

156 FERC ¶ 62,062
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Northern Illinois Hydropower, LLC

Project No. 12717-002

ORDER ISSUING ORIGINAL LICENSE

(Issued July 22, 2016)

INTRODUCTION

1. On May 27, 2009, as supplemented on March 23, 2015, Northern Illinois Hydropower, LLC (Northern Illinois) filed, pursuant to Part I of the Federal Power Act (FPA),¹ an application for an original license to construct and operate the Brandon Road Hydroelectric Project No. 12717 (Brandon Road Project or project). The project will be located at the U.S. Army Corps of Engineers' (Corps) Brandon Road Lock and Dam on the Des Plaines River near the Village of Rockdale in Will County, Illinois. The project will occupy 0.06 acre of federal land administered by the Corps.²

2. As discussed below, this order issues an original license for the Brandon Road Project. The project's authorized capacity being licensed is 6.8 megawatts (MW).

BACKGROUND

3. On April 29, 2010, the Commission issued a public notice that was published in the *Federal Register* accepting the application for filing and setting June 28, 2010, as the deadline for filing motions to intervene and protests. Exelon Generation Corporation,

¹ 16 U.S.C. §§ 791(a) – 825(r) (2012).

² The project will be located at the Corps' Brandon Road Lock and Dam and will occupy lands of the United States. Further, the Des Plaines River is a navigable waterway of the United States. *See State of Illinois*, 13 FPC ANN. REP., 84 (1932) (stating that the Des Plaines River is a navigable waterway). For any of these reasons, section 23(b)(1) of the FPA, 16 U.S.C. § 817(1) (2012), requires that the project be licensed.

LLC (Exelon)³ filed a late motion to intervene on July 8, 2011, that was granted by the Commission's Secretary on October 20, 2011. Exelon does not oppose the project.

4. On October 4, 2010, the Commission issued a public notice that was published in the *Federal Register* indicating the application was ready for environmental analysis and setting December 3, 2010, as the deadline for filing comments, recommendations, terms and conditions, and prescriptions.⁴ The U.S. Department of the Interior (Interior) filed comments and recommendations on December 3, 2010. Northern Illinois filed reply comments on January 19, 2011.

5. An environmental assessment (EA) was prepared by Commission staff and issued on July 5, 2011, analyzing the effects of the proposed project and alternatives to it. The U.S. Environmental Protection Agency (EPA), Illinois Department of Natural Resources (Illinois DNR), and Exelon filed comments and recommendations on the EA.

6. On March 23, 2015, Northern Illinois amended its application to: (1) alter the location of the proposed powerhouse at Brandon Road Dam from headgate sections 13 through 16 to sections 1 through 4;⁵ (2) increase the number of proposed turbine/generator units from 2 to 4; (3) reduce the installed capacity of the proposed project from 10.2 to 6.8 MW; (4) reduce the minimum and maximum hydraulic capacities of the proposed project from 675 and 4,500 cubic feet per second (cfs), respectively, to 166 and 3,320 cfs, respectively; (5) eliminate its proposal to construct a switchyard; (6) replace its proposal for a 1.57-mile-long, 12-kilovolt (kV) overhead transmission line with a 0.36-mile-long, 34.5-kV overhead transmission line;⁶ and (7) include a proposal to cease project operations when the Corps' flow releases through

³ Exelon owns and operates the 1,824-MW Dresden Nuclear Station, which is located approximately 14 river miles downstream of the Brandon Road Lock and Dam.

⁴ 75 *Fed. Reg.* 62,518 (October 12, 2010).

⁵ Brandon Road Dam contains a 320-foot-long headgate section located at the western-most end of dam. The headgate section of the dam contains 16 separate gate bays. Headgate numbering used in this order is based on the Corps' numbering whereby the gates are sequentially numbered 1 (the western-most headgate) through 16 (the eastern-most headgate).

⁶ The modified transmission line route will be shorter and constructed in developed areas already analyzed in staff's EA. Therefore, the environmental effects of the amended application will be less than those described in staff's EA and no additional environmental analysis is required.

the Corps' headgates and Tainter gates (i.e., outlet structures) cumulatively fall below 1,000 cfs.

7. The intervention, 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

8. The project will be located on the Des Plaines River at river mile 286, approximately 13 miles upstream from its confluence with the Kankakee River. The Des Plaines and Kankakee Rivers together form the Illinois River. The Illinois River flows for 273 miles in a southerly and southwesterly direction to its confluence with the Mississippi River near Grafton, Illinois.

9. The Corps' navigation system from Chicago, Illinois, to Grafton, Illinois, is known as the Illinois Waterway and provides transportation for barge traffic from Lake Michigan to the Mississippi River. The Illinois Waterway flows 327 miles through eight navigational pools and includes the following locks and dams, which are all operated by the Corps: T.J. O'Brien (river mile 326.0), Lockport (river mile 291.0), Brandon Road (river mile 286.0), Dresden Island (river mile 271.5), Marseilles (river mile 244.6), Starved Rock (river mile 231.0), Peoria (river mile 157.7), and LaGrange (river mile 80.2).

10. The State of Illinois began construction of Brandon Road Lock and Dam in 1927. In 1930, construction was turned over to the federal government and completed, under the authority of the Rivers and Harbors Act of 1930,⁷ in 1933. The primary role of Brandon Road Lock and Dam is to maintain a water surface elevation within the Brandon Road Reservoir for commercial navigation. At the time of construction, hydropower was considered at the dam but was not installed. However, both dam and spillway structures (e.g., headgates) were designed to allow for future hydropower development.

B. Existing Corps Facilities and Operation

11. Brandon Road Dam impounds the 5.1-mile-long, 356-acre Brandon Road Reservoir, which is maintained by the Corps at an elevation of 539.0 feet National Geodetic Vertical Datum (NGVD). Brandon Road Dam is 2,391 feet long and includes a concrete gravity structure, earthen embankments, and a lock. The concrete gravity structure has a total length of about 1,569 feet that includes four concrete spillway sections and non-overflow sections. The four concrete spillway sections (moving in a

⁷ 33 U.S.C. § 403 (2012).

west to east direction) include: (1) a 320-foot-long spillway containing 16 15-foot-wide, 16-foot-high headgates with a sill elevation of 511.0 feet NGVD;⁸ (2) a 30-foot-long, fixed, concrete ogee overflow/ice chute section with a crest elevation of 539.0 feet NGVD; (3) a 91-foot-long spillway containing six 7.75-foot-wide, 8.42-foot-high sluice gates with a sill elevation of 510.0 feet NGVD; and (4) a 1,110-foot-long spillway containing 21 50-foot-wide, 2.29-foot-high Tainter gates with a sill elevation of 536.75 feet NGVD. The 600-foot-long, 110-foot-wide lock is located on the west bank of the Des Plaines River and is separated from the dam by an island that extends about 2,500 feet downstream. The lock and dam have a maximum hydraulic head of approximately 34.5 feet.

12. The Corps currently operates the Brandon Road Lock and Dam in a run-of-river mode to maintain water levels in the impoundment for navigation. The water surface elevation in the reservoir is maintained by releasing water at the same rate as it enters the project by operating the Tainter gates and headgates.

13. Historically, operation of the Tainter gates and headgates has varied over the years due to mechanical changes and Corps operating policies. Prior to 2010, the Corps frequently released large quantities of water from the headgates nearer the western end of the dam. Thereafter, the Corps shifted the majority of these flow releases from the headgates to the Tainter gates, with a preference to using the eastern-most Tainter gates during low and moderate flows. However, depending on inflow, the Corps releases flows from the headgates, Tainter gates, or any combination thereof.

C. Proposed Project Facilities

14. The project will use four of the currently inoperable headgates at Brandon Road Dam. The concrete plugs located in headgates 1 through 4 will be removed and four new 15-foot-wide intake gates will be installed in the modified headgate openings to enable Northern Illinois to control flow to the project powerhouse. A 100-foot-long by 190-foot-wide headrace channel will be excavated immediately upstream of the dam to convey water from the Brandon Road Reservoir into the powerhouse. Trashracks with 2-inch clear bar spacing will be installed on the headgate openings. Four new 15.3-foot-diameter penstocks will be fitted to the intake gates to direct water to a new 82-foot-long by 88.5-foot-wide concrete and steel powerhouse that will be constructed immediately downstream of headgates 1 through 4. The powerhouse will contain four identical 2,413-horsepower Kaplan turbines each coupled to a new 1.7-MW generator with a combined installed capacity of 6.8 MW. A 30-foot-long by 130-foot-wide tailrace

⁸ Headgate sections 1 through 8 are closed and plugged with concrete. Headgate sections 9 through 16 are functional and operated by the Corps as part of its water control operations.

channel will be excavated immediately downstream of the powerhouse to return flows from the powerhouse to the Des Plaines River.

15. A 0.36-mile-long, 34.5-kV overhead transmission line will transmit power from the powerhouse to an interconnection point at an existing distribution line owned by Commonwealth Edison.

16. A more detailed project description is contained in Ordering Paragraph (B)(2).

D. Proposed Project Operation

17. Northern Illinois proposes to operate the project in a run-of-release mode using flows made available by the Corps that otherwise would pass through the dam via the Corps' outlet structures.⁹ Northern Illinois also proposes to cease project operations when the Corps' flow releases through the Corps' outlet structures, other than the lock, cumulatively fall below 1,000 cfs. During flood conditions, generation will be suspended when excessive debris conditions exist, or when tailwater levels rise to the point where insufficient head exists for the turbines to operate effectively.

18. The proposed project will not have the capability to store water, and its operation will not change reservoir elevations or the cumulative amount or timing of flows released from the dam. Northern Illinois proposes to fully automate project operation to meet the Corps' requirements for maintaining the reservoir level in the Brandon Road Reservoir. The project will allow instantaneous access by the Corps to modify hydroelectric operation in response to emergencies associated with lock operation, flood control, or other events.

19. The project will generate an average of 40,000 megawatt-hours (MWh) annually.

E. Project Boundary

20. The project boundary includes a section of the Corps' existing headgate structure (i.e., headgates 1 through 4), as well as the new headrace, penstocks, powerhouse, tailrace, and the transmission line right-of-way. The Corps' dam and reservoir are federal facilities and, therefore, cannot be licensed by the Commission.

⁹ In Northern Illinois' amended application and the EA, Northern Illinois' proposed mode of operation was referred to as run-of-river; however, this mode of operation is more accurately described as run-of-release because the project will utilize flows made available to it (i.e., released to it) by the Corps for generation purposes only with no storage of flows in the reservoir. Therefore, this order refers to Northern Illinois' proposed mode of operation as run-of-release.

F. Proposed Environmental Measures

21. To minimize sediment runoff to the Des Plaines River during project construction, Northern Illinois prepared a draft Erosion and Sediment Control Plan¹⁰ to address sediment and erosion control during and after project construction. Northern Illinois proposes to finalize this plan after consultation with the “appropriate agencies” and file the plan with the Commission and Corps prior to commencing construction.
22. Northern Illinois proposes to demonstrate compliance with applicable water quality standards during instream project construction by conducting surface water sampling upstream and downstream of each dredging area during active sediment-disturbing activities.
23. Northern Illinois proposes to cease project operations when the Corps’ flow releases through the Corps’ outlet structures, other than the lock, cumulatively fall below 1,000 cfs to minimize the effects of project operations on downstream water quality and aquatic resources in the Des Plaines River.
24. To identify project effects on water quality, Northern Illinois proposes to monitor dissolved oxygen (from April through October) upstream and downstream of the project throughout the term of any license issued.
25. To minimize fish mortality from impingement and entrainment during project operation, Northern Illinois proposes to design the project trashracks with a 2-inch clear bar spacing and a maximum approach velocity of 1.5 feet per second.
26. To minimize the effects of project construction on aquatic resources, Northern Illinois proposes to prepare a fish recovery plan with provisions to collect and relocate fish trapped within cofferdams before dewatering of the cofferdams begins.
27. To identify the effects of project construction and operation on aquatic resources, Northern Illinois proposes to conduct: (1) a pre-construction survey of fish populations downstream of Brandon Road Dam to determine the composition of the existing fish community utilizing the project area prior to project construction; and (2) a post-construction survey of these fish populations after two years of project operation to assess any changes to the composition of the fish community inhabiting the area downstream of the dam.

¹⁰ The draft Erosion and Sediment Control Plan was filed on March 23, 2015, as Appendix A to Northern Illinois’ amended application. Northern Illinois’ amended application also refers to this plan as the draft Construction Erosion and Sedimentation Plan, draft Sediment and Erosion Control Plan, and draft Erosion and Sedimentation Control Plan.

28. To minimize the effects of project construction on freshwater mussels, Northern Illinois proposes to: (1) conduct a mussel survey to identify whether mussels are present within areas to be affected by project construction; and (2) prepare a freshwater mussel relocation plan if the results of the survey indicate freshwater mussels are present.

29. To protect the federally threatened northern long-eared bat during project construction, Northern Illinois proposes to: (1) conduct a pre-construction survey of the portions of the dam that will be affected during project construction to determine whether roosting bats are present; and (2) prepare a plan to minimize disturbance to bats during project construction, if roosting bats are observed during the pre-construction survey.

30. To minimize the effects of project construction on wetlands and mitigate for any loss of wetlands, Northern Illinois proposes to implement its proposed Wetland Mitigation Plan that contains provisions for: (1) restoring any temporally disturbed wetlands upon the completion of project construction; and (2) purchasing credits from a wetland mitigation bank, if temporary effects to wetlands cannot be mitigated.

31. To protect terrestrial resources, Northern Illinois proposes to refrain from tree-clearing during project construction.

SUMMARY OF LICENSE REQUIREMENTS

32. As summarized below, this license, which authorizes the installation of 6.8 MW of new, renewable energy generation capacity, requires a number of measures to protect and enhance water quality, fish, wildlife, and cultural resources at the project. The requirements include Northern Illinois' proposed measures with some modifications, as well as some additional measures, as indicated below.

