance; and

(6) a schedule for installing and operating the monitoring equipment.

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

The Commission reserves the right to require changes to the plan. Implementation of the plan must not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Article 404. *Debris Management Plan.* Within six months of the effective date of the license, the licensee must file with the Commission, for approval, a plan that

describes how the licensee will remove and dispose of woody debris and trash at the project.

The plan must include, but not necessarily be limited to, provisions that identify the frequency and methods for:

(1) removing and sorting woody debris and trash that collects on project structures;

(2) passing a portion of the collected woody debris downstream of the project; and

(3) removing and disposing of all collected trash.

The licensee must prepare the plan in consultation with Wisconsin Department of Natural Resources and U.S. Fish and Wildlife Service. 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 the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Implementation of the plan must not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Article 405. *Invasive Species Control Plan.* Within six months of the effective date the license, the licensee must file with the Commission, for approval, an invasive species control plan. Invasive species of interest include, but are not necessarily limited to: glossy and common buckthorn, garlic mustard, Japanese honeysuckle, narrow leaf cattail, purple loosestrife, Eurasian milfoil, phragmites, and Japanese knotweed. The plan must include, but not necessarily be limited to, the following:

(1) identifying target species;

(2) defining the treatment area(s) in the vicinity of the project;

(3) describing the techniques to be used to control invasive species, including the frequency of treatments;

(4) monitoring treatment areas for invasive species on an annual basis for three consecutive years following invasive species control treatment, to evaluate the success of invasive species control efforts; and

(5) filing a report with the Commission following the monitoring period, including an analysis of whether additional invasive species control is necessary.

The licensee must prepare the plan in consultation with Wisconsin Department of Natural Resources (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 is 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. Implementation of the plan must not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

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

(1) avoid tree removal within the project boundary unless the tree poses a threat to human life or property, or the removal occurs outside of the northern long-eared bat pup season from June 1 through July 31; and

(2) only remove live bats from structures within the project boundary following consultation with the U.S. Fish and Wildlife Service (FWS) and in accordance with FWS recommendations.

Article 407. *Whitewater Recreation Improvements*. Within one year of the effective date of the license, the licensee must implement the following measures to improve whitewater boating at the project:

(1) install and maintain boat exclusion cables in the forebay canal upstream of the powerhouse intake;

(2) install and maintain signage on the safety exclusion cables in the forebay canal to indicate the direction and approximate distance to the Elm Street access point that is part of the Badger-Rapide Croche Hydroelectric Project No. 2677;

(3) continue to maintain existing safety signage and warnings identified in Article 302, including warnings for recreationists in the area of the project boundary; and

(4) install and maintain signs at the following locations to indicate the direction and approximate distance to the existing Elm Street access point: (a) on the shoreline of the channel that is located to the south of the unnamed island in the upper impoundment; (b) on the shoreline of the channel that is located to the north of the unnamed island; (c) on a buoy located in the impoundment at the end of the north channel; and (d) on a buoy located immediately downstream of the Elm Street access point.

The licensee must consult with the National Park Service on the location of the boat exclusion cable and the design of the signage that will be used to direct boaters to the Elm Street access point. At least 60 days prior to installation of the boat exclusion cables and the signage, the licensee must file with the Commission documentation of consultation with the National Park Service. If the licensee does not adopt a recommendation from the National Park Service, the filing must include the licensee's reasons, based on project-specific information. The Commission reserves the right to require changes to the boat exclusion cable location and signage design. Consistent with Article 302 of this license, installation of the boat exclusion cable and signage may not begin until the licensee is notified by the Commission that the location and design of the boat exclusion cable and signage are approved.

Article 408. *Programmatic Agreement and Historic Properties Management Plan*. The licensee must implement the "Programmatic Agreement Among the Federal Energy Regulatory Commission, the Advisory Council on Historic Preservation, the State of Wisconsin, State Historic Preservation Officer, and the State of Michigan, State Historic Preservation Officer, for Managing Historic Properties that may be Affected by New and Amended Licenses Issuing for the Continued Operation of Existing Hydroelectric Projects in the State of Wisconsin and Adjacent Portions of the State of Michigan" (Programmatic Agreement), executed on December 16, 1993, and including but not limited to the May 2016 Historic Properties Management Plan (HPMP) for the project. In the event that the Programmatic Agreement is terminated, the licensee shall continue to implement the provisions of the HPMP. The Commission reserves the authority to require changes to the HPMP at any time during the term of the license.

Article 409. *Use and Occupancy*. (a) In accordance with the provisions of this article, the licensee must 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 must 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 must 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 water craft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee must require multiple use and occupancy of facilities for access to project lands or waters. The licensee must also ensure that, to the satisfaction of the Commission's authorized representative, 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 must: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the 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-kilovolts 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 must file with the Commission 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. No report filing is required if no conveyances were made under paragraph (c) during the previous calendar year.

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

discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 water craft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 60 days before conveying any interest in project lands under this paragraph (d), the licensee must 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 must 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 must 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 must not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee must 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 must 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 must be consolidated for consideration when revised Exhibit G drawings would be filed for approval for other purposes.

(g) The authority granted to the licensee under this article must 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 FPA, 16 U.S.C. § 825*l* (2012), and section 385.713 of the Commission's regulations, 18 C.F.R. § 385.713 (2018). 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 constitutes 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 non-power licensee under the provisions of Section 15 of said Act, the Licensee, its successors and assigns shall be responsible for, and shall make good any defect of title to, or of right of occupancy and use in, any of such project

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

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

Article 8. The Licensee shall install and thereafter maintain gages and stream-gaging stations for the purpose of determining the stage and flow of the stream or streams on which the project is located, the amount of water held in and withdrawn from storage, and the effective head on the turbines; shall provide for the required reading of such gages and for the adequate rating of such stations; and shall install and maintain standard meters adequate for the determination of the amount of electric energy generated by the project works. The number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, shall at all times be satisfactory to the Commission or its authorized representative. The Commission reserves the right, after notice and opportunity for hearing, to require such alterations in the number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, as are necessary to secure adequate determinations. The installation of gages, the rating of said stream or streams, and the determination of the flow thereof, shall be under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region of the project, and the Licensee shall advance to the United States Geological Survey the amount of funds estimated to be necessary for such supervision, or cooperation for such periods as may be 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 non-power 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
Filed January 8, 2019

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 license 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. Cooperate with Wisconsin DNR on the implementation of the Lower Green Bay Remedial Action Plan to facilitate the management of contaminated sediment in the Lower Fox River by providing reasonable access to the project area for agencies involved with the implementation of the Remedial Action Plan and temporarily modifying run-of-river operation as needed during the removal or treatment of contaminated sediments;

6. When FERC issues the new license, the Licensee shall consult with the Department concerning any changes or modifications to the woody debris management plan, the impoundment drawdown plan, the operation monitoring plan, and the invasive species monitoring plan.

7. The Department may modify or revoke this certification if the project [is not] maintained according to the terms of the certification, or if the Department determines the activity is detrimental to the public interest.

8. Your acceptance of this certification signifies that you have read, understood, and agreed to follow all conditions of this certification.

9. This certification does not authorize any activities other than what is included in the FERC approved license articles and management plans.

10. 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.

11. 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 Department.

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