

159 FERC ¶ 62,070  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Public Service Company of New Hampshire

Project No. 2457-041

ORDER ISSUING NEW LICENSE

(Issued April 20, 2017)

**INTRODUCTION**

1. On December 18, 2015, Public Service Company of New Hampshire (PSNH or licensee) filed, pursuant to sections 4(e) and 15 of the Federal Power Act (FPA),<sup>1</sup> an application for a new license to continue operation and maintenance of the Eastman Falls Hydroelectric Project No. 2457 (Eastman Falls Project).<sup>2</sup> The 6.06 megawatt (MW) project is located on the Pemigewasset River in the town of Franklin in Merrimack and Belknap Counties, New Hampshire. The project occupies 476 acres of federal land owned and maintained by the U.S. Army Corps of Engineers' (Corps).<sup>3</sup>
2. As discussed below, this order issues a new license for the project.

**BACKGROUND**

3. The Commission issued a new license for the project on August 25, 1987, with an effective date of January 1, 1988, that expires December 31, 2017.<sup>4</sup>

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<sup>1</sup> 16 U.S.C. §§ 797(e) and 808 (2012).

<sup>2</sup> PSNH revised its application by filings of January 13 and March 30, 2016.

<sup>3</sup> The project occupies federal land, and is located on the Pemigewasset River, which is a navigable waterway of the United States. *Public Service Company of New Hampshire*, 37 F.P.C. 578 (1967) (stating that the Pemigewasset River is a navigable waterway). For either of these reasons, section 23(b)(1) of the FPA, 16 U.S.C. § 817(1)(2012), requires the project to be licensed.

<sup>4</sup> 40 FERC ¶ 62,220 (1987). The original license for the project was issued on December 31, 1969. 42 F.P.C. 1310 (1969).

4. On April 26, 2016, the Commission issued a public notice that was published in the *Federal Register* accepting the application for filing, indicating the application was ready for environmental analysis, and setting June 27, 2016<sup>5</sup> as the deadline for filing motions to intervene, protests, comments, recommendations, preliminary terms and conditions, and preliminary fishway prescriptions.<sup>6</sup> The U.S. Department of the Interior (Interior) filed a notice of intervention,<sup>7</sup> as well as comments, recommendations, and preliminary fishway prescriptions. The Upper Merrimack River Local Advisory Committee (Merrimack Advisory Committee) filed a timely motion to intervene.<sup>8</sup> The New Hampshire Fish and Game Department filed comments in support of Interior's comments, recommendations, and prescriptions. PSNH filed reply comments on August 3, 2016.

5. Commission staff prepared, and on October 24, 2016, issued, an Environmental Assessment (EA) analyzing the impacts of the proposed project and alternatives to it. Interior, PSNH, and the Merrimack Advisory Committee filed comments on the EA.

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

## PROJECT DESCRIPTION

### A. Project Area

7. The Eastman Falls Project is located on the Pemigewasset River in the town of Franklin, Merrimack and Belknap Counties, New Hampshire. From the project area, the Pemigewasset River flows about 1 mile before joining the Winnepesaukee River to form

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<sup>5</sup> The Commission's Rules of Practice and Procedure provide that if a filing deadline falls on a Saturday, Sunday, holiday, or other day when the Commission is closed for business, the filing deadline does not end until the close of business on the next business day. 18 C.F.R. § 385.2007(a)(2) (2016). Because the 60-day filing deadline fell on a Saturday (i.e., June 25, 2016), the filing deadline was extended until the close of business on Monday, June 27, 2016.

<sup>6</sup> 81 *Fed. Reg.* 26,541 (May 2, 2016).

<sup>7</sup> Under Rule 214(a) of the Commission's Rules of Practice and Procedure, Interior became a party to the proceeding upon timely filing of its notice of intervention.

<sup>8</sup> Timely and unopposed motions to intervene are granted by operation of Rule 214(c)(1) of the Commission's Rules of Practice and Procedure. 18 C.F.R. § 385.214(c) (2016).

the Merrimack River in New Hampshire. From the confluence of the Winnepesaukee and the Pemigewasset rivers, the Merrimack River flows southeasterly for 116 miles to the Atlantic Ocean. Land use in the project area is primarily residential and the remaining land is commercial, transportation, industrial, and other urban uses.

## **B. Project Facilities**

8. The Eastman Falls Project consists of a 341-foot-long, 37-foot-high concrete gravity dam and spillway with 6-foot-high steel flashboards and a crest elevation of 307 feet above mean sea level (msl) with the flashboards installed. The dam and spillway include a concrete waste gate with a 16-foot-high, 30-foot-wide steel slide gate and a 342-foot-long, 8-foot-deep floating louver array. The louver array extends upstream from the generating facilities to the reservoir shoreline to guide fish away from the generating facility intakes and towards a lowered flashboard on the spillway.

9. Eastman Falls dam impounds the 582-acre Eastman Falls reservoir with a normal maximum water surface elevation of 307 feet msl. The reservoir extends nine miles upstream of the dam and passes through an opening in the Corps) Franklin Falls dam.

10. The project includes two powerhouses. Water enters the intake for powerhouse 1 through a 12.5-foot-high, 15-foot-wide headgate structure and a trashrack with 3.5-inch clear-bar spacing. From the headgate and trashrack, water passes into a 12.5-foot-high, 12.5-foot-wide, 21-foot-long concrete penstock that leads to powerhouse 1 which contains a single 1.8-MW turbine-generator unit. Water is discharged from powerhouse 1 via a 60-foot-long draft tube.

11. Water enters the intake for powerhouse 2 through a 20-foot-high, 21-foot-wide headgate and two trashracks with 3.5-inch clear-bar spacing and then passes into powerhouse 2 which contains a single 4.26-MW turbine-generator unit. Water is discharged from powerhouse 2 via a 60-foot-long draft tube.

12. Generator leads connect the turbine-generator units in powerhouses 1 and 2 to a 100-foot-long, 2.4-kV transmission line that connects to the regional grid. A detailed project description is contained in ordering paragraph (B)(2).

13. The project includes three recreation facilities located near the dam: (1) Eastman Falls Recreation Area, which includes a picnic area and boat launch; (2) a portage trail; and (3) the Franklin Public Boat Ramp, which includes a parking area and picnic area.

## **C. Project Boundary**

14. The existing project boundary encloses 582 acres from the Eastman Falls dam to the upstream end of the impoundment, including the 476 acres of federal land. The

project boundary encloses the three recreation facilities and the project facilities listed above.

#### **D. Current Project Operation**

15. PSNH operates the project in a run-of-river mode, whereby outflow from the project equals inflow at all times and water levels in the impoundment are not manipulated for power generation. The normal elevation of the impoundment is 307 feet msl. PSNH releases a year-round minimum flow of 410 cubic feet per second (cfs) or inflow (whichever is less) through generating facility No. 1.

16. The project uses flows between 250 cfs (the minimum hydraulic capacity of powerhouse 1) and 2,780 cfs (the combined maximum hydraulic capacity of powerhouses 1 and 2) to generate electricity. At flows less than 250 cfs, the project does not operate and all flow is either released through the waste gate or spilled over the dam. At inflows between 250 and 700 cfs, powerhouse 1 operates and powerhouse 2 is idle. At inflows between 700 and 1,830 cfs, powerhouse 2 operates and powerhouse 1 is idle. At inflows between 1,830 cfs and 2,780 cfs, both powerhouses operate at varying capacities within their operating ranges. When inflow exceeds 2,780 cfs, both powerhouses operate at maximum capacity and excess flow is spilled over the flashboards or passed through the waste gate.

