

155 FERC ¶ 62,089
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

FFP Project 92, LLC

Project No. 14276-002

ORDER ISSUING ORIGINAL LICENSE

(Issued May 5, 2016)

INTRODUCTION

1. On April 16, 2015, FFP Project 92, LLC (FFP 92) filed, pursuant to Part I of the Federal Power Act (FPA)¹ and the Hydropower Regulatory Efficiency Act of 2013,² an application for an original license to construct and operate the proposed Kentucky River Lock and Dam No. 11 Hydroelectric Project No. 14276 (L&D 11 Project).³ The 5-megawatt (MW) project will be located at the Kentucky River Authority's (River Authority)⁴ Lock and Dam No. 11 on the Kentucky River,⁵ near the Town of Waco in Madison and Estill Counties, Kentucky. The project will not occupy federal land.

2. As discussed below, this order issues an original license for the L&D 11 Project.

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

² The license application was prepared under a pilot, two-year licensing process established by the Commission's Office of Energy Projects staff pursuant to the Hydropower Regulatory Efficiency Act of 2013 (2013 Act), Pub. L. 113-23, § 6, 27 Stat. 493 (2013).

³ FFP 92 supplemented its application on May 5, 2015, May 6, 2015, May 29, 2015, June 3, 2015, June 8, 2015, June 10, 2015, June 11, 2015, June 30, 2015, July 1, 2015, July 21, 2015, August 14, 2015, August 27, 2015, September 23, 2015, September 28, 2015, October 28, 2015, November 2, 2015, December 9, 2015, and January 20, 2016. FFP 92's July 1, 2015 filing modified the proposal to exclude the installation of 3.5-foot-high crest gates on the existing dam.

⁴ Lock and Dam No. 11 is owned by the Commonwealth of Kentucky and operated by the River Authority, a state agency.

⁵ The Kentucky River is a navigable waterway of the United States. *See Report of Navigable Status of the Kentucky River*, Federal Power Commission (1939) (filed in Project No. 13213 on December 11, 2015). Therefore, section 23(b)(1) of the Federal Power Act, 16 U.S.C. § 817(1)(2012), requires the project to be licensed.

BACKGROUND

3. On September 25, 2015, the Commission issued a public notice that was published in the *Federal Register* accepting the application for filing, soliciting motions to intervene and protests, indicating the application was ready for environmental analysis and setting November 24, 2015, as the deadline for filing comments, recommendations, preliminary terms and conditions, and preliminary fishway prescriptions.⁶ Lock 12 Hydro Partners, LLC (Lock 12 Partners), licensee for the upstream Ravenna Hydroelectric Project No. 13214, filed a motion to intervene⁷ and comments. The U.S. Department of the Interior (Interior) and the Kentucky Heritage Council filed comments and recommendations.

4. Commission staff issued an Environmental Assessment (EA) on February 12, 2016, analyzing the effects of the proposed project and alternatives to it. The U.S. Fish and Wildlife Service (FWS), Kentucky Department for Environmental Protection (Kentucky DEP), and FFP 92⁸ filed comments on the EA.

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

PROJECT DESCRIPTION

A. Project Area

6. The Kentucky River originates from its Three Forks sources (North, Middle, and South Forks) near Beattyville, Kentucky, on the western slope of the Appalachian Mountains and flows approximately 260 miles in a northwesterly direction to its confluence with the Ohio River at Carrollton, Kentucky. The Kentucky River Basin drains about 7,000 square miles in 42 counties in Kentucky.

7. Historically, the Kentucky River was regulated by 14 lock and dam structures. The Commonwealth of Kentucky constructed the first five locks and dams (i.e., Lock and Dam Nos. 1 through 5) on the Kentucky River between 1836 and 1842 to provide a transportation route for agricultural products to get to markets on the Ohio and Mississippi Rivers. In 1880, the U.S. Army Corps of Engineers (Corps) took control of the locks for commercial navigation purposes, and by 1917 the Corps had completed a system of 14 locks and dams,⁹ which included a 6-foot-deep channel stretching the 260-

⁶ 80 *Fed. Reg.* 59,763-64 (October 2, 2015).

⁷ Timely, unopposed motions to intervene are granted by operation of Rule 214(c) of the Commission's Rules of Practice and Procedure. 18 C.F.R. § 385.214(c) (2015).

⁸ Rye Development, LLC, FFP 92's managing entity, filed on behalf of FFP 92.

⁹ The locks and dams are numbered consecutively, starting with the lock and dam
(continued ...)

mile length of the river from Beattyville to Carrollton, Kentucky. The Corps completed construction of Lock and Dam No. 11 in 1906.¹⁰ Operation and maintenance of the locks became cost prohibitive, and the Corps permanently closed lock Nos. 5 through 14 in the 1970s, and between 1996 and 2006, transferred ownership of the locks and dams to the Commonwealth of Kentucky.¹¹ The River Authority operates the impoundments to provide municipal water supply, recreation, and habitat for fish and wildlife.

8. The L&D 11 Project dam is located at river mile (RM) 201. In 2015, Commission staff issued licenses for projects at two upstream lock and dam structures: Lock 12 Partners' Ravenna Hydroelectric Project at Lock and Dam No. 12 (RM 220.9),¹² and Lock 14 Hydro Partners, LLC's Heidelberg Hydroelectric Project No. 13213 at Lock and Dam No. 14 (RM 249).¹³

B. Existing Facilities and Operation

9. Lock and Dam No. 11 consists of a 208-foot-long, 35-foot-high fixed concrete gravity dam that acts as an uncontrolled spillway at a crest elevation of 583.05 feet,¹⁴ an abandoned 148-foot-long, 52-foot-wide navigation lock structure located on the south river bank, and a 579-acre reservoir (Pool No. 11). Because the dam crest functions as an uncontrolled spillway that passes all reservoir inflow downstream, the reservoir's water surface elevation varies with inflow. At the normal pool elevation of 583.05 feet (at the crest of the dam), the reservoir is approximately 19 miles long.

C. Proposed Project Facilities

10. In addition to the existing Lock and Dam No. 11 and associated reservoir, the project will include the following new facilities: (1) a 275-foot-long, 75-foot-wide reinforced concrete intake located in the abandoned lock and partly within an existing esplanade;¹⁵ (2) a 260-foot-long, 47-foot-high intake channel guide wall to be installed

located closest to the confluence with the Ohio River and moving upstream, with the downstream-most being Lock and Dam No. 1.

¹⁰ See Stallings, F.P. and S. Owens. 2015. Historic Architectural Survey for the Kentucky River Lock and Dam No. 11 Hydroelectric Project. Brockington and Associates, Inc., Norcross, Georgia. September 2015.

¹¹ The Corps is now in the process of transferring control of lock Nos. 1 through 4, which remain open for navigation, to the River Authority.

¹² *Lock 12 Hydro Partners, LLC*, 153 FERC ¶ 62,220 (2015).

¹³ *Lock 14 Hydro Partners, LLC*, 153 FERC ¶ 62,219 (2015).

¹⁴ Unless otherwise stated, all references to reservoir elevations, herein, are in National Geodetic Vertical Datum of 1929.

¹⁵ An esplanade is a long, level, open stretch of paved or grassy ground usually next to a river or large body of water designed for walking or driving along a shore. An esplanade (*continued ...*)

along the esplanade to convey flows to be used for generation into a 30-foot-long, 47-foot-high, 64.5-foot-wide intake and headgate structure to be built within the existing lock structure and extending beyond the south lock wall into the riverbank; and (3) trash racks with 3-inch clear bar spacing to be installed on the project intake.

11. Flows for generation will pass through the intake to a new 140-foot-long, 64.5-foot-wide powerhouse that will be built in the abandoned lock and extend into the esplanade located on the south riverbank. The powerhouse will contain two 2.5-MW horizontal pit Kaplan turbine generator units, for a total installed capacity of 5 MW. Flows exiting the powerhouse will be returned to the Kentucky River through a 190-foot-long, 78-foot-wide reinforced concrete tailrace channel with a 295-foot-long, 35-foot-high retaining wall.

12. The project's transmission facilities will include a new 40-foot-long by 40-foot-wide 69-kilovolt (kV) substation with a new 212-foot-long, 4.16-kV underground transmission cable from the powerhouse to the substation, and an approximately 4.5-mile-long, 69-kV overhead transmission line extending from the substation to an existing substation located near Waco, Kentucky.

13. FFP 92 proposes to construct a new portage trail around the lock and dam and a composting toilet near the proposed portage trail. FFP 92 also proposes to provide designated bank fishing access to the tailrace and construct and maintain a new parking area, adjacent to an existing access road on the River Authority's land, to provide access to project facilities and parking for canoers and anglers. FFP 92 also proposes to operate and maintain two existing boat launches (Irvine Boat Ramp and Docks and Drowning Creek Access) as project recreation facilities to provide access to the project's impoundment.

D. Proposed Project Operation

14. The project will be operated in a run-of-river mode, such that outflow from the project approximates inflow and the reservoir elevation is maintained at 583.05 feet. The project will have a maximum hydraulic capacity of 4,000 cubic feet per second (cfs), and a minimum hydraulic capacity of 200 cfs.

15. To generate power, the project will divert to the new turbine/generator units a portion of the water that currently passes uncontrolled over the dam. When inflow is less than the minimum hydraulic capacity of the powerhouse, the project will not operate and

for a lock and dam is bordered by a lock wall along the length of the lock by "training" walls at the upstream and downstream ends. At a working lock, the esplanade surface provides a location for the lock tender to work, and the associated training walls prevent the river from eroding around the lock. *See* EA at 7.

all inflow will be passed over the dam. Flows exceeding the maximum hydraulic capacity of the project will be passed over the dam.

16. The project will generate an average of 18,500 megawatt-hours (MWh) annually. A more detailed project description is contained in Ordering Paragraph B.

E. Project Boundary

17. The proposed project boundary encloses the lock and dam, reservoir, intake, powerhouse, tailrace, substation, transmission line, and land necessary for the proposed project recreation facilities and access to project facilities.

F. Proposed Environmental Measures

18. To minimize the potential for erosion, sedimentation, and mobilization of any existing contaminated sediments during project construction, FFP 92 proposes to: (1) sample river sediment for contaminants prior to project construction; (2) dispose of dredged sediments and solid waste at permitted facilities, if necessary; (3) develop and implement a groundwater protection plan; (4) implement best management practices (BMPs) to prepare the project site; (5) stabilize land surfaces during construction; (6) install cofferdams to minimize turbidity during construction; (7) implement wetland protection measures; (8) inspect and maintain erosion control measures; (9) stabilize and revegetate disturbed areas; and (10) re-establish 25- to 50-foot riparian buffer zones in the construction area along the Kentucky River.¹⁶

19. To identify project effects on water quality, FFP 92 proposes to monitor turbidity, water temperature, and dissolved oxygen (DO) upstream and downstream of the project prior to, during, and after project construction, and to implement mitigation measures, if necessary.

20. To minimize the effects of project construction on aquatic habitat and fish spawning, FFP 92 proposes to avoid in-stream excavation and streambed disturbance from April through June.

21. To minimize fish mortality from impingement¹⁷ and entrainment¹⁸ during project operation, FFP 92 proposes to design the trashracks at the powerhouse intake with a 3-inch clear bar spacing and an approach velocity of less than 1.5 feet per second (fps).

¹⁶ See FFP 92's August 14, 2015 filing.

¹⁷ Impingement could occur when flow velocity exceeds the swimming capability of a fish, creating contact with a screen face or bar rack.

¹⁸ Entrainment could occur when fish are unable to overcome the approach velocity at a screen face or bar rack and pass through the turbines during project operation.