33. To control erosion, the license requires Northern Illinois to prepare an erosion and sediment control plan that includes the requirements of Illinois EPA's water quality certification conditions 1 through 6.

34. To protect water quality and aquatic resources during instream construction, the license requires Northern Illinois to prepare a dredging plan that includes the requirements of Illinois EPA's water quality certification conditions 1 through 3.

35. To protect water quality and aquatic resources, the license requires Northern Illinois to prepare a hazardous substances control plan to minimize the potential for hazardous substance spills and ensure that procedures are in place to minimize the extent and adverse effects of any hazardous substance spills that may occur.

36. To ensure compliance with state water quality standards, the license requires Northern Illinois to prepare a dissolved oxygen monitoring plan that includes the requirements of Illinois EPA's water quality certification condition 7 and provisions for:

(1) monitoring dissolved oxygen at additional locations to ensure project effects on dissolved oxygen downstream of the dam can be evaluated relative to conditions immediately upstream of the intake; (2) describing the proposed measures to be implemented if monitoring reveals instances whereby project operation causes dissolved oxygen levels downstream of the dam to fall below state water quality standards; and (3) filing annual dissolved oxygen monitoring data and non-compliance reports with the Commission.

37. To ensure compliance with the operational requirements of this license, the license requires Northern Illinois to develop an operation compliance monitoring plan.

38. To protect the federally threatened northern long-eared bat, the license requires Northern Illinois to avoid cutting potential forage or roosting trees between April 1 and October 31, and only remove trees equal to or greater than 3 inches in diameter at breast height between November 1 and March 31.

39. To protect terrestrial habitat and mitigate for any effects on wetlands during construction, the license requires Northern Illinois to revise its proposed Wetland Mitigation Plan to include the requirements of Illinois EPA's water quality certification condition number 11 and provisions for: (1) describing the total area of affected wetlands based on the final project design; (2) describing the specific measures to be implemented to mitigate effects on wetlands; (3) describing how the success of wetland restoration will be monitored and the criteria that will be used to determine whether wetland restoration is successful; and (4) an implementation and reporting schedule.

40. To minimize potential bird electrocution and collision hazards, the license requires Northern Illinois to design, construct, and maintain the project's transmission line using the most recent transmission line design guidelines prepared by the Avian Power Line Interaction Committee.

41. If a previously unidentified cultural resource is discovered during project operation, maintenance, or other project-related activities, the license requires Northern Illinois to stop all land-clearing and land-disturbing activities and consult with the Illinois State Historic Preservation Officer (Illinois SHPO).

WATER QUALITY CERTIFICATION

42. 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 either has issued water quality

¹¹ 33 U.S.C. § 1341(a)(1) (2012).

certification for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year. Section 401(d) of the CWA provides that the certification shall become a condition of any federal license that authorizes construction or operation of the project.¹²

43. Northern Illinois originally applied to the Illinois EPA for certification on August 11, 2009. Since that date, Northern Illinois has annually withdrawn and refiled its application. Most recently, Northern Illinois refiled its application on June 17, 2014, which was received by Illinois EPA on June 19, 2014. On January 29, 2015, Illinois EPA issued certification for the Brandon Road Project. The conditions of the certification, with the exception of condition 8(b), which is discussed below, are set forth in Appendix A of this order and incorporated into the license by Ordering Paragraph D.

44. The certification includes 11 conditions. Six of the conditions are general or administrative requirements.¹³ The remaining five project-specific conditions require Northern Illinois to: (1) conduct dissolved oxygen monitoring; (2) implement measures necessary to maintain dissolved oxygen levels that meet state water quality standards and operate the powerhouse to maintain river flows of at least 1,000 cfs through the Corps' outlet structures at Brandon Road Dam; (3) conduct a mussel survey within the in-water construction areas prior to initiating any construction activities, and submit the survey results and a mussel relocation and restoration plan to the Illinois EPA; and (4) implement the Wetland Mitigation Plan that was developed for the project.¹⁴

¹² 33 U.S.C. § 1341(d) (2012).

¹³ The general or administrative conditions require: (1) that Northern Illinois not cause a violation of state water quality standards, water pollution, or interference with water use practices near public recreation facilities or water supply intakes; (2) that Northern Illinois provide adequate planning and supervision during project construction to prevent water pollution and erosion; (3) that Northern Illinois adhere to specific procedures during the disposal of spoil materials and backfilling activities; (4) that all areas affected by construction be mulched and seeded as soon after construction as possible, that the necessary erosion control measures be implemented during construction, that all construction within the waterway be conducted during low flow conditions, and that a National Pollution Discharge Elimination System Storm Water Permit be obtained by Northern Illinois, as necessary; (5) that Northern Illinois implement erosion control measures consistent with the Illinois Urban Manual; and (6) that adequate erosion control measures be implemented to prevent the downstream transport of sediment and materials.

¹⁴ In its August 12, 2015 Additional Information Response, Northern Illinois' (continued ...)

Minimum Flow

45. Under the Corps' current operation of the dam, riffle-type habitat is created immediately downstream of the dam below the Corps' outlet structures. The habitat is used by numerous fish species, including state-listed species, for spawning.¹⁵

46. During project operation, flows will be diverted from the Corps' outlet structures to the powerhouse, which will be located on the far western end of the Brandon Road Dam. As a result of this redistribution of flows, and depending on the Corps' gate operations, portions of the Des Plaines River located immediately downstream of the Corps' outlet gates have the potential to become partially or fully dewatered.

47. In order to mitigate this potential effect, water quality certification condition 8(b) stipulates that: "The applicant shall operate the hydroelectric powerhouse facility to maintain river flows of at least 1,000 cfs that flow through the dam of the Brandon Road Lock and Dam and do not flow through the turbines."

48. The cumulative amount and timing of flows released from the Corps' lock and dam will fully remain under the authority of the Corps. The certification cannot impose a requirement on the Corps or Northern Illinois to maintain river flows of at least 1,000 cfs through the dam, nor can it do so through a Commission license. The Commission can only enforce Illinois EPA's certification conditions as they apply to the Brandon Road Dam Project. For these reasons, certification condition 8(b) is not a lawful condition, and it cannot be included as a condition of this license.¹⁶ Condition 8(b) of the certification is therefore removed from Appendix A.

49. However, to minimize the effects of project operation on aquatic resources and water quality within this reach of the Des Plaines River, Northern Illinois proposes to cease project operations when the Corps' flow releases through the Corps' outlet structures, other than the lock, cumulatively fall below 1,000 cfs. Doing so will ensure that hydroelectric project operations do not cause the reach of the Des Plaines River immediately downstream of the Corps' outlet structures to fall below 1,000 cfs, which is

states that the Wetland Mitigation Plan does not exist in the formal sense, but rather, the plan refers to an agreement between Northern Illinois and Illinois EPA, as detailed in emails between Northern Illinois and Illinois EPA dated December 30, 2014 (*see* Appendix E of Northern Illinois' August 12, 2015 Additional Information Response) and a letter from Northern Illinois to Illinois EPA, filed on August 12, 2015.

¹⁵ *See* Illinois DNR's letter filed August 3, 2011.

¹⁶ *See Southern California Edison Co.*, 86 FERC ¶ 61,230 at 61,834 (1999).

the minimum flow that is needed to provide sufficient aeration for maintaining dissolved oxygen at levels consistent with the state's water quality standards. Therefore, Article 403 requires the licensee to cease project operations when the Corps' flow releases through the Corps' outlet structures, other than the lock, cumulatively fall below 1,000 cfs, and Article 404 requires the licensee to develop a plan for monitoring compliance with Article 403.

Water Quality

50. Under current conditions, spill over the Tainter gates provides some level of aeration to the flows within the dam's tailwater area (i.e., the 1,100-foot-wide area of the Des Plaines River immediately downstream of the Tainter gates). In the EA,¹⁷ staff concluded that project operation (i.e., diverting a portion of the flow from the Corps' Tainter gates to the project turbines) may reduce dissolved oxygen levels in the Des Plaines River by reducing the level of aeration that currently occurs in the tailwater area.¹⁸ Further, because the level of aeration associated with discharge through the project turbines is unknown, the area of the Des Plaines River within and immediately downstream of the tailrace may also have lower dissolved oxygen levels than existing conditions. In the EA,¹⁹ staff recommended that Northern Illinois prepare a project operation plan to ensure dissolved oxygen levels downstream of the dam would not be adversely affected during project operation. Staff recommended that the plan contain a description of how the project will be operated during periods of low dissolved oxygen and provisions consistent with Northern Illinois' proposed measures contained in its May 27, 2009 application to identify and mitigate project effects on dissolved oxygen, including: (1) installing and operating a real-time dissolved oxygen monitoring system that would automatically adjust project generation based on collected dissolved oxygen data; and (2) conducting dissolved oxygen monitoring upstream and downstream of the dam for a period of three years after the start of project operation to determine project effects on dissolved oxygen.

51. In its comments on the EA, Illinois DNR states that Northern Illinois' proposal for dissolved oxygen monitoring is not sufficient. Illinois DNR further states this proposal is

¹⁷ See EA at 136-137.

¹⁸ Because the Brandon Road Dam is not perpendicular to inflow (i.e., the Tainter gates are located slightly upstream of the headgates) and the proposed powerhouse would be located at the southern-most headgates, operation of the proposed project would create conditions whereby discharge from the project would be downstream of the discharge from the Tainter gates, creating a bypassed reach within the tailwater area.

¹⁹ *Id.*

not sufficient because Northern Illinois' proposal to conduct dissolved oxygen monitoring approximately 400 to 500 yards downstream of the powerhouse would not capture project effects on habitat in the "current tailwater," which is located upstream of any monitoring that would occur downstream of the powerhouse.²⁰

52. In its amended application, Northern Illinois states that it no longer proposes the above-described measures to identify and mitigate project effects on dissolved oxygen. Rather, Northern Illinois proposes to implement the dissolved oxygen monitoring requirements of Illinois EPA's water quality certification. Specifically, water quality certification condition 7 requires that Northern Illinois conduct continuous (i.e., hourly) dissolved oxygen monitoring (from April thru October) at the following locations for the duration of any license issued for the project: (1) in or upstream of the powerhouse tailrace; (2) upstream of the Brandon Road Lock and Dam and the intake channel to the turbines in the Brandon Road Pool; and (3) downstream of the powerhouse at the Interstate-55 Bridge.

53. Implementing the water quality certification's dissolved oxygen monitoring program will allow Northern Illinois to verify project effects on dissolved oxygen levels in the project tailrace, identify instances whereby project operation causes dissolved oxygen levels in the project tailrace to fall below levels specified by current state water quality standards, and to implement appropriate mitigation actions, if necessary. However, the monitoring locations required by the certification would not be sufficient for Northern Illinois to identify project effects on dissolved oxygen in the tailwater area, as the certification does not require monitoring in this area. Also, including a monitoring location at the Interstate-55 Bridge, as also required by the certification, would be unlikely to provide any useful information regarding project effects on dissolved oxygen because of the potential for contributing effects from other non-project-related activities within the eight-mile reach of the Des Plaines River between the project and this monitoring location. For this reason, we find no need to monitor dissolved oxygen at the Interstate-55 Bridge. Rather, in addition to locating dissolved oxygen monitoring sites immediately upstream of the intake and in the powerhouse tailrace, as required by the certification, monitoring dissolved oxygen in the tailwater area and immediately downstream of the confluence of flows from powerhouse discharge and the tailwater area would better allow Northern Illinois to evaluate the effects of project operation on dissolved oxygen levels in the project area. However, Illinois EPA's requirement for Northern Illinois to monitor dissolved oxygen at the Interstate-55 Bridge is required by the water quality certification, and therefore, is included as a condition of the license.

²⁰ Based on Illinois DNR's comments, this order assumes the "current tailwater" area referenced by Illinois DNR is the reach of the Des Plaines River located immediately downstream of the 1,110-foot-long Tainter gate section of the dam. This order refers to this area of the Des Plaines River as the tailwater area.

54. Preparing a dissolved oxygen monitoring plan that incorporates the requirements of water quality certification condition 7 and the additional staff-recommended provisions will ensure that dissolved oxygen levels downstream of the project meet levels stipulated by current state water quality standards, consistent with staff's recommendations in the EA. Article 407 requires Northern Illinois to prepare a plan consistent with the requirements of water quality certification condition 7 and staff's recommendations.

55. In the EA,²¹ staff found that monitoring dissolved oxygen for a period of three years after the start of project operation would be sufficient to identify any project-related effects on downstream dissolved oxygen and, therefore, did not recommend dissolved oxygen monitoring for the duration of the license term, as required by certification condition 7. However, as noted above, monitoring dissolved oxygen for the duration of the license term is required by the water quality certification, and therefore, is included as a condition of the license.

