

180 FERC ¶ 62,073
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Lock 7 Hydro Partners, LLC

Project No. 539-015

ORDER ISSUING NEW LICENSE

(Issued August 15, 2022)

INTRODUCTION

1. On April 30, 2020, Lock 7 Hydro Partners, LLC (Lock 7 Partners) filed, pursuant to sections 4(e) and 15 of the Federal Power Act (FPA),¹ an application for a new license to continue to operate and maintain the Mother Ann Lee Hydroelectric Station Project No. 539 (Mother Ann Lee Project or project). The 2.21-megawatt (MW) project is located on the Kentucky River,² in Mercer, Jessamine, and Garrard Counties, Kentucky, at the Kentucky River Lock and Dam No. 7.³
2. As discussed below, this order issues a new license for the project.

¹ 16 U.S.C. §§ 797(e), 808.

² 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 FPA, 16 U.S.C. § 817(1), requires the project to be licensed.

³ Lock and Dam No. 7 is owned by the Commonwealth of Kentucky and operated by a state agency, the Kentucky River Authority (KRA).

BACKGROUND

3. The Commission issued a new license for the project on May 26, 1992,⁴ and the license expired on April 30, 2022.⁵ Since then, Lock 7 Partners has operated the project under an annual license pending the disposition of its new license application.⁶

4. On December 22, 2020, the Commission issued a public notice that was published in the *Federal Register* accepting the application for filing and setting February 22, 2021, as the deadline for filing motions to intervene and protests.⁷ No motions to intervene or protests were filed.

5. On February 26, 2021, the Commission issued a public notice that was published in the *Federal Register* indicating the application was ready for environmental analysis and setting April 27, 2021, as the deadline for filing comments, recommendations, terms and conditions, and fishway prescriptions.⁸ The U.S. Fish and Wildlife Service (FWS) filed comments and recommendations.

6. Commission staff issued an environmental assessment (EA) on April 25, 2022, analyzing the effects of the proposed project and alternatives to it, and setting a deadline for filing comments of May 25, 2022. The Kentucky Energy and Environment Cabinet filed comments on the EA on May 26 and 27, 2022.

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

PROJECT DESCRIPTION

A. Project Area

8. The Kentucky River is located entirely within the Commonwealth of Kentucky and flows 265 miles from the City of Beattyville northwest to Carrollton, where its drainage of about 6,970 square miles, joins the Ohio River. The Mother Ann Lee Project

⁴ The project was operated under annual licenses pending an application for a new license until 1992.

⁵ *Ky. Utils. Co.*, 59 FERC ¶ 62,186 (1992).

⁶ See 16 U.S.C. § 808(a)(1); see also Commission staff's May 11, 2022 Notice of Authorization for Continued Project Operation.

⁷ 85 Fed. Reg. 86,551-52 (Dec. 30, 2020).

⁸ 86 Fed. Reg. 12,680-81 (Mar. 4, 2021).

is located at river mile 117 within an area known as the Kentucky River Palisades, which is characterized by steep limestone cliffs, springs, caves, and deep gorges through which the river flows for approximately 100 miles in central Kentucky.

9. There are 14 locks and dams on the Kentucky River. Lock and Dam Nos. 1 through 4 operate as navigational locks, primarily for recreational boating. Lock and Dam Nos. 5 through 14 have been retired as navigational locks and are now managed for domestic water supply, recreation, and hydroelectric power generation.

B. Project Facilities

10. The Mother Ann Lee Project includes Lock and Dam 7, which is a 250-foot-long, 15.3-foot-high timber crib dam with a concrete cap and a 62-foot-long retired lock structure that is sealed at its downstream end. The dam creates a 777-acre impoundment that is approximately 23-miles-long, with 5,828 acre-feet of storage at a surface elevation of 513.12 feet National Geodetic Vertical Datum of 1929 (NGVD 29).

11. Water is drawn from the impoundment through a 120-foot-long forebay before entering the powerhouse, which is integral with the dam. The powerhouse contains three generating units; two 680-kilowatt (kW) units, and one 850-kW unit with a total installed capacity of 2.21 MW. Water passes directly from the powerhouse into the tailrace downstream of the dam.

12. Project power is transmitted to the project substation and then to the regional electric grid via a 2,310-foot-long, 34.5-kilovolt (kV) transmission line. A more detailed description of the project facilities is contained in Ordering Paragraph (B)(2).

13. There are no project recreation facilities. Anglers use an existing road, maintained by Jessamine County, to access the shoreline for bank fishing just downstream of the dam on the east side of the Kentucky River. Anglers using this informal fishing area park at a small pull-off from the county road, which is located within the project boundary.

C. Project Boundary

14. The current project boundary encloses approximately 890 acres, including the impoundment and the land associated with the project features listed above.

D. Current Project Operation

15. The project is operated in a run-of-river mode, with outflow from the project approximating inflow. This is achieved by using a Programmable Logic Controller to prevent lowering of the reservoir surface elevation below the top of the dam at 513.12 feet NGVD 29.

16. The project generates electricity when inflow exceeds the project's minimum hydraulic capacity of 228 cubic feet per second (cfs) and continues until the impoundment surface elevation drops below the top of the dam. When inflow exceeds the project's maximum hydraulic capacity of 2,415 cfs, all water not passing through the project turbines spills over the top of the dam.

17. The project does not operate when low flow limits (i.e., during a drought) are declared by the Kentucky Department for Environmental Protection (Kentucky DEP) or the KRA to protect municipal water supplies.

18. The project's average annual generation is approximately 9,200 MW-hours (MWh).

E. Proposed Project Operation and Environmental Measures

19. To protect aquatic resources, water quality, and water quantity, Lock 7 Partners proposes to continue to operate the project in a run-of-river mode.

20. To protect downstream aquatic resources and water quality, Lock 7 Partners proposes to implement a Water Quality Monitoring Plan that includes: (1) monitoring water temperature and dissolved oxygen (DO) concentrations in the tailrace throughout the year; (2) reporting the monitoring results annually; and (3) shutting down project turbines if DO levels fall below 5 milligrams per liter (mg/L) over a 24-hour average period, or 4 mg/L instantaneously.

21. To document compliance with the operating requirements of a new license, Lock 7 Partners proposes to implement an Operation Compliance Monitoring Plan, which includes provisions to operate the project in a run-of-river mode and to cease generation during low-flow restricted periods as declared by the Kentucky DEP or the KRA.

22. To protect birds and other wildlife, Lock 7 Partners proposes to maintain the existing avian/wildlife protection devices at the project substation.

23. To enhance recreational opportunities at the project, Lock 7 Partners proposes to implement a Recreation Plan with provisions for constructing, operating, and maintaining a canoe portage, fishing access below the dam, parking, and associated directional and safety signage.

24. To protect historic properties at the project, Lock 7 Partners proposes to implement a Historic Properties Management Plan (HPMP).

SUMMARY OF LICENSE REQUIREMENTS

25. This license, which authorizes 2.21 MW of renewable energy generation capacity, requires the proposed measures noted above in addition to the Commission staff-recommended modifications and additional measures described below and the conditions required by Kentucky DEP's water quality certification (Appendix A). Combined, these measures will protect and enhance water quality, water quantity, fisheries, terrestrial resources, recreation, and cultural resources at the project.
26. To minimize the potential for electrocution and collision of birds and other wildlife at the project substation and with the project transmission line, the license requires Lock 7 Partners to develop an Avian Protection Plan.
27. To protect summer roosting habitat for the federally listed Indiana and northern long-eared bats, as well as foraging and traveling habitat for federally listed gray, Indiana, and northern long-eared bats, the license requires Lock 7 Partners to limit tree removal activities to November 15 through March 31.
28. To ensure the recreation amenities are constructed within a reasonable amount of time, the license requires Lock 7 Partners to complete the measures proposed in the Recreation Plan within 2 years of license issuance.
29. To protect cultural resources, the license requires Lock 7 Partners to modify the proposed HPMP in accordance with the Programmatic Agreement (PA) executed for the project on June 27, 2022, to: (1) consistently define the project's area of potential effects; (2) require consultation with the Eastern Band of Cherokee Indians in addition to the Cherokee Nation; (3) describe routine maintenance activities which would not require additional consultation; (4) clarify emergency protocols; and (5) describe conditions under which additional section 106 consultation may be necessary.

WATER QUALITY CERTIFICATION

30. Under section 401(a)(1) of the Clean Water Act (CWA),⁹ the Commission may not issue a license authorizing the construction or operation of a hydroelectric project unless the state water quality certifying agency has either issued a water quality certification for the project or 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 for the project.¹⁰

⁹ 33 U.S.C. § 1341(a)(1).

¹⁰ *Id.* § 1341(d).