22. To prevent the spread of non-native invasive plants during project construction and operation, FFP 92 proposes to: (1) conduct a pre-construction survey to identify and map any non-native invasive plants; (2) revegetate with native species and/or use materials free of non-native invasive plants when stabilizing soils; (3) use BMPs during construction to minimize soil and vegetation disturbance and the spread of non-native invasive plant material within the project area; and (4) monitor for non-native invasive plants for a minimum of two years after project construction, and extend the monitoring period to five years if necessary to effectively treat and control these species.¹⁹

23. To minimize the effects of project construction and maintenance on vegetation and wildlife habitat along the transmission line corridor, FFP 92 proposes to develop a transmission line corridor management plan²⁰ that includes provisions to: (1) survey for federally listed threatened or endangered plants (i.e., running buffalo clover and globe bladderpod) before construction, during the flowering periods for these species; (2) survey for federally listed bats (i.e., Indiana bat, northern long-eared bat, gray bat, and Virginia big-eared bat) before construction; (3) restore disturbed areas, to be cleared for the new transmission line, using techniques, species, and seed mixes recommended by the University of Kentucky, Kentucky Transportation Center (2009);²¹ (4) monitor reseeded areas bi-weekly and after significant rainfall and reseed until revegetation is successful; (5) implement BMPs before and during construction to protect an emergent wetland located partially within the transmission line corridor; (6) minimize adverse effects on wildlife habitats within and along the transmission line corridor during vegetation management activities; and (7) delineate location(s) of known habitat for rare, threatened, and endangered species and avoid disturbance or removal of vegetation that provides important habitat.

24. To minimize the risk of adverse avian interactions with project facilities (i.e., electrocutions and collisions with the proposed project transmission line), FFP 92 proposes to develop and implement an avian protection plan²² that includes provisions for: (1) a training program for operating and management personnel on avian protection measures; (2) use of construction design standards in accordance with Avian Powerline Interaction Committee (APLIC) publications (i.e., *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*); (3) methods for managing nests that become established on the transmission line or poles; (4) a reporting system; (5) an evaluation of potential avian impacts; (6) a risk assessment methodology for migratory birds with associated determinations on mortality reduction measures.

¹⁹ See FFP 92's August 14, 2015 filing.

²⁰ See FFP 92's August 14, 2015 filing.

²¹ See EA at 68 and FFP 92's August 14, 2015 filing.

²² See FFP 92's August 14, 2015 filing.

25. To provide recreation opportunities at the project, FFP 92 proposes to implement a proposed Recreation Resources Management Plan (Recreation Plan), with provisions for: (1) constructing a new portage trail around the lock and dam and a composting toilet near the proposed portage trail; (2) providing designated bank fishing access to the tailrace; (3) constructing a new parking area for four to six vehicles adjacent to an existing access road on land owned by the River Authority; and (4) designating the existing Irvine Boat Ramp and Docks and Drowning Creek Access as project recreation facilities.

26. To limit the visual effect of project facilities, FFP 92 proposes to design the powerhouse and other ancillary structures to blend with the existing lock and dam structures.

27. To mitigate the effect of constructing and operating the project on Lock and Dam No. 11, which is eligible for inclusion in the National Register of Historic Places (National Register), and to protect National Register-eligible historic architectural resources adjacent to the project's transmission line corridor, FFP 92 proposes to develop and implement a Historic Properties Management Plan (HPMP) for the project.

SUMMARY OF LICENSE REQUIREMENTS

28. Except as indicated below, this license requires most of FFP 92's proposed environmental measures, modifications to some of FFP 92's proposed measures, and some additional staff-recommended measures.

29. To protect water quality and aquatic resources, the license requires FFP 92 to prepare a sediment contaminant testing and disposal plan prior to the start of project construction.

30. To limit erosion and sedimentation during construction, the license requires FFP 92 to prepare a soil erosion and sedimentation control plan that includes site-specific BMPs.

31. To protect soils and water quality during project operation, the license requires FFP 92 to prepare a post-construction erosion monitoring plan that includes provisions to identify, document, and stabilize any areas of active riverbank erosion in the construction zone and monitor for project-related erosion for five years after the start of project operation.

32. To protect water quality and aquatic resources during construction and operation, the license requires FFP 92 to prepare a spill prevention, containment, and countermeasures 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.

33. To protect water quality and aquatic resources during project operation, the license requires FFP 92 to maintain an instantaneous minimum DO concentration of 4 milligrams per liter (mg/L) and a 24-hour average minimum of 5.0 mg/L downstream from the dam and develop a water quality monitoring plan to verify compliance with the DO requirements.

34. To monitor compliance with the project's operational requirements, the license requires FFP 92 to prepare an operation compliance monitoring plan.

35. To minimize disturbance to vegetation during construction, and restore and manage vegetation after construction, the license requires FFP 92 to prepare a revegetation and non-native invasive species management plan that incorporates the measures in FFP 92's proposed invasive species and noxious weed plan, some measures from FFP 92's proposed transmission line corridor management²³ and erosion and sediment control plans,²⁴ and some additional staff-recommended measures to ensure successful revegetation and non-native invasive species control, and minimize the effects of project maintenance activities.

36. To minimize potential electrocution and collision hazards on birds, the license requires FFP 92 to develop an avian protection plan.²⁵

37. To protect running buffalo clover and Short's bladderpod and Indiana, northern long-eared, gray, and Virginia big-eared bats during project construction and maintenance, the license requires FFP 92 to prepare an endangered species protection plan that includes provisions for: (1) conducting pre-construction surveys along the final transmission line route for running buffalo clover, Short's bladderpod, and cave and/or roosting habitat for federally listed bats; (2) filing the survey report with the Commission; (3) avoiding identified running buffalo clover and Short's bladderpod occurrences during construction and regular project maintenance activities; and (4) conducting project-related tree removal from August 1 through May 31.²⁶

²³ The measures from the proposed transmission line corridor management plan include implementing wetland protection measures before and during construction, restoring disturbed areas, and monitoring until revegetation is successful. *See* FFP 92's August 14, 2015 filing.

²⁴ The measures from the proposed erosion and sediment control plan include using BMPs before, during, and after construction to minimize effects to vegetation and wildlife habitat, including wetlands, and restore disturbed areas after construction. *See* FFP 92's August 14, 2015 filing.

²⁵ This plan would include the measures described in the list of proposed environmental measures above.

²⁶ *See* Rye Development's March 10, 2016 filing at 1.

38. To guide the effective implementation of the proposed recreation amenities, the license requires FFP 92 to revise its proposed Recreation Plan to include: (1) conceptual drawings for the proposed recreation amenities; (2) a construction and implementation schedule; (3) a description of the type and placement of informational and safety signs at project recreation facilities during and after project construction; and (4) provisions for periodic review and revision of the plan.

39. To protect cultural resources, the license requires FFP 92 to prepare and file a final HPMP with the Commission, pursuant to a Programmatic Agreement (PA) that was executed on April 22, 2016.

WATER QUALITY CERTIFICATION

40. Under section 401(a)(1) of the Clean Water Act (CWA),²⁷ the Commission may not issue a license authorizing the construction or operation of a hydroelectric project unless the state water quality certifying agency either has issued water quality certification for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year. Section 401(d) of the CWA provides that the certification shall become a condition of any federal license that authorizes construction or operation of the project.²⁸

41. On May 6, 2015, FFP 92 filed an application with the Kentucky DEP for water quality certification (certification) pursuant to the CWA for the L&D 11 Project, which Kentucky DEP received the same day. On January 29, 2016, the Kentucky DEP issued certification for the L&D 11 Project that includes conditions which are set forth in Appendix A of this order and incorporated into the license by Ordering Paragraph D.

42. The certification includes 21 conditions. Fourteen of the conditions are project or process descriptions, administrative requirements, and general conditions.²⁹ The

²⁷ 33 U.S.C. § 1341(a)(1) (2012).

²⁸ 33 U.S.C. § 1341(d) (2012).

²⁹ The administrative and general terms and conditions provide: (1) the historical context for the license application (T-1); (2) a project description (T-2); (3) the basis for issuing the certification (T-4); (4) for amendments to, or revocation of, the certification (T-7); (5) that Kentucky DEP may modify or revoke the certification (T-8); (6) that FFP 92 notify Kentucky DEP of any changes in ownership, scope, or construction methods of the project (T-9); (7) that any new owner request that Kentucky DEP transfer of the certification to the new owner (T-10); (8) that FFP 92 provide Kentucky DEP personnel access to the site (T-11); (9) that FFP 92 is responsible for work done by contractors (T-12); (10) that project areas be clearly marked in the field (T-13); (11) for the suspension or revocation of the certification if conditions are not adhered to or if significant degradation to water occurs as a result of permitted activities (T-16); (12) that (*continued ...*)

remaining seven conditions require FFP 92 to: (1) meet state water quality standards for DO and water temperature;³⁰ (2) monitor water quality in accordance with the conditions of the final certification; (3) notify downstream water users prior to any activities that may affect water quality; (4) prevent the direct or indirect discharges of pollutants to the waters of Kentucky; (5) develop and implement a BMPs inspection and maintenance plan; (6) locate staging areas and access points in open upland areas and minimize disturbance of existing wetlands; and (7) develop and implement a Stormwater Pollution Prevention Plan that includes sediment and erosion control measures.

43. Condition T-2 of the certification establishes the requirements for DO and temperature during project operations. The condition also provides that project construction and operation is not authorized, and no work can be performed in the waterway or adjacent wetlands until FFP 92 receives final authorization from Kentucky DEP.³¹

SECTION 18 FISHWAY PRESCRIPTION

44. Section 18 of the FPA³² provides that the Commission shall require the construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretary of the Interior or the Secretary of Commerce, as appropriate. No fishway prescriptions or reservations of authority were filed under section 18 of the FPA.

the certification does not constitute authorization of other entities' permitted activities (T-17); (13) that FFP 92 provide Kentucky DEP a certification from any other jurisdiction where a discharge originates, or will originate (T-19); and (14) for the Energy and Environment Cabinet's certification of compliance with applicable provisions of the CWA (T-20).

³⁰ FFP 92 is required to maintain: (1) DO at a minimum concentration of 5.0 mg/L as a 24-hour average, with an instantaneous minimum of not less than 4.0 mg/L; and (2) water temperatures that do not exceed 31.7 degrees Celsius (89 degrees Fahrenheit).

³¹ Kentucky DEP refers to the certification as "interim," i.e., FFP 92 must apply to Kentucky DEP for a "final" certification. Condition T-4 explains that the "interim" certification is based on the Commission's use of the 2-year licensing process for this project. Condition T-3 explains that Kentucky DEP expects to issue a "final" certification authorizing project construction and operation after FFP 92 submits certain information. To ensure any future conditions for the project are accounted for in the license, Ordering Paragraph (D) reserves the Commission's authority to modify the license, as necessary, to incorporate such conditions.

³² 16 U.S.C. § 811 (2012).

THREATENED AND ENDANGERED SPECIES

45. Section 7(a)(2) of the Endangered Species Act (ESA) of 1973³³ 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.

46. There are six federally listed species (four bats and two plants) with the potential to occur in the project area: the endangered Indiana bat, gray bat, Virginia big-eared bat, running buffalo clover, and Short's bladderpod,³⁴ and the threatened northern long-eared bat. Additionally, the Kentucky arrow darter is a proposed threatened species that may occur in the project area.

47. In the EA,³⁵ staff recommended that FFP 92 develop an endangered species protection plan that includes: (1) FFP 92's proposed pre-construction surveys; (2) avoidance of any identified running buffalo clover and Short's bladderpod during construction and regular maintenance, including vegetation management within the project boundary; (3) project-related tree removal only from August 1 through May 31 to protect listed bats; and (4) consultation with FWS on additional species-specific protection measures, based on the pre-construction survey results, to minimize potential project effects on the species and habitats that occur within the project boundary.

48. The EA concluded that, with the above measures, licensing the L&D 11 Project is not likely to adversely affect the six federally listed species and their habitats.³⁶ Staff also determined that licensing the L&D 11 Project, as proposed with the staff-recommended measures, is not likely to jeopardize the continued existence of the Kentucky arrow darter because the effects of proposed project's construction and operation would be limited to the mainstem of the Kentucky River where the species is not found.³⁷

49. By letter filed March 9, 2016, the FWS concurred with the findings for the northern long-eared bat,³⁸ gray bat, Virginia big-eared bat, and Kentucky arrow darter.

