

Appendix 3

**FERC License 13318-003
(Application Question 3)**

167 FERC ¶ 62,077
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Swan Lake North Hydro LLC

Project No. 13318-003

ORDER ISSUING ORIGINAL LICENSE

(April 30, 2019)

1. On October 28, 2015, Swan Lake North Hydro LLC (Swan Lake North Hydro) filed, pursuant to Part I of the Federal Power Act (FPA),¹ an application for a license to construct, operate, and maintain the Swan Lake North Pumped Storage Hydroelectric Project No. 13318 (Swan Lake North Project or project). The 393.3-megawatt (MW) project will be located about 11 miles northeast of the city of Klamath Falls in Klamath County, Oregon. The project will occupy 730 acres of federal land administered by the U.S. Bureau of Land Management (BLM) and the U.S. Bureau of Reclamation (Reclamation).²
2. As discussed below, this order issues an original license for the Swan Lake North Project.

BACKGROUND

3. On December 18, 2015, the Commission issued a notice that was published in the *Federal Register*³ accepting the application for filing and setting February 16, 2016, as the deadline for filing motions to intervene and protests. Timely notices to intervene were filed by the Oregon Water Resources Department (Oregon WRD), Department of the Interior (Interior), and Oregon Department of Environmental Quality (Oregon DEQ) on February 3, 2016; February 12, 2016; and February 5, 2016, respectively.⁴ Timely

¹ 16 U.S.C. §§ 791(a)–825(r) (2012).

² The project is required to be licensed under section 23(b)(1) of the FPA, 16 U.S.C. § 817 (2012) because it will occupy federal land.

³ 80 *Fed. Reg.* 80349-80350 (Dec. 24, 2015).

⁴ Under Rule 214(a) of the Commission's Rules of Practice and Procedure, the three agencies became a party to the proceeding upon the timely filing of their notices of intervention. 18 C.F.R. § 385.214(a) (2018).

motions to intervene were filed by the Lester R. Sturm Trust, PacifiCorp, the Oregon Department of Fish and Wildlife (Oregon DFW), and Jespersen Swan Lake Inc. on February 4, 2016; February 11, 2016; February 16, 2016; and February 16, 2016, respectively.⁵ None of the intervenors oppose the project.

4. On December 20, 2017, the Commission issued a public notice that was published in the *Federal Register* indicating the application was ready for environmental analysis and setting February 18, 2018, as the deadline for filing comments, recommendations, terms and conditions, and prescriptions.^{6,7} Interior, BLM, Natural Resources Conservation Service, Oregon DFW, Oregon DEQ, Oregon WRD, Klamath Tribes, and five local residents filed comments and recommendations.

5. A draft environmental impact statement (EIS) was issued on August 22, 2018, analyzing the effects of the proposed project and the alternatives to it. Swan Lake North Hydro,⁸ Interior, U.S. Fish and Wildlife Service (FWS), Reclamation, U.S. Army Corps of Engineers, Environmental Protection Agency, Oregon DFW, Klamath County Commissioners, Klamath County Public Works, Oregon Wild, Economic Development for Central Oregon, Klamath County Economic Development Association, Citizens to Protect the Swan Lake Community, Klamath Tribes, and 28 local residents filed comments and recommendations on the draft EIS. A final EIS was issued on January 25, 2019. Interior, Environmental Protection Agency (EPA), Klamath Tribes, and Jacen Jespersen and Jacelle Neils filed comments on the final EIS.

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

PROJECT DESCRIPTION AND OPERATION

⁵ Timely, unopposed motions to intervene are granted by operation of Rule 214(c) of the Commission's Rules of Practice and Procedure. 18 C.F.R. § 385.214(c) (2018).

⁶ 82 *Fed. Reg.* 61286-61287 (Dec. 27, 2017).

⁷ 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) (2018). Because the 60-day filing deadline fell on a Sunday (i.e., February 18, 2018), followed by Presidents' Day (i.e., February 19, 2018), the filing deadline was extended until the close of business on Tuesday, February 20, 2018.

⁸ Swan Lake North Hydro's comments were filed by Rye Development.

A. Proposed Project Facilities

7. The Swan Lake North Project will consist of a new upper and lower reservoir, a high-pressure steel penstock connecting the upper reservoir with the powerhouse, a powerhouse with generating/pumping facilities, three low-pressure steel penstocks connecting the powerhouse to the lower reservoir, a transmission line and substation, and access roads to the lower and upper reservoirs.
8. The asphalt, concrete and geomembrane-lined upper reservoir will be created by a 7,972-foot-long, 58-foot-high earthen embankment and will have a surface area of 64.21 acres and a storage capacity of 2,568 acre-feet at a maximum surface elevation of 6,128 feet above mean sea level (msl). A bell-mouth intake fitted with a 38.6-foot-wide by 29.8-foot-long inclined screen and head gate will withdraw water from the upper reservoir and deliver it to the powerhouse through the 13.8-foot-diameter, 9,655-foot-long, high-pressure steel penstock that will be predominantly above-ground with a 14-foot-long buried segment.
9. The powerhouse will partially be buried and will be constructed adjacent to the lower reservoir and contain three 131.1-MW variable speed reversible pump-turbine units for a total installed capacity of 393.3 MW. Upon entering the powerhouse, the steel penstock will trifurcate to distribute flow to each pump-turbine unit, with flow distribution controlled by a spherical valve located at the intake of the pump-turbine units. The maximum hydraulic capacity of each turbine will be 3,230 cfs. Each turbine will discharge into the lower reservoir through a separate 9.8-foot-diameter, 1,430-foot-long steel low pressure penstock that will be predominantly aboveground with a 78-foot-long buried segment.
10. The asphalt, concrete and geomembrane-lined lower reservoir will be created by a 8,003-foot-long, 65-foot-high earthen embankment and will have a surface area of 60.14 acres and a storage capacity of 2,581 acre-feet at a maximum surface elevation of 4,457 feet msl. Each reservoir will be fitted with a drainage system designed to detect, collect, and monitor water leakage from the reservoirs. A 500-foot-long, riprap lined trapezoidal spillway will be built into the crest of the upper and lower reservoir embankments at an elevation of approximately 6,135 feet msl and 4,464 feet msl, respectively.
11. The 2,581 acre-feet of groundwater needed to initially fill the reservoirs and 357-acre-feet needed annually to make up for evaporative and potential seepage losses will be supplied by the local groundwater agricultural pumping system and delivered to the lower reservoir via an existing agricultural irrigation network.
12. Swan Lake North Hydro will improve approximately 10.7 miles of existing roads and construct 3.4 miles of new permanent road to access the lower reservoir, upper reservoir, laydown areas, powerhouse, substation and some of the project transmission

towers. Swan Lake North Hydro will also construct approximately 8.3 miles of temporary project access road to construct portions of the transmission line.

13. Power generated by the project will be transmitted from the powerhouse through a new adjacent fenced substation and then through a new 32.8-mile-long, 230-kilovolt aboveground transmission line to interconnect with the existing non-project Malin Substation.

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

B. Proposed Project Operation

15. The project will operate using off-peak energy (i.e., energy available during periods of low electrical demand) to pump water from the lower reservoir to the upper reservoir and generate energy by passing the water from the upper to the lower reservoir through generating units during periods of high electrical demand. Generation timing will be based on on-peak/off-peak power considerations, the need to augment the production of renewable wind and solar power generation, or to provide ancillary power services.

16. The project is designed to pump approximately 2,110 acre-feet of water from the lower reservoir to the upper reservoir in approximately 11.5 hours; it will provide a maximum of 9.5 hours of generation per day at maximum generating output. Under typical operations, a full pumping/generation cycle will take about 30 hours (1.2 days) to complete. The maximum water level fluctuation in the upper reservoir will be 44 feet, and in the lower reservoir, it will be 50 feet.

17. The project, as licensed herein, will generate an average of 1.187 gigawatt-hours annually.

C. Project Boundary

18. The proposed project boundary encloses the upper and lower reservoir, high-pressure steel penstock, powerhouse, low-pressure steel penstocks, transmission line corridor and substation, and the access roads. The total area within the project boundary is 1,040 acres, of which 730 acres are federal land and 310 acres are state and private land.