Wetland Mitigation

56. Northern Illinois has identified three wetland areas within the immediate project vicinity that could be affected during project construction, including: (1) a 400-square-foot area located approximately 400 feet west of the project tailrace that may be used as a desilting basin; (2) a 7,600-square-foot area located on either side of an existing, unimproved 600-foot-long road owned by the Corps that will be used to temporarily access the project tailrace during project construction and may be disturbed if widening of the road is necessary; and (3) a 8,900-square-foot area located immediately downstream of the project tailrace that will be disturbed during the installation of cofferdams. Construction effects to these wetlands could include dredging or filling within the wetlands, which could affect wetland functions including water retention and wildlife habitat. Although Northern Illinois states that any construction-related effects to wetlands will be temporary, the full extent of these effects cannot be determined until Northern Illinois prepares the final project design and construction plan. To protect wetlands during project construction, Northern Illinois proposes to implement its proposed Wetland Mitigation Plan, which includes a provision to restore any temporarily disturbed wetlands upon the completion of project construction using "plugs" from the surrounding wetlands.²² If wetland restoration is not possible, the Wetland Mitigation

²¹ *Id.*

²² In its August 12, 2015 Additional Information Response, Northern Illinois' states that the Wetland Mitigation Plan does not exist in the formal sense, but rather, the plan refers to an agreement between Northern Illinois and Illinois EPA, as detailed in emails between Northern Illinois and Illinois EPA dated December 30, 2014 (*see (continued ...)*)

Plan also contains a provision for Northern Illinois to mitigate any permanent effects to wetlands by purchasing credits from a wetland mitigation bank at a ratio of 1.5 to 1 for any permanently displaced emergent wetlands or a ratio of 2.5 to 1 for any permanently displaced forested wetlands.²³

57. Northern Illinois' proposed Wetland Mitigation Plan contains few details regarding: (1) how temporarily affected wetlands will be restored; (2) how the success of wetland restoration will be monitored; (3) the criteria that will be used to determine whether wetland restoration is successful; and (4) the schedule for implementation. Also, the plan does not contain any proposed measures to revegetate disturbed wetland areas with native species, which would help to minimize the spread of invasive plant species. Including this information within a revised Wetland Mitigation Plan along with the requirements of water quality certification condition 11 for monitoring wetland mitigation activities for a minimum of five years after the completion of wetland construction and providing annual progress reports to Illinois EPA and the Commission²⁴ will ensure a single, comprehensive plan exists that specifies the procedures for, guides the implementation of, and ensures compliance with the wetland mitigation and restoration activities required for the project. Staff estimates that the total levelized annual cost of revising the Wetland Mitigation Plan to include these provisions will be about \$400. The benefits of ensuring wetland resources are protected from adverse effects during project construction justify this minor cost. Therefore, Article 409 requires Northern Illinois to revise its proposed Wetland Mitigation Plan to include the additional detail and be consistent with the requirements of water quality certification condition 11.

58. Northern Illinois' proposed Wetland Mitigation Plan includes a provision to purchase credits from a wetland mitigation bank, if unavoidable permanent effects to wetlands occur. Specifically, the Wetland Mitigation Plan states that the credits will be

Appendix E of Northern Illinois' August 12, 2015 Additional Information Response) and a letter from Northern Illinois to Illinois EPA, filed on August 12, 2015.

²³ A wetland mitigation bank is a wetland area that has been restored, established, enhanced or preserved, and then set aside to compensate for future conversions of wetlands for development activities. Permittees, upon approval of regulatory agencies, can purchase credits from a mitigation bank to meet their requirements for compensatory mitigation. Mitigation banking is performed "off-site," meaning it is at a location not on or immediately adjacent to the site of the effects, but within the same watershed.

²⁴ Because the certification states that in lieu of monitoring and reporting, Northern Illinois may opt to purchase wetland mitigation banking credits, staff assumes these monitoring and reporting requirements will be implemented during the restoration of any temporary effects to wetland areas in the project vicinity.

for wetlands within the Des Plaines River watershed (i.e., within a 10 mile radius from the affected area). This proposal is not consistent with the Commission's guidelines for environmental measures,²⁵ because it constitutes a general administrative action taken on behalf of fish and wildlife resources. Although the credits represent existing, preserved wetlands, we are unable to identify the wetlands and determine whether or not the wetlands would provide a project-related public benefit at a cost that in our judgement would be justified. Regardless, given that the effects of project construction on the aforementioned wetland areas would be temporary and adequately addressed through restoration measures proposed as part of the Wetland Mitigation Plan, we do not anticipate any permanent effects to wetlands. For this reason, we see no need for measures that address permanent effects on wetlands. A Wetland Mitigation Plan that incorporates the additional details discussed above and as required by Article 409 will improve the likelihood of successfully restoring temporarily-affected wetlands by ensuring appropriate wetland restoration techniques are used and a monitoring protocol is in place to track the progress of wetland restoration activities and inform the need to make any necessary adjustments to the techniques used to restore affected wetlands. Therefore, implementing the Wetland Mitigation Plan without a provision to purchase credits from a wetland mitigation bank will adequately protect wetland resources at the project. However, because purchasing credits from a wetland bank is required by the water quality certification, it must, nevertheless, be included as a condition of the license.

59. The certification also requires Northern Illinois to file various plans and reports with Illinois EPA, and implement unspecified long-term changes to project operations or facilities based on new information or results from studies or monitoring without Commission review or approval. Article 401 requires the licensee to file, for Commission approval, plans required by the certification conditions, file reports with the Commission, and file amendment applications, as appropriate.

COASTAL ZONE MANAGEMENT ACT

60. Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA),²⁶ 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.

²⁵ See the Commission's Policy Statement on Hydropower Licensing Settlements. 116 FERC ¶ 61,207 (2006).

²⁶ 16 U.S.C. § 1456(c)(3)(A) (2012).

61. In an email filed on June 14, 2012, Illinois DNR confirmed that the project is outside the boundaries of the Illinois Coastal Management Plan and, therefore, a coastal zone consistency review is not required.

SECTION 18 FISHWAY PRESCRIPTION

62. Section 18 of the FPA²⁷ provides that the Commission must 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.

63. By letter filed December 3, 2010, Interior requested that the Commission reserve authority to prescribe fishways. Consistent with Commission policy, Article 402 of the license reserves the Commission's authority to require fishways that may be prescribed by Interior for the Brandon Road Project.

THREATENED AND ENDANGERED SPECIES

64. Section 7(a)(2) of the Endangered Species Act (ESA) of 1973²⁸ 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.

65. According to the FWS' Information, Planning, and Conservation System, the endangered sheepsnose mussel (*Plethobasus cyphus*), threatened northern long-eared bat (*Myotis septentrionalis*), endangered Hine's emerald dragonfly (*Somatochlora hineana*), threatened eastern prairie fringed orchid (*Platanthera leucophaea*), threatened lakeside daisy (*Hymenoxys herbacea*), endangered leafy prairie-clover (*Dalea foliosa*), and threatened Mead's milkweed (*Asclepias meadii*) occur within Will County.²⁹ The eastern massasauga (*Sistrurus catenatus*), a proposed threatened species, may also occur in the project area. FWS has designated critical habitat for the Hine's emerald dragonfly in the Des Plaines River basin.³⁰

²⁷ 16 U.S.C. § 811 (2012).

²⁸ 16 U.S.C. § 1536(a) (2012).

²⁹ See <http://ecos.fws.gov/ipac/>.

³⁰ 75 Fed. Reg. 21,394-21,453 (April 23, 2010).

66. Staff determined in the EA³¹ that constructing and operating the Brandon Road Project will have no effect on the sheepsnose mussel because mussel surveys conducted by Northern Illinois within the project vicinity indicate the area is devoid of freshwater mussels.³² Staff also determined in the EA that the project will have no effect on the eastern massasauga, eastern prairie fringed orchid, lakeside daisy, leafy prairie-clover, Mead's milkweed, and Hine's emerald dragonfly because none of these species have been documented in the project area. The project will also have no effect on the designated critical habitat for the Hine's emerald dragonfly because the project is not located within the boundaries of the critical habitat designation for this species. Therefore, because these species are not known to inhabit the project area and construction and operation of the project would have no effect on designated critical habitat for the Hine's emerald dragonfly, no further action under the ESA is required for these species.

Northern Long-Eared Bat

67. At the time of EA issuance, the northern long-eared bat was not listed under the ESA.³³ Therefore, on February 4, 2016, staff issued a letter to FWS that contained an analysis of the project's effects on the northern long-eared bat and sought concurrence on staff's determination that licensing the project, as proposed with the staff-recommended measures, is not likely to adversely affect the northern long-eared bat. In response, FWS informed staff³⁴ that it would need to consult under the 4(d) Rule for the Northern Long-Eared Bat³⁵ or prepare a Biological Assessment for FWS review and approval.

³¹ See EA at 98-100.

³² As noted above, Illinois' water quality certification for the project requires Northern Illinois to conduct an additional mussel survey within the construction area prior to initiating any construction activities. This additional survey can be used to verify the results of the prior survey showing that mussels are not present at the project.

³³ The northern long-eared bat was listed as threatened under the ESA on April 2, 2015 (effective on May 4, 2015). See 80 *Fed. Reg.* 17,973-18,033 (2015).

³⁴ See summary of the March 14, 2016 teleconference filed on March 29, 2016.

³⁵ Under section 4(d) of the ESA, the Secretary of the Interior has discretion to issue regulations deemed necessary and advisable to provide for the conservation of a designated species. On January 14, 2016, FWS issued a final rule pursuant to section 4(d) that establishes measures for the conservation of the northern long-eared bat, a bat species that occurs in 37 states. See 81 *Fed. Reg.* 1,900-1,922 (2016).
(continued ...)

68. On April 1, 2016, staff submitted a Biological Assessment to FWS that supplemented its February 4, 2016 letter with additional data and analyses. The Biological Assessment noted that although the immediate project area does not contain ideal habitat for northern long-eared bats, including known hibernacula³⁶ and roosting habitat, tree species that northern long-eared bat are known to use for roosting, occur adjacent to the project.³⁷ The Biological Assessment adds that northern long-eared bats potentially use Brandon Lock and Dam as roosting habitat.³⁸ The Biological Assessment finds that Northern Illinois' proposal to refrain from all tree-clearing activities during project construction would adequately protect northern long-eared bats and its potential habitat during project construction. The Biological Assessment also finds that any northern long-eared bats roosting at Brandon Lock and Dam during project construction could use upland forests and riparian areas in the project vicinity for alternative temporary roosting habitat. In addition, the Biological Assessment also finds that maintenance of the project (e.g., transmission line corridor maintenance) throughout the term of any license issued may require the removal of potential forage or roosting trees in the future. To mitigate any effects on northern long-eared bats during future tree clearing activities associated with project maintenance activities, staff recommended in the Biological Assessment that Northern Illinois refrain from cutting potential northern long-eared bat forage or roosting trees between April 1 and October 31, and only remove trees equal to or greater than 3 inches in diameter at breast height between November 1 and March 31. The Biological Assessment then concludes that for all of these reasons, the proposed project, with staff's recommended measures, is not likely to adversely affect the northern long-eared bat.³⁹

69. In response to the Biological Assessment, on May 11, 2016, FWS concurred with staff's determination on the northern long-eared bat.⁴⁰ Therefore, no further action under the ESA is required for the northern long-eared bat. Article 411 requires the northern long-eared bat avoidance and protection measures noted in the Biological Assessment.

³⁶ Hibernacula are places of shelter used by hibernating animals to overwinter such as a cave or mine shaft.

³⁷ See Biological Assessment at A-4.

³⁸ *Id.* at A-5.

³⁹ *Id.*

⁴⁰ See FWS's May 10, 2016 letter, filed on May 11, 2016.

70. Northern Illinois also proposes to conduct a pre-construction survey to determine whether roosting bats are present at Brandon Road Dam and prepare a subsequent mitigation plan if bats are found. As noted above, any northern long-eared bats roosting at the dam during project construction could temporarily move to upland forests and riparian areas in the project vicinity for alternative roosting habitat. Therefore, a pre-construction bat survey and subsequent mitigation plan are not required by this license.

NATIONAL HISTORIC PRESERVATION ACT

71. Under section 106 of the National Historic Preservation Act⁴¹ and its implementing regulations,⁴² 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 a reasonable opportunity to comment on the undertaking. This process generally requires the Commission to consult with the State Historic Preservation Office to determine whether and how a proposed action may affect historic properties, and to seek ways to avoid or minimize any adverse effects.

72. By letter filed on November 24, 2014, the Illinois SHPO determined that although the project is located within the Brandon Road Lock and Dam Historic District, which was listed on the National Register of Historic Places on March 10, 2014, the project will not adversely affect historic properties. Commission staff has also determined that the project would not adversely affect historic properties. Therefore, no further action under the National Historic Preservation Act is required. However, it is possible that unknown archaeological or cultural resources could be discovered during project construction, maintenance, or operation; therefore, Northern Illinois must consult with the Illinois SHPO if any unidentified archaeological or cultural resources are discovered. Article 413 requires Northern Illinois to stop work and consult with the Illinois SHPO if previously unidentified archaeological or cultural resources are discovered during project construction, maintenance, or operation. Article 414 requires Northern Illinois to consult with the Illinois SHPO prior to conducting any maintenance activities, land-clearing or land-disturbing activities, or changes to project operation or facilities that do not require Commission approval but could affect cultural resources.

⁴¹ 54 U.S.C. § 306108 *et seq.* (2014).

⁴² 36 C.F.R. Part 800 (2015).

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

73. Section 10(j)(1) of the FPA⁴³ 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,⁴⁴ to “adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)” affected by the project.

74. In response to the October 4, 2010 public notice that the project was ready for environmental analysis, Interior filed two recommendations under section 10(j).⁴⁵ One recommendation, which is outside the scope of 10(j), is discussed in the next section. This license includes a condition consistent with Interior’s other recommendation, which is within the scope of 10(j). Interior’s recommendation for Northern Illinois to prepare a dissolved oxygen plan to ensure dissolved oxygen concentrations immediately downstream of the powerhouse are at concentrations consistent with current state water quality standards for dissolved oxygen is incorporated into this license pursuant to Article 407.

SECTION 10(a)(1) OF THE FPA

75. Section 10(a)(1) of the FPA⁴⁶ requires that any project for which the Commission issues a license shall 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. Interior’s Recommendation

76. Interior recommends that Northern Illinois evaluate the potential for unintended upstream passage of aquatic nuisance species through project facilities. Interior recommends that the results of this evaluation be provided to FWS and Illinois DNR.

⁴³ 16 U.S.C. § 803(j)(1) (2012).

⁴⁴ 16 U.S.C. §§ 661 *et seq.* (2012).