³³ 16 U.S.C. § 1536(a) (2012).

³⁴ Throughout the informal consultation process, FWS referenced both "globe bladderpod" and "Short's bladderpod" as potentially occurring within the project area; however, FWS's March 9, 2016 letter recommended that the Commission and the applicant use the common name Short's bladderpod and scientific name, *Physaria globosa*, in all future coordination and consultation efforts.

³⁵ See EA at 4 and 135-137.

³⁶ See EA at 4 and 84-93.

³⁷ See EA at 4.

³⁸ FWS stated that the proposed action is consistent with the final 4(d) rule for the
(continued ...)

However, FWS stated that without the results of the proposed pre-construction surveys, the associated analysis of potential project effects, and final proposed protection measures, it could not concur with the findings for the running buffalo clover and Short's bladderpod.

50. By letter filed March 22, 2016,³⁹ FWS stated that it had received additional information from FFP 92 regarding running buffalo clover and Short's bladderpod clarifying that the entire project area, including the transmission line right-of-way, was surveyed for running buffalo clover and Short's bladderpod. While suitable habitat for running buffalo clover and Short's bladderpod⁴⁰ was identified within the project boundary, neither of these species were observed. Based on the survey results, as well as FFP 92's commitment to resurvey the project area prior to construction, avoid these species, if identified, and coordinate with FWS if avoidance is not feasible, FWS concurred with the Commission staff's "not likely to adversely affect" finding for running buffalo clover and Short's bladderpod.

51. In its letter filed March 9, 2016, FWS indicated that FFP 92 could either conduct surveys to determine whether Indiana bats are present in the project area⁴¹ or instead assume they are present and contribute to the Imperiled Bat Conservation Fund (Conservation Fund), created under a programmatic biological opinion (BO) covering the potential impacts to the Indiana bat summer habitat in Kentucky.⁴² Because it was

northern long-eared bat and FWS's January 5, 2016 intra-Service Programmatic Biological Opinion (BO) on the final 4(d) rule for the northern long-eared bat. The 4(d) rule identifies prohibitions that focus on protecting the bat's sensitive life stages in areas affected by the disease white-nose syndrome. *See* 81 Fed. Reg. 1,900-1,922 (2016).

³⁹ FWS's March 22, 2016 letter also reiterated that FFP 92 could assume the presence of Indiana bats in the project area and contribute to the Conservation Fund to address potential impacts to the species.

⁴⁰ FFP 92's Terrestrial Habitat and Rare, Threatened, and Endangered Species Survey report stated that the north bank of the Kentucky River near Lock and Dam No. 11 has steep banks with exposed bedrock that may be suitable for this species, but that it is not anticipated that the north banks would be disturbed by project operations. The field survey results of the survey report stated that no habitat for this species was found. *See* FFP 92's May 6, 2015 filing.

⁴¹ FWS's June 26, 2014 filing, describes the recommended Indiana bat surveys and alternatives to surveys based on FWS's guidance in effect at that time.

⁴² *See* FWS's April 21, 2015 BO entitled *Kentucky Field Office's Participation in Conservation Memoranda of Agreement for the Indiana Bat and/or Northern Long-eared Bat* at 3 and 34. The Conservation Fund is administered by the Kentucky Natural Lands Trust (Lands Trust), an independent non-profit land trust, and use of these funds is a collaborative effort among the Lands Trust, FWS's Kentucky Field Office, and several
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unclear which of these options FFP 92 intended to use, FWS could not concur with staff's finding for the Indiana bat.

52. On March 30, 2016, FFP 92 contributed to the Conservation Fund.⁴³ By letter filed April 1, 2016, FWS acknowledged FFP 92's contribution.⁴⁴ FWS stated that, following the Kentucky Field Office's 2015 *Conservation Strategy for Forest Dwelling Bats* (Conservation Strategy),⁴⁵ the contribution would provide appropriate mitigation for the removal of up to 1.0 acre of potential forested habitat for Indiana (and northern long-eared) bat between August 1 and May 31. Through adherence to the Conservation Strategy, FWS concluded that the project is not likely to jeopardize the continued existence of the Indiana bat (or northern long-eared bat) or result in the destruction or adverse modification of designated critical habitat for either species. FWS stated that any incidental take of Indiana (and/or northern long-eared) bats that will, or could, result from the removal of forest habitat associated with the project is authorized under the BO, except for tree clearing during the bats' non-volancy⁴⁶ period (i.e., June 1 through July 31). Further, FWS stated that if additional forested areas not previously considered are to be removed, FFP 92 should coordinate with FWS to determine if additional compensation is necessary to be in ESA compliance. Finally, FWS's April 1, 2016 letter stated that the requirements of section 7 of the ESA have been fulfilled for this project.

53. Article 411 requires an endangered species protection plan with the staff-recommended measures described above.

federal, state, and private conservation organizations that are involved with bat and/or forest conservation in Kentucky.

⁴³ Rye Development, FFP 92's managing entity, made a one-time contribution of \$3,250 to the fund on behalf of FFP 92.

⁴⁴ See Rye Development's March 29, 2016 filing at 1-2, attached to FWS's letter filed on April 1, 2016.

⁴⁵ The Conservation Strategy supersedes the Revised Indiana Bat Mitigation Guidance for the Commonwealth of Kentucky and can be found at <http://www.fws.gov/frankfort/pdf/2015%20KY%20Forest-Dwelling%20Bat%20Conservation%20Strategy.pdf>. Currently, the FWS Kentucky Field Office's 2015 BO and Conservation Strategy cover impacts to and mitigation for Indiana bats as well as northern long-eared bats because these forest dwelling bats have similar habitat requirements. The Conservation Strategy contemplates future expansion of the species list.

⁴⁶ The period when bat pups are incapable of flight.

NATIONAL HISTORIC PRESERVATION ACT

54. Under section 106 of the National Historic Preservation Act (NHPA)⁴⁷ and its implementing regulations⁴⁸ federal agencies must take into account the effect of any proposed undertaking on properties listed or eligible for listing in the National Register (defined as historic properties) and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. This generally requires the Commission to consult with the State Historic Preservation Officer (SHPO) to determine whether and how a proposed action may affect historic properties, and to seek ways to avoid or minimize any adverse effects.

55. To satisfy these responsibilities, the Commission executed a PA with the Kentucky SHPO on April 22, 2016, and invited FFP 92, the United Keetoowah Band of Cherokee Indians in Oklahoma, and the River Authority to concur with the stipulations of the PA. FFP 92 concurred. The PA requires FFP 92 to prepare and implement a final HPMP for the project. Execution of the PA demonstrates the Commission's compliance with section 106 of the NHPA. Article 414 requires FFP 92 to implement the PA and file a final HPMP with the Commission within one year of license issuance.

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

56. Section 10(j)(1) of the FPA⁴⁹ 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,⁵⁰ to “adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)” affected by the project. No section 10(j) recommendations were filed for the L&D 11 Project.

SECTION 10(a)(1) OF THE FPA

57. Section 10(a)(1) of the FPA⁵¹ requires that any project for which the Commission issues a license be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce; for the improvement and utilization of waterpower development; for the adequate protection, mitigation, and enhancement of fish and wildlife; and for other beneficial public uses,

⁴⁷ Section 106 of the National Historic Preservation Act of 1966, as amended, 54 U.S.C. § 306108, Pub. L. No. 113-287, 128 Stat. 3188 (2014).

⁴⁸ 36 C.F.R. Part 800 (2016).

⁴⁹ 16 U.S.C. § 803(j)(1) (2012).

⁵⁰ 16 U.S.C. §§ 661 *et seq.* (2012).

⁵¹ 16 U.S.C. § 803(a)(1) (2012).

including irrigation, flood control, water supply, recreation, and other purposes.

A. Project Operation and Compliance Monitoring

58. FFP 92 proposes to operate the project in a run-of-river mode, whereby outflow from the project approximates inflow, and to maintain a minimum reservoir elevation 583.05 feet (i.e., the height of the dam crest). However, FFP 92 did not propose any method for monitoring compliance with these operational requirements. In the EA,⁵² Commission staff recommended run-of-river operation and that FFP 92 develop an operation compliance monitoring plan to detail how it would verify compliance with run-of-river operation and maintenance of the reservoir level at or above the crest of the dam at all times. Article 401 requires run-of-river operation and Article 402 requires FFP 92 to develop an operation compliance monitoring plan.

B. Sediment Contaminant Testing and Disposal

59. In-water construction activities (e.g., cofferdam installation and removal) could disturb contaminated sediments known to be present within the Kentucky River, resulting in the re-suspension of these contaminants into the water column and subsequent adverse effects on water quality and aquatic resources.⁵³ Additional solid waste would be generated during excavation at the powerhouse site. Therefore, FFP 92 proposes to conduct sediment sampling and testing upstream and downstream from the lock chamber, prior to commencing construction activities, remove and properly dispose of any discovered contaminated sediments, and dispose of any other solid waste generated during project construction. Any disposal of solid waste, including contaminated sediments, would be conducted in accordance with the Commonwealth of Kentucky and U.S. Environmental Protection Agency requirements.

60. In the EA,⁵⁴ staff recommended sediment sampling and disposal of any solid waste, including contaminated sediments, consistent with FFP 92's proposal. Article 403 requires FFP 92 prepare a sediment contaminant testing and disposal plan to specify the procedures for, and guide the implementation of, sediment sampling and testing upstream and downstream from the lock chamber prior to the start of project construction, and any associated solid waste disposal.

C. Erosion Control and Riverbank Stability

61. As described above, FFP 92 proposes to develop an erosion and sedimentation control plan that includes measures for erosion and sediment control during project

⁵² See EA at 133.

⁵³ See EA at 22 and 41-43.

⁵⁴ See EA at 130-131.

construction (e.g., cofferdams to minimize turbidity increases during dredging, as well as measures for post-construction erosion and sediment control. In addition, some of FFP's proposed measures overlap with measures FFP 92 proposed as part of other resource protection plans (e.g., minimizing disturbance to existing vegetation, wetland protection, re-establishment of riparian buffer zones, and regrading and reseeded after construction). The proposed measures not strictly related to erosion and sediment control during construction, and resulting required plans, are addressed where appropriate in this order.

62. Regarding efforts to minimize the potential for erosion and sedimentation to protect aquatic resources during project construction, FFP 92 proposes to develop an erosion and sedimentation control plan that includes site-specific provisions to implement BMPs to prepare the project site for construction, seed and mulch temporarily during construction, and inspect and maintain erosion control structures during construction. In addition, Condition T-14 of the certification requires BMPs for erosion and sediment control.

63. In the EA,⁵⁵ staff recommended, and Article 302 of this license requires, that FFP 92 develop an Erosion and Sediment Control Plan.

64. Operation of the project would shift flow from the spillway to the powerhouse tailwater. FFP 92's hydraulic models predict that the changes in project operation will alter water velocities near the intake, tailrace, and south riverbank. Changes in water velocity, particularly on unprotected, silty, riverbanks, can lead to erosion.

65. In the EA,⁵⁶ staff recommended that FFP 92 monitor for active riverbank erosion within the immediate vicinity of the powerhouse, intake, and tailrace, as well as the riverbank where the transmission line would cross Pool No. 11. Article 404 requires this measure.

D. Spill Prevention, Containment, and Countermeasures

66. Construction and operation of the project could result in hazardous material spills, which could degrade water quality and adversely affect aquatic resources, such as fish and mussels.⁵⁷ Condition T-21 of the certification prohibits the discharge of any pollutant or other hazardous substance to waters of the Commonwealth of Kentucky, but requires no mechanism(s) to ensure that such pollution does not occur. In the EA,⁵⁸ staff recommended that FFP 92 prepare a Spill Prevention, Containment, and Countermeasures Plan that includes measures to protect groundwater, and to minimize

⁵⁵ See EA at 128-129.