D. Proposed Environmental Measures

19. To minimize erosion and sedimentation during construction, Swan Lake North Hydro proposes to develop an erosion control plan and to construct the portions of the upper reservoir access road that cross intermittent waterbodies in the dry season.

20. To prevent the release of oil and hazardous materials during project construction and operation, Swan Lake North Hydro proposes to develop and implement a hazardous substances spill prevention and cleanup plan.
21. To ensure that dissolved solids, nutrients, and heavy metals in the project reservoirs do not rise to concentrations that could adversely affect wildlife, Swan Lake North Hydro proposes to develop a reservoir water quality monitoring and management plan.
22. To re-establish native vegetation on disturbed land and reduce the spread and introduction of noxious weeds and invasive plants, Swan Lake North Hydro proposes to prepare a final Revegetation and Noxious Weed Management Plan⁹ in consultation with the resource agencies.
23. To minimize disturbances to sensitive plants during construction, Swan Lake North Hydro proposes to conduct preconstruction surveys, and if sensitive plants are found, implement protection measures.
24. To mitigate for the permanent and long-term disturbance of wildlife habitat due to project construction, Swan Lake North Hydro proposes to prepare a final Wildlife Habitat Restoration and Enhancement Plan (WHREP)¹⁰ in consultation with resource agencies that includes improving 917 acres of wildlife habitat by: installing/repairing two waterers for big game; protecting existing habitats from development by acquiring or obtaining a long-term lease of 585 acres of conservation lands; and funding BLM to thin 232 acres of western juniper and mixed conifer forest to improve the value of sagebrush habitat on Bryant Mountain.
25. To minimize disturbances to nesting bald and golden eagles during project construction, Swan Lake North Hydro proposes to develop an eagle conservation plan that includes: prohibiting blasting and helicopter use within 0.5 mile of an active eagle nest between January 1 and August 15; consulting with resource agencies before conducting high-decibel activities; and protecting an historic bald eagle nest tree near the lower reservoir on Grizzly Butte.
26. To protect birds from disturbance and minimize the risk of collision and electrocution from the project's transmission line, Swan Lake North Hydro proposes to develop an avian protection plan that includes: conducting two preconstruction surveys

⁹ A draft Revegetation and Noxious Weed Management Plan was filed with the license application on October 28, 2015.

¹⁰ A draft WHREP was filed on July 26, 2016.

between May 1 and July 31 for raptors (two breeding seasons) and birds of conservation concern (one breeding season); prohibiting ground-disturbing and vegetation-clearing activities in the reservoir areas between April 1 and July 15 to protect nesting songbirds; designing transmission structures to prevent avian electrocution and collision to the extent practicable, including installing flight diverters in five areas with a high risk of avian collisions; adjusting lighting systems to minimize disruption of nighttime foraging; avoiding the removal of shrubs, grasses, and forbs under the transmission line; marking the project reservoir fencing with vinyl strips and/or reflective tape to prevent avian collisions; and monitoring of the transmission line and reservoir fencing for bird collisions.

27. To minimize project effects on deer and other wildlife, Swan Lake North Hydro proposes to develop an ungulate protection plan that includes: fencing the project reservoirs to prevent drownings; daily monitoring of reservoir fencing to ensure it is properly maintained; applying dust suppressants to ungraded roads during construction to reduce dust clouds and minimize degrading the quality of adjacent habitats; decommissioning temporary construction access roads to reduce disturbance to wildlife and their habitats from unauthorized off-road vehicle use; designing construction trenches to reduce potential entrapment hazards; creating wildlife crossings under the penstock to minimize impediments to wildlife movement; avoiding construction within the transmission corridor during wildlife winter range use; enforcing vehicle speed limits on all access roads to reduce collisions; and managing portions of the transmission line right-of-way for wildlife.

28. To enhance recreation opportunities at the project and ensure public safety during construction, Swan Lake North Hydro proposes to: (1) develop an interpretive facility that includes educational signage and a staging area for periodic guided tours of the hydroelectric facility; (2) develop a public safety plan, that includes providing emergency vehicle access, preventing and monitoring access to the reservoirs, and working with the Oregon Parks and Recreation Department to ensure the safety of hikers using the Oregon, California, and Eastern Woods Line State Trail (OC&E Trail) during project construction; and (3) cooperate with BLM to support any future efforts to design and construct BLM's proposed Swan Lake Rim Trail.

29. To reduce the visual contrast of the project facilities and construction activities on the landscape, Swan Lake North Hydro proposes to: (1) use locally quarried rock for the outer berm faces of the proposed reservoirs to match the colors of the surrounding landscape; (2) plant vegetation to screen project facilities; (3) paint the powerhouse, maintenance structures, and appurtenant facilities with colors that match the surrounding landscape and dull the surfaces of facilities that cannot be painted; (4) use special lamps, covers, timers, and motion sensors on outdoor lighting to minimize light pollution; (5) install mono-pole-type transmission line structures instead of lattice-types structures; and (6) use weathering COR-TEN-type steel that weathers to a natural rust color over

time for the transmission towers and use conductors with non-specular materials where possible.

30. To minimize the effects of construction-related traffic on local roads and prevent unauthorized recreational off-highway vehicle access to public land, Swan Lake North Hydro proposes to develop a comprehensive traffic safety plan.

31. To protect cultural resources, Swan Lake North Hydro proposes to develop a historic properties management plan (HPMP).

SUMMARY OF LICENSE REQUIREMENTS

32. As summarized below, the license requires the measures described above with some modifications and additions.

33. To effectively monitor water quality in the reservoirs, the license requires Swan Lake North Hydro to include in its proposed reservoir water quality monitoring plan: (1) specific methods to annually monitor levels of dissolved solids, nutrients, and heavy metals in the project reservoirs; and (2) a schedule for annually reporting the monitoring results and any proposed measures for addressing deteriorating water quality based on the monitoring results.

34. To ensure that the proposed revegetation and noxious weed control measures are effective, the license requires Swan Lake North Hydro to modify the proposed Revegetation and Noxious Weed Management Plan to specify: (1) proposed seed mixes and plant species to include wild celery and other plants important in tribal customs if practicable (i.e., seeds are available and site conditions would support their use); (2) proposed planting densities and methods; (3) fertilization and irrigation requirements; (4) monitoring protocols; and (5) criteria for measuring the success of revegetation efforts.

35. To protect birds, the license requires Swan Lake North Hydro to modify its proposed avian protection plan to: (1) include an additional preconstruction survey in February to ensure that early nesting raptors are identified; (2) expand the preconstruction survey area from 0.25 mile to 0.5 mile around project features where no blasting would occur to include known nesting territories within the search area that may be potentially disturbed by construction noise and activity; (3) adjust the proposed spatial and temporal restrictions for construction activities as needed based on site-specific environmental conditions and nesting status; (4) install flight diverters on the section of transmission line between Hopper Hill and the temporary access road in Swan Lake Valley; (5) include quantifiable thresholds for determining when additional measures would be needed to address high-mortality areas based on the proposed transmission line monitoring; and (6) include procedures for documenting and reporting bird fatalities and injuries.

36. To protect roosting bald and golden eagles, the license requires Swan Lake North Hydro to include in the proposed eagle conservation plan the following additional measures: (1) two preconstruction winter roost surveys for two winter seasons; and (2) include helicopter flight paths in the preconstruction surveys for eagle nests and winter roosts.

37. To ensure that the proposed wildlife habitat measures achieve their goals and objectives, the license requires Swan Lake North Hydro to include in its proposed WHREP: (1) a maintenance program for the proposed big game waterers; (2) a management plan for the conservation land to be acquired that identifies the parcels, the criteria used to select the parcels, and the habitat improvements that would be implemented on each parcel; (3) a provision to thin juniper and mixed conifer forest on 282 acres instead of 232 acres; (4) a provision to bring acquired lands into the project boundary; and (5) an implementation schedule.

38. To protect deer and other wildlife, the license requires Swan Lake North Hydro to include in the ungulate protection plan: (1) installation of a big game waterer near the upper reservoir and one near the lower reservoir; and (2) a schedule for inspecting and making any necessary fence repairs.