⁴⁵ Interior filed the recommendations on December 3, 2010.

⁴⁶ 16 U.S.C. § 803(a)(1) (2012).

Interior further recommends that if the results indicate that upstream passage through project facilities is possible, Northern Illinois should prepare a plan to prevent the spread of aquatic nuisance species at the project.

77. As discussed in the EA,⁴⁷ FWS has stated that it is most concerned about the spread of Asian carp into Lake Michigan. Asian carp have already been documented upstream of the project and, given the operation of the existing Brandon Road Lock, it is likely that some unknown amount of upstream (and downstream) fish passage currently occurs through the Brandon Road Lock. However, construction and operation of the project will not interfere with the Corps' operation of its lock. Therefore, upstream and downstream passage of fish at the Brandon Road Lock, including nuisance species such as Asian carp, will likely continue to occur and as such, will not be related to project operation. Further, the configuration and operation of the project will prohibit fish present downstream of the dam from moving upstream through project works. Because there is no evidence that operation of the project will affect the upstream passage of aquatic nuisance species, Interior's recommendations for Northern Illinois to evaluate the ability of aquatic nuisance species to pass upstream of the dam and prepare a subsequent plan to control the upstream passage of aquatic nuisance species based on the results of the evaluation are not included in the license.

B. Erosion and Sediment Control

78. Construction of the project will involve land-disturbing activities and disposal of excavated materials that could potentially cause localized soil erosion. To minimize soil and sediment runoff into the Des Plaines River during construction, Northern Illinois proposes to finalize its draft Erosion and Sediment Control Plan in consultation with the "appropriate agencies." In the EA,⁴⁸ staff recommended that Northern Illinois revise its draft Erosion and Sediment Control Plan, which was filed on March 23, 2015, as Appendix A to Northern Illinois' amended application, to include site-specific erosion and sediment control measures to be implemented during construction to ensure that erosion control measures are meeting their objectives and Northern Illinois is able to identify and take corrective actions as needed. In its comments on the EA, Exelon states that increased transport of sediment during project construction may have the potential to damage and/or obstruct the screens associated with its Dresden Nuclear Generating Station's (Dresden Nuclear Station) water circulating systems. Exelon requests that Northern Illinois avoid sustained releases of sediment and consult with Exelon during the development of its erosion and sediment control plan. Illinois EPA's water quality certification includes a number of general conditions regarding the use of management

⁴⁷ See EA at 72 and 142 through 144.

⁴⁸ See EA at 133 and 134.

practices during construction.⁴⁹ Article 302 requires Northern Illinois to prepare an erosion and sediment control plan after consultation with the Illinois EPA and Exelon that is consistent with Illinois EPA's water quality certification conditions 1 through 6.

C. Contaminated Sediment Removal and Disposal

79. Northern Illinois sampled sediments at the proposed in-water construction areas upstream of the dam and found that the sediments contain some heavy metals and low levels of polychlorinated biphenyls. Cofferdam installation and removal, dredging, and other in-water construction activities will disturb river sediments and elevate particulate levels in the water column in the construction area, as well as downstream of the project. Handling, stockpiling, transporting, and disposing of the spoil material could potentially introduce soils, sediments, and contaminants into the environment. Northern Illinois prepared the Brandon Road Dredging Plan, which was filed on March 23, 2015, as Appendix A to Northern Illinois' amended application, to describe the required dredging and spoil disposal activities during project construction. Northern Illinois proposes to conduct surface water sampling upstream and downstream of each dredging area during sediment-disturbing activities to demonstrate compliance with the applicable water quality standards. To minimize particulate and contaminant levels in the Des Plaines River during project construction, Northern Illinois proposes to finalize its draft Erosion and Sediment Control Plan.⁵⁰

80. In the EA,⁵¹ staff recommended that Northern Illinois revise its draft Erosion and Sediment Control Plan to include site-specific measures to be implemented during construction to ensure that control measures are meeting their objectives and Northern Illinois is able to identify and take corrective actions as needed. Illinois EPA, in its water quality certification, provided a number of general conditions regarding the use of management practices in carrying out instream construction activities. Article 405 requires Northern Illinois to prepare a dredging plan after consultation with the Corps, Illinois EPA, and Exelon that is consistent with conditions 1 through 3 of the water quality certification and includes the above staff-recommended provisions.

⁴⁹ See note 14, *supra*.

⁵⁰ Northern Illinois' draft Erosion and Sediment Control Plan incorporates by reference the Brandon Road Dredging Plan.

⁵¹ See EA at 133 and 134.

D. Hazardous Substances Control

81. Construction and operation of the project could result in hazardous material spills, which could degrade water quality and negatively affect aquatic resources. In the EA,⁵² staff recommended that Northern Illinois prepare a hazardous substances control plan to document procedures to be implemented to minimize the extent and adverse effects of any hazardous materials spills that may occur. Article 406 requires the plan.

E. Project Operation

82. In the EA,⁵³ staff recommended that Northern Illinois operate the project in a run-of-release mode to protect aquatic resources and near-shore habitat both upstream and downstream of Brandon Road Dam. Under this mode of operation, the project would not affect the cumulative amount or timing of flow from the Corps' facility because flows for project generation purposes would be controlled and made available by the Corps under its authority, and as specified in a Memorandum of Agreement (MOA) between the Corps and Northern Illinois. Article 403 requires run-of-release operations.

F. Cofferdam Fish Recovery Plan

83. During project construction, cofferdams will be used to dewater construction areas upstream and downstream of the dam, including the powerhouse and tailrace excavation areas. Game fish and state-listed fish species that occur at the project could be trapped behind the cofferdams. Northern Illinois proposes to prepare a cofferdam fish recovery plan to detail the procedures that would be implemented to collect and relocate fish trapped behind the cofferdams at the start of project construction. In the EA,⁵⁴ staff recommended a cofferdam fish recovery plan to minimize the mortality of fish trapped within the cofferdams. Article 408 requires the plan.

G. Pre- and Post-Construction Fish Surveys

84. In its amended application, Northern Illinois proposes to conduct a pre- and post-construction fish survey downstream of Brandon Road Dam to determine the composition of the existing fish community in this area prior to project construction and to assess any changes to the fish community after two years of project operation.

⁵² See EA at 78 and 131.

⁵³ See EA at 65 and 66.

⁵⁴ See EA at 131.

85. As discussed in the EA,⁵⁵ we do not expect long-term changes to the fish community as a result of project construction and operation. In addition, the EA,⁵⁶ based on existing information, already describes the current fish community at the Brandon Road Project. Therefore, conducting pre- and post-construction fish surveys downstream of Brandon Road Dam is not warranted. Therefore, the license does not require these surveys.

H. Avian Protection

86. Constructing the project will include the installation of a 0.36-mile-long, 34.5-kV overhead transmission line. Electric transmission lines, especially lower voltage lines, create the potential for electrocution of large birds (e.g., eagles, hawks, and owls) capable of bridging the distance between the conductors. In the EA,⁵⁷ staff recommended that Northern Illinois use the most recent transmission line design guidelines prepared by the Avian Power Line Interaction Committee to protect avian species by minimizing the risk of electrocution and collision effects on birds. These guidelines include, for example, adequate separation of energized conductors and the use of ground wires, insulation, line marking devices, and structures to discourage avian perching and nesting. Therefore, Article 410 requires Northern Illinois to adhere to these guidelines.

COMMENTS ON THE EA

A. Mitigation and Monitoring Plans

87. In its comments on the EA, Exelon notes that the staff alternative requires Northern Illinois to prepare, among other things: (1) a final Erosion and Sediment Control Plan to minimize soil erosion and sedimentation during project construction; (2) a post-construction monitoring plan to minimize soil erosion, sedimentation, and the redistribution of contaminated sediments during project operation; (3) a hazardous substances control plan to minimize the potential for hazardous substance spills and ensure that procedures are in place to minimize the extent and adverse effects of any hazardous substance spills that may occur; and (4) a turbidity and chemical constituent monitoring plan to minimize turbidity increases and the redistribution of contaminated sediments during project construction. Exelon explains that the Dresden Nuclear Station's current National Pollutant Discharge Elimination System permit requires compliance with applicable pH, total suspended solids, water temperature, oil and grease,

⁵⁵ See EA at 80 and 142.

⁵⁶ See EA at 51-54.

⁵⁷ See EA at 131.

and total residual chlorine/total residual oxidant standards. Exelon is concerned that construction and operation of the project could adversely affect water quality downstream at its Dresden Nuclear Station, and it recommends that any license issued for the project require Northern Illinois to consult with it during the preparation and implementation of these plans to ensure that any water quality changes from project construction and operation will not result in permit violations at the Dresden Nuclear Station.

88. Construction and operation of the project will have no effect on water temperature, pH, or total residual chlorine/total residual oxidants. However, construction and operation of the project could affect certain water quality parameters, including dissolved oxygen, total suspended solids, and oil and grease. Because the Dresden Nuclear Station is located approximately 14 miles downstream of the project, it is unlikely that construction and operation of the project will have any effects on water quality at the nuclear station. However, to identify and address potential project-related effects on dissolved oxygen downstream of the project, this license requires Northern Illinois to prepare a dissolved oxygen monitoring plan. To minimize the potential for project construction and operation to contribute to increases in total suspended solids, and oil and grease downstream of the project, this license requires Northern Illinois to prepare an erosion and sediment control plan (Article 302) and a dredging plan (Article 405), and a hazardous substances control plan (Article 406), respectively. Additionally, to ensure Exelon is provided an opportunity to participate in the development of these plans relevant to protecting water quality in the Des Plaines River, this license also requires Northern Illinois to include Exelon as a consulted party during the development of each of the above-referenced plans.

B. Sediment Transport

89. In its comments on the EA, Exelon states that it is concerned with the potential effects of project construction and operation to the Dresden Nuclear Station. Exelon states that information regarding whether radioactive sediments are present within the vicinity of the project are not contained in the EA. Exelon further states that to the extent radioactive elements are present in the sediment⁵⁸ and transported to the Dresden Nuclear Station, radiation monitors at the station could be inadvertently triggered. Accordingly, Exelon recommends that any license issued require Northern Illinois to investigate the presence and potential transport of radioactive sediments at the project. If such an

⁵⁸ Coal fines are small particles of coal material that are created during the preparation of coal for use as fuel and are discarded. Coal fines, which contain traces of gamma radiation, could be present in stream sediments and could potentially trigger certain radiation monitors at the Dresden Nuclear Station if present in significant quantities.

analysis indicates that radioactive sediments are present, Exelon requests that any license issued require Northern Illinois, as an element of its erosion and sediment control, dredging, and post-construction monitoring plans, to develop notification procedures to inform Exelon when the transport of radioactive sediments may be expected to occur.

90. During scoping, no entity raised any concerns with the potential for radioactive sediments to be present in the project vicinity. As a result, this issue was not addressed in the EA. However, for the reasons discussed above, license Article 405, which requires Northern Illinois to prepare a dredging plan, requires that Northern Illinois test sediments for the presence and magnitude of contamination, including radioactivity. Article 405 also requires that Northern Illinois include Exelon as a consulted entity during the preparation of the dredging plan to mitigate for project effects on water resources. Consultation will provide Exelon an opportunity to discuss notification procedures and any potential mitigation measures to be implemented to prevent the downstream distribution of radioactive sediments, if radioactive sediments are present and likely to being transported downstream to the Dresden Nuclear Station during project construction.

91. In its comments on the EA, Exelon also states that increased transport of sediment during construction of the proposed Brandon Road Project, regardless of whether radioactive sediments are present, may have the potential to damage and/or obstruct the screens associated with the Dresden Nuclear Station's water circulating systems. Exelon requests that Northern Illinois avoid sustained releases of sediment and consult with Exelon during the development of its erosion and sediment control plan. This license requires Northern Illinois to provide Exelon an opportunity to participate in the development of both the Erosion and Sediment Control Plan (Article 302) and the dredging plan (Article 405). This license also requires that Northern Illinois comply with Illinois EPA's water quality certification conditions 1 through 6, which require that the Brandon Road Project be constructed without causing water pollution.

C. Blasting Activities

92. In its comments on the EA, Exelon states that the EA does not discuss whether project construction will require blasting. If blasting is necessary, Exelon states that the explosive force could trigger seismic sensors at the Dresden Nuclear Station. Therefore, Exelon recommends that any license issued require Northern Illinois to consult with Exelon in developing its construction procedures and plans, which should include notification procedures to inform Exelon prior to any blasting activities. Exelon also recommends that any license issued require Northern Illinois to provide Exelon with a current proposed schedule for project construction, because the schedule may need to be periodically revised to reflect actual progress.

93. Because Northern Illinois does not propose to utilize blasting during project construction, the associated effects of this activity on the various resources were not discussed in the EA. However, if it is determined that construction of the Brandon Road Project requires blasting, a blasting plan would be submitted to the Commission's Division of Dam Safety and Inspections for review and comment. Article 302 requires that Northern Illinois provide Exelon an advance written schedule of all blasting activities.

D. Dam Safety

94. In its comments on the EA, Exelon states that the design, construction, and operation of the project could potentially jeopardize the integrity of Brandon Road Dam, thereby adversely affecting Exelon's ability to operate the Dresden Nuclear Station in a safe and reliable manner. Exelon, therefore, recommends that any license issued require Northern Illinois to consult with Exelon on the Brandon Road Potential Failure Modes Analysis and any project design and construction elements that may affect the stability and structural integrity of the dam.

95. Brandon Road Dam is owned and operated by the Corps. Therefore, the Corps alone will retain the responsibility to ensure the safety of the dam. If Exelon has concerns regarding the safety of the Corps project, it should address the matter with the Corps. The Commission will coordinate with the Corps to fulfill its obligation to ensure that the hydroelectric project's safety requirements are met as part of the Memorandum of Understanding between the Commission and the Corps and as set forth in Articles 308 through 314 of this license.