⁵⁶ See EA at 57.

⁵⁷ See EA at 43.

⁵⁸ See EA at 131-132.

the extent and adverse effects of any hazardous materials spills that may occur, including a provision to safely transport, store, handle, and dispose of such materials. Article 405 requires the plan.

E. Water Quality Monitoring

67. Project operation (i.e., passing river flows through the project's turbines instead of over the spillway) could reduce DO and water temperature downstream from the project.⁵⁹ FFP 92 proposes to monitor DO and water temperature upstream of, and downstream from, the project. FFP 92 would monitor water quality from June through September prior to commencing construction (baseline) and after the project is constructed and placed into service. Condition T-5 of the certification requires FFP 92 to monitor water quality (e.g., DO, water temperature, streamflow, total dissolved gas, turbidity, and pH) during project construction and operation.

68. Aside from the specific parameters to be monitored and the monitoring season, neither the license application nor the certification provides details regarding sampling equipment, locations, and schedule. Therefore, Commission staff recommended, in the EA,⁶⁰ that FFP 92 prepare a water quality monitoring plan that includes sampling methods, mitigation measures, and a protocol for reporting results to the Kentucky DEP, Kentucky Department of Fish and Wildlife Resources (Kentucky DFWR), and the Commission to ensure that project operation does not cause deviations of water quality parameters that exceed Kentucky's water quality standards. Article 406 requires FFP 92 to file such a plan that contains the provisions recommended by staff for monitoring water quality at the project.

F. Fish Protection at the Project Intake

69. Operation of the project has the potential to cause fish injury or mortality due to fish impingement on the trashrack, entrainment through the turbines, and blade strike from turbines. To minimize these effects, FFP 92 proposes to install a trashrack at the powerhouse intake that has a 3-inch clear bar spacing and an intake velocity of 1.5 fps or less.

70. In the EA, Commission staff concluded that the proposed trashrack would minimize project effects on fish populations resulting from impingement, entrainment,⁶¹ and turbine mortality.⁶² Staff recommended the trashrack as part of FFP 92's design for

⁵⁹ See EA at 44-45.

⁶⁰ See EA at 132-133.

⁶¹ Commission staff estimates that total entrainment would approach 30,000 fish per year. See EA at 52.

⁶² See EA at 55.

the project.⁶³ However, neither the license application nor subsequent filings provided information on (1) the specific design of the proposed trashrack, including dimensions, bar size, and rack angle, and (2) how the trashrack will be maintained to ensure that it functions as designed to protect fish. Accordingly, Article 407 requires FFP 92 to file a Trashrack Design and Maintenance Plan that includes a detailed design drawing of the proposed trashrack and the procedures for maintaining it.

G. Timing of In-water Construction

71. Construction activities have the potential to affect the reproductive success of aquatic species including fish and freshwater mussels.⁶⁴ FFP 92 proposes to avoid in-water excavation and streambed disturbance from April through June when the majority of fish spawning takes place in the project area. In the EA,⁶⁵ staff recommended this measure. Article 408 requires FFP 92 to avoid in-water work from April through June.

H. Revegetation and Non-native Invasive Species Control

72. Construction of the project would result in soil disturbance and an associated loss of existing vegetation. During operation, maintenance activities, such as vegetation management along the transmission line corridor, could disturb soil or remove existing vegetation. Any disturbed soils could be colonized by non-native invasive plant species known to occur in the project area and have the potential to out-compete native plant communities, thereby reducing their value for wildlife within the project area.⁶⁶

73. To minimize these effects, FFP 92 proposes to develop, in consultation with resource agencies, several plans, including a soil erosion and sediment control plan, an invasive species and noxious weed control plan, and a transmission line corridor management plan. These plans have a number of overlapping measures.⁶⁷ To eliminate the overlap in measures, staff recommended that FFP 92 prepare, in consultation with Kentucky DFWR and FWS, a revegetation and non-native invasive species management plan⁶⁸ that incorporates: (1) the measures proposed by FFP 92 for invasive species and noxious weed control; and (2) some of the measures proposed by FFP 92 for its proposed transmission line corridor management plan. In addition, staff recommended that the revegetation and non-native invasive species management plan include an

⁶³ See EA at 124.

⁶⁴ See EA at 49.

⁶⁵ See EA at 124.

⁶⁶ See EA at 63-70.

⁶⁷ For instance, each plan has a provision to implement BMPs to minimize the effects of project construction on existing native vegetation and habitats, including wetlands; and to reseed and/or monitor disturbed areas after construction.

⁶⁸ See EA at 135.

implementation schedule and provisions to: (1) identify criteria for success; (2) identify the specific areas within the project boundary where regular (i.e., non-emergency) vegetation management will occur, including recreation areas; (3) describe proposed regular vegetation management methods, including non-native invasive plant control measures; (4) identify site-specific BMPs to minimize the transport of, and prevent the establishment or spread of non-native invasive plants within the project boundary during post-construction maintenance activities; (5) identify specific methods for minimizing effects of maintenance activities on wildlife habitats within the project boundary; and (6) file annual monitoring reports with the Commission until revegetation and non-native invasive species control targets are achieved. Staff also recommended adopting measures from FFP 92's erosion and sediment control plan.⁶⁹

74. Article 409 requires the plan with these measures.

I. Avian Protection

75. Constructing the project would include the installation of an approximately 4.5-mile-long, 69-kV overhead transmission line. Electric transmission lines create the potential for electrocution of large birds (e.g., eagles, hawks, and owls) capable of bridging the distance between the conductors. Transmission lines can also create obstacles that can pose a collision hazard for many birds (e.g., herons, ducks, geese, hawks, owls, doves, song birds) depending on the types and configuration of, and markings on, the lines and the body size, weight, wing shape, flight behavior, and nesting habits of the birds.⁷⁰ To minimize the risk of avian interaction with project facilities (i.e., electrocutions and collisions with the proposed project transmission line), FFP 92 proposes to develop an avian protection plan upon completion of an interconnection study to be conducted by Kentucky Utilities Company (Kentucky Utilities).⁷¹ The plan would be finalized, in consultation with FWS and Kentucky DFWR, and include site-specific provisions for: (1) a program for training operating and management personnel on avian protection measures; (2) construction design standards established in accordance with APLIC publications (i.e., *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*); (3) methods for managing nests that become established on the

⁶⁹ See EA at 128-129.

⁷⁰ See EA at 72-73; APLIC's *Reducing Avian Collisions with Power Lines: the State of the Art in 2012*.

⁷¹ Kentucky Utilities owns the segment of existing transmission line corridor extending approximately 4 miles from the Richmond Water Supply Intake to the Waco substation. The results of the interconnection study will determine the transmission voltage, required upgrades, and the specific avian protection measures to minimize the risk of electrocution and collision hazards for birds.

transmission line or poles; (4) an avian reporting system; (5) evaluating potential avian impacts; and (6) a risk assessment methodology for migratory birds with associated determinations on mortality reduction measures.

76. In the EA,⁷² staff concluded that these measures would be beneficial in identifying and addressing impacts to birds in a timely manner throughout a license term. Article 410 requires FFP 92 to file an Avian Protection Plan, incorporating these measures.

J. Recreation Enhancements and Public Access

77. FFP 92's proposed Recreation Plan includes provisions for constructing a new portage trail around the lock and dam and a composting toilet near the proposed portage trail, providing designated bank fishing access to the tailrace, constructing a new parking area for four to six vehicles adjacent to an existing access road on land owned by the River Authority, and designating the existing Irvine Boat Ramp and Docks and Drowning Creek Access as project recreation facilities.⁷³

78. In the EA,⁷⁴ staff concluded that FFP 92's proposed recreation facilities would enhance recreation opportunities on the Kentucky River. However, to guide the implementation of the proposed recreation measures, Commission staff recommended that FFP 92 revise their Recreation Plan to include: (1) conceptual drawings for the proposed new facilities; (2) a construction and implementation schedule, including provisions for sequencing recreation facility construction near the end of the project's construction timeline; (3) a description of the type and placement of informational and safety signs at project recreation facilities during and after project construction; and (4) provisions for periodic review of the recreation facilities and updates to the plan as necessary.

79. Commission staff also recommended that FFP 92 modify the description of the project recreation facilities at Irvine Boat Ramp and Docks to exclude the 12 private floating cabins and mooring spaces,⁷⁵ leased by Rader's River Grill Restaurant, from the project boundary because private facilities do not serve a project purpose. The revised plan, and any future plan updates would be developed in consultation with the National Park Service, Kentucky DFWR, and the River Authority.

⁷² See EA at 70-73, and 125.

⁷³ The Irvine Boat Ramp and Docks site is currently operated and maintained by Rader's River Grill Restaurant. Drowning Creek Access is maintained by the Madison County Department of Public Works. FFP 92 proposes to execute agreements with these entities for maintenance of the sites over the term of a license. See EA at 98.

⁷⁴ See EA at 137-138.

⁷⁵ A mooring cabin is a floating cabin.

80. In comments on the EA filed March 11, 2016, FFP 92 stated that it intends to revise the Recreation Plan following license issuance, in accordance with staff's recommendations. Article 412 requires the proposed plan to be revised to include these provisions.

K. Aesthetic Resource Protection

81. In the EA, Commission staff concluded that FFP 92's proposal to design and construct project facilities to blend with the existing features of the National Register-eligible Lock and Dam No. 11 would be consistent with the history of industrial use along the Kentucky River and would minimize adverse effects of project construction on aesthetic resources.⁷⁶ Therefore, Article 413 requires FFP 92 to design and construct the project's powerhouse and appurtenant facilities to blend with the existing features at Lock and Dam No. 11.

ADMINISTRATIVE PROVISIONS

A. Annual Charges

82. The Commission collects annual charges from licensees for administration of the FPA.⁷⁷ Article 201 provides for the collection of funds for administration of the FPA.

B. Exhibit F and G Drawings

83. The Commission requires licensees to file sets of approved project drawings in electronic file format. The Exhibit F and G drawings are being approved and Article 202 requires the filing of these drawings.

⁷⁶ See EA at 99-100.

⁷⁷ On October 15, 2015, the Commission issued a final rule revising section 11.1(c)(5) of its regulations to modify when the Commission will commence assessment of administrative annual charges to hydropower licensees and exemptees, other than state or municipal entities, with respect to licenses and exemptions authorizing unconstructed projects and new capacity. *Commencement of Assessment of Annual Charges*, Order No. 815, 80 *Fed. Reg.* 63,667 (October 15, 2015), FERC Stats. & Regs. ¶ 31,372 (2015). The final rule became effective on December 21, 2015. Because this license is issued after December 21, 2015, and authorizes an unconstructed project, assessment of administrative annual 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.

C. Amortization Reserve

84. 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 203 requires the establishment of the account.

D. Project Financing

85. To ensure that there are sufficient funds available for project construction, operation, and maintenance, Article 204 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.

E. Headwater Benefits

86. Some projects directly benefit from headwater improvements that were constructed by other licensees, the United States, or permittees. Article 205 requires the licensee to reimburse such entities for these benefits.

F. Project Land Rights

87. The project as licensed includes the Lock and Dam No. 11, a reservoir (Pool No. 11), and project features that will include the powerhouse, substation, an approximately 212-foot-long, 4.16-kV underground transmission cable, a 4.5-mile-long, 69-kV overhead transmission line, a tailrace, and project recreation facilities. The Exhibit drawings G-1 through G-7, filed on July 1, 2015, identify private and state land ownership within the project boundary.

88. Standard Article 5 set forth in Form L-4 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 Article 5, Article 206 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.

89. Article 307 requires the licensee to provide the Commission with documentation that it has obtained sufficient rights for the dam and reservoir to meet the safety requirements in accordance with Part 12, Safety of Water Power Projects and Project Works, of the Commission's regulations.