39. To protect wildlife, the license requires Swan Lake North Hydro to notify Oregon DFW, FWS, and BLM (if its lands are involved) within 24 hours (six hours for state or federal listed species) in the event of emergencies or unanticipated circumstances in which wildlife are being endangered, harmed, or killed by the project or its operation; implement corrective measures required by the agencies to the extent the measures don't conflict with license requirements; and inform the Commission within 10 days after each occurrence and specify the nature of the occurrence and corrective measures taken.

40. To prevent wildfires, the license requires Swan Lake North Hydro to develop a fire prevention plan, including the removal of slash by means other than burning.

41. To protect and enhance recreation opportunities and facilitate Commission administration of the license, the license requires Swan Lake North Hydro to: (1) file conceptual drawings of the proposed interpretive facility for Commission approval and a map showing the location of the interpretive facility, and (2) include in the proposed public safety plan specific measures to minimize disrupting the use of the OC&E Trail during construction and to protect hikers from any hazards related to construction activities.

42. To minimize disruptions to quarry operations and farming during construction of the transmission line, the license requires Swan Lake North Hydro to develop: (1) a Harpold Dam and Quarry coordination plan, and (2) an agricultural operations coordination plan that considers pole spacing and installation timing.

43. To minimize the effects of project construction traffic on area roads, the license requires Swan Lake North Hydro to include in the proposed traffic safety plan details explaining how: (1) work shifts will be scheduled; (2) the public will be notified of traffic pattern changes; and (3) Swan Lake North Hydro will coordinate with Klamath County Public Works to minimize disrupting roadway and drainage facility maintenance and operation.

44. To control fugitive dust and vehicle emissions during project construction, the license requires Swan Lake North Hydro to develop an air quality control plan.

WATER QUALITY CERTIFICATION

45. Under section 401(a)(1) of the Clean Water Act (CWA),¹¹ the Commission may not issue a license authorizing the construction or operation of a hydroelectric project unless the state water quality certifying agency either has issued water quality certification for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year. Section 401(d) of the CWA provides that the certification shall become a condition of any federal license that authorizes construction or operation of the project.¹²

46. On April 10, 2018, Swan Lake North Hydro requested Oregon Department of Environmental Quality (Oregon DEQ) concurrence that a 401 water quality certification for the project is not required because the project will not withdraw from or discharge into surface waters. On June 19, 2018, Oregon DEQ agreed that a water quality certification is not required for the project.¹³

COASTAL ZONE MANAGEMENT ACT

47. Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA),¹⁴ 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.

¹¹ 33 U.S.C. § 1341(a)(1) (2012).

¹² *Id.* § 1341(d).

¹³ *See* Swan Lake North Hydro filing on June 19, 2018 in Docket No. P-13318.

¹⁴ 16 U.S.C. § 1456(c)(3)(A) (2012).

48. The project will not be located within the state-designated coastal management zone, which extends inland to the crest of the Cascade Mountain range. The project will be located east of the Cascade Mountain Range, will be at least 10 miles northeast of the Klamath River, and will use groundwater taken from an existing irrigation network. Therefore, the project will not affect Oregon's coastal resources. Because the project will have no effect on coastal resources, it is not subject to Oregon's coastal zone program review, and no consistency certification is required.

SECTION 18 FISHWAY PRESCRIPTION

49. Section 18 of the FPA¹⁵ 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.

50. No fishway prescription or reservation of authority to prescribe fishways was filed under section 18.

THREATENED AND ENDANGERED SPECIES

51. Section 7(a)(2) of the Endangered Species Act of 1973¹⁶ requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species, or result in the destruction or adverse modification of their designated critical habitat.

52. Several federally listed species have the potential to occur in the project area. Species listed as endangered include the gray wolf, Lost River sucker, shortnose sucker, Applegate's milk-vetch, and Greene's tuctoria. Three other species are listed as threatened: the northern spotted owl, yellow-billed cuckoo, and slender Orcutt grass. The proposed threatened North American wolverine and the candidate species whitebark pine may also be present in the project area. There are no critical habitats in the project area.

53. In the final EIS,¹⁷ staff determined that the project would not affect the Lost River sucker or the Shortnose sucker because neither species is found in the project vicinity and construction and operation would not alter the hydrology of the Lost River. Therefore, no further action under the ESA is required for these species.

¹⁵ 16 U.S.C. § 811 (2012).

¹⁶ *Id.* § 1536(a).

¹⁷ Final EIS at 106-107.

54. In the final EIS,¹⁸ staff also determined that the project would not affect the Applegate's milk-vetch, Greene's tuctoria, slender Orcutt grass, yellow-billed cuckoo, North American wolverine, or whitebark pine because these species are not known to occur in the project vicinity and suitable habitat for these species does not exist in the project area. Additionally, Swan Lake North Hydro proposes to survey for sensitive plant species prior to construction, and to avoid or minimize effects to sensitive plants if they are found during preconstruction surveys. Therefore, no further action under the ESA is required for these species.

55. Northern spotted owls occur north of the project within the old growth forested habitat of the Fremont-Winema National Forest. However, the known designated home range territories for the northern spotted owl are more than two miles from the project boundary. In the final EIS,¹⁹ staff determined that project construction and operation would not affect northern spotted owls because they are unlikely to use the early to mid-seral stage forested areas on Swan Lake Rim plateau where construction activities will occur, and that owls in known territories north of the project would be far enough away so as to not be affected by noise from project construction or operation activities. Therefore, no further action under the ESA is required for the northern spotted owl.

56. The project borders potential gray wolf habitat, and at least one wolf is known to have been within the project vicinity in recent years. In the final EIS,²⁰ staff determined that noise and human activity during project construction and operation may cause wolves and their prey base to avoid the project site for short periods of time, but such localized and short-term effects would be insignificant given the wolf's rarity and transitory use of the project area. In addition, the mitigation measures proposed by the licensee and recommended by staff to benefit big game winter range habitat may benefit the wolf's prey base. Staff, therefore, concluded that issuing a license for the Swan Lake North Hydro Project with staff recommended measures, may affect, but would not likely adversely affect, the gray wolf. Staff requested FWS concurrence on August 24, 2018. FWS concurred with this determination in a letter filed on October 9, 2018.

¹⁸ Final EIS at 108-110.

¹⁹ Final EIS at 109.

²⁰ Final EIS at 107-108.

NATIONAL HISTORIC PRESERVATION ACT

57. Under section 106 of the National Historic Preservation Act (NHPA)²¹ and its implementing regulations,²² federal agencies must take into account the effect of any proposed undertaking on properties listed or eligible for listing on the National Register of Historic Places (defined as historic properties) and afford the Advisory Council on Historic Preservation (Advisory Council) a reasonable opportunity to comment on the undertaking. This process 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.

58. To satisfy these responsibilities, the Commission executed a Programmatic Agreement (PA) with the Advisory Council and Oregon SHPO and invited Swan Lake North Hydro, BLM, Reclamation, Klamath Tribes, and Modoc Tribe to concur with the stipulations of the PA. BLM, Reclamation, Klamath Tribes, and Swan Lake North Hydro concurred. The PA requires the licensee to prepare and implement a revised Historic Properties Management Plan (HPMP) for the term of any license issued for this project. Execution of the PA demonstrates the Commission's compliance with section 106 of the NHPA. Article 417 requires the licensee to implement the PA and to file its HPMP with the Commission within one year of license issuance.

PACIFIC NORTHWEST ELECTRIC POWER PLANNING AND CONSERVATION ACT

59. In 1980, Congress enacted the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act).²³ This act created the Northwest Power Planning Council (now known as the Northwest Power and Conservation Council) and directed it to develop a Columbia River Basin Fish and Wildlife Program (Program). The Program is to protect, mitigate, and enhance fish and wildlife resources affected by the development and operation of hydroelectric projects on the Columbia River and its tributaries, while assuring the Pacific Northwest an adequate, efficient, economical, and reliable power supply.²⁴ Section 4(h)(11)(A) of the Northwest Power Act²⁵ provides that

²¹ 54 U.S.C. § 300101 et seq. (Pub. L. No. 113-287, 128 Stat. 3187, Dec. 19, 2014).