17. To provide flood protection, the Corps closes the opening in Franklin Falls dam to maintain the spillway crest elevation of 389 feet msl during periods of high inflows. During this time, flows used for generation at the Eastman Falls Project are limited to releases from the Franklin Falls spillway.

18. The project's average annual generation is approximately 27,871 megawatt-hours (MWh).

#### **E. Proposed Operation and Environmental Measures**

19. PSNH proposes to: (1) continue to operate the project in a run-of-river mode such that impoundment fluctuations do not exceed  $\pm 0.2$  foot from the normal impoundment elevation of 307 feet msl with flashboards installed;<sup>9</sup> (2) implement an operation compliance monitoring and maintenance plan to monitor impoundment levels, flow

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<sup>9</sup> PSNH also proposes to discontinue maintaining the 410-cfs minimum flow downstream of the project because it would serve no purpose at a run-of-river project with no bypassed reach. The 410-cfs minimum flow is a requirement of the current license that allows PSNH to operate the project in storage-and-release mode.

releases, and impoundment refill procedures; (3) maintain downstream flows of 502 cfs (equal to the aquatic base flow), or 90 percent of inflow to the impoundment (whichever is less) to protect downstream aquatic habitat when refilling the impoundment after drawdowns for maintenance or emergencies; (4) implement an invasive species management and monitoring plan to monitor the spread of invasive species within the project boundary and implement control measures, if necessary; and (5) continue to operate and maintain the Eastman Falls Recreation Area and the portage trail.

## **SUMMARY OF LICENSE REQUIREMENTS**

20. As summarized below, this license, which authorizes 6.06 MW of renewable energy generation capacity, requires PSNH to implement most of the proposed measures noted above, with some modifications and additional staff-recommended measures described below. The license also includes the conditions required by the New Hampshire Department of Environmental Services (New Hampshire DES) water quality certification (certification) (Appendix A). Combined, these measures will protect water quality, fisheries resources, recreation, and cultural resources at the project.

21. To protect water quality and aquatic resources, the license requires PSNH to: (1) continue to operate the project in a run-of-river mode and ensure that impoundment water level fluctuations do not exceed  $\pm 0.2$  foot from the normal impoundment elevation of 307 feet msl with flashboards installed; (2) implement an impoundment refill procedure whereby 90 percent of project inflow is passed downstream and 10 percent is used to refill the impoundment; (3) implement an operation compliance monitoring and maintenance plan to monitor impoundment levels, flow releases, and impoundment refill procedures; (4) develop a plan to conduct water temperature and dissolved oxygen (DO) monitoring continuously upstream and downstream of Eastman Falls dam for up to 3 years during the period of June 1 to September 30; (5) develop a plan to install up to three upstream fishways for American eel that will be operated annually from May 1 to October 30; (6) develop a plan to annually implement downstream passage measures (interim measures will be implemented initially and eventually be replaced by permanent measures) for American eel from August 15 to November 15; (7) develop and implement a fishway operation and maintenance plan, including procedures for managing debris collected at or near fish passage facilities; and (8) develop and implement a fishway effectiveness monitoring plan.

22. To monitor and control the spread of invasive species within the project boundary, the license requires PSNH to develop and implement an invasive species management and monitoring plan.

23. To protect existing recreation opportunities at the project, the license requires PSNH to continue to operate and maintain project recreation facilities.

24. To protect cultural resources, the license requires PSNH to consult with the New Hampshire State Historic Preservation Commission prior to implementing any project

modifications not specifically authorized by this license, or if any unknown cultural resources are discovered during routine project operation.

### **WATER QUALITY CERTIFICATION**

25. Under section 401(a)(1) of the Clean Water Act (CWA),<sup>10</sup> the Commission may not issue a license authorizing the construction or operation of a hydroelectric project unless the state water quality certifying agency either has issued water quality certification for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year. Section 401(d) of the CWA provides that the certification shall become a condition of any federal license that authorizes construction or operation of the project.<sup>11</sup>

26. On December 18, 2015, PSNH applied to the New Hampshire DES for water quality certification for the Eastman Falls Project. On December 15, 2016, the New Hampshire DES issued a certification for the project that includes 15 conditions (conditions E-1 through E-15), which are set forth in Appendix A of this order and incorporated into the license by ordering paragraph (D). Eight of the conditions (conditions E-1 through E-7 and E-15) are general or administrative and are not discussed further.

27. The remaining seven conditions require PSNH to: (1) operate the Eastman Falls Project in run-of-river mode at a water surface elevation of 307 feet msl ( $\pm$  0.2 foot msl) (Condition E-8a), maintain a maximum impoundment drawdown rate of six inches or less per day, to the extent possible (Condition E-8b), and implement an impoundment refill procedure after drawdowns for maintenance or emergencies where 90 percent of project inflow is passed downstream and 10 percent is used to refill the impoundment (Condition E-8b); (2) maintain electronic records of project operation and provide an annual report to New Hampshire DES demonstrating compliance with project operation requirements (Condition E-9); (3) notify the New Hampshire DES of deviations from run-of-river operation within 24 hours and file a report about the incident within 45 days (Condition E-10); (4) develop an operation compliance monitoring plan that describes how the

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<sup>10</sup> 33 U.S.C. § 1341(a)(1) (2012).

<sup>11</sup> 33 U.S.C. § 1341(d) (2012).

project will be operated under various scenarios (i.e., normal flows, low flows, high flows, maintenance periods, and emergencies; the plan must also describe procedures for measuring, monitoring, and reporting project operation) (Condition E-11); (5) develop a plan to monitor and manage invasive species in the project area (Condition E-12); (6) develop a plan to monitor water quality in the impoundment and downstream of the dam (Condition E-13, which specifies that the monitoring results will be used to determine if mitigation measures or additional monitoring is necessary); and (7) comply with Interior's section 18 prescriptions, including any future modifications to those prescriptions (Condition E-14).

28. Periodically, the project impoundment is drawn down when flashboards are lowered during high flows, for maintenance, or for emergencies and run-of-river operation may be temporarily suspended. Condition E-8b requires PSNH to implement an impoundment refill procedure after drawdowns for maintenance or emergencies where 90 percent of project inflow is passed downstream and 10 percent is used to refill the impoundment. In the EA,<sup>12</sup> staff recommended a different impoundment refill procedure that would allow PSNH to release the aquatic base flow (502 cfs) or 90 percent of inflow (whichever is less) when refilling the impoundment after drawdowns for maintenance and emergencies. Staff recommended this alternative because it would provide adequate protection of downstream aquatic habitat while allowing the project to generate more power than would occur during the procedure required by condition E-8. However, because the impoundment refill procedure specified by condition E-8 is mandatory, it is required by ordering paragraph (D) and attached to this order in Appendix A.

29. Condition E-13 requires PSNH to monitor water quality in the impoundment and downstream of the project dam. In its license application, PSNH presents the results of water quality monitoring that indicates that DO in the project area meets New Hampshire DES's standards during warm, low-flow periods. Based on this information and proposed run-of-river operation, staff concluded in the EA<sup>13</sup> that the project would not likely contribute to or exacerbate DO problems in the Pemigewasset River and staff did not recommend requiring additional water quality monitoring. However, because the water quality monitoring specified in condition E-13 of the certification is mandatory, it is required by ordering paragraph (D) and attached to this order in Appendix A.