EXEMPTION OF THE FERC FORM 80 RECREATION REPORT

96. The FERC Form 80 Recreation Report (Form 80) collects recreation usage data on recreation facilities at projects through the term of their licenses. However, the Brandon Road Project will have a small footprint with little potential for recreational facilities. Therefore, the licensee is exempt from filing the Form 80 during the term of its license (Article 412).

ADMINISTRATIVE PROVISIONS

A. Annual Charges

97. The Commission collects annual charges from licensees for administration of the FPA.⁵⁹ The Brandon Road Project will occupy 0.06 acre of federal land administered by

⁵⁹ Because this license is issued to a non-municipal licensee after December 21, 2015, and authorizes an unconstructed project, assessment of administrative annual
(continued ...)

the Corps. The Commission does not assess a land use charge for a licensee's use of federal lands adjoining or pertaining to federal dams or other structures.⁶⁰ Rather, it assesses the charge for the use of a government dam.⁶¹ Article 201 provides for the collection of funds for administration of the FPA and use of a government dam.

B. Exhibit F and G Drawings

98. The Commission requires licensees to file sets of approved project drawings in electronic file format. Article 202 requires the filing of the approved Exhibit F drawings.

99. The Exhibit G drawing filed on August 12, 2015, is not approved because the drawing: (1) does not describe the location of the project boundary using contour lines, courses and distances, or relative to public land survey lines; and (2) does not identify property ownership by legal subdivision for all the lands and waters within the project boundary. Therefore, Article 203 requires Northern Illinois to file a revised Exhibit G.

C. Amortization Reserve

100. The Commission requires that for original licenses for major projects, non-municipal licensees must set up and maintain an amortization reserve account after the first 20 years of operation of the project under license. Article 204 requires the establishment of the account.

D. Project Financing

101. To ensure that there are sufficient funds available for project construction, operation, and maintenance, Article 205 requires the licensee to file for Commission approval documentation of project financing necessary for construction, operation, and maintenance of the project at least 90 days before starting any construction associated with the project.

charges will commence on the date by which the licensee is required to commence construction, as may be extended, but in no case longer than four years after license issuance. *See* section 11.1(c)(5) of the Commission's regulations, as modified on October 15, 2015, effective December 21, 2015, *Commencement of Assessment of Annual Charges*, Order No. 815, 80 *Fed. Reg.* 63,667 (2015), FERC Stats. & Regs. ¶ 31,372 (2015).

⁶⁰ 18 C.F.R. § 11.2(a) (2015).

⁶¹ 18 C.F.R. § 11.3 (2015).

E. Headwater Benefits

102. Some projects directly benefit from headwater improvements that were constructed by other licensees, the United States, or permittees. Article 206 requires the licensee to reimburse such entities for these benefits if they were not previously assessed and reimbursed.

F. Project Land Rights Progress Report

103. The project will occupy about 0.06 acre of land administered by the Corps, 1.55 acres of land owned by the State of Illinois, and 0.27 acre of privately owned land. In the revised Exhibit G filed on August 12, 2015, Northern Illinois identified the land for which it intends to obtain all necessary easements and rights necessary to operate and maintain the project. Standard Article 5 set forth in Form L-6 requires the licensee to 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, within five years. In order to monitor compliance with Standard Article 5, Article 207 requires the licensee to file no later than four years after license issuance, a report detailing its progress on acquiring title in fee or the necessary rights to all lands within the project boundary. The report must include specific documentation on the status of the rights that have been acquired as of the filing date of the progress report, and a plan and schedule to acquire all remaining land prior to the five-year deadline.

G. As-Built Drawings

104. Where new construction or modifications to the project are involved, the Commission requires licensees to file revised drawings of project features as-built. Article 208 provides for the filing of these drawings.

H. Use and Occupancy of Project Lands and Waters

105. Requiring a licensee to obtain prior Commission approval for every use or occupancy of project land would be unduly burdensome. Therefore, Article 415 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.

I. Start of Construction

106. Section 13 of the FPA requires the licensee to commence construction within two years from the issuance date of the license, for which the deadline may be extended once

for two additional years.⁶² Furthermore, the licensee must obtain all of the necessary approvals from the Corps and the Commission prior to the start of project construction.⁶³ Therefore, the burden is on the licensee to obtain these approvals and commence construction within the time frames required under section 13 and as specified in this license. The licensee is expected to work diligently with the Corps and other relevant entities to secure the necessary approvals to allow it to timely commence project construction and pursue it to completion.

107. Article 301 requires the licensee to commence construction of the project works within two years from the issuance date of the license and complete construction of the project within five years from the issuance date of the license.

J. Review of Final Plans and Specifications

108. Article 302 requires the licensee to provide the Commission's Division of Dam Safety and Inspection (D2SI)-Chicago Regional Engineer with final contract drawings and specifications, a supporting design report consistent with the Commission's engineering guidelines, a Quality Control and Inspection Program, a Temporary Construction Emergency Action Plan, Blasting Plan, and an Erosion and Sediment Control Plan.

109. Article 303 requires the licensee to provide the Commission's D2SI-Chicago Regional Engineer with approved cofferdam and deep excavation construction drawings.

110. Article 304 requires the licensee to file the initial independent consultant inspection report no later than five years from the date of first commercial operation or the date on which the powerhouse is subject to normal water levels, whichever comes first.

111. To demonstrate awareness of the roles and responsibilities of project licensees and their staff for the safety of the project, Article 305 requires the licensee to submit a Project Owner's Safety Program to the Commission's D2SI-Chicago Regional Engineer.

112. Article 306 requires the licensee to provide a Public Safety Plan for the project to the Commission's D2SI-Chicago Regional Engineer.

⁶² 16 U.S.C. § 806 (2012). Under section 13, failure to timely commence project construction will result in termination of the license.

⁶³ See, e.g., Article 205, documentation of project financing; Article 302, approval of contract plans and specifications; Article 308, Corps' approval of facility design and construction; Article 312, Corps' approval of project operating plan; and Article 314, Corps' written approval of construction plans.

113. Article 307 requires the licensee to notify and coordinate with the Commission's D2SI-Chicago Regional Engineer on any proposed modifications to the water retaining and/or conveyance features of the project resulting from the environmental requirements of the license to ensure that these modifications do not adversely affect the project works, dam safety, or project operation.

K. Conditions for Projects at Corps Dams

114. Pursuant to a 2011 Memorandum of Understanding between the Commission and the Department of the Army,⁶⁴ seven special articles are included in licenses for hydroelectric projects to be developed at Corps facilities. The articles are incorporated in this license as Articles 308 through 314.

STATE AND FEDERAL COMPREHENSIVE PLANS

115. Section 10(a)(2)(A) of the FPA⁶⁵ 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.⁶⁶ Under section 10(a)(2)(A), federal and state agencies filed seven comprehensive plans that address various resources in Illinois. Of these, staff identified and reviewed five comprehensive plans that are relevant to the Brandon Road Project.⁶⁷ No inconsistencies were found.

SAFE MANAGEMENT, OPERATION, AND MAINTENANCE OF THE PROJECT

116. Staff reviewed Northern Illinois preliminary plans to build the project as described in the license application, as amended. The project will be safe when constructed, operated, and maintained in accordance with the Commission's standards and provisions of this license.

⁶⁴ Memorandum of Understanding between United States Army Corps of Engineers and Federal Energy Regulatory Commission on Non-federal Hydropower Projects, March 2011. <http://www.ferc.gov/legal/mou/mou-usace.pdf>.

⁶⁵ 16 U.S.C. § 803(a)(2)(A) (2012).

⁶⁶ Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2015).

⁶⁷ The list of applicable comprehensive plans can be found in section 5.5 of the EA.

NEED FOR POWER

117. Project power will be used to meet regional electrical demand. To assess the need for power, staff looked at the needs in the operating region in which the project is located. The project will be located in the PJM assessment area of the North American Electric Reliability Council (NERC). According to NERC's 2015 forecast, demand in the PJM assessment area is expected to grow 1.0 percent from 2016 through 2025. The project's power and contribution to the region's diversified generation mix will help meet a need for power in the region.

PROJECT ECONOMICS

118. In determining whether to issue a license for a hydroelectric project, the Commission considers a number of public interest factors, including the economic benefits of project power. Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in *Mead Corp.*,⁶⁸ the Commission uses current costs to compare the costs of the project and likely alternative power, with no forecasts concerning potential future inflation, escalation, or deflation beyond the license issuance date. The basic purpose of the Commission's economic analysis is to provide a general estimate of the potential power benefits and the costs of a project, and of reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

119. In applying this analysis to the Brandon Road Project, staff considered three options: no-action, Northern Illinois' proposal, and the project as licensed herein. Under the no-action alternative, the project would not be built. As proposed by Northern Illinois, the levelized annual cost of constructing and operating the Brandon Road Project is \$3,024,540, or \$56.01/MWh. The proposed project would generate an average of 54,000 MWh of energy annually. When the estimate of average generation is multiplied by the alternative power cost of \$31.16/MWh,⁶⁹ the total estimated value of the project's power is \$1,682,640 in 2016 dollars. The project's cost is subtracted from the value of the project's power, to determine whether the proposed project is economically

⁶⁸ 72 FERC ¶ 61,027 (1995).

⁶⁹ The energy portion of the power value was based on the Annual Energy Outlook 2016 published by the Energy Information Administration, June 2016 (\$27.73/MWh). The capacity portion of the power value was based on the annual cost of the hydro-equivalent combined-cycle capacity, which staff estimated to be about \$190/kilowatt-year.

beneficial. Therefore, in the first year of operation, the project would cost \$1,341,900, or \$24.85/MWh, more than the likely alternative cost of power.

120. As licensed herein with the mandatory conditions and staff-recommended measures, the levelized annual cost of constructing and operating the project will be about \$3,019,680, or \$55.92/MWh. Based on the same average annual generation of 54,000 MWh as proposed, the project will produce power valued at \$1,682,640 when multiplied by the \$31.16/MWh value of the project's power. Therefore, in the first year of operation, project power will cost \$1,337,040, or \$24.76/MWh, more than the likely cost of alternative power.

121. In considering public interest factors, the Commission takes into account that hydroelectric projects help maintain the stability of a power system by quickly adjusting power output to respond to rapid changes in system load. Although our analysis shows that the project as licensed herein will cost more to operate than our estimated cost of alternative power, it is the applicant who must decide whether to accept this license and any financial risk that entails.

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

COMPREHENSIVE DEVELOPMENT

123. Sections 4(e) and 10(a)(1) of the FPA⁷⁰ require the Commission to give equal consideration to power development purposes and to the purposes of energy conservation; the protection, mitigation of damage to, and enhancement of fish and wildlife; the protection of recreational opportunities; and the preservation of other aspects of environmental quality. Any license issued shall be such as in the Commission's judgment 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.

124. 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 Brandon Road Project as described in this order will not constitute a major federal action significantly affecting the quality of the

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

human environment. The project will be safe if operated and maintained in accordance with the requirements of the license.

125. Based on Commission staff's independent review and evaluation of the project, recommendations from the resource agencies and other stakeholders, and the no-action alternative, as documented in the EA, the Brandon Road Project as licensed herein, is selected and found to be best adapted to a comprehensive plan for improving or developing the Des Plaines River.

126. This alternative was selected because: (1) issuance of an original license will serve to provide a beneficial and dependable source of electric energy; (2) the required environmental measures will protect and enhance fish and wildlife resources, water quality, and cultural resources; and (3) the 6.8 MW of electric capacity comes from a renewable resource that does not contribute to atmospheric pollution.

LICENSE TERM

127. Section 6 of the FPA⁷¹ provides that original licenses for hydropower projects shall be issued for a period not to exceed 50 years. The Commission's general policy is to issue a 50-year license for a project located at a federal dam.⁷² Accordingly, this license is issued for a term of 50 years.

The Director orders:

(A) This license is issued to Northern Illinois Hydropower, LLC (licensee), for a period of 50 years, effective the first day of the month in which this order is issued, to construct, operate, and maintain the Brandon Road Hydroelectric Project. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The Brandon Road Hydroelectric Project consists of:

(1) All lands, to the extent of the licensee's interests in these lands, described in the project description and the project boundary discussion of this order.

(2) Project works consisting of: (1) a new 100-foot-long by 190-foot-wide excavated headrace channel to convey water from the Brandon Road Reservoir to

⁷¹ 16 U.S.C. § 799 (2012).

⁷² See *City of Danville, Virginia*, 58 FERC ¶ 61,318 at 62,020 (1992).

existing headgate sections 1 through 4 (headgates); (2) new trashracks with 2-inch clear bar spacing spanning the four headgate openings; (3) four new 15-foot-wide intake gates to be installed in modified headgate slots at each of the four headgates; (4) four new 15.3-foot-diameter penstocks leading from the intake gates to the new powerhouse; (5) a new 82-foot-long by 88.5-foot-wide concrete and steel powerhouse; (6) four new 2,413-horsepower Kaplan turbines each coupled to a new 1.7-megawatt (MW) generator with a combined installed capacity of 6.8 MW; (7) a new 30-foot-long by 130-foot-wide tailrace channel located immediately downstream of the powerhouse to return flows from the powerhouse to the Des Plaines River; (8) a new 0.36-mile-long, 34.5-kilovolt, overhead transmission line connecting the transformers mounted to the exterior of the powerhouse to a utility-owned distribution line; and (9) appurtenant facilities.

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

Exhibit A: Section 3.1 entitled “Powerhouse and Equipment;” section 3.2 entitled “Transmission;” section 3.3 entitled “Additional Equipment;” and table A-2 entitled “Proposed Project Description” in Exhibit A of the license application filed on March 23, 2015 and response numbers 3, 4, 5 and 6 of the licensee’s August 12, 2015 filing in response to Commission staff’s June 12, 2015 Additional Information Request.