31. On July 9, 2020, Lock 7 Partners applied to Kentucky DEP for water quality certification for the Mother Ann Lee Project, which Kentucky DEP received on July 22, 2020. On July 27, 2020, Kentucky DEP issued a certification for the project that includes 18 conditions. Fifteen of the certification conditions (conditions S-1 (in part), T-2 through T-6, and general conditions 1 through 7, 9, and 11) are general or administrative in nature and are not discussed further.

32. The remaining certification conditions require Lock 7 Partners to: (1) file an annual water quality monitoring report for at least 10 years (condition S-1); (2) (a) operate the project in a run-of-river mode, (b) monitor DO concentrations between May 1 and October 31, and (c) stop project operations if DO concentrations drop below 4 mg/L (instantaneous) or 5 mg/L (24-hour average) (condition T-1);¹¹ (3) minimize the re-suspension of sediments and disturbance to the channel, banks, or riparian vegetation when in-stream work is unavoidable (general condition 8); and (4) restrict the removal of existing riparian vegetation to that necessary for project construction (general condition 10).

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

SECTION 18 FISHWAY PRESCRIPTION

34. Section 18 of the FPA¹² provides that the Commission shall require the construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretary of the Interior or the Secretary of Commerce, as appropriate. No fishway prescriptions or reservations of authority were filed under section 18 of the FPA.

THREATENED AND ENDANGERED SPECIES

35. Section 7(a)(2) of the Endangered Species Act of 1973 (ESA)¹³ requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of

¹¹ Lock 7 Partners conducts automatic monitoring of DO concentrations in the project tailrace. If the automated monitoring system fails, condition T-1 also requires Lock 7 Partners to stop project operations if DO concentrations drop below 5 mg/l (instantaneous) during manual monitoring.

¹² 16 U.S.C. § 811.

¹³ *Id.* § 1536(a).

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

36. Based on the FWS's Information for Planning and Consultation (IPaC) website, the endangered gray bat, Indiana bat, sheepsnose mussel, clubshell, fanshell, purple cat's paw,¹⁴ and Short's bladderpod; and the threatened northern long-eared bat and rabbitsfoot mussel have the potential to occur in the project area.¹⁵ No designated critical habitat for any federally listed species occurs at the project.

A. Freshwater Mussels

37. Lock 7 Partners surveyed freshwater mussel habitat in the Kentucky River upstream and downstream of Lock and Dam No. 7 and did not observe any federally listed species alive or dead, or suitable habitat for the sheepsnose, clubshell, fanshell, purple cat's paw, or rabbitsfoot mussels. However, suitable habitat and host fish for these species may be present within the 22.9-mile-long (upstream) pool 7 and the 20.8-mile-long (downstream) pool 6. In the EA,¹⁶ Commission staff determined that relicensing the project as proposed, with the mandatory conditions in Kentucky DEP's certification, would have no effect on the sheepsnose mussel, clubshell, fanshell, purple cat's paw mussel, or rabbitsfoot mussel, or on the suitability of mussel habitat within the project area or in pools 6 or 7 because no federally listed mussels or suitable habitat is known to occur at or adjacent to the project, and Lock 7 Partners proposes no changes to project operation. Staff also determined that the project would have no effect on critical habitat for the rabbitsfoot, because it is not located at, or adjacent to, the project. Therefore, no further consultation under the ESA is required for these species.¹⁷

¹⁴ While purple cat's paw is not included on the August 11, 2022, IPaC species list, it appeared on previous lists and is discussed herein.

¹⁵ See FWS's updated official list of threatened and endangered species, accessed by Commission staff using the IPaC database (<http://ecos.fws.gov/ipac/>) and filed on August 12, 2022. Staff filed previous versions of the official species list on June 5, 2020, December 1, 2020, September 16, 2021, December 28, 2021, and April 21, 2022. Running buffalo clover was included on the initial IPaC species list for the project, but was delisted on September 7, 2021 after FWS's determination that this species has recovered. See 86 Fed. Reg. 43,102 (2021).

¹⁶ EA at 36-37, A-2, and A-3.

¹⁷ FWS concurred with a "not likely to adversely affect" call for these mussel species in its June 10, 2022 concurrence letter. However, Commission staff confirmed with FWS by email dated June 21, 2022, that no consultation is required for these mussel species given that Commission staff made a "no effect" determination. See Commission

B. Short's Bladderpod

38. Although there are three known occurrences of Short's bladderpod within one mile of the project, none are located within the project boundary. Lock 7 Partners' habitat surveys concluded that there is a small rock face on the western side of the Kentucky River that could provide limited habitat for Short's bladderpod at the project (i.e., within the project boundary).

39. In the EA,¹⁸ Commission staff determined that relicensing the project is not likely to adversely affect the Short's bladderpod because there are no known locations of Short's bladderpod or areas that include all of this species' habitat requirements within the project boundary, and project maintenance activities are unlikely to disturb any existing suitable habitat. In addition, staff determined that relicensing the project would have no effect on Short's bladderpod critical habitat because there are no designated critical habitat units for this species within or adjacent to the project boundary.

40. FWS concurred with this finding by letter filed on June 10, 2022. Therefore, no further action under the ESA is required for Short's bladderpod.

C. Bats

41. Within one mile of the project, there are four recorded occurrences of gray bats, one occurrence of a northern long-eared bat, known winter swarming habitat for the northern long-eared bat, and known summer habitat for the Indiana bat. None of the known occurrences for these species or critical habitat units for the Indiana bat are located within the project boundary. Three caves were identified during Lock 7 Partners' survey for bat habitat at the project. No bats or signs of bats were observed in the two ground-level caves and the third cave was not assessed due to its location over 100 feet above the ground on a cliff face. Suitable summer roosting, foraging, and/or traveling habitat for Indiana, northern long-eared, and gray bats were identified along the riparian zone of the Kentucky River within the project boundary and surrounding areas.

42. In the EA,¹⁹ Commission staff found that ongoing project operation and maintenance, and the construction and use of the canoe portage, would have no effect on bat use of the: (1) two ground-level caves because the presence of multiple fire pits, trash, and graffiti within the caves indicate they are frequently visited by people, and, therefore, bat use is unlikely; and (2) third cave due to its location 100 feet above the

staff's June 21, 2022 Memorandum.

¹⁸ EA at 38-39, and A-3.

¹⁹ *Id.* at 40-44, A-3, and A-4.

ground. Staff also found that Lock 7 Partners' vegetation management within the project transmission line corridor could disturb or modify suitable summer roost trees, or swarming, foraging, and traveling habitat for Indiana, northern long-eared, and gray bats. Staff recommended that non-hazardous tree removal²⁰ be conducted between November 15 and March 31 to minimize potential adverse effects of project maintenance activities while the Indiana, northern long-eared, and gray bats are active. With this measure, staff concluded that relicensing the project is not likely to adversely affect the Indiana bat and gray bat. Staff also concluded that relicensing the project may affect the northern long-eared bat, but any incidental take that may result is not prohibited under section 4(d) of the ESA. On January 24, 2022, Commission staff used FWS's northern long-eared bat key in the IPaC website to generate a letter from the FWS's Kentucky Ecological Services Field Office which states that staff's determination was consistent with the FWS's January 5, 2016, intra-Service programmatic biological opinion on the 4(d) rule for the northern long-eared bat and verifies that the Commission's responsibilities were fulfilled under ESA section 7(a)(2) for this species.²¹

43. FWS concurred with Commission staff's findings on Indiana, northern long-eared, and gray bats by letter filed June 10, 2022.²² Therefore, no further action under the ESA is required for these bat species.

44. Article 405 requires Lock 7 Partners to limit the removal of trees greater than or equal to three inches diameter at breast height²³ to the period of November 15 through

²⁰ FWS defines "tree removal" as cutting down, harvesting, destroying, trimming, or manipulating in any other way the trees, saplings, snags, or any other form of woody vegetation likely to be used by northern long-eared bat. Removal of hazardous trees for the protection of human life and property is not prohibited under the 4(d) rule. 81 Fed. Reg. 1901-02 (January 14, 2016).

²¹ See Commission staff's January 24, 2022, Memorandum.

²² On June 15, 2022, staff confirmed that FWS reviewed the January 24, 2022, northern long-eared bat verification letter referenced in *supra* note 21 and that the Commission has fulfilled its responsibilities under the ESA relative to the northern long-eared bat. See staff's June 15, 2022, Memorandum.

²³ Northern long-eared bats roost in cavities, crevices, or hollows or underneath bark of both live and dead trees and/or snags with a diameter of three inches or greater at breast height. See FWS, *Programmatic Biological Opinion* (January 5, 2016), at 11, 18, https://www.fws.gov/sites/default/files/documents/NLEB_BO_4d_Rule.pdf (accessed July 26, 2022). Diameter "at breast height" is the tree diameter as measured about 4 to 4.5 feet above the ground.

March 31, which is outside of the Indiana, northern long-eared, and gray bats' active season.