30. The 15 conditions of the certification are set forth in Appendix A of this order and incorporated into the license by ordering paragraph (D). Article 401 requires the licensee to file, for Commission approval, plans and reports required by the certification

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<sup>12</sup> EA at 49.

<sup>13</sup> EA at 22 and 49.

conditions, notify the Commission of emergencies and other activities, and file amendment applications, as appropriate.

### **COASTAL ZONE MANAGEMENT ACT**

31. Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA),<sup>14</sup> the Commission cannot issue a license for a project within or affecting a state's coastal zone unless the state CZMA agency concurs with the license applicant's certification of consistency with the state's CZMA program, or the agency's concurrence is conclusively presumed by its failure to act within six months of its receipt of the applicant's certification. By letter dated November 5, 2016, New Hampshire DES states that the project is not located within the state-designated coastal zone and the project will not affect New Hampshire's coastal resources. Therefore, a CZMA consistency certification is not required.

### **SECTION 18 FISHWAY PRESCRIPTION**

32. Section 18 of the FPA<sup>15</sup> 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.

33. By letter filed January 23, 2017, Interior provided section 18 prescriptions that require PSNH to provide upstream and downstream passage for American eel at the Eastman Falls dam, prepare a fishway operation and maintenance plan, and prepare a fishway effectiveness monitoring plan. Interior's prescriptions are required by ordering paragraph (E) and attached to this order in Appendix B.

34. Interior also requested that the Commission reserve authority to prescribe fishways. Consistent with Commission policy, Article 402 of the license reserves the Commission's authority to require fishways that may be prescribed by Interior for the Eastman Falls Project.

### **THREATENED AND ENDANGERED SPECIES**

35. Section 7(a)(2) of the Endangered Species Act of 1973 (ESA)<sup>16</sup> requires federal agencies to ensure their actions are not likely to jeopardize the continued existence of

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<sup>14</sup> 16 U.S.C. § 1456(c)(3)(A) (2012).

<sup>15</sup> 16 U.S.C. § 811 (2012).

<sup>16</sup> 16 U.S.C. § 1536(a) (2012).



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

36. In a letter dated June 22, 2016, Interior states that suitable habitat for the federally threatened northern long-eared bat exists within and adjacent to the project area. The EA found that, while there is northern long-eared bat habitat within and adjacent to the project area, northern long-eared bats are not known to inhabit the project area. In addition, there are no measures included in this license that would affect northern long-eared bat habitat. Based on this information, licensing the project will have no effect on the threatened northern long-eared bat. Therefore, no further action under the ESA is required.

### **NATIONAL HISTORIC PRESERVATION ACT**

37. Under section 106 of the National Historic Preservation Act (NHPA)<sup>17</sup> and its implementing regulations,<sup>18</sup> federal agencies must take into account the effect of any proposed undertaking on properties listed or eligible for listing in the National Register of Historic Places (National Register), defined as historic properties, and afford the Advisory Council on Historic Preservation 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.

38. The Eastman Falls dam was constructed as a power source in 1903 by the Pemigewasset Power Company. Powerhouse 1 was built in 1937, while powerhouse 2, originally built in 1910, was retrofitted in 1983. By letter dated May 8, 2012, the New Hampshire SHPO indicated that the Eastman Falls facilities may be eligible for listing on the National Register. However, the New Hampshire SHPO concluded that issuing a license for the project would have “no potential to cause effects” on historic, architectural, or archaeological resources based on the applicant’s proposal.<sup>19</sup> The EA concludes that because there are no known cultural resources within the project’s area of

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<sup>17</sup> Section 106 of the National Historic Preservation Act of 1966, as amended, 54 U.S.C. § 306108, Pub. L. No. 113-287, 128 Stat. 3188 (2014). (The National Historic Preservation Act was recodified in Title 54 in December 2014.)

<sup>18</sup> 36 C.F.R. Part 800 (2016).

<sup>19</sup> PSNH December 18, 2015 application, at Appendix A.

potential effect and no changes to the project's features or operation are proposed, issuing a license for the project would have no adverse effect on historic properties.<sup>20</sup>

39. While the project will have no adverse effect on known historic properties, cultural resources could be discovered during the course of operating or maintaining the project. If cultural resources are inadvertently discovered during construction or operation of the project, PSNH must stop all land-disturbing activities and consult with the New Hampshire SHPO to determine the need for any cultural resource studies or measures. If no measures are needed, PSNH must file documentation of its consultation. If a discovered cultural resource is determined to be eligible for the National Register, the licensee must file for Commission approval a historic properties management plan. As required by Article 405, PSNH must not resume land-clearing or land-disturbing activities until informed by the Commission that the requirements of the article are met.

40. Additionally, project maintenance activities that may be needed during the term of this license, but do not require Commission approval, could adversely affect cultural resources.<sup>21</sup> Therefore, Article 406 requires the licensee to consult with the New Hampshire SHPO prior to conducting any project modifications to determine the effects of the activities and the need for protection measures.

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

41. Section 10(j)(1) of the FPA<sup>22</sup> 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<sup>23</sup> to "adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)" affected by the project.

42. In response to the April 26, 2016 public notice that the project was ready for environmental analysis, Interior filed seven recommendations under section 10(j).<sup>24</sup> Two

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<sup>20</sup> EA at 37.

<sup>21</sup> Activities could include modifications to the powerhouses, such as painting, roof repairs, or general landscaping. *Id.*

<sup>22</sup> 16 U.S.C. § 803(j)(1) (2012).

<sup>23</sup> 16 U.S.C. §§ 661 *et seq.* (2012).

<sup>24</sup> Interior filed the recommendations on June 22, 2016.

of the recommendations are outside the scope of section 10(j) and are discussed in the next section. Three of the recommendations that are within the scope of section 10(j) and are included in this license require PSNH to: (1) operate the project in an instantaneous run-of-river mode (required by certification condition E-8a), (2) develop and implement an operation and flow monitoring plan (required by certification condition E-11), and (3) maintain the impoundment elevation at 307 feet msl  $\pm$  0.2 foot (required by certification condition E-8b). The remaining two recommendations that are within the scope of section 10(j) are also included in this license, and are discussed below.

43. In the EA, Commission staff made an initial determination that Interior's recommendation to develop and implement a post-license water quality monitoring plan may be inconsistent with the comprehensive planning standard of section 10(a)(1) of the FPA. Staff did not recommend water quality monitoring because existing water quality meets New Hampshire state standards and the project would continue to operate in run-of-river mode.<sup>25</sup> However, because the water quality monitoring plan is included in the certification (see condition E-13), which is mandatory,<sup>26</sup> the water quality plan is required by the license.

44. In the EA, Commission staff made an initial determination that Interior's recommendation to implement an impoundment refill protocol that passes 90 percent of inflow downstream and uses 10 percent of inflow to refill the impoundment may be inconsistent with the comprehensive planning standard of section 10(a)(1) of the FPA. Staff did not recommend Interior's refill protocol because PSNH's proposed refill protocol (i.e., releasing the aquatic base flow (502 cfs) or 90 percent of inflow (whichever is less) when refilling the impoundment) would protect aquatic habitat while allowing PSNH to generate more power than Interior's refill protocol.<sup>27</sup> However, because the refill protocol is included in the certification (condition E-8c), which is mandatory, the impoundment refill protocol to pass 90 percent of inflow downstream and use 10 percent of inflow to refill the impoundment is required by the license.