²² 36 C.F.R. Part 800 (2018).

²³ 16 U.S.C. §§ 839(b) *et seq.* (2012).

²⁴ *Id.* § 839(h)(5).

federal agencies operating or regulating hydroelectric projects within the Columbia River Basin shall exercise their responsibilities to provide equitable treatment for fish and wildlife resources with other purposes for which the river system is utilized and shall take the Council's Program into account "at each relevant stage of decision-making processes to the fullest extent practicable."

60. As part of its Program, the Council has designated over 40,000 miles of river in the Pacific Northwest as not being suitable for hydroelectric development ("protected area"). Because the project will be a closed-loop system that will not be hydraulically connected to any surface waters, the project will not be located on or develop a protected area. However, the transmission line will cross the Lost River, which is a protected reach designated for wildlife.

61. To mitigate harm to fish and wildlife resources, the Council has adopted specific provisions to be considered in the licensing or relicensing of non-federal hydropower projects (Appendix F of the Program). The license requires measures to minimize avian collisions, reduce effects on mule deer and other wildlife, revegetate disturbed habitat with native vegetation, and manage the transmission line corridor to benefit wildlife that will minimize effects of the transmission line on the resources for which the Lost River reach was designated and thus are consistent with the protected area provisions of the Program. Further, Article 409 reserves to the Commission the authority to require further alterations in project structures and operations to take into account, to the fullest extent practicable, the applicable provisions of the Program.

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

62. Section 10(j)(1) of the FPA²⁶ 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 Act²⁷ to "adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including spawning grounds and habitat)" affected by the project.

63. In response to the December 20, 2017 public notice that the project was ready for environmental analysis, Oregon DFW filed 17 recommendations under section 10(j).²⁸

²⁵ *Id.* § 839(h)(11)(A).

²⁶ *Id.* § 803(j)(1).

²⁷ *Id.* §§ 661 *et seq.*

²⁸ Oregon DFW filed its recommendations on February 20, 2018. Several
(continued ...)

Ten of the recommendations are outside the scope of section 10(j) and are discussed in the next section. The license includes conditions consistent with the seven remaining recommendations that are within the scope of section 10(j), as follows: (1) develop a reservoir water quality monitoring plan (Article 401); (2) develop a wildlife habitat restoration and enhancement plan²⁹ (Article 403); (3) develop an avian protection plan (Article 405); (4) develop an eagle conservation plan (Article 406); (5) develop an ungulate protection plan (Article 407); (6) develop a revegetation and noxious weed management plan (Article 404); and (7) include monitoring strategies and protocols for all resource plans (Articles 401 and 403-407).

64. If the Commission believes that any such recommendation may be inconsistent with the purposes and requirements of Part I of the FPA or other applicable law, section 10(j)(2) requires the Commission and the agencies to attempt to resolve any such inconsistency, giving due weight to the recommendations, expertise, and statutory responsibilities of such agencies.³⁰ If the Commission still does not adopt a recommendation, it must explain how the recommendation is inconsistent with Part I of the FPA or other applicable law and how the conditions imposed by the Commission adequately and equitably protect, mitigate damages to, and enhance fish and wildlife resources.

65. In the draft EIS,³¹ Commission staff made an initial determination that Oregon DFW's recommendation to install fencing around the reservoirs to exclude small animals may be inconsistent with the comprehensive planning standard of section 10(a)(1) and the public interest standard of section 4(e) of the FPA.³²

recommendations contain multiple parts. Two of Oregon DFW's recommendations (3(B) and 3(C)) are redundant in that both recommend the development and implementation of a final wildlife habitat restoration and enhancement plan for mitigating permanent losses to wildlife habitat; therefore, it is counted only once.

²⁹ Recommendation 3(B) for a wildlife habitat restoration and enhancement plan also includes establishing a fund to implement the plan, which is not within the scope of section 10(j) and is addressed in the next section.

³⁰ 16 U.S.C. § 803(j)(2) (2012).

³¹ Draft EIS at 214-223.

³² Oregon DFW's small animal fencing was to be included as part of the development of the ungulate protection plan.

66. By letter dated August 24, 2018, Commission staff advised Oregon DFW of its preliminary determination and attempted to resolve the inconsistency. On October 31, 2018, Oregon DFW filed a letter requesting a section 10(j) meeting to resolve the inconsistency, which was held via teleconference on December 6, 2018. The inconsistency could not be resolved.

67. Oregon DFW's recommended fencing is intended to prevent small animals (e.g., reptiles, amphibians, small mammals) from being exposed to reservoir water treated with algaecides or other chemicals, reduce the risk of predation as small animals congregate and pass through the reservoir fences, and prevent the risk of drowning. In the EIS,³³ staff reasoned that there are no federally threatened or endangered small animal species or other sensitive species in the project vicinity that might warrant such protection, and there is no information in the record that indicates the reservoirs would cause elevated small animal mortality. Further, there is nothing in the record to indicate that Swan Lake North Hydro would treat the project reservoirs or that reservoir water quality will degrade sufficiently over time to levels harmful to wildlife. Nonetheless, staff's recommended water quality monitoring plan will provide a means for identifying if and when water quality conditions warrant additional protective measures. At that time, appropriate measures could be proposed to address those effects. Therefore, there is no current basis for requiring small animal fencing.³⁴

68. The license requires the licensee to develop and implement various measures to protect wildlife, including revegetation and noxious weed control (Article 404), protecting and enhancing over 900 acres of wildlife habitat (Article 403), installing large animal fencing (Article 407), and monitoring reservoir water quality (Article 401).

69. For the above reasons, this license does not include, Oregon DFW's recommendation for small animal fencing because it is inconsistent with the substantial evidence standard of section 313(b) of the FPA. In accordance with section 10(j)(2)(B) of the FPA, the measures required by the license, including Articles 401 and 403-407 as discussed above, will adequately and equitably protect, mitigate damages to, and enhance fish and wildlife resources affected by this project.

³³ Final EIS at 84.

³⁴ Final EIS at 251.

SECTION 10(a)(1) OF THE FPA

70. Section 10 (a)(1) of the FPA³⁵ requires that any project for which the Commission issues a license be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce; for the improvement and utilization of waterpower development; for the adequate protection, mitigation, and enhancement of fish and wildlife; and for other beneficial public uses, including irrigation, flood control, water supply, recreation, and other purposes.

71. The licensee's proposal, recommendations submitted by Oregon DFW not considered under section 10(j), and the recommendations and comments submitted by Interior, BLM, the Klamath Tribes, EPA, and several members of the public are considered below under the broad public interest standard of section 10(a)(1) of the FPA.

A. Oregon DFW Recommendations

72. Oregon DFW made 10 recommendations under section 10(j) that are not specific measures to protect, mitigate damages to, or enhance fish and wildlife. Consequently, they are not considered under section 10(j) of the FPA, but rather under the broad public-interest standard of section 10(a)(1).³⁶ These measures include consultation and reporting requirements for the various resource management plans, establishing a terrestrial resource working group, developing a project operation plan, establishing an agreement between the licensee, Oregon DFW, and FWS to address avian-power line issues, allowing state and federal regulatory agencies access to and across project lands and works to inspect facilities and records, and notifying Oregon DFW when there is a wildlife emergency such as the occurrence of wildlife injuries or mortalities.

1. Consultation Requirements

73. For each of the resource management plans (e.g., WHREP, ungulate protection plan, avian protection plan, eagle protection plan, vegetation and noxious weed management plan, water quality monitoring plan), Oregon DFW recommends that Swan Lake North Hydro file, by March 31 of each year of the license term, an annual report that describes the actions taken during the prior year, the activities planned for the next year, and any monitoring results. The reports are to be prepared in consultation with the terrestrial resources working group, and allow members 30 days to review and comment

³⁵ 16 U.S.C. § 803(a)(1) (2012).

³⁶ *Id.*

on the report before filing with the Commission. In its license application, Swan Lake North Hydro only proposed to file annual reports during project construction and for the first five years of project operation to describe activities undertaken in the WHREP and the revegetation and noxious weed management plan. In the final EIS,³⁷ staff recommended, and the license requires, filing the annual reports as recommended by Oregon DFW because actions within each of the plans are to be taken throughout the term of the license and such reporting would facilitate Commission oversight (Articles 401 and Articles 403 – 407).