HISTORIC AND CULTURAL RESOURCES

A. National Historic Preservation Act

45. Under section 106 of the National Historic Preservation Act (NHPA)²⁴ and its implementing regulations,²⁵ federal agencies must consider the effect of any proposed undertaking on properties listed or eligible for listing in the National Register of Historic Places (National Register), defined as historic properties, and afford the Advisory Council on Historic Preservation 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.

46. On May 11, 2017, Commission staff designated Lock 7 Partners as its non-federal representative for the purposes of conducting section 106 consultation under the NHPA. Pursuant to section 106, and as the Commission's designated non-federal representative, Lock 7 Partners initiated consultation with the Kentucky SHPO to identify historic properties within the project's area of potential effects.

47. Lock and Dam No. 7 and the Mother Ann Lee Hydropower Station are representative of late nineteenth and early twentieth-century engineering for both river navigation and power generation. Modifications to these facilities over time have allowed them to retain their original characteristics and, as a result, the facilities are eligible for listing in the National Register.

48. In the EA,²⁶ Commission staff concluded that continued operation and maintenance of the project has the potential to adversely affect the National Register-eligible Kentucky River Lock and Dam No. 7 and Mother Ann Lee Hydropower Station. To satisfy the requirements of section 106, the Commission executed a Programmatic Agreement (PA) with the Kentucky SHPO on June 27, 2022, and invited Lock 7 Partners, the Cherokee Nation, the Eastern Band of Cherokee Indians, and KRA to concur with the stipulations of the PA.²⁷ Lock 7 Partners concurred. The PA requires

²⁴ 54 U.S.C. § 306108.

²⁵ 36 C.F.R. pt. 800 (2021).

²⁶ EA at 50.

²⁷ See Commission staff July 19, 2022 Executed PA.

Lock 7 Partners to revise the HPMP. Execution of the PA demonstrates the Commission's compliance with section 106 of the NHPA. Article 408 requires the licensee to implement the PA, including making the specified revisions to the HPMP filed on September 28, 2020, and filing the revised HPMP with the Commission within 120 days of license issuance.

B. Tribal Consultation

49. For the Mother Ann Lee Project relicensing, the Commission sought to initiate consultation with the Cherokee Nation, the Eastern Band of Cherokee Indians, and the United Keetoowah Band of Cherokee Indians in Oklahoma, by letters issued April 26, 2017.

50. The Eastern Band of Cherokee Indians Tribal Historic Preservation Officer (THPO) responded by letter filed April 19, 2017, stating that no cultural resources important to the Cherokee people will be adversely impacted by the project, but that it would like to be contacted in the event of project design changes, or if cultural resources or human remains are inadvertently discovered. The Cherokee Nation THPO responded by letter filed February 25, 2021, stating that it does not foresee the project impacting Cherokee cultural resources, but that it would like to be contacted in the event of unanticipated cultural discoveries. The United Keetoowah Band of Cherokee Indians in Oklahoma did not respond to the Commission's consultation request.

51. The licensee's proposed HPMP requires consultation with the Cherokee Nation regarding project related impacts on cultural resources. The proposed HPMP does not specify consultation with the Eastern Band of Cherokee Indians. Article 408 requires the licensee to revise the HPMP as stipulated in the PA, which includes revising the HPMP to require consultation with both the Cherokee Nation and Eastern Band of Cherokee Indians regarding project-related effects on cultural resources.

ENVIRONMENTAL JUSTICE

52. In conducting NEPA reviews of proposed hydropower projects, the Commission follows the instruction of Executive Order 12898, which directs federal agencies to identify and address "disproportionately high and adverse human health or environmental effects" of their actions on minority and low-income populations (i.e., environmental justice communities).²⁸ Executive Order 14008 also directs agencies to develop "programs, policies, and activities to address the disproportionately high and adverse

²⁸ Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 16, 1994). While the Commission is not one of the specified agencies in Executive Order 12898, the Commission nonetheless addresses environmental justice in its analysis, in accordance with our statutory duties.

human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts.”²⁹ Environmental justice is “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”³⁰

53. Commission staff identified two environmental justice communities within a one-mile radius of the project boundary and considered how the communities may be affected by noise, visual, and traffic impacts of the construction of new recreation facilities, corresponding changes in recreational activity, and the effects of project operation and recreation on subsistence fishing. In the EA,³¹ staff concluded that relicensing the project as proposed, with staff’s recommended modifications, would not result in disproportionately high and adverse impacts on the identified environmental justice populations.

NATIONAL ENVIRONMENTAL POLICY ACT

54. On April 20, 2022, the Council on Environmental Quality (CEQ) issued a final rule revising its regulations implementing the National Environmental Policy Act.³² The final rule became effective on May 20, 2022, after the EA was issued, and revised the definition of “effects” to include direct, indirect, and cumulative effects.³³ Below, is an analysis of the potential cumulative effects of relicensing the Mother Ann Lee Project.

²⁹ Exec. Order No. 14,008, 86 Fed. Reg. 7619 (Feb. 1, 2021). The term “environmental justice community” includes disadvantaged communities that have been historically marginalized and overburdened by pollution. *Id.* The term also includes, but may not be limited to, minority populations, low-income populations, or indigenous peoples. See EPA, *EJ 2020 Glossary* (Sept. 7, 2021), <https://www.epa.gov/environmentaljustice/ej-2020-glossary>.

³⁰ EPA, *Learn About Environmental Justice*, [https://www.epa.gov/environmentaljustice/learn-about-environmental-justice#:~:text=Environmental%20justice%20\(EJ\)%20is%20the,environmental%20laws%2C%20regulations%20and%20policies](https://www.epa.gov/environmentaljustice/learn-about-environmental-justice#:~:text=Environmental%20justice%20(EJ)%20is%20the,environmental%20laws%2C%20regulations%20and%20policies).

³¹ EA at 55.

³² *National Environmental Policy Act Implementing Regulations Revisions*, 87 Fed. Reg. 23,453 (Apr. 20, 2022).

³³ *Id.* at 23,453, 23,469-23,470.

55. According to the CEQ's revised regulations, a cumulative effect is the effect on the environment that results from the incremental effect of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time, including hydropower and other land and water development activities.

56. Based on staff's review, aquatic, recreation, and cultural resources have the potential to be cumulatively affected by the proposed action, in combination with other past, present, and foreseeable future actions.

57. The geographic scope of analysis defines the physical limits or boundaries of the proposed action's effects on the resources. The geographic scope of analysis for aquatic, recreation, and cultural resources is the entire 260-mile mainstem of the Kentucky River from the confluence of the North, Middle, and South Forks near Beattyville, Kentucky to its confluence with the Ohio River at Carrollton, Kentucky. This geographic scope is appropriate because it encompasses the full system of locks and dams along the Kentucky River and the continued operation and maintenance of the Mother Ann Lee Project, in combination with other uses of the river, including hydroelectric generation, which may contribute to the cumulative effects on the identified resources.

58. The temporal scope of the cumulative effects analysis includes a discussion of past, present, and reasonably foreseeable future actions and their effects on each resource that could be cumulatively affected. The temporal scope looks 40 years into the future, concentrating on the effects on the resources from reasonably foreseeable future actions. The historical discussion is limited, by necessity, to the amount of available information for each resource. Present resource conditions are based on the license application, agency comments, and comprehensive plans.

A. Aquatic Resources

59. Historically, the Kentucky River was relatively narrow and meandering and subject to flooding and low water conditions, with pools of deep water and shoals of sand, gravel, or rock alternating every few miles along the length of the river. To provide a consistent six feet of water to enable year-round transportation of coal, minerals, and forest resources from the river's mountainous Appalachian headwater region to its confluence with the Ohio River (between Louisville, Kentucky, and Cincinnati, Ohio), the Commonwealth of Kentucky and the U.S. Army Corps of Engineers (Corps) built a total of 14 locks and dams between 1836 and 1917. Following World War II, improvements in rail and highway transportation ended potential use of the Kentucky River for the transportation of goods. As mentioned above, the Corps permanently sealed locks 5 through 14 in the 1970s but left them in place for other uses.

60. Construction of the locks and dams on the Kentucky River converted a free-flowing system into a series of reservoirs that resulted in decreased water velocity and increased water depth. These changes likely led to an increase in water temperatures and a related lowering of DO concentrations throughout the river.