G. As-Built Exhibits

90. Where new construction or modifications to the project are involved, the Commission requires licensees to file revised exhibits of project features as-built. Article 207 provides for the filing of these drawings.

H. Use and Occupancy of Project Lands and Waters

91. 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

92. 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

93. 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, and a Soil Erosion and Sediment Control Plan.

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

95. Article 304 requires the licensee to provide the Commission's D2SI-Chicago Regional Engineer with an independent consultant inspection report.

96. Article 305 requires the licensee submit to the Commission's D2SI-Chicago Regional Engineer a Project Owners Dam Safety Program that demonstrates an acknowledgement of the project owner's responsibility for the safety of the project in accordance with the guidance information posted on the Commission's website.

97. Article 306 requires the licensee submit one copy to the Commission's D2SI-Chicago Regional Engineer and two copies to the Commission of a Public Safety Plan that include an evaluation of public safety concerns at the project site, in accordance with the Commission's Guidelines for Public Safety at Hydropower Projects on the FERC website.

98. Where project modifications are proposed as a result of environmental requirements, the Commission requires licensees to file a plan and schedule of any proposed modifications to project operation or to the water retaining and/or conveyance features of the project. Article 308 provides for the filing of this plan and schedule.

STATE AND FEDERAL COMPREHENSIVE PLANS

99. Section 10(a)(2)(A) of the FPA⁷⁸ 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.⁷⁹ Under section 10(a)(2)(A), federal and state agencies filed 17 comprehensive plans that address various resources in Kentucky. Of these, staff identified and reviewed seven comprehensive plans that are relevant to this project.⁸⁰ No conflicts were found.

CONSERVATION EFFORTS

100. Section 10(a)(2)(C) of the FPA⁸¹ requires the Commission to consider the electricity consumption improvement program of the applicant, including its plans, performance, and capabilities for encouraging or assisting its customers to conserve electricity cost-effectively, taking into account the published policies, restrictions, and requirements of state regulatory authorities.

101. Staff concludes that, given the limits of its ability to influence users of the electricity generated by the project, FFP 92 complies with section 10(a)(2)(C) of the FPA.

SAFE MANAGEMENT, OPERATION, AND MAINTENANCE OF THE PROJECT

102. Staff reviewed FFP 92's preliminary plans to build the project as described in the license application. The project will be safe when constructed, operated, and maintained in accordance with the Commission's standards and provisions of this license.

NEED FOR POWER

103. To assess the need for power, staff looked at the needs in the operating region in which the project is located. Project power will be used to meet regional electrical demand. The project will be located in the Southeastern Electric Reliability Council

⁷⁸ 16 U.S.C. § 803(a)(2)(A) (2012).

⁷⁹ Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2015).

⁸⁰ The list of applicable plans can be found in section 5.4 of the EA for the project.

⁸¹ 16 U.S.C. § 803(a)(2)(C) (2012).

(SERC) region, which is one of eight regional reliability councils of the North American Electric Reliability Corporation (NERC). NERC annually forecasts electrical supply and demand nationally and regionally for a 10-year period. According to NERC's December 2015 forecast, peak season energy demand in the SERC-Southeast region will increase from 44,934 MW in 2016 to 50,502 MW in 2025, an increase of about 1.2 percent per year over the ten-year period. Commission staff conclude that the project's power, and its contribution to the region's diversified generation mix, will help meet a need for power in the region.

PROJECT ECONOMICS

104. 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.*,⁸² 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.

105. In applying this analysis to the L&D 11 Project, Commission staff considered three alternatives: no-action; FFP 92's proposal; and the project as licensed herein. Under the no-action alternative, there are no costs associated with this alternative, other than FFP 92's cost for preparing the license application at \$500,000. As proposed by FFP 92, the project will generate an average of 18,500 MWh of electricity annually. The average annual project cost is \$1,624,670 or \$87.82/MWh. When the estimated average annual generation is multiplied by the alternative power cost of \$38.24/MWh,⁸³ the total estimated value of the project's power is \$707,440 in 2015 dollars. To determine whether the proposed project is currently economically beneficial, the project's cost is subtracted from the value of the project's power. Therefore, the project costs \$917,230, or \$49.58/MWh, more to produce power than the likely alternative cost of power.

106. As licensed herein with mandatory conditions and staff recommended measures, the levelized annual cost of operating the project will be about \$1,630,035, or \$88.11/MWh. Based on an estimated average generation of 18,500 MWh, the project will produce power valued at \$707,440 when multiplied by the alternative power cost of

⁸² 72 FERC ¶ 61,027 (1995).

⁸³ The alternative power cost of \$38.24 per MWh is based on information obtained from the Energy Information Administration fuel cost data for natural gas.

\$38.24/MWh. Therefore, in the first year of operation, project power will cost \$922,595, or \$49.87/MWh, more than the likely cost of alternative power.

107. In considering public interest factors, the Commission takes into account that hydroelectric projects offer unique operational benefits to the electric utility system (ancillary service benefits). These benefits include the ability to help maintain the stability of a power system, such as by quickly adjusting power output to respond to rapid changes in system load; and to respond rapidly to a major utility system or regional blackout by providing a source of power to help restart fossil-fuel based generating stations and put them back on line.

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

109. 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

110. Sections 4(e) and 10(a)(1) of the FPA⁸⁴ 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 must be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

111. 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 L&D 11 Project as described in this order would not constitute a major federal action significantly affecting the quality of the human environment. The project will be safe if operated and maintained in accordance with the requirements of this license.

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

112. Based on 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 L&D 11 Project, as licensed herein, is selected and found to be best adapted to a comprehensive plan for improving or developing the Kentucky River.

113. 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, recreational and aesthetic resources, and cultural resources; and (3) the 5.0 MW of electric capacity comes from a renewable resource that does not contribute to atmospheric pollution.

LICENSE TERM

114. Section 6 of the FPA⁸⁵ 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 establish 30-year terms for projects with little or no redevelopment, new construction, new capacity, or environmental mitigation and enhancement measures; 40-year terms for projects with a moderate amount of such activities; and 50-year terms for projects with extensive measures.⁸⁶ Further, it is Commission policy to "coordinate the expiration dates of the licenses [in the same river basin] to the maximum extent possible, to maximize future consideration of cumulative impacts at the same time in contemporaneous proceedings at relicensing."⁸⁷

115. As noted above, the Commission issued original licenses for the Heidelberg and Ravenna Projects with 40-year terms, expiring December 31, 2055. To coordinate the license term of the L&D 11 Project with the Heidelberg and Ravenna license orders, this license is for a 39-year, 8-month license term, to coincide with the expiration of the Heidelberg and Ravenna Projects.

The Director orders:

(A) This license is issued to FFP Project 92, LLC (licensee), for a period of 39 years and 8 months, effective the first day of the month in which this order is issued, to construct, operate, and maintain the Kentucky River Lock and Dam No. 11 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.

⁸⁵ 16 U.S.C. § 799 (2012).

⁸⁶ See *City of Danville, Virginia*, 58 FERC ¶ 61,318, at 62,020 (1992).

⁸⁷ 18 C.F.R. § 2.23 (2015).

(B) The 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: (a) an existing 579-acre reservoir with a gross storage capacity of 6,900 acre-feet; (b) Kentucky River Authority's existing Lock and Dam No. 11, which consists of (a) a 208-foot-long, 35-foot-high fixed crest spillway dam that has a normal pool elevation of 583.05 feet National Geodetic Vertical Datum of 1929; (b) an abandoned navigation lock; (c) a new 275-foot-long, 75-foot-wide reinforced concrete intake channel equipped with trashracks with 3-inch bar spacing and a new 260-foot-long, 47-foot-high intake channel guide wall; (d) a new 140-foot-long, 64.5-foot-wide powerhouse that includes a 30-foot-long, 47-foot-high, 64.5 foot-wide intake and headgate structure built within the existing lock structure and extending beyond the south lock wall into the esplanade; (e) two new horizontal pit Kaplan turbine generator units each rated at 2.5 megawatts; (f) a new 190-foot-long, 78-foot-wide tailrace with a 295-foot-long, 35-foot-high retaining wall located immediately downstream of the powerhouse to return flows from the powerhouse to the Kentucky River; (g) a new 40-foot-long, 40-foot-wide 69-kV substation; (h) a new 212-foot-long, 4.16-kilovolt (kV) underground transmission cable from the generators to the new substation; (i) a new about 4.5-mile-long, 69-kV overhead transmission line extending from the new substation at the powerhouse to an existing substation located near Waco, Kentucky; and (j) appurtenant facilities.

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

Exhibit A: The following sections of Exhibit A:

Section 1.0, page A-2, entitled "Project Description: Introduction;" page A-2, section 1.1, entitled "Project Description: Generators;" and page A-2, section 1.3, entitled "Project Description: Turbines;" of the license application filed on April 16, 2015; and page 1 and pages A-11 through page A-12 of the licensee's August 27, 2015 filing.

Exhibit F: The following Exhibit F drawings, filed on May 6, 2015:

<u>Exhibit F Drawing</u>	<u>Drawing</u> <u>No. 14276-</u>	<u>Description</u>
Sheet F-1	1	Proposed Plan of Development
Sheet F-2	2	Proposed Powerhouse, Plan View

<u>Exhibit F Drawing</u>	<u>Drawing No. 14276-</u>	<u>Description</u>
Sheet F-3	3	Proposed Powerhouse, Section View

Exhibit G: The following Exhibit G drawings, filed on July 1, 2015:

<u>Exhibit G Drawing</u>	<u>Drawing No. 14276-</u>	<u>Description</u>
Sheet G-1	4	Proposed Project Boundary
Sheet G-2	5	Proposed Project Boundary
Sheet G-3	6	Proposed Project Boundary
Sheet G-4	7	Proposed Project Boundary
Sheet G-5	8	Proposed Project Boundary
Sheet G-6	9	Proposed Project Boundary
Sheet G-7	10	Proposed Project Boundary

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

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

(D) This license is subject to the conditions submitted by the Kentucky Department for Environmental Protection (Kentucky DEP) under section 401(a)(1) of the Clean Water Act, 33 U.S.C. § 1341(a)(1) (2012), and set forth in Appendix A to this order. Authority is reserved to the Commission to amend this license to include such water quality certification conditions as may be required by the Kentucky DEP upon issuance of water quality certification for construction and operation of the Kentucky River Lock and Dam No. 11 Hydroelectric Project, and to modify existing conditions of this license as necessary to achieve consistency with any such additional certification conditions.

(E) This license is also subject to the articles set forth in Form L-4, (October, 1975), entitled, "Terms and Conditions of License for Unconstructed Major Project Affecting Navigable Waters of the United States" (*see* 54 F.P.C. 1792, *et seq.*), as reproduced at the end of this order, and the following additional articles:

Article 201. Administrative Annual Charges. The licensee must pay the United States the following annual charges, as determined in accordance with provisions of the Commission's regulations in effect from time to time, 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 5.0 megawatts.

Article 202. Approved Exhibit Drawings. Within 45 days of the date of issuance of this license, as directed below, the licensee must file the approved exhibit drawings (F-1, G-1, etc.) in electronic file format on compact disks with the Secretary of the Commission, ATTN: OEP/DHAC.

a) Digital images of the approved exhibit drawings must be prepared in electronic format. Prior to preparing each digital image, the FERC Project-Drawing Number (i.e., P-14276-1 through P-14276-10) 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 Critical Energy Infrastructure Information (**CEII**) **material under 18 C.F.R. §388.113(c)**. Each drawing must be a separate electronic file, and the file name must include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this license, and file extension in the following format [P-14276-1, F-1, Proposed Plan of Development, 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 dpi desired, (200 dpi min)
 DRAWING SIZE FORMAT – 24” x 36” (minimum), 28” x 40” (maximum)
 FILE SIZE – less than 1 megabyte desired

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

b) Project boundary GIS data must be in a georeferenced electronic file format (such as ArcView shape files, GeoMedia files, MapInfo files, or a similar GIS format). The filing must include both polygon data and all reference points shown on the individual project

boundary drawings. An electronic boundary polygon data file(s) is required for each project development. Depending on the electronic file format, the polygon and point data can be included in single files with multiple layers. The georeferenced electronic boundary data file must be positionally accurate to ± 40 feet in order to comply with National Map Accuracy Standards for maps at a 1:24,000 scale. The file name(s) must include: FERC Project Number, data description, date of this License, and file extension in the following format [P-14276, boundary polygon/or point data, MM-DD YYYYY.SHP]. The data must be accompanied by a separate text file describing the spatial reference for the georeferenced data: map projection used (i.e., UTM, State Plane, Decimal Degrees, etc.), the map datum (i.e., North American 27, North American 83, etc.), and the units of measurement (i.e., feet, meters, miles, etc.). The text file name must include: FERC Project Number, data description, date of this license, and file extension in the following format [P-14276, project boundary metadata, MM-DD-YYYY.TXT].