74. Oregon DFW also recommends that Swan Lake North Hydro provide Oregon DFW and other state, federal and tribal stakeholders at least 60 days to review and comment on the various draft plans before filing with the Commission for approval. Staff found this review period excessive,³⁸ therefore the license requires providing consulted entities 30 days to review and comment on the draft plans.

75. The terrestrial working group recommended by Oregon DFW would consist of Swan Lake North Hydro's environmental coordinator/consultants, and to the extent of their interest in participating, representatives from Oregon DFW, FWS, and BLM. Oregon DFW believes that the formation of a terrestrial working group (with annually-scheduled meetings) would be an efficient way to help draft and finalize resource protection plans and annual reports, and to assess how well things are working under the license. While Commission staff did not oppose such consultation efforts, it did not recommend establishment of the working group as a license requirement³⁹ because the Commission cannot require an entity to participate in such working groups. Staff reasoned that if agency participation is not required, then there is little value in making the establishment of the working group a license requirement. Further, Swan Lake North Hydro proposes, and the license requires, that the resource plans be developed in consultation with interested resource agencies, which should be sufficient to ensure that the interests of the agencies are considered in developing and implementing the resource plans.

2. Operation Compliance Monitoring

76. Oregon DFW recommends that Swan Lake North Hydro develop a project operation plan. As discussed in the final EIS,⁴⁰ Commission staff did not recommend

³⁷ Final EIS at 238.

³⁸ Final EIS at 237.

³⁹ Final EIS at 242-243.

⁴⁰ Final EIS at 243.

the plan because as a closed-loop pumped storage project, there are no constraints on its operations that would need to be monitored to ensure compliance with the license requirements (e.g., minimum flows or reservoir fluctuating limits). Therefore, the plan is unnecessary.

3. Avian Power Line Agreement

77. Oregon DFW recommends Swan Lake North Hydro enter into an agreement with Oregon DFW and the FWS to address avian-power line issues. Oregon DFW believes that, given the long term nature of any license, a formal agreement is needed to promote cooperation between the licensee and the signatory agencies to address bird collisions and electrocutions. Staff did not recommend this measure⁴¹ because the Commission cannot require entities to sign such an agreement. The consultation requirements in the avian protection and eagle conservation plans will achieve the same purpose.

4. Inspection of Facilities and Records

78. Oregon DFW recommends that Swan Lake North Hydro be required to allow state and federal regulatory agencies access to and across project lands and works for the purpose of inspecting facilities and records, including monitoring data, to monitor compliance with the license. The licensee would allow such inspections upon agencies providing the licensee with reasonable notice of such inspections and agreeing to follow the licensee's standard safety and security procedures when engaged in such inspections.

79. Standard L-Form license Article 4 already requires Swan Lake North Hydro to allow 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. Article 410 extends the same rights to state agencies. However, ensuring compliance with license is the Commission's responsibility. Staff also recommended in the final EIS,⁴² and Article 410 requires Swan Lake North Hydro to provide Oregon DFW with monitoring data, for information purposes, within 15 days of the agency's written request for the data. In most cases, the data would be readily available, and therefore would not be an undue burden for the licensee.

5. Agency Notification of Emergency Situations

80. Oregon DFW recommends that in an emergency situation where wildlife are being killed, harmed, or endangered by any of the project facilities or as a result of project operation, the licensee immediately take appropriate action to prevent further

⁴¹ Final EIS at 243.

⁴² Final EIS at 238.

loss, notify the nearest Oregon DFW office within 24 hours (6 hours for state or federal ESA listed species) of an occurrence, and comply with any corrective measures required by the agency to the extent such measures do not conflict with the conditions of any license. Lastly, Oregon DFW recommends that the applicant notify the Commission as soon as possible but no later than 10 days after each occurrence and inform the Commission as to the nature of the occurrence and restorative measures taken.

81. In the EIS,⁴³ staff supported these notification requirements but also recommend notifying the FWS and BLM if the incident involves their respective lands (Article 411). While staff recommended that Swan Lake North Hydro take immediate reasonable actions to remediate the situation, any corrective actions that would result in long-term changes to project facilities or operations will require prior Commission approval. To facilitate Commission administration of the license, Article 411 requires Swan Lake North Hydro to file a report with the Commission within 30 days that includes: (1) the nature and chronology of the event, (2) the circumstances that led up to the event, (3) any observed or reported adverse environmental impacts resulting from the event, (4) any corrective actions taken, and (5) any recommended measures to reduce the likelihood of similar events occurring in the future. These notification procedures should have a minor cost.

B. Hazardous Substances Spill Prevention and Cleanup

82. Swan Lake North Hydro proposes to develop and implement a hazardous substances spill prevention and cleanup plan that would include the following preliminary best management practices (BMPs): (1) establish fueling areas at locations that avoid or minimize potential spills into waterbodies, (2) inspect vehicles and equipment for leaks, (3) store hazardous materials in protective containers, (4) stop and clean up spills immediately, and (5) provide employee training to prevent and respond to spills. In the final EIS,⁴⁴ staff recommended and the license requires (Article 402) the development and implementation of a hazardous substances spill prevention and cleanup plan to protect surface and groundwater resources.

C. Reservoir Water Quality Monitoring

83. As noted above, Swan Lake North Hydro proposes to develop a reservoir water quality monitoring plan to ensure that water quality in the reservoirs does not adversely affect wildlife. In the final EIS,⁴⁵ staff concluded that the proposed plan lacked

⁴³ Final EIS at 238-239.

⁴⁴ Final EIS at 49.

⁴⁵ Final EIS at 231-232.

sufficient detail and recommended that the plan include (1) specific methods to annually monitor levels of dissolved solids, nutrients, and heavy metals in the project reservoirs; and (2) a schedule for annually reporting the monitoring results and any proposed measures for addressing deteriorating water quality based on the monitoring results. Article 401 requires that the water quality monitoring plan include these measures to facilitate Commission administration of the license and effective plan implementation. Including these measures would not have a significant cost because Swan Lake North Hydro already proposes to develop the plan in consultation with the Oregon DFW and Oregon DEQ.

D. Wildlife Habitat Restoration and Enhancement

84. To mitigate for the permanent and long-term disturbance of about 306 acres of important big game winter range and other wildlife habitat due to project construction, Swan Lake North Hydro proposes to prepare a final WHREP in consultation with resource agencies. The proposed plan includes improving 917 acres of wildlife habitat by: installing/repairing two waterers for big game (50 acres of mitigation value); retaining an access easement across a private road and making permanent improvements to a temporary access road to provide BLM access to its land for habitat improvements (50 acres of mitigation value); acquiring or obtaining a long-term lease of 585 acres of land for big game and other wildlife habitat conservation, and funding BLM to thin 232 acres of western juniper and mixed conifer forest to improve the value of sagebrush habitat on Bryant Mountain. Oregon DFW supports the measures in the WHREP and recommends that Swan Lake North Hydro establish a fund to implement the measures in the plan. In the final EIS, staff also recommended the plan, but with the modifications discussed below.

1. Acquisition of Conservation Land

85. In the final EIS,⁴⁶ staff concluded that acquiring and preserving 585 acres of conservation land alone would not likely provide the intended benefits because staff could not identify threats to nearby lands (e.g., development or agricultural conversion) such that the habitat value would be lost if conservation easements were not in-place. To adequately mitigate for permanent and long-term habitat disturbance due to project construction, staff recommended that the 585 acres of conservation land be located near the project, contain similar habitat values as the habitat being lost, and be improved and managed for mule deer and other wildlife. Developing the management plans for the acquired parcels will increase the capital cost of the plan by an estimated \$50,000. Implementation costs for the conservation land management plans will depend on the site-specific management needs and goals. Therefore, Article 403 requires that the

⁴⁶ Final EIS at 232.

WHREP include a description of the 585 acres of wildlife conservation land to be purchased or acquired under a long-term lease, a map showing the parcels, an explanation as to how the parcels were selected based on their proximity to the project site and their habitat values, specific management plans for the parcels, and a schedule for acquisition of the parcels and implementation of the management plans.⁴⁷ Because the licensee will be responsible for managing these lands and because they will continue to serve project purposes for the life of the license, Article 403 also requires that the land be brought into the project boundary.