61. Five hydroelectric projects are licensed by the Commission on the Kentucky River including the: (1) Mother Ann Lee Hydroelectric Project No. 539, located at Lock and Dam No. 7; (2) Kentucky River Lock and Dam No. 11 Hydroelectric Project No. 14276; (3) Matilda Hamilton Fee Hydroelectric Station Project No. 13214, located at Lock and Dam No. 12; (4) Evelyn Hydroelectric Project No. 14799, located at Lock and Dam No. 13; and (5) the Heidelberg Hydroelectric Project No. 13213, located at Lock and Dam No. 14. Of these projects, the Mother Ann Lee Project and Matilda Hamilton Fee Hydroelectric Station are currently in operation while the remaining three are in development. All of the projects operate in a run-of-river mode which minimizes the length of time that water is retained and warmed by the sun in an impoundment. Lock 7 Partners monitors, and proposes to continue monitoring, water temperature and DO concentrations in the tailrace of the Mother Ann Lee Project every 15 minutes throughout the year. If low DO concentrations are measured, the project turbines will be shut down, as needed, to pass flow over the spillway and aerate flows until DO concentrations increase and improve water quality. Collectively, the operational measures of the above-mentioned hydroelectric projects and continuous water quality monitoring at the Mother Ann Lee Project, will help protect water quality and reduce the cumulative effects of multiple locks and dams and hydroelectric projects on water quality in the Kentucky River.

62. The reservoirs created by the locks and dams on the Kentucky River provide a relatively stable and reliable source of drinking water. Pools 3 through 11 and pool 14 currently serve as sources of municipal water supply. The Mother Ann Lee Project's pool 7 serves as a water source for the Harrodsburg Municipal Water Department. The dam maintains a depth in the impoundment sufficient for water withdrawal under most conditions. Lock 7 Partners' proposal to continue operating the project in a run-of-river mode, with outflow approximating inflow at all times, ensures that project operations have little effect on water storage within the impoundment. During low flow conditions, the KRA may request water releases from pool 7, discharged through a bypass release valve, to augment water supplies in downstream pools. Lock 7 Partners proposes to stop project operations during these low flow conditions and comply with KRA requests. Overall, the Mother Ann Lee Project's contribution to cumulative effects on water quantity and municipal water supplies is minimal.

63. Hydropower operations can injure or kill fish as a result of impingement on intake structures and entrainment through project turbines.³⁴ Centrarchidae (sunfishes) are the most likely fish to be killed as a result of the continued operation of the Mother Ann Lee Project. These species often exhibit high reproductive rates and may spawn multiple times during long spawning seasons. High reproductive rates provide a mechanism to buffer against instances of high mortality and associated population declines that could otherwise be caused by turbine mortality. As a result, the Mother Ann Lee Project's contribution to cumulative effects on fish survival in the Kentucky River is likely to be minimal.

64. The 14 locks and dams on the Kentucky River impede fish movement to varying degrees. At all 14 of the locks and dams, fish move downstream through hydroelectric project turbines and/or over the dams during high flow/spill events. Passage through the turbines likely results in some injury and mortality. Fish move upstream and downstream through the locks at Lock and Dam Nos. 1 through 4. However, because the locks are sealed at Lock and Dam Nos. 5 through 14, there is no upstream passage. Because freshwater mussels are dependent on fish hosts, whose composition and movement has changed over time as a result of the locks and dams, for survival and dispersal during early life stages, the system of locks and dams have likely cumulatively affected freshwater mussel survival and dispersal in the Kentucky River. Continued operation of the Mother Ann Lee Project is not expected to increase the cumulative adverse effects on fish and freshwater mussel movement.

B. Recreation

65. The National Park Service, in conjunction with the Commonwealth of Kentucky, local governments, and the Kentucky Riverkeeper (collectively the Kentucky Water Trail Partners), have developed plans for improving river access for recreational boating and interpreting the ecology and cultural history of the Kentucky River as part of the Kentucky River Water Trail system.³⁵ The Commonwealth of Kentucky has focused on developing the Kentucky River Water Trail and promoting recreational use of the river corridor. To date, projects include rehabilitating and opening Lock Nos. 1, 2, 3, and 4 for recreational navigation, as well as developing plans for recreation enhancements at the series of locks and dams for the length of the Kentucky River.

66. When viewed in combination with the pending improvements at other Commission-licensed projects at Lock and Dam Nos. 11, 12, 13 and 14, as well as the recreation improvements proposed by the Water Trail Partners, the licensee's proposed recreation enhancement measures have the potential to contribute to cumulatively

³⁴ EA at 17-19.

³⁵ *Id.* at 44.

beneficial effects. This addition to the series of portage trails around the lock and dam structures would help improve recreational connectivity. Additional parking would improve accessibility for recreationists using the Kentucky River Water Trail. Over the term of a license, the licensee's proposed recreation enhancement measures at the Mother Ann Lee Project would contribute to the Kentucky Water Trail Partners' long-term vision for recreation use of the Kentucky River.

C. Cultural Resources

67. The Kentucky River locks and dams are representative of the history of commercial barge navigation from the Eastern Coalfields and Bluegrass regions of Kentucky to the Ohio and Mississippi Rivers. Although their use has changed over time, the locks and dams and their contributing resources (such as lock houses and other ancillary structures) maintain sufficient integrity to be considered historic resources. Based on studies conducted by the Corps in the 1980s, the structures are recognized by the Kentucky SHPO to form a non-contiguous historic district.³⁶

68. Construction of the proposed recreation amenities, project operations (such as reservoir and regulated river reach fluctuations), and/or routine maintenance associated with hydropower development at five of the Kentucky River locks and dams cumulatively affect cultural resources. Implementing the Mother Ann Lee HPMP will guide future operation and maintenance activities (e.g., recommended strategies for preserving extant concrete masonry associated with the lock and dam) in a way that is consistent with the protection of historic properties. It will also help protect any cultural resources at the project that may be discovered during the term of the new license.

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

69. Section 10(j)(1) of the FPA³⁷ 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,³⁸ to “adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)” affected by the project.

³⁶ Commission staff, Environmental Assessment for the Kentucky River Lock and Dam No. 11 Hydroelectric Project No. 14276, Docket No. P-14276-002, at 109 (issued Feb. 12, 2016).

³⁷ 16 U.S.C. § 803(j)(1).

³⁸ *Id.* §§ 661 *et seq.*

70. No recommendations were filed under section 10(j) in response to the February 26, 2021, public notice that the application was ready for environmental analysis.

SECTION 10(a)(1) OF THE FPA

71. Section 10(a)(1) of the FPA³⁹ requires that any project for which the Commission issues a license be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce; for the improvement and utilization of waterpower development; for the adequate protection, mitigation, and enhancement of fish and wildlife; and for other beneficial public uses, including irrigation, flood control, water supply, recreation, and other purposes.

A. Water Quality Monitoring

72. Lock 7 Partners proposes to implement a Water Quality Monitoring Plan,⁴⁰ that includes, in part, provisions to continue monitoring water temperature and DO concentrations in the project tailrace every 15 minutes throughout the year and, if low DO concentrations are measured in the tailrace, shut down the project turbines, incrementally, or all turbines, as needed, to release inflow over the spillway until outflow DO concentrations are consistent with minimum levels stipulated by the state water quality standards. Condition T-1 of the Kentucky DEP's water quality certification requires, in part, Lock 7 Partners to monitor DO concentrations between May 1st and October 31st of each year and to voluntarily stop project operations if DO concentration falls below the state standard.

73. In the EA,⁴¹ Commission staff determined that Lock 7 Partners proposed Water Quality Monitoring Plan, which requires monitoring of temperature and DO throughout the year, would exceed the requirements of certification condition T-1 (Appendix A), as stated above, and be more protective of aquatic resources in the Kentucky River. Therefore, staff recommended in the EA, and Article 401 requires, Lock 7 Partners to implement the more stringent proposed Water Quality Monitoring Plan. To the extent that a certification condition and a license article are different, the more stringent provision governs.⁴²

³⁹ *Id.* § 803(a)(1).

⁴⁰ Lock 7 Partners September 28, 2020, Filing.

⁴¹ EA at 17.

⁴² *See, e.g., Noah Corporation*, 57 FERC ¶ 61,170, at 61,601 (1991); *Carex Hydro*, 52 FERC ¶ 61,216, at 61,769 (1990) (“Pursuant to section 10(a) of the FPA, the

B. Operation Compliance Monitoring

74. To ensure compliance with run-of-river project operation, Lock 7 Partners proposes to implement an Operations Compliance Monitoring Plan⁴³ that includes provisions to: (1) shut down generating units in order to maintain water levels at or above the top of the dam; and (2) cease generation during low-flow periods declared by the Kentucky Division of Water or KRA.

75. In the EA,⁴⁴ Commission staff concluded that implementing Lock 7 Partners' proposed plan would ensure compliance with the conditions of any new license issued for the project designed to protect aquatic resources and the municipal water supply in the project area. Therefore, Article 403 of this license requires Lock 7 Partners to implement its Operations Compliance Monitoring Plan, which includes a provision to cease generation during low-flow periods as may be specified by the Kentucky Division of Water or KRA.

C. Avian Protection

76. Exposed energized components at the project substation can electrocute birds and other wildlife. In addition, the 2,310-foot-long, 34.5-kV project transmission line poses a collision and electrocution risk to birds. To prevent avian/wildlife mortality associated with project operation, Lock 7 Partners proposes to maintain the existing avian/wildlife protection guards and electrical insulation on the energized components of the project substation.