Article 203. 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 204. 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 205. 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 206. 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 207. As-built Exhibits. Within 90 days of completion of construction of the facilities authorized by this license, the licensee must file for Commission 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, and Soil 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.

Article 303. Cofferdam Construction Drawings and Deep Excavation. 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 construction drawings and specifications, and the letters of approval.

Article 304. Inspection by Independent Consultant. In accordance with Part 12D §12.38 of the Commission's Regulations, the initial independent consultant's inspection of the project must be completed and the report on the inspection filed within two years of license issuance. Information on specific inspection and report requirements can be found in Part 12D §12.35 and §12.37, 18 CFR § 12.35 and 12.37 (2015), of the Commission's Regulations.

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 (D2SI)-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 Dam Safety Program, the licensee should reference the information posted on the Commission website.

Article 306. Public Safety Plan. At least 60 days prior to the start of construction, 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 an evaluation of public safety concerns at the project site, including designated recreation areas, and assess the need for the installation of safety devices or other safety measures. The submitted plan should include a description of all public safety devices and signage, as well as 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 Commission website.

Article 307. Proof of Adequate Property Rights. Within 90 days of the date of this license, the licensee must provide the Commission with documentation that it has obtained sufficient rights for the dam and reservoir to meet the safety requirements in accordance with Part 12, Safety of Water Power Projects and Project Works, of the Commission's regulations, 18 C.F.R. Part 12 (2015). This includes, but is not limited to: (1) allowing access to all project works, including the dam and reservoir, for inspection by the Commission's Division of Dam Safety and Inspections (D2SI)-Chicago Regional Engineer or authorized representative; and (2) taking any action with respect to the design, construction, operation, maintenance, repair, use or modification of the project or its works, including the dam and reservoir, that is in the judgement of the D2SI-Chicago Regional Engineer or other authorized Commission representative to be desirable. At least 60 days prior to any ground-disturbing activities, the licensee must provide the Commission with documentation that it has obtained sufficient rights for construction of project works. Any grant of easement submitted to the Commission as proof of the licensee's compliance with the requirements of Article 5 of this license must explicitly state that, notwithstanding any other provision contained in such grant, the licensee or its successor must have the right to perform any and all acts required by an order of the Federal Energy Regulatory Commission or its successor without the prior approval of the grantor of the easement.

Article 308. 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 (D2SI)-Chicago Regional Engineer. Consultation must allow sufficient review time for the Commission to ensure that the proposed work does not adversely affect the project works, dam safety, or project operation.

Article 401. Project Operation. The licensee must operate the Kentucky River Lock and Dam No. 11 Hydroelectric Project in a run-of-river mode, whereby outflow from the project approximately equals inflow, for the protection of aquatic resources in the Kentucky River. While operating in a run-of-river mode, the licensee must maintain

the water surface elevation of the Lock and Dam No. 11 pool no lower than the crest of the Kentucky River Lock and Dam No. 11 (583.05 feet National Geodetic Vertical Datum of 1929).

Project operation, including the water surface elevation requirement referenced herein, may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods upon mutual agreement among the Kentucky Department for Environmental Protection (Kentucky DEP), Kentucky Department of Fish and Wildlife Resources (Kentucky DFWR), Kentucky River Authority, and the U.S. Fish and Wildlife Service (FWS).

If operational requirements are modified due to operating emergencies beyond the control of the licensee, the licensee must notify the Commission, Kentucky DEP, Kentucky DFWR, FWS, and the Kentucky River Authority as soon as possible, but no later than 10 days after each such incident. As part of its notification to the Commission, the licensee must provide, in an incident report, the: (1) reason(s) for the change; (2) operational data before, during, and immediately after the incident; (3) any corrective measures taken at the time of the occurrence and any measures taken or proposed to ensure that similar incidents do not recur; and (4) comments or correspondence, if any, received from the entities listed above. Based on the report and the Commission's evaluation of the incident, the Commission reserves the right to require modifications to the project facilities and operations to ensure future compliance.

If operational requirements are modified for short periods upon mutual agreement with the aforementioned entities, the licensee must notify the Commission as soon as possible, but not later than 10 days after each such incident.

No long-term or permanent change in project operation may be made unless approved by the Commission, based on the licensee filing an application to amend the license.

Article 402. *Operation Compliance Monitoring Plan.* Within one year of license issuance, the licensee must file for Commission approval, a plan to document compliance with the operational provisions of Article 401 of this license.

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

(1) a description of the monitoring locations, and the equipment used to monitor compliance with Article 401;

(2) a detailed description of the procedures for maintaining and calibrating each gage and/or monitoring device;

(3) a detailed description of the frequency data is recorded for each gage and/or monitoring device;

(4) a procedure for recording and maintaining operational data; and

(5) a provision for reporting to the Kentucky Department for Environmental Protection (Kentucky DEP), Kentucky Department of Fish and Wildlife Resources (Kentucky DFWR), the U.S. Fish and Wildlife Service (FWS), and the Commission, deviations from the operational requirements of the license, along with proposed actions that will be taken to avoid reoccurrence of the deviation.

The Operation Compliance Monitoring Plan must be developed after consultation with Kentucky DEP, Kentucky DFWR, FWS, and the Kentucky River Authority. 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 entities above, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the entities 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 403. *Sediment Contaminant Testing and Solid Waste Disposal Plan.* Within 6 months of license issuance, and prior to the start of any in-water or ground-disturbing activities, the licensee must file for Commission approval, a Sediment Contaminant Testing and Solid Waste Disposal Plan to protect water quality and aquatic resources in the Kentucky River during project construction.

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

(1) a provision to sample and test the sediments in the in-water construction areas for contaminants;

(2) a description of the sampling methodologies to be employed and the types of contaminants to be tested for;

(3) a description of how contaminated sediments would be managed (e.g., mechanical or hydraulic removal, avoidance, or securing in place), handled, or disposed of;

(4) a disposal plan for any contaminated sediment and other solid waste, including construction debris, removed from the site and where contaminated sediments would be disposed of;

(5) a provision for a report of all sediment sampling results (including a quantification of the contaminated sediments to be removed) to be provided to the Kentucky Department for Environmental Protection (Kentucky DEP) and Kentucky Department of Fish and Wildlife Resources (Kentucky DFWR) for their review and comment, prior to filing the report with the Commission; and

(6) an implementation schedule.

The plan must be developed after consultation with Kentucky DEP, Kentucky DFWR, and the Kentucky River Authority. 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 entities, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the entities 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. 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 404. Post-Construction Erosion Monitoring Plan. Within 1 year of license issuance, the licensee must file for Commission approval, a Post-Construction Erosion Monitoring Plan. The purposes of the plan are to: (1) minimize the effects of project operation on riverbank erosion, and (2) describe how the licensee will monitor for, and mitigate areas of, post-construction erosion along the riverbanks within the project boundary.

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

(1) a provision to assess the riverbanks located within the project boundary once project construction is complete and prior to commencing operation to identify and document the extent and magnitude of active riverbank erosion and those areas that may exhibit the potential for erosion in the future under project operation;

(2) a provision to stabilize riverbanks exhibiting erosion as identified in item 1 at least 50 feet upstream of the powerhouse, to the downstream extent of the project boundary, and on the banks where the transmission line crosses the Kentucky River;

(3) a description of the measures to be used to stabilize the riverbanks (e.g., riprap and/or native vegetation, species, planting densities);

(4) a provision to monitor the riverbanks for at least 50 feet upstream of the powerhouse, to the downstream extent of the project boundary, and on the banks where the transmission line crosses the Kentucky River, for a period of five years following commencement of project operation to (a) assess the effectiveness of the initial stabilization efforts, and (b) identify any new areas of riverbank erosion and determine whether they are related to project operation;

(5) a description of the methodology(ies) that will be used to monitor riverbank stability and determine the extent and magnitude of any erosion occurring during the monitoring period; and

(6) a provision to submit annual reports during the monitoring period to the Kentucky Department for Environmental Protection (Kentucky DEP) and the Kentucky Department of Fish and Wildlife Resources (Kentucky DFWR), for their review and comment, prior to filing the reports with the Commission. The reports must include: (a) a description of the measures used to stabilize the riverbanks and control erosion; (b) an assessment of the effectiveness of the measures used; (c) identification of any problem areas; and (d) any recommendations for additional measures to stabilize problem areas, and/or for continued monitoring.

The plan must be developed after consultation with Kentucky DEP, Kentucky DFWR, and the Kentucky River Authority. 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 entities, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the entities 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. *Spill Prevention, Containment, and Countermeasures Plan*. Within 6 months of license issuance, and prior to the start of any in-water or ground-disturbing activities, the licensee must file for Commission approval, a Spill Prevention, Containment, and Countermeasures Plan. The purpose of the plan is to protect surface water and groundwater by minimizing the extent of, and adverse effects associated with, any hazardous material spills.

The plan must be consistent with the requirements of Condition T-21 of the January 29, 2016 water quality certification (certification) issued by the Kentucky Department for Environmental Protection (Kentucky DEP) and included as Appendix A to this license. In addition to the stipulations of the certification, the plan must include, but not necessarily be limited to:

- (1) a description of proposed measures to maintain on-site sanitary facilities;
- (2) a description of how oil, fuels, lubricant products, and other hazardous liquid substances will be transported, stored, handled, and disposed of in a safe and environmentally acceptable manner;
- (3) 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 at the project;
- (4) a provision to notify the Commission, Kentucky DEP, and the Kentucky Department of Fish and Wildlife Resources (Kentucky DFWR) as soon as possible, but no later than 24 hours after discovering a hazardous substance spill; and
- (5) 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 relative to the project boundary, (b) the type and quantity of hazardous material spilled, (c) any corrective actions that have been undertaken to clean up the spill, (d) any identifiable environmental effects attributable to the spill; and (e) any measures implemented to address identified environmental impacts and ensure similar spills do not occur in the future.

The Spill Prevention, Containment, and Countermeasures Plan must be developed after consultation with Kentucky DEP and Kentucky DFWR. The licensee must include with the plan documentation of consultation, copies of 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 406. Water Quality Monitoring Plan. Within 6 months of license issuance, and prior to the start of any in-water or ground-disturbing activities, the licensee must file for Commission approval, a Water Quality Monitoring Plan. The purpose of this plan is to monitor compliance with the water quality requirements of this license.

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

(1) provisions to monitor compliance with the water quality requirements specified in Conditions T-5 and T-6 of Appendix A of this license;

(2) a provision to monitor turbidity levels immediately upstream of, and downstream from, any construction areas to ensure all erosion and sedimentation control measures are effective;

(3) a description of the frequency of turbidity monitoring to be conducted during construction;

(4) a description of the proposed measures to be implemented if monitoring reveals instances whereby turbidity levels downstream of a project construction activity exceed those upstream of the activity;

(5) a description of (a) the proposed water quality monitoring equipment, including the procedures for maintaining and calibrating the turbidity monitoring equipment, (b) sampling locations, and (c) the sampling schedule for monitoring dissolved oxygen (DO) and water temperature;

(6) a description of the proposed measures to be implemented if monitoring reveals instances whereby DO concentrations downstream from the project fall below the criteria described in Condition T-3 of Appendix A;

(7) a provision to notify the Commission, the Kentucky Department for Environmental Protection (Kentucky DEP), the Kentucky Department of Fish and Wildlife Resources (Kentucky DFWR), and the U.S. Fish and Wildlife Service (FWS) of any deviations in the water quality requirements specified by this license along with any corrective actions taken, within 24 hours of becoming aware of an event; and

(8) a provision to file annual reports, with the Commission, documenting the results of the previous year's water quality monitoring by March 31 of each following year.