Exhibit F: The following Exhibit F drawings filed on August 12, 2015;

<u>Exhibit F Drawing</u>	<u>FERC No. 12717-</u>	<u>Description</u>
Sheet F-1	1	Site Plan of Proposed Powerhouse
Sheet F-2	2	Powerhouse Site Plan
Sheet F-3	3	Powerhouse – General Arrangement Roof Plan
Sheet F-4	4	Powerhouse – General Arrangement Operating Floor Plan
Sheet F-5	5	Powerhouse – General Arrangement Longitudinal Sections
Sheet F-6	6	Powerhouse – General Arrangement Transverse Sections
Sheet F-7	7	Downstream and Upstream Elevation Views of Proposed Powerstation

(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 for the operation or maintenance of the project.

(C) The Exhibits A and F described above are approved and made part of this license. The Exhibit G drawing filed on August 12, 2015, as part of the application for this license does not conform to Commission regulations and is not approved.

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

(E) This license is also subject to the articles set forth in Form L-6 (October 1975), entitled “Terms and Conditions of License for Unconstructed Major Project Affecting Navigable Waters and Lands 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 the following annual charges, as determined in accordance with provisions of the Commission’s regulations in effect from time to time:

(a) effective as of the date by which the licensee is required to commence project construction, or as that date may be extended, but in no case longer than four years after license issuance, to reimburse the United States for the cost of administration of Part 1 of the Federal Power Act. The authorized installed capacity for that purpose is 6.8 megawatts.

(b) to recompense the United States for the use of a government dam.

Article 202. Exhibit F Drawings. Within 45 days of the date of issuance of this license, as directed below, the licensee must file two sets of the approved exhibit drawings in electronic file format on compact disks with the Secretary of the Commission, ATTN: OEP/DHAC.

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-12717-1 through P-12717-7) must be shown in the margin below the title block of the approved drawing. Exhibit F drawings must be segregated from other project exhibits, and identified as **(CEII) material under 18 CFR §388.113(c)**. Each drawing must be a separate electronic file, and the file name must include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this license, and file extension in the following format [P-12717-1, F-1, Description, 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

Article 203. Exhibit G Drawing. Within 90 days of the effective date of the license, the licensee must file, for Commission approval, a revised Exhibit G drawing that: (1) describes the location of the project boundary using contour lines, courses and distances, or relative to public land survey lines; and (2) identifies property ownership by legal subdivision for all the lands and waters within the project boundary. The Exhibit G drawings must comply with sections 4.39 and 4.41(h) of the Commission’s regulations.

Article 204. Amortization Reserve. Pursuant to section 10(d) of the Federal Power Act, after the first 20 years of operation of the project under license, a specified reasonable rate of return upon the net investment in the project must be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. One-half of the project surplus earnings, if any, accumulated after the first 20 years of operations under the license, in excess of the specified rate of return per annum on the net investment, must be set aside in a project amortization reserve account at the end of each fiscal year. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year after the first 20 years of operation under the license, the amount of that deficiency must be deducted from the amount of any surplus earnings subsequently accumulated, until absorbed. One-half of the remaining surplus earnings, if any, cumulatively computed must be set aside in the project amortization reserve account. The amounts established in the project amortization reserved account must be maintained until further order of the Commission.

The annual specified reasonable rate of return must be the sum of the annual weighted costs of long-term debt, preferred stock, and common equity, as defined below. The annual weighted cost for each component of the reasonable rate of return is the product of its capital ratio and cost rate. The annual capital ratio for each component of the rate of return must be calculated based on an average of 13 monthly balances of amounts properly includable in the licensee’s long-term debt and proprietary capital accounts as listed in the Commission’s Uniform System of Accounts. The cost rates for long-term debt and preferred stock must be their respective weighted average costs for the year, and the cost of common equity must be the interest rate on 10-year government bonds (reported as the Treasury Department’s 10-year constant maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

Article 205. Documentation of Project Financing. At least 90 days before starting construction, the licensee must file with the Commission for approval, the licensee’s documentation for the project financing. The documentation must show that the licensee has acquired the funds, or commitment for funds, necessary to construct the project in

accordance with this license. The documentation must include, at a minimum, financial statements, including a balance sheet, income statement, and a statement of actual or estimated cash flows over the license term which provide evidence that the licensee has sufficient assets, credit, and projected revenues to cover project construction, operation, and maintenance expenses, and any other estimated project liabilities and expenses.

The financial statements must be prepared in accordance with generally accepted accounting principles and signed by an independent certified public accountant. The licensee must not commence project construction associated with the project before the filing is approved.

Article 206. Headwater Benefits. If the licensee's project is directly benefited by the construction work of another licensee, a permittee, or of the United States on a storage reservoir or other headwater improvement, the licensee must reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed. The benefits will be assessed in accordance with Subpart B of the Commission's regulations.

Article 207. Project Land Rights Progress Report. No later than four years after license issuance, the licensee must file a report with the Commission describing the status of acquiring title in fee or the rights for all the lands within the project boundary. The report must provide an overview map of each parcel and summary table identifying the licensee's rights over each parcel within the project boundary. The report must also include specific supporting documentation showing the status of the land rights on all parcels of land within the project boundary that: (1) have been acquired up to the date of filing of the report, including pertinent deeds, lease agreements, and/or bill of sale information that specifically verify the licensee's rights; and (2) the licensee's plan and schedule for acquiring all remaining project lands prior to the five-year deadline, including a history of actions taken, current owner information, the type of ownership to be acquired whether in fee or by easement, and the timeline for completing property acquisition.

Article 208. As-built Exhibits. Within 90 days of completion of construction of the facilities authorized by this license, the licensee must file with the Commission for approval, revised Exhibits A, F, and G, as applicable, to describe and show those project facilities as built.

Article 301. Start of Construction. The licensee must commence construction of the project works within two years from the issuance date of the license and must complete construction of the project within five years from the issuance date of the license.

Article 302. Contract Plans and Specifications. At least 60 days prior to the start of any construction, the licensee must submit one copy of its plans and specifications and supporting design document 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 submittal to the D2SI-Chicago Regional Engineer must also include as part of preconstruction requirements: a Quality Control and Inspection Program, Temporary Construction Emergency Action Plan, Blasting Plan, and Erosion and Sediment Control Plan. 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.

The Erosion and Sediment Control Plan must be consistent with conditions 1 through 6 of the Illinois Environmental Protection Agency's (Illinois EPA's) water quality certification contained in Appendix A of this order and be prepared after consultation with the Illinois EPA and Exelon Generation Company, LLC.

If a Blasting Plan is required for project construction, the licensee must provide Exelon with advance written schedule of all blasting activities.

Article 303. Cofferdam and Deep Excavation Construction Drawings. Should construction require cofferdams or deep excavations, the licensee must: (1) have a Professional Engineer who is independent from the construction contractor, review and approve the design of contractor-designed cofferdams and deep excavations prior to the start of construction; and (2) ensure that construction of cofferdams and deep excavations is consistent with the approved design. At least 30 days before starting construction of any cofferdams or deep excavations, 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 must be a courtesy copy to the Commission's Director, D2SI), of the approved cofferdam and deep excavation construction drawings and specifications, and the letters of approval.

Article 304. Inspection by Independent Consultant. In accordance with Part 12, Safety of Water Power Projects and Project Works, of the Commission's Regulations, the initial independent consultant's inspection must be completed and the report on it filed no later than five years from the date of first commercial operation or the date on which the powerhouse is subject to normal water levels, whichever comes first.

Article 305. Project Owner's Dam Safety Program. Within 90 days of the issuance date of the license, the licensee must submit to the Commission's Division of Dam Safety and Inspections-Chicago Regional Engineer, a Project Owner's Dam Safety Program which at a minimum must demonstrate a clear acknowledgement of the project owner's responsibility for the safety of the project, an outline of the roles and responsibilities of the dam safety staff, and access of the dam safety official to the Chief Executive Officer. For guidance on preparing a Project Owner's Safety Program, the licensee should reference the information posted on the FERC website.

Article 306. Public Safety Plan. Within 60 days from the issuance of the license, 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 must 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 307. 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 308. Facility Design and Construction. The design and construction of those permanent and temporary facilities, including reservoir impounding cofferdams and deep excavations that would be an integral part of, or that could affect the structural integrity or operation of the Government project, must be done after consultation with and subject to the review and approval of the U.S. Army Corps of Engineers' (Corps) District Engineer. The Corps' review of the cofferdams will be in addition to the licensee's review and approval of the final plans, and shall in no way relieve the licensee of responsibility and liability regarding satisfactory performance of the cofferdams. Within 90 days from the issuance date of the license, the licensee must furnish the Corps and the Commission's Division of Dam Safety and Inspections-Chicago Regional Engineer, a schedule for submission of design documents and the plans and specifications for the project. If the schedule does not afford sufficient review and approval time, the licensee, upon request of the Corps, must meet with the Corps and FERC staffs to revise the schedule accordingly.

Article 309. Review of Contractor Designs. The licensee must review and approve the design of contractor-designed cofferdams and deep excavations, other than those approved according to Article 308, prior to the start of construction and must ensure that construction of cofferdams and deep excavations is consistent with the approved design. At least 30 days prior to the start of construction of the cofferdam, the licensee must file with the U.S. Army Corps of Engineers, one copy of the approved cofferdam construction drawings and specifications and a copy of the letter(s) of approval.

Article 310. Agreement with Corps. The licensee must within 90 days from the issuance date of the license, enter into an agreement with the U.S. Army Corps of

Engineers (Corps) to coordinate its plans for access to and site activities on lands and property administered by the Corps so that the authorized purposes, including operation of the Federal facilities, are protected. In general, the agreement must not be redundant with the Commission's requirements contained in this license, must identify the facility, and the study and construction activities, as applicable, and terms and conditions under which studies and construction will be conducted. The agreement must be mainly composed of reasonable arrangements for access to the Corps site to conduct studies and construction activities, such access rights to be conditioned by the Corps as may be necessary to protect the federally authorized project purposes and operations. Should the licensee and the Corps fail to reach an access agreement, the licensee must refer the matter to the Commission for resolution.

Article 311. Periodic and Continuous Inspections by the Corps. The construction, operation, and maintenance of the project works that, in the judgment of the U.S. Army Corps of Engineers (Corps) may affect the structural integrity or operation of the Corps project shall be subject to periodic or continuous inspections by the Corps. Any construction, operation, and maintenance deficiencies or difficulties detected by the Corps inspection must be immediately reported to the Division of Dam Safety and Inspections (D2SI)-Chicago Regional Engineer. Upon review, the D2SI-Chicago Regional Engineer shall refer the matter to the licensee for appropriate action. In cases when construction, operation, or maintenance practices or deficiencies may create a situation posing imminent danger to the structural integrity and safety of the Corps project, the Corps inspector has the authority to stop construction or maintenance while awaiting the resolution of the problem. The licensee must immediately inform the D2SI-Chicago Regional Engineer of the circumstances surrounding the cessation of construction, operation, or maintenance activities. The licensee must not resume construction, operation, or maintenance activities until notified by the D2SI-Chicago Regional Engineer that the problem or situation has been resolved.

Article 312. Regulating (or Operating) Plan. The licensee must at least 60 days prior to start of construction, submit for approval a regulating plan to the U.S. Army Corps of Engineers (Corps), describing: (a) the designed mode of hydropower operation; (b) reservoir flow diversion and regulation requirements for operation of the Corps project during construction as established by the Corps; and (c) integration of the operation of the hydroelectric facility into the Corps' emergency action plan. In addition, the licensee, prior to start of power plant operation, must enter into an operating MOA with the Corps describing the detailed operation of the powerhouse acceptable to the Corps. The MOA must specify any restrictions needed to protect the primary purposes of the Corps project for navigation, recreation, water quality, and flood control. The Division of Dam Safety and Inspections (D2SI)-Chicago Regional Engineer must be invited to attend meetings regarding the agreement. The MOA must be subject to revision by mutual consent of the Corps and licensee as experience is gained by actual project operation. Should the licensee and the Corps fail to reach an agreement; the

matter will be referred to the Director, Office of Energy Projects (OEP), for resolution. Copies of the regulating plan and signed MOA between the Corps and the licensee and any revision thereof must be furnished to the Director, OEP and the D2SI-Chicago Regional Engineer.

Article 313. No Claim. The licensee shall have no claim under this license against the United States arising from the effect of any changes made in the operation or reservoir levels of the U.S. Army Corps of Engineers project.

Article 314. Corps' Written Approval. The licensee must provide the Division of Dam Safety and Inspections (D2SI)-Chicago Regional Engineer two copies of all correspondence between the licensee and the Corps. The D2SI-Chicago Regional Engineer shall not authorize construction of any project work until the Corps' written approval of construction plans and specifications has been received by the D2SI-Chicago Regional Engineer.

Article 401. Commission Approval, Reporting, and Filing of Amendments.

(a) Requirement to File Plan for Commission Approval

Condition 10 of the Illinois Environmental Protection Agency's (Illinois EPA) final section 401 water quality certification (certification) (Appendix A) requires the licensee to prepare a plan after consultation with other entities for approval by Illinois EPA. The plan must also be submitted to the Commission for approval. The plan is listed below.

Certification Condition No.	Description	Due Date
Condition 10	Freshwater mussel survey, relocation, and restoration plan.	At least 90 days prior to the start of in-water construction activities.

(b) Requirement to File Report

Condition 10 of the Illinois EPA certification requires the licensee to file a report with other entities. Because the report relates to compliance with the requirements of this license, the report must also be submitted to the Commission. The report is listed in the following table:

Certification Condition No.	Description	Due Date
Condition 10	A report on the results of the required mussel survey must be provided to Illinois EPA.	Within 90 days of the completion of the required mussel survey.