2. Operation and Maintenance of the Waterers

86. To ensure that the waterers continue to provide their intended benefits, staff recommended, and Article 403 requires, that the WHREP include procedures and a schedule for inspecting and maintaining the waterers.⁴⁸

3. Funding

87. Although it does not specify the amount, Oregon DFW recommends that the licensee establish a fund for the purpose of implementing the WHREP. Article 403 requires the licensee to develop the WHREP, in consultation with Oregon DFW, the Klamath Tribes, BLM, and the FWS. Article 403 further requires the licensee to file the WHREP for Commission approval, and implement the WHREP upon receiving approval. As the formulation and implementation of the WHREP are required by the terms of the license, the Commission's authority to enforce the conditions of the license, including environmental mitigation and enhancement measures,⁴⁹ is sufficient to ensure timely implementation of the WHREP. Therefore, establishment of a mitigation fund to accomplish this is not necessary.

⁴⁷ Because of the Klamath Tribes' interests and expertise with culturally important wildlife and plants in the area, Articles 403 through 408 require Swan Lake North Hydro to consult with the Klamath Tribes in preparing the final WHREP, revegetation and noxious weed management plan, avian protection plan, eagle conservation plan, ungulate protection plan, and sensitive plant protection plan. The Klamath Tribes' assistance will help inform the development of the plans.

⁴⁸ The ungulate protection plan also requires the installation and operation of two waterers near the project reservoirs. The maintenance procedures and schedule should cover these waterers as well.

⁴⁹ *Erie Boulevard Hydropower, L.P.*, 98 FERC ¶ 61,143, p. 61,430-61,431 (2002).

88. Oregon DFW supports Swan Lake North Hydro's proposal to fund BLM's thinning of 232 acres of western juniper and mixed conifer forest on Bryant Mountain. As explained in the final EIS,⁵⁰ staff did not recommend this as a funding measure because the Commission could not be assured of when or if the measures would be undertaken by BLM, as the Commission only has authority over its licensees. Instead, staff recommended, and Article 403 of the license requires, that Swan Lake North Hydro implement the juniper and mixed conifer forest thinning on 232 acres although this could mean contracting with BLM to undertake the work.

4. BLM Administrative Access

89. As part of its draft WHREP, Swan Lake North Hydro proposes to: (1) attempt to secure and transfer to BLM administrative access rights to an existing road across private lands, and (2) retain and convert a 0.9-mile-long segment of the new transmission line's construction access road into a permanent road for exclusive use by BLM personnel and the licensee. BLM would use this 0.9-mile segment to access BLM lands and implement habitat improvement projects. The improved road would be turned over to BLM after construction, and any maintenance costs associated with the road or future improvements would be borne by BLM. In return for the access, the project would be credited for 50 acres of big-game habitat improvements toward the 917 acres that were to be improved or protected under the WHRMP to mitigate for the loss of 306 acres of big-game habitat.

90. In the final EIS,⁵¹ staff did not recommend this measure because: (1) it is unclear what wildlife habitat improvements would be undertaken on BLM lands; (2) how such improvements would mitigate project effects on wildlife; and (3) if and when the habitat improvements would take place. Because there is no clear relationship between BLM's recommended access and habitat improvements and the project's effects, there is no basis for requiring the licensee to provide BLM access to these non-project lands. Nonetheless, to meet the objective of improving 917 acres of big-game habitat, staff recommended that Swan Lake North Hydro implement an additional 50 acres of juniper and mixed conifer forest thinning in areas near the reservoirs or along the transmission line.⁵² The capital cost of improving the road, or undertaking the juniper and mixed conifer thinning will be the same (\$20,000), such that staff's recommended measure will not increase the cost of implementing the WHREP, but will ensure direct benefits to

⁵⁰ Final EIS at 233.

⁵¹ Final EIS at 233.

⁵² The 50 acres would be in addition to the 232 acres of thinning and replanting that Swan Lake North Hydro proposed to implement on Bryant Mountain.

wildlife affected by the project. Therefore, Article 403 requires staff's recommended habitat improvements instead of the access improvements proposed by Swan Lake North Hydro.

E. Revegetation and Noxious Weed Management

91. To promote the recovery of disturbed areas and prevent the establishment of noxious weeds, Swan Lake North Hydro proposes a Revegetation and Noxious Weed Management Plan. The plan includes cleaning of equipment prior to entering and leaving the construction site, guidance for treatment of stockpiled soils that may contain weeds, safety guidelines for herbicide use, use of weed-free materials (e.g., seed stock, fill materials, and materials used in erosion control), noxious weed surveys and treatment prior to ground-disturbing activity, temporarily planting certain areas to reduce weed establishment, monthly inspection and treatment of areas within the project boundary during construction, and monitoring and post-construction treatment of weeds identified within the project boundary.

92. In the final EIS,⁵³ staff recommended Swan Lake North Hydro's proposed measures but also recommended revising the plan to include certain details to ensure effective implementation of the plan. The recommended details include: the seed mixes and plant species to be used; proposed planting densities and methods; proposed fertilization and irrigation methods; monitoring protocols; and criteria for measuring revegetation success. Lastly, staff recommended that the seed mixtures include wild celery and other plants important in tribal customs if practicable. Article 404 requires Swan Lake North Hydro to include staff's recommended measures in the final Revegetation and Noxious Weed Management Plan.

F. Sensitive Plant Survey

93. To minimize disturbing sensitive plants during construction, Swan Lake North Hydro proposes to conduct preconstruction surveys for state and federally listed plants and plants listed by BLM as sensitive or strategic species. However, Swan Lake North Hydro does not provide any details as to how these surveys would be conducted. Article 408 requires that the licensee develop a plan that includes a description of the survey methodology, an implementation schedule, and the filing of a report discussing the survey results. The report must include specific measures to be employed to protect sensitive plants if they are found and will be affected by construction, operation, or maintenance of the project.

⁵³ Final EIS at 231.

G. Avian Protection

94. The project will be located in an area that receives high use by waterfowl, raptors, and other migrating birds. The new transmission line could cause bird injuries or mortalities due to collisions or electrocutions. Noise and human activity associated with construction of the project could disrupt normal nesting behaviors or abandonment of nests.

95. To minimize project effects on birds, Swan Lake North Hydro proposes to develop an avian protection plan that includes: conducting two preconstruction surveys between May 1 and July 31, within a 0.5-mile radius around project features where blasting will occur and a 0.25-mile radius around all other features; prohibiting blasting and helicopter use within 0.5 mile of an active eagle nest between January 1 and August 15; installing flight diverters in five areas with a high risk of avian collisions; and monitoring the transmission line and reservoir fencing for bird collisions.

96. For the preconstruction surveys, Oregon DFW recommends⁵⁴ that: (1) the survey area distance where no blasting occurs should be 0.5 mile instead of 0.25 mile; (2) surveys should begin February 15th of each year instead of May 1st, to cover early-nesting raptors; and (3) at a minimum, one survey should be conducted in February and one survey in June/July, with a third, mid-season survey strongly recommended. In the final EIS,⁵⁵ staff recommended scheduling one survey in February to better assess the presence/absence of early nesting birds, such as great horned owls and bald eagles that can begin nesting activities as early as January in Oregon, but that the two surveys already proposed by Swan Lake North Hydro would adequately detect any other nesting raptors and special-status species that may be present. In the final EIS,⁵⁶ staff also recommended increasing the survey distance from 0.25 to 0.5 mile to ensure that the surveys identify known nesting territories that might be negatively influenced by construction noise. Article 405 requires the final avian protection plan including the staff-recommended measures.

97. Oregon DFW also recommends that during project construction: (1) the 0.5-mile buffer distance for surface blasting and helicopter use be a starting point and be adjusted based on site topography; and (2) surface blasting and helicopter use should be

⁵⁴ Oregon DFW did not file these recommendations under section 10(j), but as comments on the proposed plan. Therefore, staff considered these under section 10(a) of the FPA.

⁵⁵ Final EIS at 235.