### **SECTION 10(a)(1) OF THE FPA**

45. Section 10(a)(1) of the FPA<sup>28</sup> requires that any project for which the Commission issues a license be best adapted to a comprehensive plan for improving or developing a

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<sup>25</sup> EA at 49.

<sup>26</sup> See *American Rivers v. FERC*, 129 F.3d 99 (2<sup>nd</sup> Cir. 1997).

<sup>27</sup> EA at 49-50.

<sup>28</sup> 16 U.S.C. § 803(a)(1) (2012).

waterway or waterways for the use or benefit of interstate or foreign commerce; for the improvement and utilization of waterpower development; for the adequate protection, mitigation, and enhancement of fish and wildlife; and for other beneficial public uses, including irrigation, flood control, water supply, recreation, and other purposes.

#### **A. Interior's Recommendation**

46. Interior made one recommendation under section 10(a)(1). In addition, as noted above, Interior made two recommendations under section 10(j) that are not specific measures to protect, mitigate damages to, or enhance fish and wildlife. These recommendations are considered below under the broad public-interest standard of section 10(a)(1).

47. Interior recommends that the licensee be required to notify Interior if an amendment or appeal of any fish and wildlife-related license conditions, or extension of time is filed with the Commission (10(a) recommendation 1).

48. For significant amendments related to fish and wildlife resources, the Commission's regulations require licensees to consult with Interior while preparing an amendment application.<sup>29</sup> For other amendments, appeals, and requests for extensions of time, Interior can receive notification of any filings and issuances through the Commission's eSubscription service.<sup>30</sup> Therefore, there is no need to include Interior's recommendation as a requirement of this license.

49. Interior recommends that the licensee develop and implement an invasive species management and monitoring plan (10(j) recommendation 5). This plan is required in the license by certification condition E-12.

50. Interior recommends that the Commission consult under section 7 of the Endangered Species Act if northern long-eared bat habitat will be affected by project activities (10(j) recommendation 6).

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<sup>29</sup> If a licensee files a request to amend its license or to amend any fish and wildlife-related license condition, the licensee may need to consult with Interior pursuant to sections 4.38(a)(6) and 4.201(c) of the Commission's regulations. 18 CF.R. §§ 4.38(a)(6) and 4.201(c) (2016).

<sup>30</sup> The Commission's eSubscription service can be accessed at <http://www.ferc.gov/docs-filing/esubscription.asp>.

51. As discussed above and in the EA,<sup>31</sup> operation of the project, as licensed herein, will have no effect on the threatened northern long-eared bat or its habitat. Therefore, there is no need for consultation or to include any measures addressing northern long-eared bats in this license.

### **B. Comments on the EA**

52. Interior, PSNH, and the Merrimack Advisory Committee filed comments during the EA comment period. Interior's letter reiterates its recommendations for water quality monitoring, impoundment refill, and consultation on northern long-eared bat, but did not provide any specific comments on the EA. The Merrimack Advisory Committee's letter indicates its support for Interior's and New Hampshire DES's recommendations, conditions, and prescriptions and also did not provide any specific comments on the EA.

53. In its comments on the EA, PSNH states that the use of traps to collect juvenile American eel and the target number of eels collected in the traps could be determined as part of an upstream eel passage plan. In response to staff's statement in the EA<sup>32</sup> that the only existing routes for downstream movement of American eel at the dam are over the spillway or through the turbines, PSNH states that the project also has a bottom-opening waste gate that could be used for passing out-migrating American eel. PSNH also states that biological triggers, based on upstream eel passage rates and eel life cycle, should be considered as part of any downstream eel passage measures, whether interim or permanent. While the EA did not address the potential development of an upstream passage plan, the use of the bottom-opening waste gate for downstream passage, or the use of biological triggers, we expect that each of these activities can be addressed during the consultation on upstream and downstream eel passage measures with Interior (and the New Hampshire Fish and Game Department) that is required by prescriptions 13.1 and 13.2.

### **C. Other Issues**

#### *Debris Management*

54. Interior's prescription 12.4 requires PSNH to develop a fishway operation and maintenance plan that includes debris removal from any guidance channels and fishway entrances and exits. Removing debris from fish passage facilities will ensure the effectiveness of any passage facilities; however, prescription 12.4 does not address the

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<sup>31</sup> EA at 34.

<sup>32</sup> EA at 25.

handling and disposal of removed debris. To ensure that inorganic trash is properly disposed of (i.e., recycled or sent to a landfill) and organic debris, that may provide valuable habitat for fish and macroinvertebrates, is reintroduced to the river, staff recommended in the EA that the plan be modified to include procedures for sorting, passing, or disposing of debris, as appropriate.<sup>33</sup> Therefore, Article 403 requires PSNH to describe procedures for handling and disposal of debris as part of the fishway operation and maintenance plan.

### *Recreation Facilities*

55. As discussed above, the Eastman Falls Project includes three recreation facilities owned by PSNH: Eastman Falls Recreation area, portage trail, and the Franklin Public Boat Ramp. PSNH operates and maintains the Eastman Falls Recreation area and the portage trail, and the City of Franklin operates and maintains the Franklin Public Boat Ramp. While PSNH may enter into an agreement with the City to operate and maintain the Franklin Public Boat Ramp, PSNH, as the licensee is ultimately responsible for ensuring adequate operation and maintenance of the project's recreational facilities. Article 404 requires PSNH to continue to provide public access to and ensure adequate operation and maintenance of the three project recreation facilities.

## **ADMINISTRATIVE PROVISIONS**

### **A. Annual Charges**

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

57. Section 10(e) of the FPA directs the Commission to assess licensees an annual charge to recompense the United States "for the use, occupancy, and enjoyment" of its lands.<sup>34</sup> As noted, the Eastman Falls Project boundary includes approximately 476 acres of federal land managed by the Corps, as part of the Franklin Falls Flood Control Dam.

58. PSNH filed documentation indicating that it has maintained prescriptive rights and deeded flowage rights entitling it to flow water over land managed by the Corps since before the federal government acquired the land for construction of the Franklin Falls Flood Control Dam.<sup>35</sup>

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<sup>33</sup> EA at 47-48.

<sup>34</sup> 16 U.S.C. § 803(e) (2012).

<sup>35</sup> PSNH April 3, 2013, Response to Request for Additional Information, (continued ...)

59. The information provided by PSNH demonstrates that it has acquired and retained sufficient rights to carry out project purposes over land managed by the Corps as a part of the Franklin Falls Control Dam. Accordingly, the Commission will not assess an annual charge for the project's occupancy of government lands.<sup>36</sup>

#### **B. Exhibit F and G Drawings**

60. The Exhibit F drawings filed on December 18, 2015, and the Exhibit G drawings filed on March 30, 2016, are approved and made part of the license (ordering paragraph (C)). The Commission requires licensees to file sets of approved project drawings in electronic file format. Article 202 requires the filing of these drawings.

#### **C. Amortization Reserve**

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

#### **D. Headwater Benefits**

62. Some projects directly benefit from headwater improvements that were constructed by other licensees, the United States, or permittees. Article 204 requires the licensee to reimburse such entities for these benefits if they were not previously assessed and reimbursed.

#### **E. Use and Occupancy of Project Lands and Waters**

63. Requiring a licensee to obtain prior Commission approval for every use or occupancy of project land would be unduly burdensome. Therefore, Article 407 allows the licensee to grant permission, without prior Commission approval, for the use and occupancy of project lands for such minor activities as landscape planting. Such uses must be consistent with the purposes of protecting and enhancing the scenic, recreational, and environmental values of the project.