The Water Quality Monitoring Plan must be developed after consultation with Kentucky DEP, Kentucky DFWR, and FWS. The licensee must include with the plan documentation of consultation, copies of 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 407. Trashrack Design and Maintenance Plan. Within 6 months of license issuance, the licensee must file with the Commission for approval, a Trashrack Design and Maintenance Plan that includes, at a minimum, the following:

(1) design drawings showing the depth, dimensions, and orientation of the trash racks relative to the project intake;

(2) specifications of the size of the openings between the trashrack bars that must not exceed a clear bar spacing of 3.0 inches, and of the mean approach velocity that must not exceed 1.5 feet per second as measured immediately upstream of the trashrack.

(3) a description of the methods and schedule for installing the trashrack; and

(4) a description of any trashrack removal, maintenance, or cleaning procedures.

The plan must be developed after consultation with the U.S. Fish and Wildlife Service, Kentucky Department of Fish and Wildlife Resources, and the Kentucky River Authority. The licensee must include with the plan, documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to the entities above, and specific descriptions of how the entities' comments and recommendations are accommodated by the plan. The licensee must allow a minimum of 30 days for the entities 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 408. Timing of In-water Construction. To protect water quality and the aquatic resources at the project, the licensee must not conduct any in-water work from April 1 through June 30.

Article 409. Revegetation and Non-Native Invasive Species Management Plan. Within 6 months of license issuance, and prior to the start of any ground-disturbing or land-clearing activities, the licensee must file for Commission approval, a Revegetation and Non-Native Invasive Species Management Plan to minimize disturbance to existing vegetation during construction, as well as restore and manage vegetation within the project boundary after construction.

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

Pre-Construction

(1) survey to identify and map non-native invasive plants within the project boundary. A survey report must be prepared and filed with the Commission and include map(s) of non-native invasive plant locations in relation to: (a) project facilities; (b) areas that will be disturbed during project construction; and (c) areas of vegetation that will be maintained during project operation and maintenance activities, including recreation facilities; and

(2) best management practices (BMPs)⁸⁸ to prepare the project site for construction, including but not limited to: (a) a 25-foot buffer around the riparian areas and an emergent wetland located partially within the new segment of transmission line corridor; (b) removing non-native plant material within the construction zone by cutting, covering or bagging any above ground plant material, allowing the plant material to decompose and/or dry, and burying nonviable material; (c) erosion and sediment control measures, specified in the Erosion and Sediment Control Plan required by Article 302, before land clearing and grading; and (d) use, as necessary, of temporary and permanent soil disposal areas, haul roads, construction staging areas, and an access point with cleaning station to control the spread of invasive plant material. The plan must include a map showing the locations of the BMPs, and a description of the measures to be used to store and dispose of spoil materials and the location(s) of any spoil disposal areas.

Construction

(1) a description of how the plan is consistent with the requirements of Condition T-14 of the January 29, 2016 water quality certification issued by the Kentucky

⁸⁸ See University of Kentucky, Kentucky Transportation Center. 2009. Best Management Practices (BMPs) for Controlling Erosion, Sediment, and Pollutant Runoff from Construction Sites. Revised 2009. Available at http://dep.ky.gov/formslibrary/Documents/09BMPManual_Final.pdf.

Department for Environmental Protection and included as Appendix A to this license regarding soil and erosion control BMPs;

- (1) minimize disturbance to soil, native vegetation, and existing drainage systems;
- (3) collect and stockpile topsoil from areas that will be disturbed by excavation, filling, road building, or compaction by equipment;
- (4) stabilize, temporarily seed (i.e., with native species, or non-natives that are not on the Kentucky Exotic Pest Plant Council's most current list of non-native invasive plants), and use mulch, hay, rip-rap, or gravel that is free of non-native invasive plants on disturbed land surfaces during construction;
- (5) BMPs to minimize the transport of, and render nonviable, non-native invasive plant material that may occur within the project area, including but not limited to:
 - (a) conduct staging activities in areas without non-native invasive plants;
 - (b) use portable wash stations to clean equipment of non-native invasive plant material;
 - (c) monitor the construction site for the emergence of non-native invasive plants; and
 - (d) eradicate any non-native invasive plants that are observed;
- (6) BMPs to protect wetlands including but not limited to: (a) maintain a 25-foot buffer around the riparian areas and an emergent wetland; (b) use wide-tire vehicles or timber mats if heavy equipment is required; and (c) locate transmission line poles outside of the wetland; and
- (7) inspect and maintain erosion control measures.

Post-Construction

- (1) criteria that define when revegetation and control of non-native invasive species is successful;
- (2) regrade, distribute topsoil, reseed with native grasses, shrubs, and trees, and install erosion control geo-fabric and/or mulch in the disturbed areas. Describe all areas revegetated including the size and location of the area, a list of the native plant species used, planting densities, and fertilization or other requirements;
- (3) restore 25- to 50-foot riparian buffer zones in the construction areas along the Kentucky River;
- (4) monitor reseeded areas bi-weekly and after significant rainfall until vegetation is established and reseed any bare areas;
- (5) monitor for non-native invasive plants (i.e., bi-monthly until vegetation is established, and then biannually thereafter) for a minimum of two years after project construction. If non-native invasive species are present two years after construction, then

implement control measures, in coordination with the Kentucky Department of Fish and Wildlife Resources (Kentucky DFWR) and the U.S. Fish and Wildlife Service (FWS), and extend the monitoring period to five years, if necessary, to effectively treat and control identified non-native invasive plants; and

(6) file annual monitoring reports with the Commission until revegetation and non-native invasive species control targets are achieved.

Regular (i.e., Non-Emergency) Vegetation Management

(1) identify areas within the project boundary where regular vegetation management would occur, including recreation sites;

(2) describe the regular vegetation management methods, including non-native invasive plant control measures that would be used in each area;

(3) identify project-specific BMPs to minimize the transport of, and prevent the establishment or spread of, non-native invasive plants within the project boundary during project operation and maintenance activities including vegetation management and maintenance of recreation facilities; and

(4) identify specific methods for minimizing effects of maintenance activities on wildlife habitats within the project boundary.

The plan must be prepared after consultation with the Kentucky DFWR, the FWS, and the Kentucky River Authority. 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 entities above, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the entities 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. Ground-disturbing or land-clearing 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 Plan. Within 6 months of license issuance, and at least 90 days prior to the start of any ground-disturbing or land-clearing activities associated with transmission line construction, the licensee must file, for Commission approval, an Avian Protection Plan. The purpose of this plan is to identify and minimize the risks of adverse avian interactions with project facilities (i.e., electrocutions and

collisions with the project transmission line) in a timely manner throughout the license term.

The plan must include, but not necessarily be limited to, the following site-specific provisions for:

- (1) a training program for operating and management personnel on avian protection measures;
- (2) construction design standards established in accordance with Avian Powerline Interaction Committee (APLIC) publications (i.e., *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*);
- (3) a description of methods for managing nests that may become established on the project transmission facilities;
- (4) a description of a system for reporting avian interactions with the project transmission facilities;
- (5) an evaluation of potential avian impacts of the final project transmission line alignment and design; and
- (6) a risk assessment methodology for migratory birds and associated determinations on mortality reduction measures.

The plan must be prepared after consultation with the Kentucky Department of Fish and Wildlife Resources and the U.S. Fish and Wildlife Service. The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the entities above, and specific descriptions of how the entities' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the entities 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. Ground-disturbing or land-clearing activities associated with transmission line 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 411. Endangered Species Protection Plan. Within 6 months of license issuance, and at least 90 days prior to the start of any ground-disturbing or land-clearing

activities, the licensee must file, for Commission approval, an Endangered Species Protection Plan. The purpose of this plan is to avoid and minimize construction and maintenance effects on federally listed species that may occur within the project boundary.

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

(1) conduct pre-construction surveys along the final transmission line route for running buffalo clover, Short's bladderpod, and cave and/or roosting habitat for federally listed bats;

(2) file the survey reports, with the Commission, after allowing the Kentucky Department of Fish and Wildlife Resources (Kentucky DFWR) and the U.S. Fish and Wildlife Service (FWS) a minimum of 30 days to comment and make recommendations. The reports must include documentation of consultation with Kentucky DFWR and FWS, any agency recommendations, and a description of how the agencies' comments are addressed;

(3) flag and avoid identified running buffalo clover and Short's bladderpod occurrences during construction and regular maintenance, including vegetation management within the project boundary; and

(4) schedule project-related tree removal from August 1 through May 31.

The plan must be prepared after consultation with the Kentucky DFWR and the 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 above, 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. Ground-disturbing or land-clearing 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 412. *Revised Recreation Resources Management Plan*. Within 6 months of license issuance, and at least 90 days prior to the start of any ground-disturbing activities, the licensee must file with the Commission, for approval, a revision to the proposed Recreation Resources Management Plan (RRMP), filed on June 3, 2015. The revised plan must include provisions for constructing and operating the following

recreation facilities: (1) a new portage trail around the lock and dam and a composting toilet near the proposed portage trail; (2) designated bank fishing access to the tailrace; and (3) a new parking area for four to six vehicles adjacent to an existing access road on land owned by the Kentucky River Authority. In addition, the existing boat launches and parking at Irvine Boat Ramp and Docks and Drowning Creek Access must be designated as project recreation facilities.

The revised RRMP must include: (1) conceptual drawings for the proposed recreation amenities; (2) a discussion of how the needs of the disabled were considered in the planning and design of the recreation facilities; (3) a construction and implementation schedule, including provisions for sequencing recreation facility construction near the end of the project's construction timeline; (4) a description of the type and placement of informational and safety signs at project recreation facilities during and after project construction; and (5) provisions for periodic review of the recreation facilities and updates to the RRMP as necessary, based on the results of the review.

The revised RRMP must be developed after consultation with the National Park Service, Kentucky Department of Fish and Wildlife Resources, and Kentucky River Authority. 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 entities above, and specific descriptions of how the entities' comments and recommendations are accommodated by the plan. The licensee must allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

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

Article 413. Aesthetic Resources. To minimize effects of project construction on aesthetic resources, the licensee must design and construct the powerhouse and appurtenant facilities to blend with the setting and character of the existing facilities (e.g., materials and color) at Lock and Dam No. 11. Photographic documentation must be filed with the Kentucky State Historic Preservation Office and the Commission within 60 days of completion of construction of the powerhouse and appurtenant facilities to ensure all new facilities comply with this article. Based on this documentation, the Commission reserves the right to require changes to the powerhouse and appurtenant facilities to protect aesthetic resources.

Article 414. Programmatic Agreement and Historic Properties Management Plan. The licensee must implement the “Final Programmatic Agreement Between the Federal Energy Regulatory Commission and the Kentucky State Historic Preservation Officer for Managing Historic Properties that May be Affected by Issuing an Original License to FFP Project 92, LLC for the Construction and Operation of the Kentucky River Lock and Dam No. 11 Hydroelectric Project in Madison and Estill Counties, Kentucky (FERC No. 14276-002),” executed on April 22, 2016, and including but not limited to the Historic Properties Management Plan (HPMP) for the project. Pursuant to the requirements of this Programmatic Agreement, the licensee must file, for Commission approval, an HPMP within one year of issuance of this order. The Commission reserves the authority to require changes to the HPMP at any time during the term of the license. If the Programmatic Agreement is terminated prior to Commission approval of the HPMP, the licensee must obtain approval from the Commission and the Kentucky State Historic Preservation Officer, before engaging in any ground-disturbing activities or taking any other action that may affect any historic properties within the project’s area of potential effects.