⁵⁶ Final EIS at 235.

prohibited from January 1 through August 15, or until nests are documented to have failed or fledged. In the final EIS,⁵⁷ staff agreed that local site conditions such as vegetation, topography, and atmospheric conditions affect whether visual cues can be seen at a distance and how well noise carries, and that the fledging period for some raptor species could extend beyond August 15. Therefore, staff recommended that the spatial and temporal restrictions for construction activities in the draft avian protection plan be adjusted based on site-specific environmental conditions and nesting status and after consultation with resource agencies. These measures are included in the avian protection plan required by Article 405.

98. Oregon DFW also recommends that bird flight diverters be installed along the 2-mile-long section of transmission line north of the Hopper Hill area, in addition to the five areas proposed by Swan Lake North Hydro. In the final EIS,⁵⁸ staff recommended installing flight diverters in this area to minimize collision risks as raptors fly back and forth from nesting habitat on Swan Lake Rim and foraging habitat in Swan Lake meadow. Article 405 requires the additional flight diverters.

99. Oregon DFW also recommends that the licensee provide additional flight diverters as needed, and, in its comments on the final EIS, Interior states that there must be a commitment by the applicant to change project design or operation if monitoring shows that there are impacts to birds. Interior also states that the final EIS should include an anticipated level of avian mortality. The final EIS⁵⁹ acknowledged that there may be some avian mortality from electrocutions and collisions, but it would be too speculative to estimate the level of mortality because of the lack of local and migrating bird population data for this area. Staff agreed that additional measures may be needed depending on the effectiveness of the flight diverters to prevent bird collisions, but to commit the licensee to any such unknown measures now would be premature.⁶⁰ Article 405 requires the licensee to develop a monitoring plan that includes monitoring methods and frequency of monitoring, and to file an annual report describing the monitoring results, estimated fatality rates based on monitoring results, and any recommendations for corrective measures, if necessary. Article 405 also requires that the final avian protection plan include quantifiable thresholds for determining when corrective measures would need to be implemented to address high-collision areas.

⁵⁷ Final EIS at 90.

⁵⁸ Final EIS at 236.

⁵⁹ Final EIS at 91.

⁶⁰ Final EIS at 247.

H. Eagle Conservation

100. The project area supports nesting bald and golden eagles. During project construction, noise or visual disturbance from equipment and human activity could cause eagles to abandon nests or roosts.

101. Swan Lake North Hydro proposes to develop an eagle conservation plan to minimize adverse project effects on eagles. The plan includes the same measures as the proposed avian protection plan, plus a measure to protect an historic bald eagle nest tree near the lower reservoir site on Grizzly Butte and to restrict helicopter use within 0.5 mile of active raptor nests during construction. In its comments on the draft EIS, Interior recommends that the eagle conservation plan also include measures to prevent disturbing eagle winter roosts as well as nesting areas to be consistent with BLM's 2016 Southwestern Oregon Record of Decision/Resource Management Plan. FWS, in its comments on the draft EIS, recommends that the preconstruction surveys for eagle nests include the flight paths of helicopters.

102. In the final EIS,⁶¹ staff recommended that the licensee conduct two preconstruction winter roost surveys for two winter seasons, so that if roosts are located, the licensee could take appropriate measures to protect these areas during project construction. In the final EIS,⁶² staff also recommended that helicopter flight paths be included in the preconstruction survey area to allow for re-routing of flight paths to avoid disturbing active nests or roosts located within 0.5 mile of the helicopter flight path. Article 406 requires staff's recommended measures, and an eagle conservation plan within six months of license issuance to ensure that there is enough time to conduct the surveys before the start of construction. Implementing these provisions is consistent with the applicable provisions of BLM's resource management plan.

I. Fire Prevention

103. Vegetation clearing to construct the project and maintain the transmission line corridor will create slash that could build up concentrations of combustible material that could fuel wildfires. BLM recommends that the following measures be incorporated into project construction and operation to prevent the buildup of combustible fuels: (a) all fire restrictions must be followed in accordance with the jurisdictional land management agency; and (b) any vegetation slash created on BLM land must be removed, within one year of creation, by means other than burning. In the final EIS,⁶³

⁶¹ Final EIS at 236.

⁶² Final EIS at 236.

⁶³ Final EIS at 231-232.

Commission staff recommended developing a fire prevention plan with protocols for preventing wildfires including promptly removing slash. The safety benefits to the public and wildlife would be worth the minor, levelized annual cost of \$830 to develop this plan. Article 412 of the license requires the development and implementation of this plan.

J. Interpretive Facility Design and Location

104. To enhance recreational opportunities in the project area, Swan Lake North Hydro proposes to build an interpretive facility at the lower reservoir that includes educational signage and a staging area for periodic guided tours of the hydroelectric facility. In the final EIS, staff concluded that such a facility would provide a means for the public to learn about the history of the area and understand the function and operation of a pumped-storage hydroelectric project.⁶⁴ However, it is not clear exactly where the facility is to be located or how it will be designed. Therefore, staff recommended that prior to constructing the facility, conceptual drawings of the proposed facility be filed with the Commission for approval, along with its proposed content, and a map showing the location of the facility.⁶⁵ Because Swan Lake North will be required to maintain the facility, staff also recommended that the facility be enclosed within the project boundary and that revised Exhibit G drawings be filed with the Commission that show the interpretive facility within the project boundary.⁶⁶ Staff concluded that the benefits to the public from designing and constructing the facility justify the small annual levelized cost of \$790. Article 413 requires Swan Lake North Hydro to file the above information for Commission approval within one year of license issuance.

K. Harpold Dam and Quarry Coordination

105. The project transmission line will be constructed across the Lost River immediately downstream of Harpold Dam, which is operated by the Horsefly Irrigation District. The transmission line will cross directly over the Harpold Quarry located on the north side of the Lost River, which is operated by Klamath Irrigation District and Klamath County Public Works. In the final EIS,⁶⁷ staff recommended that Swan Lake North coordinate pole placement and the timing of construction activities with the Klamath Irrigation District, the Horsefly Irrigation District, and Klamath County Public

⁶⁴ Final EIS at 119.

⁶⁵ Final EIS at 119, 239.

⁶⁶ Final EIS at 119, 239.

⁶⁷ Final EIS 123, 241.

Works to minimize interference with their respective operations. Staff concluded that the benefits of minimizing interference with operations of Harpold Dam and the quarry justify the small annual levelized cost to develop the plan of \$830. Article 414 requires Swan Lake North Hydro to develop a Harpold Dam and quarry coordination plan.

L. Agricultural Operations Coordination

106. The project transmission line will cross parcels of agricultural land and, depending on where the poles are placed, could impair agricultural operations such as irrigation, planting, and harvesting. In the final EIS, staff recommended that Swan Lake North coordinate pole placement and the timing of construction activities with affected landowners to minimize adverse effects on agricultural operations where feasible.⁶⁸ Staff concluded that the benefit of minimizing interference with agricultural operations would justify the small annual levelized cost to develop the plan of \$830. Article 415 requires Swan Lake North Hydro to develop an agricultural operations coordination plan.

M. Visual Resources Protection

107. Constructing the project's facilities will create both temporary and permanent visual changes to the immediate area and surrounding landscape. To minimize these effects, Swan Lake North Hydro proposes to: (1) use locally-quarried rock for the outer berm faces of the proposed reservoirs to match the colors of the surrounding landscape; (2) plant vegetation to screen project facilities; (3) paint the powerhouse, maintenance structures, and appurtenant facilities with colors that match the surrounding landscape and dull the surfaces of facilities that cannot be painted; (4) use special lamps, covers, timers, and motion sensors on outdoor lighting to minimize light pollution; (5) install mono-pole-type transmission line structures instead of lattice-type structures; and (6) use weathering COR-TEN-type steel that weathers to a natural rust color over time for the transmission towers and use conductors with non-specular materials where possible. In the final EIS, staff recommended these measures.⁶⁹ Article 416 requires Swan Lake North Hydro to implement these measures and file documentation with the Commission of completion of these measures.

N. Burying the Transmission Line

108. Several members of the public recommend burying various lengths of the project transmission line for a variety of reasons. Mary Hunnicutt and other residents living

⁶⁸ Final EIS at 122, 241.