77. In the EA,⁴⁵ Commission staff found that maintenance of Lock 7 Partners' existing animal protection guards and electrical insulation on energized components would minimize the potential for electrocution of birds and other wildlife at the project substation. However, the proposal lacks procedures to maintain the existing avian and wildlife protection devices and does not take into account potential collisions and/or electrocutions of birds and other wildlife along the project transmission line. Therefore, staff recommended that Lock 7 Partners incorporate its proposal to maintain the existing avian/wildlife protection devices at the project substation in an Avian Protection Plan with a provision to develop specific procedures for monitoring their condition and

Commission can impose in the license water quality conditions that are more stringent than those contained in a state's water quality certification.”).

⁴³ Lock 7 Partners April 30, 2020, Application.

⁴⁴ EA at 20.

⁴⁵ *Id.* at 24-25 and 61.

identifying and scheduling any needed repairs or replacements. To address adverse avian/wildlife interactions with the project transmission line, staff recommended that the plan also include provisions to: (1) install and maintain avian protection devices on the transmission line such as aerial marker spheres, swinging markers, and/or bird flight diverters to minimize adverse avian interactions; (2) periodically monitor the transmission line for nests, signs of adverse avian interactions, and the condition of all avian/wildlife protection devices; (3) train personnel on avian and wildlife protection measures; and (4) file an implementation schedule. Article 406 requires Lock 7 Partners to develop an Avian Protection Plan that includes these measures.

D. Recreation Measures

78. Lock 7 Partners proposes to implement a Recreation Plan⁴⁶ to guide the development, operation, and maintenance of recreation facilities at the project. As part of the plan, Lock 7 Partners will provide a canoe portage, new parking area, safe access to a fishing and swimming area, and safety fencing and signs. The canoe portage will include new stairs at both the upstream and downstream access points (put-ins/take-outs) and an approximately 1,300-foot-long gravel path that will follow the existing Lock 7 Road as much as possible. New gravel paths will connect the road to the upstream and downstream access points, and the new gravel parking area will be located near the upstream access point. The area around the downstream access point will be designated for fishing and swimming. Safety fencing will be added along the lock esplanade, and directional and safety signage will be installed for the canoe portage.

79. In the EA,⁴⁷ Commission staff found that Lock 7 Partners' proposed measures would support the continued development of the Kentucky River Water Trail and improve access for anglers wishing to fish below the dam by providing a safe route down the steep banks to access the water. However, the plan does not specify a completion date for construction of the recreation facilities. Adding a completion requirement to the plan will ensure that the recreation facilities are constructed and available to the public in a timely manner. Therefore, Article 407 approves Lock 7 Partners' Recreation Plan and specifies that construction of all amenities included in the plan must be completed within two years of license issuance.

⁴⁶ Lock 7 Partners September 28, 2020, Filing.

⁴⁷ EA at 46.

ADMINISTRATIVE PROVISIONS

A. Annual Charges

80. The Commission collects annual charges from licensees for administration of the FPA.⁴⁸ Article 201 provides for the collection of funds for administration of the FPA.

B. Reservation of Authority to Require Financial Assurance Measures

81. To confirm the importance of licensees maintaining sufficient financial reserves, Article 202 reserves the Commission's authority to require future measures to ensure that the licensee maintains sufficient financial reserves to carry out the terms of the license and Commission orders pertaining thereto.

C. Exhibit F and G Drawings

82. Commission regulations require that licensees file as part of the license application sets of approved drawings in electronic format. The Exhibit F drawings filed on September 28, 2020, do not meet the Commission's requirements. Section 4.39 requires a title block located in the lower right corner of each drawing, but the drawings have the title block in various other locations on the drawings. Many of the drawings are also illegible. The Exhibit F drawings must be updated to include: (1) a cross-section of the Lock Chamber on sheet 9 showing the concrete bulkhead that was installed by the U.S. Army Corps of Engineers; (2) an extension of the profile of the dam on sheet 10 to include the concrete overflow spillway section located left of the powerhouse; (3) a cross-section of the overflow spillway section located left of the powerhouse; and (4) the elevation datum on all drawings that have elevations.

83. The Exhibit G drawings filed on February 19, 2021, must also be revised. The project boundary shown on the maps includes private lands not associated with the project.⁴⁹ The Exhibit G drawings must be revised to exclude lands not associated with the project. Article 203 requires that Lock 7 Partners file for Commission approval revised Exhibit F and G drawings to correct the issues noted above.

⁴⁸ 16 U.S.C. § 803(e)(1); *see also* 18 C.F.R. §§ 11.1 (2020).

⁴⁹ By letter filed on July 2, 2021, Lock 7 Partners indicated that the private lands located south of the dam along the river were unintentionally included in the project boundary. Lock 7 Partners clarified that the project boundary includes only KRA property, the transmission line rights-of-way, and the river channel including the entirety of pool 7 (Project Boundary Clarification filed on July 2, 2021).

D. Amortization Reserve

84. The Commission requires that for new major licenses, non-municipal licensees must set up and maintain an amortization reserve account upon license issuance. Article 204 requires the establishment of the account.

E. Headwater Benefits

85. 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 if they were not previously assessed and reimbursed.

F. Review of Final Plans and Specifications

86. Article 301 requires the licensee to consult with the Commission's D2SI – Chicago Regional Engineer on any project modifications resulting from environmental requirements.

G. Commission Approval of Annual Water Quality Monitoring Reports

87. In Appendix A of this order, the certification requires the licensee to file an annual Water Quality Monitoring Report with the Kentucky Division of Water by March 31 of each year but does not require the licensee to file these reports with the Commission. Therefore, Article 402 requires the licensee to file the reports with the Commission for review and approval.⁵⁰

H. Operational Deviations

88. To provide for administrative efficiency and allow the licensee the flexibility to quickly address project-related situations requiring short-term deviations, Article 404 allows planned, short-term deviations from the run-of-river requirements of the license after mutual agreement among the licensee, Kentucky Division of Water, and KRA. Article 404 specifies reporting procedures that the licensee must follow regarding such planned deviations. Article 404 also includes reporting requirements that the licensee must follow in the event of unplanned deviations from operational requirements, based on the duration of the event, and any observed or reported effects of the deviations. Under the article, unplanned deviations from run-of-river operation or minimum flows requirements that do not exceed three hours in duration (from the time the deviation starts until the time compliance is resumed) and for which there are no observed or reported

⁵⁰ Annual Water Quality Monitoring Reports will be reviewed and approved for compliance with the water quality monitoring requirements of this license.

environmental effects, do not need to be reported to the Commission individually, but can instead be included in an annual report that describes these minor incidents. Unplanned deviations from these operational requirements that exceed three hours in duration must be reported to the Commission individually.

I. Use and Occupancy of Project Lands and Waters

89. Requiring a licensee to obtain prior Commission approval for every use or occupancy of project land would be unduly burdensome. Therefore, Article 409 allows the licensee to grant permission, without prior Commission approval, for the use and occupancy of project lands for such minor activities as landscape planting. Such uses must be consistent with the purposes of protecting and enhancing the scenic, recreational, and environmental values of the project.

STATE AND FEDERAL COMPREHENSIVE PLANS

90. Section 10(a)(2)(A) of the FPA,⁵¹ 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.⁵² Under section 10(a)(2)(A), Commission staff identified and reviewed seven comprehensive plans relevant to this project that address various resources in Kentucky.⁵³ No conflicts were found.

APPLICANT'S PLANS AND CAPABILITIES

91. In accordance with sections 10(a)(2)(C) and 15(a) of the FPA,⁵⁴ Commission staff evaluated Lock 7 Partners record as a licensee for the following areas: (A) conservation efforts; (B) compliance history and ability to comply with the new license; (C) safe management, operation, and maintenance of the project; (D) ability to provide efficient and reliable electric service; (E) need for power; (F) transmission services; (G) cost effectiveness of plans; and (H) actions affecting the public. This order adopts staff's findings in each of the following areas.

⁵¹ 16 U.S.C. § 803(a)(2)(A).

⁵² Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2021).

⁵³ The list of applicable plans can be found in section 5.4 of the EA.

⁵⁴ 16 U.S.C. §§ 803(a)(2)(C), 808(a).

A. Conservation Efforts

92. Section 10(a)(2)(C) of the FPA⁵⁵ requires the Commission to consider the electricity consumption improvement program of Lock 7 Partners, 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.

93. Lock 7 Partners sells the project's energy to a local utility. Commission staff concludes that, given the limits of Lock 7 Partners' ability to influence users of electricity generated by the project, Lock 7 Partners will continue to operate the project in a manner consistent with section 10(a)(2)(C) of the FPA.

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

94. Based on a review of Lock 7 Partners' compliance with the terms and conditions of the existing license, Commission staff finds that Lock 7 Partners' overall record of making timely filings and complying with its license is satisfactory. Therefore, staff concludes that Lock 7 Partners can satisfy the conditions of a new license.