#### **F. As-Built Exhibits**

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supplemented on May 1, 2013.

<sup>36</sup> See *Consumers Power Company*, 73 FERC ¶ 61,093, at 61,300 (1995) (citing *Pacific Gas and Electric Company*, 56 F.P.C. 964 (1976); *Pacific Gas and Electric Company*, 2 FERC ¶ 61,105 (1978)).

64. Where new construction or modifications to the project are involved (i.e., new fish passage facilities), the Commission requires licensees to file revised exhibits of project features as-built. Article 205 provides for the filing of these exhibits.

### **G. Review of Final Plans and Specifications**

65. Article 301 requires the licensee to provide the Commission's Division of Dam Safety and Inspection New York Regional Office (D2SI-NYRO) with final contract drawings and specifications— together with a supporting design document consistent with the Commission's engineering guidelines. The submittal must include a quality control and inspection program, a temporary construction emergency action plan, and a soil erosion and sediment control plan.

66. Article 302 requires the licensee to provide the Commission's D2SI-NYRO with cofferdam construction drawings if cofferdams will be used for the construction activities authorized or required by this license.

67. Article 303 requires the licensee to provide the Commission's D2SI-NYRO with proposed project modifications resulting from environmental requirements.

### **H. Commission Approval of Resource Plans, Notification, and Filing of Reports and Amendments**

68. In Appendices A and B, there are certain certification conditions and fishway prescriptions that either do not require the licensee to file plans with the Commission or do not provide for consultation with the appropriate agencies during plan development. Therefore, Article 401 requires the licensee to consult with the other agencies during plan development and to file the plans with the Commission for approval, notify the Commission of planned and unplanned deviations from license requirements, and file amendment applications, as appropriate.

## **STATE AND FEDERAL COMPREHENSIVE PLANS**

69. Section 10(a)(2)(A) of the FPA,<sup>37</sup> 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.<sup>38</sup> Under section 10(a)(2)(A), federal and state agencies filed 32 comprehensive plans that address

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<sup>37</sup> 16 U.S.C. § 803(a)(2)(A) (2012).

<sup>38</sup> Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2016).



various resources in New Hampshire. Of these, the staff identified and reviewed six comprehensive plans relevant to this project.<sup>39</sup> No conflicts were found.

## **APPLICANT'S PLANS AND CAPABILITIES**

70. In accordance with sections 10(a)(2)(C) and 15(a) of the FPA,<sup>40</sup> Commission staff evaluated PSNH's record as a licensee for these areas: (A) conservation efforts; (B) compliance history and ability to comply with the new license; (C) safe management, operation, and maintenance of the project; (D) ability to provide efficient and reliable electric service; (E) need for power; (F) transmission services; (G) cost effectiveness of plans; and (H) actions affecting the public. This order adopts staff's findings in each of the following areas.

### **A. Conservation Efforts**

71. Section 10(a)(2)(C) of the FPA requires the Commission to consider an applicant's electricity consumption improvement programs in the case of license applicants primarily engaged in the generation or sale of electric power, like PSNH. PSNH implements programs to improve efficiency and promotes energy conservation, including an energy savings plan and smart energy use solutions. These programs show that PSNH is making an effort to conserve electricity and made a satisfactory good faith effort to comply with section 10(a)(2)(C) of the FPA.

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

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

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

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

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<sup>39</sup> The list of applicable plans can be found in section 5.4 of the EA and has not changed since issuance of the EA.

<sup>40</sup> 16 U.S.C. §§ 803(a)(2)(C) and 808(a) (2012).

#### **D. Ability to Provide Efficient and Reliable Electric Service**

74. Staff has reviewed PSNH's plans and its ability to operate and maintain the project in a manner most likely to provide efficient and reliable electric service. Staff's review indicates that PSNH 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 the project has been in operation, has undertaken several initiatives to ensure the project is able to operate reliably into the future. Therefore, PSNH is capable of operating the project to provide efficient and reliable electric service in the future.

#### **E. Need for Power**

75. The project is located in the Northeast Power Coordinating Council (NPCC) New England region of the North American Electric Reliability Corporation (NERC) and generates an average of 27,871 MWh annually. To assess the need for power, staff looked at PSNH's present and anticipated future use of project power, together with the need for power in the operating region in which the project is located.

76. NERC annually forecasts electrical supply and demand in the nation and the region for a 10-year period. NERC's most recent report indicates summer peak demand in the NPCC New England region is projected to grow at an annual rate of 0.48 percent from 2016 through 2025. Therefore, the project's power will help meet the regional need for power.

#### **F. Transmission Services**

77. The project includes a 100-foot-long transmission line that connects the generator bus in generating facility No. 2 to the regional grid. PSNH is proposing no changes that would affect its own or other transmission services in the region. The project and its transmission line provide power and voltage control in New Hampshire and the region.

#### **G. Cost Effectiveness of Plans**

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

#### **H. Actions Affecting the Public**

79. PSNH provided opportunities for public involvement in the development of its application for a new license for the Eastman Falls Project. In addition, during the previous license period, PSNH operated the project in a manner that supported recreation

activities, including boating, fishing, and picnicking in the Pemigewasset River upstream and downstream of the project.

## PROJECT ECONOMICS

80. 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.*,<sup>41</sup> the Commission uses current costs to compare the costs of the project and likely alternative power with no forecasts concerning potential future inflation, escalation, or deflation beyond the license issuance date. The basic purpose of the Commission's economic analysis is to provide a general estimate of the potential power benefits and the costs of a project, and of reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

81. In applying this analysis to the Eastman Falls Project, staff considered three options: no-action alternative, PSNH's proposal, and the project as licensed herein. Under the no-action alternative, the project would continue to operate as it does now. The project has an installed capacity of 6.06 MW, and generates an average of 27,871 MWh of electricity annually. The average annual project cost is about \$ \$867,346, or \$31.12/MWh. When an estimate of average generation is multiplied by the alternative power cost of \$40.71/MWh,<sup>42</sup> the total value of the project's power is \$1,134,628 in 2016 dollars. To determine whether the proposed project is currently economically beneficial, the project's cost is subtracted from the value of the project's power. Therefore, the project costs \$ \$267,282, or \$9.59/MWh, less to produce power than the likely alternative cost of power.

82. As proposed by PSNH, the levelized annual cost of operating the Eastman Falls Project is \$869,575, or \$31.20/MWh. The proposed project would generate an average of 27,871 MWh of energy annually. The estimate of average generation is multiplied by the alternative power cost of \$40.71/MWh, a total value of the project's power is \$1,134,628, in 2016 dollars. Therefore, in the first year of operation, the project would cost \$265,053, or \$9.51/MWh, less than the likely alternative cost of power.

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<sup>41</sup> 72 FERC ¶ 61,027 (1995).

<sup>42</sup> The alternative power cost of \$40.71 per MWh is based on the New England Independent Operating System real time cost for New Hampshire.

83. As licensed herein with mandatory conditions and staff measures, the levelized annual cost of operating the Eastman Falls Project is \$879,051, or \$31.54/MWh. The proposed project would generate an average of 27,871 MWh of energy annually. The estimate of average generation is multiplied by the alternative power cost of \$40.71/MWh, a total value of the project's power is \$1,134,628, in 2016 dollars. Therefore, in the first year of operation, the project would cost \$255,577, or \$9.17/MWh, less than the likely alternative cost of power.