(c) Requirement to File Amendment Applications

Certain conditions of Illinois EPA's certification (Appendix A) contemplate unspecified long-term changes to project operation or facilities based on the results of studies or monitoring (e.g., condition 8 contemplates unspecified changes based on dissolved oxygen monitoring results). Such changes may not be implemented without prior Commission authorization granted after the filing of an application to amend the license.

Article 402. Reservation of Authority to Prescribe Fishways. Authority is reserved to the Commission to require the licensee to construct, operate, and maintain, or to provide for the construction, operation, and maintenance of such fishways as may be prescribed by the Secretary of the Interior pursuant to section 18 of the Federal Power Act.

Article 403. Project Operation. The licensee must operate the project in a run-of-release mode, meaning the licensee must not deviate from the flow constraints, including flow releases, established by the U.S. Army Corps of Engineers (Corps) according to Article 312. In addition, for the protection of aquatic resources immediately downstream of Brandon Road Dam, the licensee must cease hydroelectric project operations when the Corps' flow releases through the Corps' outlet structures, other than the lock, cumulatively fall below 1,000 cfs.

Project operation, including the above requirements, may be temporarily modified if required by operating emergencies beyond the control of the licensee, or for short periods upon mutual agreement between the licensee and the Corps. If operation is so modified, the licensee must notify the Commission as soon as possible, but no later than 10 days after each such incident.

Article 404. Operation Compliance Monitoring Plan. At least 90 days prior to the start of project operation, the licensee must file with the Commission, for approval, an operation compliance monitoring 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:

(1) a detailed description of how the licensee will document compliance with the operational requirements of the license specified in Article 403;

(2) a description of the steps the licensee will take to ensure run-of-release operation continues during planned and emergency shutdowns;

(3) a description of all gages or recording devices that will be used to monitor operation compliance;

(4) the method of calibration of each gage and/or measuring device;

(5) the frequency of recording for each gage and/or measuring device;

(6) a provision to maintain a log of project operation;

(7) procedures for recording, maintaining, and reporting the monitoring data to the Commission; and

(8) a provision for reporting to the Commission deviations from the operational requirements of the license, along with proposed actions that will be taken to avoid reoccurrence of the deviation, within 10 days of discovery of the non-compliance event.

The licensee must prepare the plan after consultation with the U.S. Army Corps of Engineers, Illinois Department of Natural Resources, and Illinois Environmental Protection Agency. 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. Project operation 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. Dredging Plan. At least 90 days prior to the start of any contaminated spoil stockpile area development, or instream sediment-disturbing or spoil-producing activities (e.g., dredging), the licensee must file with the Commission, for approval, a dredging plan to describe the methods to be used to test the sediments and the procedures to be used to safely dispose of contaminated sediments. The plan must be

consistent with the requirements of Illinois Environmental Protection Agency's (Illinois EPA) water quality certification conditions 1 through 3 in Appendix A of this order.

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

- (1) a description of the contaminants to be sampled (including radioactivity), sampling locations, and methods to be implemented to test sediments for the presence and magnitude of contamination;
- (2) a description of the measures to be implemented to minimize the introduction of sediment and other contaminants into the water column during sediment-disturbing activities;
- (3) a description of the measures to be implemented to safely transport and dispose of contaminated sediments;
- (4) a description of the procedures that would be implemented to assess the effectiveness of the mitigation measures to minimize inputs of sediment and other contaminants into the water column during and following sediment-disturbing activities;
- (5) a provision to file a report with the Commission within 10 days of any temporary or emergency deviations from the plan's requirements; and
- (6) an implementation schedule.

The licensee must prepare the plan after consultation with the U.S. Army Corps of Engineers, Illinois EPA, and Exelon Generation Company, LLC (Exelon). 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 Exelon, and specific descriptions of how the agencies' and Exelon's comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the agencies and Exelon 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. No land-clearing, land-disturbing, contaminated spoil stockpile area development, or instream sediment-disturbing or spoil-producing activities (e.g., dredging) activities may 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. Hazardous Substances Control Plan. At least 90 days prior to the start of any land-disturbing or in-water construction activities, the licensee must file with the Commission, for approval, a hazardous substances control plan that describes the site-specific measures that will be implemented to minimize the potential for hazardous

material spills and ensure that procedures are in place to minimize the extent and adverse effects of any hazardous materials spills that do occur during construction, operation, and maintenance of the project.

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

(1) a description of how oil, fuels, lubricant products, and other hazardous liquid substances will be transported, stored, handled, and disposed of in a manner that is safe and minimizes adverse effects to environmental resources;

(2) a description of the equipment and procedures that will be used in the event of a spill to ensure the proper containment and cleanup of any hazardous substances to minimize adverse effects to water quality and aquatic resources in the project area;

(3) a provision to notify the Commission, U.S. Army Corps of Engineers (Corps), Illinois Environmental Protection Agency (Illinois EPA), Illinois Department of Natural Resources (Illinois DNR), and Exelon Generation Company, LLC (Exelon) as soon as possible, but no later than 24 hours after discovering a hazardous substances spill; and

(4) a provision to file a report with the Commission within 10 days of a hazardous substance spill that identifies: (a) the location of the spill; (b) the type and quantity of hazardous material spilled; (c) any corrective actions that have been undertaken to clean up the spill; and (d) any measures taken to ensure similar spills do not occur in the future.

The licensee must prepare the plan after consultation with the Corps, Illinois EPA, Illinois DNR, and Exelon. 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 Exelon, and specific descriptions of how the agencies' and Exelon's comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the agencies and Exelon 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. Land-disturbing or in-water construction activities 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 407. Dissolved Oxygen Monitoring Plan. At least 90 days prior to the start of any land-disturbing or in-water construction activities, the licensee must file with the Commission, for approval, a plan to monitor dissolved oxygen in the Des Plaines River. The plan must include the requirements of Illinois Environmental Protection Agency's (Illinois EPA) water quality certification condition 7 in Appendix A of this order.

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

- (1) a detailed description of the licensee's water quality monitoring methods, including equipment, and data recording procedures;
- (2) identification of the specific dissolved oxygen parameters under 35 Ill. Adm. Code 302.206 to be met pursuant to condition 8(a) of Appendix A;
- (3) a detailed description of the licensee's water quality monitoring locations, which in addition to the locations required by condition 7 in Appendix A of this order, must include: (a) the tailwater area (i.e., the 1,100-foot-wide area of the Des Plaines River immediately downstream of the Tainter gates), at a location upstream of the confluence of flow from the tailwater area with any powerhouse discharge; and (b) a location immediately downstream of the confluence of flow from the tailwater area and powerhouse discharge;
- (4) a description of the proposed measures to be implemented if project operation causes dissolved oxygen levels at the monitoring locations located downstream of the dam to fall below current state water quality standards;
- (5) a schedule for implementing the water quality monitoring and reporting the results on an annual basis to the U.S. Army Corps of Engineers (Corps), Illinois Department of Natural Resources (Illinois DNR), Exelon Generation Corporation, LLC (Exelon), and the Commission; and
- (6) a provision for reporting to the Commission any non-compliance events and associated mitigation actions pertaining to instances whereby dissolved oxygen levels downstream of the project fall below current state water quality standards, within 10 days of the discovery of the non-compliance event.

The licensee must prepare the plan after consultation with the Illinois EPA, Corps, Illinois DNR, and Exelon. 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 Exelon, and specific descriptions of how the agencies' and Exelon's comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the agencies and Exelon 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. Land-disturbing or in-water construction activities 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.

Once the plan is approved by the Commission, any changes to the specific dissolved oxygen parameters that are identified in the plan under item (2) above must not be implemented until the licensee receives Commission approval.

Article 408. Cofferdam Fish Recovery Plan. At least 90 days prior to the start of cofferdam construction, the licensee must file with the Commission, for approval, a cofferdam fish recovery plan to be implemented during project construction activities.

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

(1) a description of the procedures for collecting any fish prior to draining the areas enclosed by the project cofferdams, and returning these fishes safely to the river; and

(2) a provision to report any stranded fish and actions taken to the Illinois Department of Natural Resources (Illinois DNR), U.S. Fish and Wildlife Service (FWS), and Commission.

The licensee must prepare the plan after consultation with the Illinois 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. Cofferdam construction 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 409. Wetland Mitigation Plan. At least 90 days prior to the start of any land-disturbing or in-water construction activities, the licensee must file with the Commission, for approval, a revised Wetland Mitigation Plan to mitigate the effects of project construction on wetlands. The plan must include the requirements of Illinois Environmental Protection Agency's (Illinois EPA) water quality certification condition 11 in Appendix A of this order.

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

(1) a description and map of the total area of affected wetlands;

(2) a description of the measures to be implemented to mitigate effects on wetlands, including a description of how temporarily affected wetlands will be restored;

- (3) a description of how the success of wetland restoration will be monitored to evaluate the success of any restoration efforts and the criteria that will be used to determine whether wetland restoration is successful;
- (4) a provision to utilize only native vegetation during wetland restoration activities;
- (5) a provision for reporting the results of wetland mitigation monitoring to the Commission; and
- (6) an implementation schedule.

The licensee must prepare the plan after consultation with the Illinois EPA, Illinois Department of Natural Resources, and the U.S. Army Corps of Engineers. 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. Land-disturbing or in-water construction activities 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 410. Avian Protection. The licensee must design, construct, and maintain the project transmission line in accordance with Avian Power Line Interaction Committee guidelines provided in the *Avian Power Line Interaction Committee's Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006*, and *Reducing Avian Collisions with Power Lines: The State of the Art in 2012*.

Article 411. Bat Avoidance and Protection. To minimize adverse effects to the northern long-eared bat during construction, operation, and maintenance of the project, the licensee: (1) must avoid cutting potential northern long-eared bat forage or roosting trees between April 1 and October 31; and (2) only remove trees equal to or greater than 3 inches in diameter at breast height between November 1 and March 31.

Article 412. FERC Form 80 Exemption. The Brandon Road Lock and Dam facility is an active lock and dam, with limited public access which is restricted by the U.S. Army Corps of Engineers. There is no potential for recreation facilities within the project boundary. Therefore, upon the effective date of the license, the licensee is exempt from 18 C.F.R. §8.11, the filing of the Licensed Hydropower Development Recreation Report (FERC Form 80), for the Brandon Road Hydroelectric Project.

Article 413. Protection of Previously Undiscovered Cultural Resources. If the licensee discovers previously unidentified cultural resources during maintaining, or developing project works or other facilities at the project, the licensee must stop all land-clearing and land-disturbing activities in the vicinity of the resource and consult with the Illinois State Historic Preservation Officer (Illinois SHPO) to determine the need for any cultural resource studies or measures. If no studies or measures are needed, the licensee must file with the Commission documentation of its consultation with the Illinois SHPO immediately.

If a discovered cultural resource is determined to be eligible for the National Register of Historic Places (National Register), the licensee must file, for Commission approval, an historic properties management plan (HPMP) prepared by a qualified cultural resource specialist after consultation with the Illinois SHPO. In developing the HPMP, the licensee must use the Advisory Council on Historic Preservation and the Federal Energy Regulatory Commission's *Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Projects*, dated May 20, 2002. The HPMP must include the following items: (1) a description of each discovered property, indicating whether it is listed in or eligible to be listed in the National Register; (2) a description of the potential effect on each discovered property; (3) proposed measures for avoiding or mitigating adverse effects; (4) documentation of consultation; and (5) a schedule for implementing mitigation and conducting additional studies. The Commission reserves the right to require changes to the HPMP.

The licensee must not resume land-clearing or land-disturbing activities in the vicinity of a cultural resource discovered during construction, until informed by the Commission that the requirements of this article have been fulfilled.

Article 414. Protection of Cultural Resources. Prior to implementing any project modifications not specifically authorized by this license, including but not limited to maintenance activities, land-clearing or land-disturbing activities, or changes to project operation or facilities, the licensee must consult with the Illinois State Historic Preservation Officer (Illinois SHPO) to determine the effects of the activities and the need for any cultural resource studies or measures. If no studies or measures are needed, the licensee must file with the Commission documentation of its consultation with the Illinois SHPO.

If a project modification is determined to affect an historic property, the licensee must file for Commission approval an historic properties management plan (HPMP). The HPMP must be prepared by a qualified cultural resource specialist after consultation with the Illinois SHPO. In developing the HPMP, the licensee must use the Advisory Council on Historic Preservation and the Commission's *Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Projects*, dated May 20, 2002. The HPMP must include the following items: (1) a description of each

historic property; (2) a description of the potential effect on each historic property; (3) proposed measures for avoiding or mitigating adverse effects; (4) documentation of the nature and extent of consultation; and (5) a schedule for implementing mitigation and conducting additional studies.

The Commission reserves the right to require changes to the HPMP. The licensee must not implement any project modifications, other than those specifically authorized in this license, until informed by the Commission that the requirements of this article have been fulfilled.

Article 415. 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.

(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-kilovolt 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.

(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 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. § 8251 (2012), and section 385.713 of the Commission's regulations, 18 C.F.R. § 385.713 (2015). 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 shall constitute acceptance of this order.

Ann F. Miles
Director
Office of Energy Projects

Form L-6
(October, 1975)

FEDERAL ENERGY REGULATORY COMMISSION

**TERMS AND CONDITIONS OF LICENSE FOR UNCONSTRUCTED
MAJOR PROJECT AFFECTING NAVIGABLE WATERS
AND LANDS 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 works shall be constructed 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.

Upon the completion of the project, or at such other time as the Commission may direct, the Licensee shall submit to the Commission for approval revised exhibits insofar as necessary to show any divergence from or variations in the project area and project

boundary as finally located or in the project works as actually constructed when compared with the area and boundary shown and the works described in the license or in the exhibits approved by the Commission, together with a statement in writing setting forth the reasons which in the opinion of the Licensee necessitated or justified variation in or divergence from the approved exhibits. Such revised exhibits shall, if and when approved by the Commission, be made a part of the license under the provisions of Article 2 hereof.