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

95. Commission staff reviewed Lock 7 Partners' record of management, operation, and maintenance of the Mother Ann Lee Project pursuant to the requirements of 18 C.F.R. Part 12 (2021) and the Commission's Engineering Guidelines and periodic Independent Consultant's Safety Inspection Reports. Staff concludes that the project works are in good condition and well maintained, and that there is no reason to believe that Lock 7 Partners cannot continue to safely manage, operate, and maintain these facilities under a new license.

D. Ability to Provide Efficient and Reliable Electrical Service

96. Commission staff has reviewed Lock 7 Partners' plans and its ability to operate and maintain the project in a manner most likely to provide efficient and reliable electric service. Staff's review indicates that Lock 7 Partners regularly inspects the project turbine generator units to ensure they continue to perform in an optimal manner, schedules maintenance to minimize effects on energy production, and since assuming ownership of the project has undertaken several initiatives to ensure the project is able to operate reliably into the future. Therefore, staff concludes that Lock 7 Partners is capable of operating the project to provide efficient and reliable electric service in the future.

⁵⁵ *Id.* § 803(a)(2)(C).

E. Need for Power

97. To assess the need for power, Commission staff looked at the needs in the operating region in which the project is located, which is the Central Subregion of the Southeastern Electric Reliability Council, one of six regional reliability councils of the North American Electric Reliability Council (NERC). According to NERC's most recent forecast for the Central Subregion, the total internal demand is projected to grow at an annual rate of 0.9 percent from 2020 through 2030 (NERC 2019). The project's power will continue to help meet the Central Subregion's need for power.

F. Transmission Service

98. Power generated by the project is transmitted from the project generators to a substation adjacent to the powerhouse and then transmitted through the project's 4,540-foot-long, 34.5-kV transmission line to Kentucky Utilities' transmission system. Lock 7 Partners is not proposing any changes that would affect its own or other transmission services in the region.

G. Cost Effectiveness of Plans

99. Lock 7 Partners proposes no changes to project operation or project facilities. Based on Lock 7 Partners' record as an existing licensee, Commission staff concludes that Lock 7 Partners will continue to propose cost-effective project improvements under a new license, and these plans and enhancements are likely to be carried out in a cost-effective manner.

H. Actions Affecting the Public

100. Lock 7 Partners provided opportunities for public involvement in the development of its application for a new license for the Mother Ann Lee Project. Lock 7 Partners uses the project to help meet regional power needs and the project provides employment and recreation opportunities to the surrounding community.

PROJECT ECONOMICS

101. In determining whether to issue a new license for an existing hydroelectric project, the Commission considers a number of public interest factors, including the economic benefits of project power. Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in *Mead Corp.*,⁵⁶ the Commission uses current costs to compare the costs of the project with the costs of the likely alternative source of power with no forecasts concerning potential future inflation, escalation, or

⁵⁶ 72 FERC ¶ 61,027 (1995).

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.

102. In applying this analysis to the Mother Ann Lee Project, Commission staff considered three options: a no-action alternative, Lock 7 Partner's proposal, and the project as licensed herein.⁵⁷ Under the no-action alternative, the project would continue to operate as it does now. The project has an installed capacity of 2.21 MW, a capacity benefit of 1.95 MW, and generates an average of 9,200 MWh of electricity annually.⁵⁸ The average annual project cost is about \$260,804. The alternative source of power's annual cost to produce the same amount of energy and provide the same capacity benefit is \$504,941 in 2021 dollars.⁵⁹ To determine whether the proposed project is currently economically beneficial, the project's cost is subtracted from the alternative source of power's cost. Therefore, the project costs \$244,137 less than the likely alternative cost of power.

103. As proposed by Lock 7 Partners, the levelized annual cost of operating the project is \$264,069. The proposed project would generate an average of 9,200 MWh of energy annually and have a capacity benefit of 1.95 MW. The alternative source of power's cost to produce the same amount of energy and provide the same capacity benefit is \$504,941. Therefore, in the first year of operation, the project would cost \$240,872 less than the alternative source of power's cost.

104. As licensed herein with Commission staff's measures, the levelized annual cost of operating the project is \$273,348. The proposed project would generate an average of 9,200 MWh of energy annually and have a capacity benefit of 1.95 MW. The alternative source of power's cost to produce the same amount of energy and provide the same

⁵⁷ Details of Commission staff's economic analysis for the project as licensed herein, and for the other two alternatives, are included in section 4 of the EA.

⁵⁸ The term "capacity benefit" is used to describe the benefit a project receives for providing capacity to the grid, which may be in the form of a dependable capacity credit or credit for monthly capacity provided.

⁵⁹ The energy portion of the power cost is \$23.74/MWh and based on natural gas energy prices from the *Annual Energy Outlook 2021* published by the Energy Information Administration in February 2021. The capacity portion of the power cost is based on the annual cost of the hydro-equivalent natural gas-fired combined-cycle capacity, which Commission staff estimates to be about \$146.94/kilowatt-year.

capacity benefit is \$504,941. Therefore, in the first year of operation, the project would cost \$231,593 less than the alternative source of power's cost.

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

COMPREHENSIVE DEVELOPMENT

106. Sections 4(e) and 10(a)(1) of the FPA⁶⁰ require the Commission to give equal consideration to the power development purposes and to the purposes of energy conservation; the protection, mitigation of damage to, and enhancement of fish and wildlife; the protection of recreational opportunities; and the preservation of other aspects of environmental quality. Any license issued must be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

107. 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 Mother Ann Lee 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 the license.

108. Based on Commission staff's independent review and evaluation of the Mother Ann Lee Project, recommendations from the resource agencies, and the no-action alternative, as documented in the EA, staff have selected the project as licensed herein and find that it is best adapted to a comprehensive plan for improving or developing the Kentucky River.

109. Commission staff select this alternative because: (1) issuance of a new license will serve to maintain a beneficial, dependable, and inexpensive source of electric energy; (2) the required environmental measures will protect and enhance water quality, water quantity, fisheries, terrestrial, recreation, and cultural resources; and (3) the 2.21 MW of

⁶⁰ 16 U.S.C. §§ 797(e), 803(a)(1).

electric capacity comes from a renewable resource that does not contribute to atmospheric pollution.

LICENSE TERM

110. Section 15(e) of the FPA⁶¹ provides that any new license issued shall be for a term that the Commission determines to be in the public interest, but not less than 30 years or more than 50 years.

111. On October 19, 2017, the Commission established a 40-year default license term policy for original and new licenses, effective as of October 26, 2017.⁶² The Policy Statement provides for exceptions to the 40-year default license term under certain circumstances: (1) establishing a shorter or longer license term if necessary to coordinate license terms for projects located in the same river basin; (2) deferring to a shorter or longer license term explicitly agreed to in a generally-supported comprehensive settlement agreement; and (3) establishing a longer license term upon a showing by the license applicant that substantial voluntary measures were either previously implemented during the prior license term, or substantial new measures are expected to be implemented under the new license. The policy statement also explains that the Commission will consider, on a case-by-case basis, whether the costs of non-developmental (i.e., environmental) measures, and power and developmental measures are significant and warrant a longer license term.

112. Because none of the above exceptions apply in this case, a 40-year license for the Mother Ann Lee Project is appropriate.

The Director orders:

(A) The license is issued to Lock 7 Hydro Partners, LLC (licensee) to operate and maintain the Mother Ann Lee Hydroelectric Station for a period of 40 years, effective the first day of the month in which this order is issued. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

⁶¹ *Id.* § 808(e).

⁶² *Policy Statement on Establishing License Terms for Hydroelectric Projects*, 161 FERC ¶ 61,078 (2017) (Policy Statement).

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

(2) Project works consisting of: (1) a 250-foot-long, 15.3-foot-high, concrete capped, timber crib dam with a 62-foot-long, lock structure on the east side of the dam that is sealed at its downstream end and a 30-foot-long, concrete spillway section that extends from the powerhouse to the west shore; (2) a 777-acre impoundment with a storage capacity of 5,828 acre-feet at elevation 513.12 feet NGVD 29; (3) a 120-foot-long, 100-foot-wide forebay; (4) a 24-foot-tall, 84-foot-wide trash rack; (5) a 93-foot-long, 25-foot-wide, 16-foot-high powerhouse integral with the dam containing two 680-kilowatt (kW) units and one 850-kW unit with a total installed capacity of 2.21 megawatts (MW); (6) an 85-foot-long substation; and (7) a 34.5-kilovolt (kV), 2,310-foot-long overhead transmission line.

The project works generally described above are more specifically shown and described in the Exhibit A filed on September 28, 2020.

(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 Exhibit A described above is approved and made part of the license. The Exhibit F and G drawings filed as part of the application for license do not conform to Commission regulations and are not approved.

(D) This license is subject to the conditions submitted by the Kentucky Department for Environmental Protection under section 401(a)(1) of the Clean Water Act, 33 U.S.C. § 1341(a)(1), set forth in Appendix A to this order.