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

### **COMPREHENSIVE DEVELOPMENT**

85. Sections 4(e) and 10(a)(1) of the FPA<sup>43</sup> 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 shall be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

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

87. Based on an independent review and evaluation of the Eastman Falls Project, recommendations from the resource agencies and other stakeholders, and the no-action alternative, as documented in the EA, the proposed Eastman Falls Project, with the staff-recommended measures, is best adapted to a comprehensive plan for improving or developing the Pemigewasset River.

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<sup>43</sup> 16 U.S.C. §§ 797(e) and 803(a)(1) (2012).

88. This alternative was selected because: (1) issuance of a new license will serve to maintain a beneficial, dependable, and inexpensive source of electric energy; (2) the required environmental measures will protect and enhance fish and wildlife resources, water quality, recreation, and cultural resources; and (3) the 6.06 MW of electric capacity comes from a renewable resource that does not contribute to atmospheric pollution.

### LICENSE TERM

89. Section 15(e) of the FPA<sup>44</sup> 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. The Commission's general policy is to establish 30-year terms for projects with little or no redevelopment, new construction, new capacity, or environmental mitigation and enhancement measures; 40-year terms for projects with a moderate amount of such activities; and 50-year terms for projects with extensive measures.<sup>45</sup> This license authorizes no new capacity, and requires a minor amount of new environmental mitigation measures. Consequently, a 30-year license term for the Eastman Falls Project is appropriate.

#### The Director Orders:

(A) This license is issued to Public Service Company of New Hampshire (licensee), for a period of 30 years, effective January 1, 2018, to operate and maintain the Eastman Falls Hydroelectric Project. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, enclosed by the project boundary shown by Exhibits G-1, G-2, and G-3 filed on March 30, 2016:

<u>Exhibit G Drawing</u>	<u>FERC P-2457-</u>	<u>Description</u>
G-1	1001	Project Boundary Map
G-2	1002	Project Boundary Map

<sup>44</sup> 16 U.S.C. § 808(e) (2012).

<sup>45</sup> See *Consumers Power Co.*, 68 FERC ¶ 61,077, at 61,383-84 (1994).

<u>Exhibit G Drawing</u>	<u>FERC P-2457-</u>	<u>Description</u>
G-3	1003	Project Boundary Map

(2) Project works consisting of: (a) a 341-foot-long, 37-foot-high concrete gravity dam with a crest elevation of 301 feet above mean sea level (msl) and 6-foot-high steel flashboards; (b) a concrete waste gate with a 16-foot-high, 30-foot-wide steel slide gate; (c) a 582-acre impoundment with a normal maximum water surface elevation of 307 feet msl; (d) a 342-foot-long, 8-foot-deep floating louver array extending from the spillway to the reservoir shoreline; (e) a 29-foot-long, 29-foot-wide, 34-foot-high concrete and masonry powerhouse (powerhouse 1); and (f) an 88-foot-long, 78-foot-wide, 56-foot-high concrete and masonry powerhouse (powerhouse 2).

Powerhouse 1 and its associated facilities include: (a) a 12.5-foot-high, 15-foot-wide headgate structure with a 23.75-foot-high, 17-foot-wide trashrack with 3.5-inch clear-bar spacing; (b) a 12.5-foot-high, 12.5-foot-wide, 21-foot-long concrete penstock; (c) a 40-foot-high, 20-foot-wide stop log slot; (d) a single 1.8-megawatt (MW) turbine-generator unit; and (e) a 23-foot-wide, 14.5-foot-high, 60-foot-long draft tube.

Powerhouse 2 and its associated facilities include: (a) a 20-foot-high, 21-foot-wide headgate with two 12.3-foot-wide, 9.3-foot-high trashracks with 3.5-inch clear-bar spacing; (b) a 20.8-foot-high, 22.4-foot-wide stop log slot; (c) a single 4.26-MW turbine-generator unit; and (d) a 23-foot-wide, 14.5-foot-high, 60-foot-long draft tube.

Other project facilities include: (a) two 245-foot-long, 2.4-kilovolt (kV) generator leads that connect the turbine-generator in powerhouse 1 to a generator bus in powerhouse 2; (b) four 110-foot-long, 2.4-kV generator leads that connect the turbine-generator in powerhouse 2 to a generator bus in powerhouse 2; (c) a 100-foot-long, 2.4-kV transmission line that connects the generator bus in powerhouse 2 to the regional grid; and (d) appurtenant facilities.

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

Exhibit A: Pages 1 through 8 (entitled “Project Description”) of the Exhibit A filed on December 18, 2015, and pages 2 and 3 of Public Service of New Hampshire’s March 30, 2016, filing.

Exhibit F: The following Exhibit F drawing numbers 1004 through 1014 filed on December 18, 2015:

<u>Exhibit F Drawing</u>	<u>FERC P-2457-</u>	<u>Description</u>
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<u>Exhibit F Drawing</u>	<u>FERC P-2457-</u>	<u>Description</u>
F-1	1004	Plan and Elevation
F-2	1005	Dam Sections
F-3	1006	Floor Plan – Unit No. 2 Powerhouse
F-4	1007	Longitudinal Section – Unit No. 2 Powerhouse
F-5	1008	Sections – Unit No. 2 Powerhouse
F-6	1009	Floor Plan – Unit No. 1 Powerhouse
F-7	1010	Longitudinal Section – Unit No. 1 Powerhouse
F-8	1011	Sections – Unit No. 1 Powerhouse
F-9	1012	Louver Structure Plan
F-10	1013	Louver Frame Plan and Sections
F-11	1014	Louver Panel Plan and Sections

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

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

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

(E) This license is subject to the conditions submitted by the Secretary of the U.S. Department of the Interior under section 18 of the Federal Power Act, as those conditions are set forth in Appendix B to this order.

(F) This license is also subject to the articles set forth in Form L-5, (October 1975), entitled "Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters and Lands of the United States" (*see* 54 F.P.C. 1792 *et seq.*), as reproduced at the end of this order, and the following additional articles:

Article 201. Administrative Annual Charges. The licensee must pay the United States annual charges, effective the first day of the month in which this license is issued, and as determined in accordance with provisions of the Commission's regulations in effect from time to time, for the purpose(s) of reimbursing the United States for the cost of administration of Part I of the Federal Power Act. The authorized installed capacity for that purpose is 6.06 megawatts.

Article 202. Exhibit Drawings. Within 45 days of the effective date of the license, as directed below, the licensee must file two sets of the approved exhibit drawings, form FERC-587, and Geographic Information System (GIS) data in electronic file format on compact disks with the Secretary of the Commission, ATTN: OEP/DHAC.

(1) Digital images of the approved exhibit drawings must be prepared in electronic format. Prior to preparing each digital image, the FERC Project-Drawing Number (i.e., P-2457-1001 through P-2457-1014) must be shown in the margin below the title block of the approved drawing. Exhibit F drawings must be segregated from other project exhibits, and identified as Critical Energy Infrastructure Information (CEII) material under 18 C.F.R. § 388.113(c). Each drawing must be a separate electronic file, and the file name must include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this license, and a file extension in the following format [P-2457-1001, F-1, Plan and Elevation, MM-DD-YYYY.TIF].