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.

(b) The type of use and occupancy of project lands and waters for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 water craft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the

licensee must require multiple use and occupancy of facilities for access to project lands or waters. The licensee must also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee must: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the impoundment shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

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

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 water craft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved 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 shall not unduly restrict public access to project waters.

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

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G 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 related 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 must constitute acceptance of this order.

Ann F. Miles
Director
Office of Energy Projects

**FORM L-4
(October 1975)****FEDERAL ENERGY REGULATORY COMMISSION****TERMS AND CONDITIONS OF LICENSE FOR UNCONSTRUCTED
MAJOR PROJECT AFFECTING NAVIGABLE
WATERS OF THE UNITED STATES**

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

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

Article 3. The project 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. If the Licensee shall cause or suffer essential project property to be removed or destroyed or to become unfit for use, without adequate replacement, or shall abandon or discontinue good faith operation of the project or refuse or neglect to comply with the terms of the license and the lawful orders of the Commission mailed to the record address of the Licensee or its agent, the Commission will deem it to be the intent of the Licensee to surrender the license. The Commission, after notice and opportunity for hearing, may require the Licensee to remove any or all structures, equipment and power lines within the project boundary and to take any such other action necessary to restore the project waters, lands, and facilities remaining within the project boundary to a condition satisfactory to the United States agency having jurisdiction over its lands or the Commission's authorized representative, as appropriate, or to provide for the continued operation and maintenance of nonpower facilities and fulfill such other obligations under

the license as the Commission may prescribe. In addition, the Commission in its discretion, after notice and opportunity for hearing, may also agree to the surrender of the license when the Commission, for the reasons recited herein, deems it to be the intent of the Licensee to surrender the license.

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

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

APPENDIX A

Water Quality Certificate Conditions for the Kentucky River Lock and Dam No. 11 Hydroelectric Project Issued by the Kentucky Department for Environmental Protection (Kentucky DEP) on January 29, 2016

T-1 The Hydropower Regulatory Efficiency Act of 2013 directed the Federal Energy Regulatory Commission (FERC) to investigate the feasibility of a two-year licensing process for hydropower development at non-powered dams and closed loop pumped storage projects, develop criteria identifying projects that may be appropriate for a two-year process, and develop and implement pilot projects to test a two-year process, if practicable. On January 6, 2014, the Commission solicited proposals from potential applicants to test such a licensing process, and defined the minimum criteria for projects that may be appropriate for licensing within a two-year process. On May 5, 2014, Free Flow Power Project 92, LLC (FFP) requested to use the two-year licensing process to prepare a license application for the proposed Kentucky River Lock & Dam 11 Hydroelectric Project (FERC No. 14276), which would add power to the Kentucky River Authority's existing Kentucky River Lock & Dam 11, located on the Kentucky River in Estill and Madison counties, Kentucky. On August 4, 2014, FERC issued authorization to test a two-year licensing process for the Kentucky River Lock & Dam No. 11 Hydroelectric Project which is currently the only Project in the country that has been issued under this directive. The Kentucky River Lock and Dam No. 11 is owned by the Commonwealth of Kentucky and operated by the Kentucky River Authority. The Project will involve the construction of a new 5.0 MW hydroelectric facility on the right bank facing downstream. [Clean Water Act]

T-2 The proposed Project consists an intake channel, intake structure, powerhouse, tailrace, substation, access road, and transmission line. Installed capacity will be 5 megawatts (MW). The powerhouse will be constructed in the existing, abandoned lock chamber. The powerhouse will have two turbines, each having an installed capacity of 2.5 MW. Minimum powerhouse flow is 200 cubic feet per second (cfs) for one turbine. Maximum powerhouse flow is 4000 cfs for two turbines. The project will be operated in a run-of-river mode. Stream impacts will be a change in the magnitude and direction of velocity in the immediate area of the powerhouse intake, tailrace, and spillway. Flow will be directed toward the powerhouse intake. The Project has not proposed any wetlands impacts and has estimated approximately 1,400 linear feet of river impacts. [Clean Water Act]

T-3 The Kentucky Division of Water is issuing an "INTERIM" Section 401 Water Quality Certification to outline the minimum Surface Water Standards (401 KAR 10:031) that must be met by the operations of the proposed Project, including the following:

- Dissolved oxygen shall be maintained at a minimum concentration of 5.0 mg/L as a 24 hour average. The instantaneous minimum shall not be less than 4.0 mg/L.
- Temperature shall not exceed 31.7 degrees C (89 degrees F).

This INTERIM certification does not authorize the construction and operation of the proposed Project. This draft certification describes the proposed project that may be authorized, and the standard and special requirements and conditions [if any] which may be placed on the final certification. No work is to be performed in the waterway or adjacent wetlands until you have received a final certification authorizing the construction and operation of the Project. Construction and design plans, management plans, studies, evaluations and reports, and other potential terms and conditions recommended by state and federal agencies in the FERC process must all be submitted by the applicant in accordance with a formal request for final certification. Once the application is complete and the proper application fee is submitted, it will be posted to a 30-day public notice period prior to final authorization. [Clean Water Act]

T-4 This INTERIM certification is being issued based on review of the FERC Project Number P-14276 Kentucky River Lock and Dam No. 11 Hydroelectric Project Application for Original License Major Water Power Project Under 5 MW- Existing Dam; P-14276 – Kentucky River Lock and Dam No. 11 Hydroelectric Project: Final License Application containing Volumes I and II (Volumes III and IV are being withheld); August 4, 2014 FERC Authorization to Test a Two-Year Licensing Process for the Kentucky River Lock & Dam No. 11 Hydroelectric Project Letter; and Application and Request for Water Quality Certification from the Kentucky Department of Environmental Protection, Division of Water all submitted by Rye Development on behalf of FFP Project 92, LLC. [Clean Water Act]

T-5 Water quality monitoring will be required in the final certification to ensure existing designated uses and the level of water quality necessary to protect the existing uses be maintained. Water Quality Monitoring will follow parameters and frequency identified in the final certification. Additionally, any sustained or significant water quality discharge exceedance may require increase frequency in monitoring and reporting to Kentucky Division of Water, 401 Water Quality Certification Section. These increases will be based on parameter, frequency and concentration of exceedance. Monitoring requirements in the certification may identify the parameters to be monitored, including specific attributes such as location and frequency, sampling methods, locations, and the content and frequency of the data reports that the applicant must submit to the Kentucky Division of Water, 401 Water Quality Certification Section. Typical operations phase monitoring may include the following: - Temperature, °C (Hourly) - Streamflow, cfs (Daily Average) - Dissolved Oxygen, mg/l and % Saturation (Hourly) - TDG, % Saturation (Hourly). Typical construction phase monitoring may include the following: - Turbidity, NTU (Hourly) - pH, Standard Units (Hourly). [Clean Water Act]

T-6 Prior to the beginning of work, all public water supplies or other water-related activities located downstream of the proposed Project that may be affected by turbidity increases or other water quality changes caused by the activities and operations being conducted shall be sufficiently notified in advance into allow for preparation of any water quality changes. [Clean Water Act]

T-7 Water Quality Certification conditions may be added, amended, or changed and/or Water Quality Certification suspended or revoked to ensure discharge is in compliance with Kentucky Surface Water Standards (401 KAR 10:031). [Clean Water Act]

T-8 The Kentucky Division of Water reserves the right to modify, amend, or revoke this certification if it determines that, due to changes in relevant circumstances—including without limitation, changes in project activities, the characteristics of the receiving water bodies, or state Water Quality Standards—there is no longer reasonable assurance of compliance with Water Quality Standards or other appropriate requirements of state law. [Clean Water Act]

T-9 Free Flow Power Project 92, LLC shall notify Kentucky Division of Water of any change in ownership, scope, or construction methods of the Project. Free Flow Power Project 92, LLC shall obtain Kentucky Division of Water review and approval before undertaking any change to the Project that might significantly affect water quality, including changes to structures, construction, operations, and flows. [Clean Water Act]

T-10 If ownership of the project changes, the certification holder shall notify Kentucky Division of Water, in writing, upon transferring this ownership or responsibility for compliance with these conditions to another person or party. The new owner/operator shall request, in writing, the transfer of this water quality certification to their name. [Clean Water Act]

T-11 Free Flow Power Project 92, LLC shall provide access to the project site upon request by Kentucky Division of Water personnel for site inspections, monitoring, and/or to ensure that conditions of this certification are being met. [Clean Water Act]

T-12 Free Flow Power Project 92, LLC is responsible for all work done by contractors and must ensure the contractors are informed of and follow all the conditions described in this certification. [Clean Water Act]

T-13 Project areas shall be clearly identified in the field prior to initiating land-disturbing activities to ensure avoidance of impacts to jurisdictional surface waters beyond project footprints. [Clean Water Act]

T-14 BMPs for sediment and erosion control suitable to prevent additional sediment delivery to waterbodies shall be selected and installed before starting construction at the site. A BMP inspection and maintenance plan must be developed and implemented. At a minimum, BMPs must be inspected and maintained daily during project implementation. BMP effectiveness shall be monitored during project implementation. BMPs shall be replaced or augmented if they are not effective. All construction debris shall be properly disposed of so it cannot enter waters of the state or cause water quality degradation. Disturbed areas suitable for vegetation shall be seeded or revegetated to prevent subsequent soil erosion. [Clean Water Act]

T-15 Disturbance of existing wetlands and native vegetation shall be kept to a minimum. To the maximum extent practical, staging areas and access points should be placed in open, upland areas. [Clean Water Act]

T-16 Water Quality Certification may be suspended and/or revoked if the final requirements and conditions are not adhered to or when significant and sustained water quality degradation occurs as a result of the permitted activities and operations. [Clean Water Act]

T-17 This certification does not constitute authorization of the permitted activities by any other state or federal agency or private person or entity. This certification does not excuse the permit holder from the obligation to obtain any other necessary approvals, authorizations or permits. [Clean Water Act]

T-18 Other permits from the Division of Water may be required for this activity. If this activity occurs within a floodplain, a Permit to Construct Across or Along a Stream may be required. Please contact the Floodplain Section Supervisor (502-564-3410) for more information. If the project will disturb one acre or more of land, or is part of a larger common plan of development or sale that will ultimately disturb one acre or more of land, a Kentucky Pollution Discharge Elimination System (KPDES) stormwater permit shall be required from the Surface Water Permits Branch. This permit requires the development of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must include erosion prevention and sediment control measures. Contact: Surface Water Permits Branch (SWPB) Support (502-564-3410 or SWPBsupport@ky.gov). [Clean Water Act]

T-19 Any applicant for a Federal License or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters, shall provide the licensing or permitting agency a certification from the State in which the discharge originates or will originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the navigable waters at the point where the discharge originates or will originate, that any

such discharge will comply with the applicable provisions of sections 301, 302, 303, 304, 306, and 307 of this Act. [Clean Water Act]

T-20 The cabinet may certify pursuant to 33 U.S.C. sec. 1341 that applicants for a federal permit for the construction or operation of facilities which may result in a discharge into the waters of the Commonwealth will comply with the applicable provisions of the Federal Water Pollution Control Act. If a person fails to obtain a water quality certification and proceeds with the project, they have violated Section 401, 33 U.S.C. 1341 of the Clean Water Act and KRS 224.16-050(2). [KRS 224.16-050(2)]

T-21 No person shall, directly or indirectly, throw, drain, run or otherwise discharge into any of the waters of the Commonwealth, or cause, permit or suffer to be thrown, drained, run or otherwise discharged into such waters any pollutant, or any substance that shall cause or contribute to the pollution of the waters of the Commonwealth in contravention of the standards adopted by the cabinet or in contravention of any of the rules, regulations, permits, or orders of the cabinet or in contravention of any of the provisions of this chapter. [KRS 224.70-110]

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