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

Article 201. Administrative Annual Charges. The licensee must pay the United States annual charges, effective as of the first day of the month in which the license is issued, and as determined in accordance with the provisions of the Commission's regulations in effect from time to time, 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 2.21 megawatts.

Article 202. Reservation of Authority to Require Financial Assurance Measures. The Commission reserves the right to require future measures to ensure that the licensee

maintains sufficient financial reserves to carry out the terms of the license and Commission orders pertaining thereto.

Article 203. Exhibit F and G Drawings. Within 90 days of the issuance date of this license, the licensee must file, for Commission approval, revised Exhibit F and G drawings. The drawings should show the title block located in the lower right corner of each drawing. All drawings should be legible. The Exhibit F drawings should include: (1) a cross section of the Lock Chamber on sheet 9, showing the concrete bulkhead that was installed by the U.S. Army Corps of Engineers; (2) an extension of the profile of the dam on sheet 10 to include the concrete overflow spillway section located left of the powerhouse; (3) a cross-section of the overflow spillway section located left of the powerhouse; and (4) the elevation datum on all drawings that have elevations. The revised Exhibit G drawings should show a project boundary excluding lands not associated with the project. The licensee must provide the project boundary data in a geo-referenced electronic format that complies with sections 4.39 and 4.41(h) of the Commission's current regulations.

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

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

Article 205. Headwater Benefits. If the licensee's project was directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the original license

(including extensions of that term by annual licenses), and if those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the licensee must reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed, in the same manner as for benefits received during the term of this new license. The benefits will be assessed in accordance with Part 11, Subpart B, of the Commission's regulations.

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

Article 401. *Water Quality Monitoring.* The licensee must implement the Water Quality Monitoring Plan, as filed September 28, 2020. The plan may not be amended without prior Commission approval. The Commission reserves the right to make changes to any proposed revisions filed for the plan.

Article 402. *Annual Water Quality Monitoring Report.* Condition S-1 of Kentucky Department for Environmental Protection's (Kentucky DEP) water quality certification (Appendix A) requires the licensee to file an annual Water Quality Monitoring Report with the Kentucky DEP, Division of Water by March 31 each year. Because this report relates to compliance with the water quality requirements of the license, the report must also be filed with the Commission by March 31 each year. The licensee must file documentation of any consultation, and copies of any comments and recommendations made by any consulted entity in connection with the report. The Commission reserves the right to require changes to project operation, facilities, or reporting requirements based on the information contained in the reports, agency comments, or any other available information.

Article 403. *Operation Compliance Monitoring.* The licensee must implement the Operation Compliance Monitoring Plan, as filed April 30, 2020. The plan may not be amended without prior Commission approval. The Commission reserves the right to make changes to any proposed revisions filed for the plan.

Article 404. *Project Operation Deviations.*

(a) Requirement to Notify the Commission of Planned, Temporary Modifications to Mandatory Condition Requirements

The licensee may deviate from the mandatory conditions related to operation for short periods of time, of up to three weeks, without prior Commission approval after concurrence from the conditioning agency (Kentucky Department for Environmental

Protection). The licensee must file a report with the Secretary of the Commission as soon as possible, but no later than 14 calendar days after the onset of the deviation. Each report must include: (1) the reasons for the deviation and whether operations were modified, (2) the duration and magnitude of the deviation, (3) any environmental effects, and (4) documentation of approval from the conditioning agency. For deviations from the mandatory conditions exceeding three weeks, the licensee must file an application and receive Commission approval prior to implementation.

(b) Requirement to Notify the Commission of Unplanned Deviations from Mandatory Condition Requirement(s) Lasting More than 3 hours or Resulting in Environmental Effects

If there is any unplanned deviation from the mandatory conditions that lasts longer than 3 hours *or* results in visible environmental effects such as a fish kill, the licensee must file a report with the Secretary of the Commission as soon as possible, but no later than 14 calendar days after the incident. Each report must describe the incident, including: (1) the cause, (2) the duration and magnitude, (3) any pertinent operational and/or monitoring data, (4) a timeline of the incident and the licensee's response, (5) any environmental effects, (6) documentation that the respective conditioning agency were notified and any comments received, or, affirmation that no comments were received, and (7) any measures to be implemented to prevent similar incidents in the future.

(c) Requirement to Notify the Commission of Unplanned Deviations from Mandatory Condition Requirement(s) Lasting 3 Hours or Less with No Environmental Effects

For unplanned deviations lasting 3 hours or less that do not result in environment effects, the licensee must file an annual report by January 31, describing each incident up to 1 month prior to the reporting date, including: (1) the cause of the event, (2) the duration and magnitude of the deviation, (3) any pertinent operational and/or monitoring data, (4) a timeline of the incident and the licensee's response, (5) any comments or correspondence received from the resource agencies, or confirmation that no comments were received from the resource agencies, and (6) a description of measures implemented to prevent similar deviations in the future. Any deviations that occur within the month prior to the reporting date should be included in the following year's report.

Article 405. Seasonal Restriction on Tree Removal. To protect habitat for the Indiana bat, northern long-eared bat, and gray bat during their active season, the licensee must limit non-hazardous tree removal to the period of November 15 through March 31. For the purposes of this requirement, tree removal includes cutting down, harvesting, destroying, trimming, or manipulating in any other way the trees, saplings, snags, or any other form of woody vegetation likely to be used by federally listed bats, which includes live or dead trees greater than or equal to three inches diameter at breast height (dbh) that

have cavities, peeling bark, crevices, or hollows. Hazardous or fallen trees may be removed for the protection of human life and property at the project at any time.

Article 406. Avian Protection Plan. Within 120 days of license issuance, the licensee must file, for Commission approval, an Avian Protection Plan consistent with the Avian Power Line Interaction Committee (APLIC) and the U.S. Fish and Wildlife Service's (FWS) Avian Protection Plan Guidelines.⁶³ The purpose of this plan is to minimize the risks of adverse avian interactions with project facilities (i.e., electrocutions and collisions with the project transmission line and substation).

The plan must include the following provisions:

1. A description of the existing avian/wildlife protection devices at the project substation, and specific procedures for monitoring their condition and identifying and scheduling repairs or replacements, as needed;
2. Installation and maintenance of protection devices such as aerial marker spheres, swinging markers, and/or bird flight diverters on the transmission line to minimize adverse avian/wildlife interactions;
3. A description of methods for monitoring the transmission line for nests that may become established and reporting adverse avian/wildlife interactions with the project transmission facilities;
4. A training program for operating and management personnel on avian and wildlife protection measures; and
5. An implementation schedule.

The licensee must prepare the plan after consulting with the Kentucky Department of Fish and Wildlife Resources and the FWS. The licensee must include with the plan documentation of consultation with the resource agencies, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the resource agencies to comment and make recommendations before filing the plan with the Commission. If the

⁶³ See *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*. See also APLIC AND FWS, AVIAN PROTECTION PLAN GUIDELINES 30-42 (2005), https://www.aplic.org/uploads/files/2634/APPguidelines_final-draft_Aprl2005.pdf.

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. The plan must not be implemented until it is approved by the Commission. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Article 407. Recreation Plan. The Recreation Plan filed on September 28, 2020 is approved. Upon license issuance, the licensee must implement the Recreation Plan.

Within 2 years of license issuance, the licensee must construct and/or install the following amenities described in the plan: a canoe portage with stairs at the upstream and downstream access points, a new parking area, safe access to a fishing and swimming area, and directional and safety signage. The licensee must operate and maintain, or provide for the operation and maintenance of, these amenities for the term of the license.

Within 90 days of completing construction of the approved recreation amenities, the licensee must file with the Commission documentation of the completed recreation amenities approved in this order. The documentation may include photographs (aerial or traditional), as-built drawings, or other methods, provided that the documentation clearly demonstrates the approved recreation facilities have been constructed in substantial conformity as approved. The documentation must also include confirmation that the approved recreation sites are located inside the project boundary. If the approved recreation sites are not located inside the project boundary, the licensee must propose a schedule to file, for Commission approval, revised Exhibit G drawings that incorporate the approved recreation sites inside the project boundary.

Article 408. 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 Properties that May be Affected by Issuing a New License to Lock 7 Hydro Partners, LLC, for the Continued Operation of the Mother Ann Lee Hydroelectric Project in Mercer, Jessamine, and Garrard Counties, Kentucky (FERC No. 539-015)," executed on June 27, 2022. Pursuant to the requirements of this Programmatic Agreement, the licensee must file, for Commission approval, a revised Historic Properties Management Plant (HPMP) within 120 days of issuance of this order.