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

IMAGERY – black and white raster file  
 FILE TYPE – Tagged Image File Format (TIFF), CCITT Group 4 (also known as T.6 coding scheme)  
 RESOLUTION – 300 dots per inch (dpi) desired, (200 dpi minimum)  
 DRAWING SIZE FORMAT – 22” X 34” (minimum), 24” X 36” (maximum)  
 FILE SIZE – less than 1 megabyte desired

A third set (Exhibit G only) and a copy of Form FERC-587 must be filed with the Bureau of Land Management office at the following address:

Bureau of Land Management



Branch of Lands (ES-930)  
20 M Street S.E.  
Washington, D.C. 20003

Form FERC-587 is available through the Commission's website at the following URL: <http://www.ferc.gov/docs-filing/forms/form-587/form-587.pdf>. Although instruction no. 3 requires microfilm copies of the project boundary maps in aperture card format, electronic copies that meet the digital specifications in this ordering paragraph should be substituted. If the FERC-587 cannot be downloaded from the Internet, a hard copy may be obtained by mailing a request to the Secretary of the Commission.

(2) Project boundary GIS data must be in a georeferenced electronic file format (such as ArcView shape files, GeoMedia files, MapInfo files, or a similar GIS format). The filing must include both polygon data and all reference points shown on the individual project boundary drawings. An electronic boundary polygon data file(s) is required for each project development. Depending on the electronic file format, the polygon and point data can be included in single files with multiple layers. The georeferenced electronic boundary data file must be positionally accurate to  $\pm 40$  feet in order to comply with National Map Accuracy Standards for maps at a 1:24,000 scale. The file name(s) must include: FERC Project Number, data description, date of this license, and file extension in the following format [P-2457, boundary polygon/or point data, MM-DD-YYYY.SHP]. The filing must be accompanied by a separate text file describing the spatial reference for the georeferenced data: map projection used (i.e., UTM, State Plane, Decimal Degrees, etc.), the map datum (i.e., North American 27, North American 83, etc.), and the units of measurement (i.e., feet, meters, miles, etc.). The text file name must include: FERC Project Number, data description, date of this license, and file extension in the following format [P-2457, project boundary metadata, MM-DD-YYYY.TXT].

In addition, for those projects that occupy federal lands, a separate georeferenced polygon file(s) is required that identifies transmission line acreage and non-transmission line acreage affecting federal lands for the purpose of meeting the requirements of 18 C.F.R. §11.2. The file(s) must also identify each federal owner (e.g., Bureau of Land Management, Forest Service, U.S. Army Corps of Engineers, etc.), land identification (e.g., forest name, Section 24 lands, national park name, etc.), and federal acreage affected by the project boundary. Depending on the georeferenced electronic file format, the polygon, point, and federal lands data can be included in a single file with multiple layers.

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

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

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

Article 204. Headwater Benefits. If the licensee's project was directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the prior license (including extensions of that term by annual licenses), and if those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the licensee must reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed, in the same manner as for benefits received during the term of this new license. The benefits will be assessed in accordance with Part 11, Subpart B, of the Commission's regulations.

Article 205. As-built Exhibits. Within 90 days of completion of construction of the facilities authorized by this license, including any new upstream and downstream eel passage facilities, the licensee must file for Commission approval, revised Exhibits A, F, and G, as applicable, to describe and show those project facilities as built.

Article 301. Contract Plans and Specifications. At least 60 days prior to the start of any construction, the licensee must submit one copy of its plans and specifications and supporting design document to the Commission's Division of Dam Safety and Inspections (D2SI) – New York Regional Engineer, and two copies to the Commission (one of these must be a courtesy copy to the Director, D2SI). The submittal to the D2SI – New York Regional Engineer must also include as part of preconstruction requirements: a Quality Control and Inspection Program, Temporary Construction Emergency Action Plan, and Soil Erosion and Sediment Control Plan. The licensee may not begin

construction until the D2SI – New York Regional Engineer has reviewed and commented on the plans and specifications, determined that all preconstruction requirements have been satisfied, and authorized start of construction.

Article 302. Cofferdam and Deep Excavation Construction Drawings. Should construction require cofferdams or deep excavation, the licensee must review and approve the design of contractor-designed cofferdams and deep excavations and must: (1) have a Professional Engineer who is independent from the construction contractor review and approve the design of contractor-designed cofferdams and deep excavations prior to the start of construction; and (2) ensure that construction of cofferdams and deep excavations is consistent with the approved design. At least 30 days before starting construction of any cofferdams or deep excavations, the licensee must submit one copy to the Commission's Division of Dam Safety and Inspections (D2SI) – New York Regional Engineer and two copies to the Commission (one of these copies must be a courtesy copy to the Commission's Director, D2SI), of the approved cofferdam and deep excavation construction drawings and specifications, and the letters of approval.

Article 303. 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 be consult with the Commission's Division Dam Safety and Inspections – New York 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. Commission Approval, Reporting, Notification, and Filing of Amendments.

(a) Requirement to File Plans for Commission Approval.

Certain conditions found in the New Hampshire Department of Environmental Service's (New Hampshire DES) water quality certification (certification) conditions (Appendix A) and the U.S. Department of the Interior's (Interior) fishway prescriptions issued pursuant to section 18 of the Federal Power Act (FPA; Appendix B) require the licensee to prepare plans in consultation with other entities and for approval by the New Hampshire DES and Interior, respectively, and implement specific measures without prior Commission approval. Each such plan is listed below and must be filed with the Commission.

New Hampshire DES Certification Condition No.	Interior Section 18 Prescription No.	Plan Name	Date Due

New Hampshire DES Certification Condition No.	Interior Section 18 Prescription No.	Plan Name	Date Due
E-11(a)		Operation Compliance Monitoring Plan	Within 6 months of the effective date of the license
E-12(a)		Invasive Species Management and Monitoring Plan	Within 6 months of the effective date of the license
E-13(a)		Water Quality Monitoring Plan	Within 6 months of the effective date of the license
	12.4	Fishway Operation and Maintenance Plan	Within 12 months of the effective date of the license
	12.6.1	Implementation Schedule	Within 3 months of the effective date of the license
	13.1	Upstream Passage Plan for American Eel	Within 6 months of the effective date of the license
	13.2.1	Interim Downstream Passage Plan for American Eel	Within 9 months of the effective date of the license
	13.2.2	Permanent Downstream Passage Plan for American Eel	Within 9 years of the effective date of the license
	13.3.1	Fishway Effectiveness Monitoring Plan	Within 6 months of the effective date of the license

The licensee must file each plan with the Commission for approval. Each filing must include documentation that the licensee developed the plan in consultation with and has received approval from the New Hampshire DES and Interior, as appropriate. The Commission reserves the right to make changes to any plan filed. The licensee must not implement the plan prior to Commission approval. Upon Commission approval, the plan becomes a requirement of the license, and the licensee must implement the plan or changes in project operations or facilities, including any changes required by the Commission.

## (b) Requirement to File Reports.

Certain conditions of the New Hampshire DES's certification conditions and Interior's prescriptions require the licensee to file reports with other entities. These reports document compliance with requirements of this license and may have a bearing on future actions. Each such report is listed below and must be filed with the Commission.

New Hampshire DES Certification Condition No.	Interior Section 18 Prescription No.	Description	Date Due
E-9(b)		Annual Operation Report	By April 1 of each year after the effective date of the license
E-13(b)		Water Quality Monitoring Report	By January 31 of the second year of the license
	12.4	Annual Fishway Operation and Maintenance Report	By December 31 of each year after the effective date of the license
	13.1	Annual Upstream American Eel Passage Survey Report	By December 31 of the first and second year of the license
	13.3.1	Final Fishway Effectiveness Monitoring Report	Within 12 years of the effective date of the license

The licensee must file with the Commission documentation of any consultation with New Hampshire DES and Interior regarding the reports, and copies of any comments and recommendations made by the agencies. The Commission reserves the right to require changes to project operations or facilities based on the information contained in the reports and any other available information.