Article 4. The construction, operation, and maintenance of the project and any work incidental to additions or alterations 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 a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of the project and for any subsequent alterations to the project. Construction of the project works or any features or alteration thereof shall not be initiated until the program of inspection for the project works or any such feature thereof has been approved by said representative. The Licensee shall also furnish to said representative such further information as he may require concerning the construction, operation, and maintenance of the project, and of any alteration thereof, and shall notify him of the date upon which work 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 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 of occupancy and use; and none of such properties shall be voluntarily sold, leased, transferred, abandoned, or otherwise disposed of without the prior written approval of the Commission, except that the Licensee may lease or otherwise dispose of interests in project lands or property without specific written approval of the Commission pursuant to the then current regulations of the Commission.

The provisions of this article are not intended to prevent the abandonment or the retirement from service of structures, equipment, or other project works in connection with replacements thereof when they become obsolete, inadequate, or inefficient for further service due to wear and tear; and mortgage or trust deeds or judicial sales made thereunder, or tax sales, shall not be deemed voluntary transfers within the meaning of this article.

Article 6. In the event the project is taken over by the United States upon the termination of the license as provided in Section 14 of the Federal Power Act, or is transferred to a new licensee or to a nonpower licensee under the provisions of Section 15 of said Act, the Licensee, its successors and assigns shall be responsible for, and shall make good any defect of title to, or of right of occupancy and use in, any of such project property that is necessary or appropriate or valuable and serviceable in the maintenance and operation of the project, and shall pay and discharge, or shall assume responsibility for payment and discharge of, all liens or encumbrances upon the project or project property created by the Licensee or created or incurred after the issuance of the license: Provided, That the provisions of this article are not intended to require the Licensee, for the purpose of transferring the project to the United States or to a new licensee, to acquire any different title to, or right of occupancy and use in, any of such project property than was necessary to acquire for its own purposes as the Licensee.

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

Article 8. The Licensee shall install and thereafter maintain gages and stream-gaging stations for the purpose of determining the state 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 locations 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 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 consult with the appropriate State and Federal agencies and, within one year of the date of issuance of this license, shall submit for Commission approval a plan for clearing the reservoir area. Further, 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. Upon approval of the clearing plan 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. Timber on lands of the United States cut, used, or destroyed in the construction and maintenance of the project works, or in the clearing of said lands, shall be paid for, and the resulting slash and debris disposed of, in accordance with the requirements of the agency of the United States having jurisdiction over said lands. Payment for merchantable timber shall be at current stumpage rates, and payment for young growth timber below merchantable size shall be at current damage appraisal values. However, the agency of the United States having jurisdiction may sell or dispose of the merchantable timber to others than the Licensee: Provided, That timber so sold or disposed of shall be cut and removed from the area prior to, or without undue interference

with, clearing operations of the Licensee and in coordination with the Licensee's project construction schedules. Such sale or disposal to others shall not relieve the Licensee of responsibility for the clearing and disposal of all slash and debris from project lands.

Article 27. The Licensee shall do everything reasonably within its power, and shall require its employees, contractors, and employees of contractors to do everything reasonably within their power, both independently and upon the request of officers of the agency concerned, to prevent, to make advance preparations for suppression of, and to suppress fires on the lands to be occupied or used under the license. The Licensee shall be liable for and shall pay the costs incurred by the United States in suppressing fires caused from the construction, operation, or maintenance of the project works or of the works appurtenant or accessory thereto under the license.

Article 28. The Licensee shall interpose no objection to, and shall in no way prevent, the use by the agency of the United States having jurisdiction over the lands of the United States affected, or by persons or corporations occupying lands of the United States under permit, of water for fire suppression from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license, or the use by said parties of water for sanitary and domestic purposes from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license.

Article 29. The Licensee shall be liable for injury to, or destruction of, any buildings, bridges, roads, trails, lands, or other property of the United States, occasioned by the construction, maintenance, or operation of the project works or of the works appurtenant or accessory thereto under the license. Arrangements to meet such liability, either by compensation for such injury or destruction, or by reconstruction or repair of damaged property, or otherwise, shall be made with the appropriate department or agency of the United States.

Article 30. The Licensee shall allow any agency of the United States, without charge, to construct or permit to be constructed on, through, and across those project lands which are lands of the United States such conduits, chutes, ditches, railroads, roads, trails, telephone and power lines, and other routes or means of transportation and communication as are not inconsistent with the enjoyment of said lands by the Licensee for the purposes of the license. This license shall not be construed as conferring upon the Licensee any right of use, occupancy, or enjoyment of the lands of the United States other than for the construction, operation, and maintenance of the project as stated in the license.

Article 31. In the construction and maintenance of the project, the location and standards of roads and trails on lands of the United States and other uses of lands of the

United States, including the location and condition of quarries, borrow pits, and spoil disposal areas, shall be subject to the approval of the department or agency of the United States having supervision over the lands involved.

Article 32. The Licensee shall make provision, or shall bear the reasonable cost, as determined by the agency of the United States affected, of making provision for avoiding inductive interference between any project transmission line or other project facility constructed, operated, or maintained under the license, and any radio installation, telephone line, or other communication facility installed or constructed before or after construction of such project transmission line or other project facility and owned, operated, or used by such agency of the United States in administering the lands under its jurisdiction.

Article 33. The Licensee shall make use of the Commission's guidelines and other recognized guidelines for treatment of transmission line rights-of-way, and shall clear such portions of transmission line rights-of-way across lands of the United States as are designated by the officer of the United States in charge of the lands; shall keep the areas so designated clear of new growth, all refuse, and inflammable material to the satisfaction of such officer; shall trim all branches of trees in contact with or liable to contact the transmission lines; shall cut and remove all dead or leaning trees which might fall in contact with the transmission lines; and shall take such other precautions against fire as may be required by such officer. No fires for the burning of waste material shall be set except with the prior written consent of the officer of the United States in charge of the lands as to time and place.

Article 34. The Licensee shall cooperate with the United States in the disposal by the United States, under the Act of July 31, 1947, 61 Stat. 681, as amended (30 U.S.C. sec. 601, et seq.), of mineral and vegetative materials from lands of the United States occupied by the project or any part thereof: Provided, That such disposal has been authorized by the Commission and that it does not unreasonably interfere with the occupancy of such lands by the Licensee for the purposes of the license: Provided further, That in the event of disagreement, any question of unreasonable interference shall be determined by the Commission after notice and opportunity for hearing.

Article 35. If the Licensee shall cause or suffer essential project property to be removed or destroyed or to become unfit for use, without adequate replacement, or shall abandon or discontinue good faith operation of the project or refuse or neglect to comply with the terms of the license and the lawful orders of the Commission mailed to the record address of the Licensee or its agent, the Commission will deem it to be the intent of the Licensee to surrender the license. The Commission, after notice and opportunity for hearing, may require the Licensee to remove any or all structures, equipment and power lines within the project boundary and to take any such other action necessary to

restore the project waters, lands, and facilities remaining within the project boundary to a condition satisfactory to the United States agency having jurisdiction over its lands or the Commission's authorized representative, as appropriate, or to provide for the continued operation and maintenance of nonpower facilities and fulfill such other obligations under the license as the Commission may prescribe. In addition, the Commission in its discretion, after notice and opportunity for hearing, may also agree to the surrender of the license when the Commission, for the reasons recited herein, deems it to be the intent of the Licensee to surrender the license.

Article 36. 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 37. 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**Water Quality Certificate Conditions for the Brandon Road Hydroelectric Project
Issued by the Illinois Environmental Protection Agency on January 29, 2015**

This Agency hereby issues certification under Section 401 of the Clean Water Act (PL 95-217), subject to the applicant's compliance with the following conditions:

1. The applicant shall not cause:
 - a) Violation of applicable water quality standards of the Illinois Pollution Control Board, Title 35, Subtitle C: Water Pollution Rules and Regulations;
 - b) Water pollution defined and prohibited by the Illinois Environmental Protection Act; or
 - c) Interference with water use practices near public recreation areas or water supply intakes.
2. The applicant shall provide adequate planning and supervision during the project construction period for implementing construction methods, processes, and cleanup procedures necessary to prevent water pollution and control erosion.
3. Any spoil material excavated, dredged, or otherwise produced must not be returned to the waterway but must be deposited in a self-contained area in compliance with all state statutes, regulations, and permit requirements with no discharge to waters of the State unless a permit has been issued by this Agency. Any backfilling must be done with clean material and placed in a manner to prevent violation of applicable water quality standards.
4. All areas affected by construction shall be mulched and seeded as soon after construction as possible. The applicant shall undertake necessary measures and procedures to reduce erosion during construction. Interim measures to prevent erosion during construction shall be taken and may include the installation of staked straw bales, sedimentation basins, and temporary mulching. All construction within the waterway shall be constructed during zero or low flow conditions. The applicant shall be responsible for obtaining an National Pollution Discharge Elimination System (NPDES) Storm Water Permit prior to initiating construction if the construction activity associated with the project will result in the disturbance of one or more acres, total land area. An NPDES Storm Water Permit may be obtained by submitting a properly completed Notice of Intent (NOI) form by certified mail to the Agency's Division of Water Pollution Control, Permit Section.

5. The applicant shall implement erosion control measures consistent with the "Illinois Urban Manual" (IEPA/USDA, NRCS; 2014).
6. The proposed work shall be constructed with adequate erosion control measures (i.e., silt fences, straw bales, etc.) to prevent transport of sediment and materials downstream.
7. The applicant shall conduct Dissolved Oxygen (D.O.) monitoring from representative monitoring points or samples taken in the Des Plaines River according to the following:
 - a) Monitoring shall occur April thru October and when flow rate through the Brandon Road Lock and Dam and hydropower plant is less than 12,000 cubic feet per second (cfs) as reported by U.S. Army Corps of Engineers at the Brandon Road Lock and Dam. The flow rate data reported at the following website may be used to determine compliance with the flow rate requirement:
<http://rivergages.mvr.usace.army.mil/WaterControl/stationinfo2.cfm?sid=IL03&fid=JOLI2&dt=E>
 - b) Daily monitoring shall be conducted at the following three locations:
 - i. In or downstream of the powerhouse tailrace.
 - ii. Upstream of the Brandon Road Lock and Dam and the intake channel to the turbines in the Brandon Road Pool.
 - iii. Downstream of the powerhouse at the I-55 bridge.
 - c) Monitoring results shall be reported 3 times per year in July, October, and November according to the following:
 - i. Monitoring shall be completed at mid-depth elevations.
 - ii. Monitoring shall be continuous (once per hour) representing the daily minimum and mean D.O. concentrations
 - iii. The applicant shall report the D.O. results in mg/L
 - iv. Monitoring shall be reported as a daily minimum for each monitoring location.
 - v. Daily monitoring shall be reported as a daily minimum, a daily minimum averaged over 7 days, and a daily mean averaged over 30 days.
 - vi. The monitoring report shall include the date, time, location of the monitoring points, names, and qualifications of individuals(s) who performed the monitoring and methods of monitoring and measurement that were used.
 - vii. The monitoring report shall include drawings depicting the location of each monitoring point and the laboratory analysis sheets.
 - viii. The monitoring report shall identify the days when no monitoring is

conducted due to the river flow rate equal to or greater than 12,000 cfs as identified in condition 7(a) above.

- ix. The monitoring results shall be submitted in a report within one month following the designated monitoring month. The subject monitoring reports shall be submitted to:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

8. a) The applicant shall implement measures necessary to maintain D.O. levels that meet the dissolved oxygen standard adopted at 35 Ill. Adm. Code 302.206.

b) OMITTED

9. The applicant shall maintain records at the facility for each D.O. measurement taken under this certification.

10. The applicant shall conduct a mussel survey in the Des Plaines River within the immediate construction area and in vicinity of proposed construction activities (upstream and downstream) prior to commencing construction activities within the Des Plaines River. The subject mussel survey and the results of the Illinois Department of Natural Resources (IDNR) approved relocation and restoration plan shall be submitted to the following address within 30 days of completion or IDNR approval:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

11. The mitigation plan received in emails from the applicant to the Water Quality Standards Section of the Agency dated December 30, 2013 and on Page 4 of the letter of May 29, 2014 from Northern Illinois Hydropower shall be implemented. Modifications to the mitigation plan must be submitted to the Agency for approval. The permittee shall submit annual reports by July 1 of each calendar year on the status of the mitigation. The first annual report shall include a hydric soils determination that represents the soils at the completion of initial construction for the wetland mitigation site(s). The permittee shall monitor the mitigation for 5 years after the completion of initial construction. A final

report shall be submitted within 90 days after completion of the 5-year monitoring periods. If the monitoring period is extended, annual reports and the final report shall be submitted for this extended period. Each annual report and the final report shall include the following: Illinois EPA Log Number, date of completion of initial construction, representative photographs, floristic quality index, updated topographic maps, description of work in the past year, the performance standards for the mitigation as stated in the mitigation plan, and the activities remaining to complete the mitigation plan. For wetland mitigation sites containing non-hydric soils at the time of initial construction, the final report shall include a hydric soils determination that represents the soils at the end of the 5-year monitoring period. For wetland mitigation provided by purchase of wetland mitigation banking credits, in lieu of the above monitoring and reporting, the permittee shall submit written proof from the wetland mitigation bank that the wetland credits have been purchased within thirty (30) days of the purchase. The reports and proof of purchase of mitigation credits shall be submitted to:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Permit Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

This certification becomes effective when the Federal Energy Regulatory Commission includes the above conditions, nos. 1 through 11, as conditions of the requested Federal License issued pursuant to the Federal Power Act § 6, 16 U.S.C. § 799. This certification does not grant immunity from any enforcement action found necessary by this Agency to meet its responsibilities in prevention, abatement, and control of water pollution.

Document Content(s)

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