When filing the revised HPMP for Commission approval, the licensee must include any documentation of consultation with the Kentucky State Historic Preservation Officer (Kentucky SHPO), Cherokee Nation, Eastern Band of Cherokee Indians, and Kentucky River Authority during the revision of the HPMP. The Commission reserves the authority to require changes to the HPMP at any time during the term of the license. If the Programmatic Agreement is terminated prior to Commission approval of the

HPMP, the licensee must obtain approval from the Commission and the Kentucky SHPO, before engaging in any ground-disturbing activities or taking any other action that may affect any historic properties within the project's areas of potential effects.

Article 409. Use and Occupancy. (a) In accordance with the provisions of this article, the licensee must have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee must also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee must take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

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

licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensee may convey easements or rights-of-way across, or leases of project lands for: (1) replacement, expansion, realignment, or maintenance of bridges or roads where all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kilovolts or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project impoundment. No later than January 31 of each year, the licensee must file with the Commission a copy 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. No report filing is required if no conveyances were made under paragraph (c) during the previous calendar year.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 water craft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 60 days before conveying any interest in project lands under this paragraph (d), the licensee must file a letter with the Commission, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Commission's authorized representative, within 45 days from the filing date,

requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

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

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

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

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

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

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project must be consolidated for consideration when revised Exhibit G drawings would be filed for approval for other purposes.

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

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

(G) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the FPA, 16 U.S.C. § 825*l*, and section 385.713 of the Commission's regulations, 18 C.F.R. § 385.713 (2021). The filing of a request for rehearing does not operate as a stay of the effective date of this license or of any other date specified in this order. The licensee's failure to file a request for rehearing constitutes acceptance of this order.

for
Terry L. Turpin
Director
Office of Energy Projects

**Form L-3
(October, 1975)**

FEDERAL ENERGY REGULATORY COMMISSION

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

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

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

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

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

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

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

Article 6. In the event the project is taken over by the United States upon the termination of the license as provided in Section 14 of the Federal Power Act, or is transferred to a new licensee or to a nonpower licensee under the provisions of Section 15 of said Act, the Licensee, its successors and assigns shall be responsible for, and shall

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

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

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

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

Article 10. The Licensee shall, after notice and opportunity for hearing, coordinate the operation of the project, electrically and hydraulically, with such other projects or power systems and in such manner as the Commission may direct in the

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Article 22. Whenever the United States shall desire to construct, complete, or improve navigation facilities in connection with the project, the Licensee shall convey to the United States, free of cost, such of its lands and rights-of-way and such rights of

passage through its dams or other structures, and shall permit such control of its pools, as may be required to complete and maintain such navigation facilities.

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

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

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

Article 26. If the Licensee shall cause or suffer essential project property to be removed or destroyed or to become unfit for use, without adequate replacement, or shall abandon or discontinue good faith operation of the project or refuse or neglect to comply with the terms of the license and the lawful orders of the Commission mailed to the record address of the Licensee or its agent, the Commission will deem it to be the intent of the Licensee to surrender the license. The Commission, after notice and opportunity for hearing, may require the Licensee to remove any or all structures, equipment and power lines within the project boundary and to take any such other action necessary to restore the project waters, lands, and facilities remaining within the project boundary to a condition satisfactory to the United States agency having jurisdiction over its lands or the Commission's authorized representative, as appropriate, or to provide for the continued operation and maintenance of 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 Certification Conditions for the Mother Ann Lee Project Issued by the Kentucky Department for Environmental Protection, Division of Water on July 27, 2020**

S-1 Lock 7 Hydro Partners shall submit an Annual Monitoring Report for not less than 10 years to the Kentucky Division of Water by March 31st of the following year for each monitoring year as required in the Water Quality Plans for the Mother Ann Lee project FERC project No. 539. The annual report will summarize the results of the water quality monitoring for the year during the 7 months that monitoring is required, May through October,⁶⁴ and shall include the following information:

A summary for each month that dissolved oxygen (DO) levels were measured. Include in the summary the following information:

- a) The average DO for each month;
- b) Whether or not the average DO fell below the 5 mg/L level for a 24-hour period for each month;
- c) Whether or not any DO readings fell below the 4 mg/L instantaneous level for each month;
- d) Whether or not the facility shut down its operations at any point within the monitoring year and the reason(s) why it shut down; and
- e) Whether any corrective actions were required during each month to improve or record DO. [Clean Water Act]

T-1 The work approved by this certification shall be limited to:

- The operation of the Kentucky Lock 7 Hydroelectric Plant (Mother Ann Lee Hydroelectric Station), as a run-of-the-river hydroelectric plant.
- Dissolved Oxygen (DO) shall be monitored between May 1st and October 31st of each year.
- Voluntary plant shut-downs shall be carried forth during automatic monitoring should the average of the DO readings over the previous 24 hour period drop

⁶⁴ Required water quality monitoring from May through October represents 6 months out of the year, not 7 months as indicated by the Kentucky Division of Water. Commission staff assumed that monitoring is required, as stated, from May through October.

below 5 mg/l until the average rises above 5 mg/l or if a single reading drops below 4 mg/l and during manual monitoring shut-down will occur if a single reading drops below 5 mg/l.

- In the event that DO readings fall below those levels, Lock 7 Hydro Partners, LLC shall notify the WQC Section Supervisor or Project Manager by email or telephone call within 3 days of the incident.
- DO reports shall be provided to the Kentucky Division of Water, 401 Water Quality Section the following year by March 31st. Please refer to WQC #2005-0103-FM and AI No. 51793 when submitting the data. [Clean Water Act]

T-2 All work performed under this certification shall adhere to the design and specifications set forth in the:

- Application for Construction Across of Along a Stream and/or Water Quality Certification received March 23, 2005;
- Water Quality Plan, Mother Ann Lee Hydroelectric Station – FERC Project Number 539. [Clean Water Act]

T-3 This certification is valid for a period of 10 years from the date on the Water Quality Certification cover letter. A letter requesting a renewal should be submitted to the WQC office at least one month before its expiration. Include the Agency Interest (AI) number and the Water Quality Certification number in the letter. An email with this information will suffice. [Clean Water Act]

T-4 The Division of Water reserves the right to modify or revoke this certification should it be determined that the activity is in noncompliance with any condition set forth in this certification. [Clean Water Act]

T-5 If there is a transfer or conveyance of the project site prior to the completed construction of the approved activity or prior to the release from monitoring, the APPLICANT shall submit written notice to the Water Quality Certification Section Project Manager or Supervisor of the transfer or conveyance of the project site or any part of the project site at least 60 days prior to the transfer or conveyance of the project site. The notification shall include the WQC number; the Agency Interest (AI) No.; the name, mailing address, email address, and telephone number of the current owner; the name, mailing address, email address, and telephone number of the prospective transferee; the proposed effective date of transfer/conveyance; and a copy of the documentation evidencing the transfer/conveyance. Failure to comply with this condition does not negate the validity or enforceability of this certification. [Clean Water Act]

T-6 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 a Stream may be required. Please contact the Floodplain Section Supervisor (502-782-6941) 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 at 502-782-6886 or SWPBsupport@ky.gov. [Clean Water Act]

Attachment 1**General Conditions for Water Quality Certification**

1. The Kentucky Division of Water may require submission of a formal application for an Individual Certification for any project if the project has been determined to likely have a significant adverse effect upon water quality or degrade the waters of the Commonwealth so that existing uses of the water body or downstream waters are precluded.
2. Nationwide permits issued by the U.S. Army Corps of Engineers for projects in Outstanding State Resource Waters, Cold Water Aquatic Habitats, and Exceptional Waters as defined by 401 KAR 10:026 shall require individual water quality certifications.
3. Projects requiring in-stream stormwater detention/retention basins shall require individual water quality certifications.
4. Erosion and sedimentation pollution control plans and Best Management Practices must be designed, installed, and maintained in effective operating condition at all times during construction activities so that violations of state water quality standards do not occur.
5. Sediment and erosion control measures (e.g., check dams, silt fencing, or hay bales) shall not be placed within surface waters of the Commonwealth, either temporarily or permanently, without prior approval by the Kentucky Division of Water's Water Quality Certification Section. If placement of sediment and erosion control measures in surface waters is unavoidable, placement shall not be conducted in such a manner that may cause instability of streams that are adjacent to, upstream, or downstream of the structures. All sediment and erosion control measures shall be removed and the natural grade restored prior to withdrawal from the site.
6. Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.
7. To the maximum extent practicable, all in-stream work under this certification shall be performed during low flow.
8. Heavy equipment (e.g., bulldozers, backhoes, draglines, etc.), if required for this project, should not be used or operated within the stream channel. In those instances where such in-stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize re-suspension of sediments and disturbance to the channel, banks, or riparian vegetation.
9. If there are water supply intakes located downstream that may be affected by increased turbidity, the permittee shall notify the operator when work will be performed.
10. Removal of existing riparian vegetation should be restricted to the minimum necessary for project construction.

11. Should stream pollution, wetland impairment, and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the Kentucky Division of Water shall be notified immediately by calling 800/564-2380.