## (c) Requirement to Notify the Commission of Planned and Unplanned Deviations from License Requirements

New Hampshire DES's certification conditions E-8(a) and E-10(a) would allow the licensee to temporarily modify run-of-river operation under certain conditions. The Commission must be notified prior to implementing such modifications, if possible, or in the event of an emergency, as soon as possible, but no later than 10 days after each such incident. In addition, the licensee must file the incident report required by certification

condition E-10(b) within 45 days of the event.

(d) Requirement to File Amendment Applications.

Some of the conditions in Appendix A and Appendix B contemplate the New Hampshire DES and Interior requiring unspecified, long-term changes to project operation or facilities based on new information or results of monitoring or studies required by the certification, but do not appear to require Commission approval for such changes (e.g., modification of project operation to address water quality; or modification of fishways to improve effectiveness). Such changes may not be implemented without prior Commission authorization granted after the filing of an application to amend the license.

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

Article 403. Debris Management. The Fishway Operation and Management Plan required by Interior's section 18 prescription 12.4 (see Appendix B) must include procedures for sorting and properly disposing (i.e., recycling, downstream reintroduction, or landfill or other disposal) of debris that is removed from the project's fish passage facilities.

Article 404. Recreational Facilities. For the term of the license, the licensee must provide public access to and ensure adequate operation and maintenance of the following recreation facilities: (1) the Eastman Falls Recreation Area, which includes a picnic area and boat launch; (2) the portage trail; and (3) the Franklin Public Boat Ramp, which includes parking and picnic areas.

Article 405. Protection of Undiscovered Cultural Resources. If the licensee discovers previously unidentified cultural resources during the course of constructing, maintaining, or developing project works or other facilities at the project, the licensee must stop all land-clearing and land-disturbing activities in the vicinity of the resource and consult with the New Hampshire State Historic Preservation Office (New Hampshire SHPO) to determine the need for any cultural resource studies or measures. If no studies or measures are needed, the licensee must file with the Commission documentation of its consultation with the New Hampshire SHPO immediately.

If a discovered cultural resource is determined to be eligible for the National Register of Historic Places (National Register), the licensee must file for Commission approval a historic properties management plan (HPMP) prepared by a qualified cultural

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

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

Article 406. Protection of Cultural Resources. Prior to implementing any project modifications not specifically authorized by this license, including but not limited to maintenance activities, land-clearing or land-disturbing activities, or changes to project operation or facilities, the licensee must consult with the New Hampshire State Historic Preservation Officer (New Hampshire SHPO) to determine the effects of the activities and the need for any cultural resource studies or measures. If no studies or measures are needed, the licensee must file with the Commission documentation of its consultation with the entities above.

If a project modification is determined to affect an historic property, the licensee must file for Commission approval a Historic Properties Management Plan (HPMP). The HPMP must be prepared by a qualified cultural resource specialist after consultation with the New Hampshire SHPO. In developing the HPMP, the licensee must use the Advisory Council on Historic Preservation and the Federal Energy Regulatory Commission *Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Projects*, dated May 20, 2002. The HPMP must include the following items: (1) a description of each historic property; (2) a description of the potential effect on each historic property; (3) proposed measures for avoiding or mitigating adverse effects; (4) documentation of the nature and extent of consultation; and (5) a schedule for implementing mitigation and conducting additional studies.

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

Article 407. Use and Occupancy. (a) In accordance with the provisions of this article, the licensee must have the authority to grant permission for certain types of use

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

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

(c) The licensee may convey easements or rights-of-way across, or leases of project lands for: (1) replacement, expansion, realignment, or maintenance of bridges or



roads where all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project impoundment. No later than January 31 of each year, the licensee must file 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 or 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.

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

(H) 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

Project No. 2457-041

- 35 -

313(a) of the Federal Power Act, 16 U.S.C. § 825*l* (2012), and section 385.713 of the Commission's regulations, 18 C.F.R. § 385.713 (2016). The filing of a request for rehearing does not operate as a stay of the effective date of this license or of any other date specified in this order. The licensee's failure to file a request for rehearing must constitute acceptance of this order.

Terry L. Turpin  
Director  
Office of Energy Projects

**Form L-5**  
(October, 1975)

**FEDERAL ENERGY REGULATORY COMMISSION  
TERMS AND CONDITIONS OF LICENSE FOR CONSTRUCTED  
MAJOR PROJECT AFFECTING NAVIGABLE WATERS  
AND LANDS OF THE UNITED STATES**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

**Article 26.** Timber on lands of the United States cut, used, or destroyed in the construction and maintenance of the project works, or in the clearing of said lands, shall be paid for, and the resulting slash and debris disposed of, in accordance with the requirements of the agency of the United States having jurisdiction over said lands. Payment for merchantable timber shall be at current stumpage rates, and payment for young growth timber below merchantable size shall be at current damage appraisal values. However, the agency of the United States having jurisdiction may sell or dispose of the merchantable timber to others than the Licensee: Provided, That timber so sold or disposed of shall be cut and removed from the area prior to, or without undue interference with, clearing operations of the Licensee and in coordination with the Licensee's project construction schedules. Such sale or disposal to others shall not relieve the Licensee of responsibility for the clearing and disposal of all slash and debris from project lands.

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

**Article 28.** The Licensee shall interpose no objection to, and shall in no way prevent, the use by the agency of the United States having jurisdiction over the lands

of the United States affected, or by persons or corporations occupying lands of the United States under permit, of water for fire suppression from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license, or the use by said parties of water for sanitary and domestic purposes from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license.

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

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

**Article 31.** In the construction and maintenance of the project, the location and standards of roads and trails on lands of the United States and other uses of lands of the United States, including the location and condition of quarries, borrow pits, and spoil disposal areas, shall be subject to the approval of the department or agency of the United States having supervision over the lands involved.

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

**Article 33.** The Licensee shall make use of the Commission's guidelines and other recognized guidelines for treatment of transmission line rights-of-way, and shall clear

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

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

**Article 35.** If the Licensee shall cause or suffer essential project property to be removed or destroyed or to become unfit for use, without adequate replacement, or shall abandon or discontinue good faith operation of the project or refuse or neglect to comply with the terms of the license and the lawful orders of the Commission mailed to the record address of the Licensee or its agent, the Commission will deem it to be the intent of the Licensee to surrender the license. The Commission, after notice and opportunity for hearing, may require the Licensee to remove any or all structures, equipment and power lines within the project boundary and to take any such other action necessary to restore the project waters, lands, and facilities remaining within the project boundary to a condition satisfactory to the United States agency having jurisdiction over its lands or the Commission's authorized representative, as appropriate, or to provide for the continued operation and maintenance of nonpower facilities and fulfill such other obligations under the license as the Commission may prescribe. In addition, the Commission in its discretion, after notice and opportunity for hearing, may also agree to the surrender of the license when the Commission, for the reasons recited herein, deems it to be the intent of the Licensee to surrender the license.

**Article 36.** The right of the Licensee and of its successors and assigns to use or occupy waters over which the United States has jurisdiction, or lands of the United States under the license, for the purpose of maintaining the project works or otherwise, shall absolutely cease at the end of the license period, unless the Licensee has obtained a new license pursuant to the then existing laws and regulations, or an annual license under the terms and conditions of this license.