⁶⁹ Final EIS at 153.

near the Lost River and south of Harpold Dam recommend either burying the entire line or at least the one-mile-long segment that crosses the Lost River close to their homes to reduce visual effects, losses in property values, and exposure to electromagnetic field (EMF) radiation or electrical interference. They also recommend burying the line under the Lost River (about a 0.25-mile segment) to prevent further bird injuries and losses from collisions in an area that is reportedly experiencing collisions with existing distribution lines. Several local landowners recommend burying about 6.9 miles of the transmission line to prevent interfering with or eliminating agricultural operations, eliminate health risks from EMF, and reduce potential effects to birds and other wildlife.

109. As noted in the final EIS,⁷⁰ it is unknown whether, based on topographic and soil conditions, burying all or a portion of the transmission line is feasible. Assuming it is feasible, burying the line would reduce or eliminate EMF and electrical interference, eliminate long-term visual effects in the landscape, likely prevent any associated losses in property values, prevent long-term interference with existing agricultural operations such as irrigation, and eliminate any collision and electrocution risk for birds and the need to monitor bird injuries or mortalities.

110. However, staff found⁷¹ that the high levelized costs associated with burying the transmission line (from \$78,940 to bury the shortest portion of the line where it crosses the Lost River to \$2,178,700 to bury a 6.9-mile-long section through agricultural land)⁷² would not justify the benefits of doing so because: (1) the EMF levels produced by the transmission line are expected to decrease by 99 percent at 300 feet from the line, thereby making health effects or electrical interference unlikely; (2) Swan Lake North Hydro's proposed revegetation efforts and use of non-reflective materials should minimize the visual contrast of project facilities with the surrounding landscape; (3) coordinating with local agricultural landowners during the final design and placement of the transmission line will allow Swan Lake North Hydro to consider individual farming operations and minimize where possible adverse effects on agricultural operations; (4) the use of avian markers on the line and effectiveness monitoring should minimize hazards to birds; and (5) the land-disturbing activities associated with burying the line

⁷⁰ Final EIS at 92, 123, 128, 156, 185, 246, 247.

⁷¹ Final EIS at 245 - 247.

⁷² In the final EIS, staff calculated the capital costs of burying the transmission line in the following locations: (1) a 0.25-mile-long span crossing the Lost River, (2) a 1-mile-long span that includes both the Lost River crossing and a residential area, and (3) 6.9 miles of agricultural land northwest of the Lost River crossing. The costs were \$915,000 (\$78,940 levelized), \$3,660,000 (\$304,560 levelized), and \$25,254,000 (\$2,178,700 levelized), respectively. Final EIS at 220.

could adversely affect cultural resources. Based on these considerations, the license does not require burial of any portion of the transmission line.

O. Public Safety

111. The OC&E Trail crosses an existing access road that will be upgraded for project construction access and the proposed transmission line corridor near Highway 140. Although Swan Lake North Hydro proposes to develop a public safety plan to maintain recreational user safety during construction, it has not defined those measures. To minimize disruption of trail use and ensure hiker safety, staff recommended that the public safety plan include provisions for advanced public notification, signage, and establishment of alternative routes around the construction area, as needed.⁷³ Because the details of the plan still need to be developed, staff's modifications are not expected to increase the costs of the proposed plan. Article 306 requires that the public safety plan include these measures.

P. Traffic Safety

112. During the construction period, and to a lesser extent during project operation, traffic is expected to increase on local public roads and could cause delays along Swan Lake Road and Highway 140. Delays may also occur on Harpold, North Poe Valley, and Burgdorf roads near the transmission line crossing of the Lost River where Harpold Dam and the rock quarry are located. These roads are all public roads. Swan Lake North Hydro proposes to develop a traffic safety plan to minimize these adverse effects that could include staggering workforce hours, setting speed limits for construction personnel and deliveries while onsite, providing public information on traffic changes, and controlling off-highway vehicle access to public lands from within the project boundary. While staff supported these efforts, the proposed measures lacked sufficient detail to approve the plan; therefore, staff recommended that the plan describe in detail how: (1) work shifts would be scheduled; (2) the public would be notified of traffic changes; and (3) construction traffic would be coordinated to minimize interference with Klamath County Public Works roadway and drainage facility maintenance and operations, including snow removal and dust control.⁷⁴ While Swan Lake North Hydro can post speed limit signs as part of its plan, only local law enforcement can enforce the speed limits.⁷⁵ Because the details of the plan still need to be developed, staff's

⁷³ Final EIS at 117, 239 – 240.

⁷⁴ Final EIS at 187, 241.

⁷⁵ Final EIS at 241.

modifications are not expected to increase the cost of the proposed plan. Article 418 requires Swan Lake North Hydro to develop the traffic safety plan to include the above provisions in consultation with the Oregon Department of Transportation, Klamath County Public Works, Klamath Irrigation District, Horsefly Irrigation District, BLM, Oregon DFW, and Oregon Parks and Recreation Department and file it for Commission approval.

Q. Air Quality Control

113. Construction activities will create temporary emissions of fugitive dust and vehicle exhaust that could degrade air quality. To minimize these effects, staff recommended that Swan Lake North Hydro develop an air quality control plan that includes specific BMPs to control dust and vehicle emissions.⁷⁶ Staff concluded that the air quality benefits would justify the small annualized cost to develop the plan of \$1,240. Article 419 requires Swan Lake North Hydro to develop the plan.

COMMENTS ON THE FINAL ENVIRONMENTAL IMPACT STATEMENT

114. The following entities and public filed comments on the final EIS.

A. EPA's Comments

115. EPA encourages the Commission to include all "key information regarding impacts and mitigation" in the EIS prior to making a license decision by including in the EIS: (1) the location, selection criteria, and management plans for all the conservation land that would be purchased or leased as wildlife habitat mitigation; and (2) a discussion on the reasonably foreseeable effects that changes in the climate might have on the project and analysis area, as well as the project's influence on projected changes in the climate.

116. To date, Swan Lake North Hydro has identified 127 acres of conservation land to be acquired, located mainly near the proposed upper reservoir, upper reservoir laydown area, and penstock. As explained in the final EIS,⁷⁷ information on the remaining lands is not available, and negotiations with land owners may not be possible until the applicant is granted a license for the project. However, such details are not needed to comply with NEPA or support a license decision.⁷⁸ To ensure that the mitigation lands

⁷⁶ Final EIS at 198.

⁷⁷ Final EIS at A-9.

⁷⁸ *U.S. Department of the Interior v. FERC*, 952 F.2d 538, 546 (D.C. Cir. 1992). The Commission is not required to have perfect information or to definitively resolve all (continued ...)

fulfill their stated objectives, the license requires that the selected parcels be close to the project, provide similar habitat, and be improved. Construction will not be authorized until the Commission approves the plan.

117. Any changes in the timing, quantity and form of precipitation that may occur in the project area as result of climate changes would not affect the project or its operation because, as a closed-loop system that is filled by groundwater, it is not dependent on surface water flows. The project reservoirs will intercept about 177 acre-feet of water from precipitation annually, which will be negligible compared to the large drainage area of Swan Lake and thus the project's rainfall interception will not adversely affect the analysis area.⁷⁹

B. Interior's Comments

118. In order to avoid BLM having to require additional NEPA analyses to support its issuance of rights-of-way authorizations across its lands, Interior states that the EIS should include additional information regarding road closures, location data for the transmission line towers and new roads on BLM lands, handling of overflow or emergency dewatering of the reservoirs, and cumulative effects on cultural resources.

1. Roads and Other Structures located on BLM Lands

119. Interior recommends that the EIS include the location and land ownership information on the access road to the upper reservoir. Interior states that it is unclear if this road would be a new road built off of an existing road from the east side of the Swan Lake escarpment, or whether the access road would be constructed from the lower reservoir powerhouse area up the face of the escarpment. Interior is concerned that a road constructed up the face of the escarpment would require an additional visual resource analysis that was not included in the final EIS.

120. The upper reservoir will be accessed from an improved existing access road on private land off Bliss Road.⁸⁰ Exhibit G-2 of the license application shows that the upper reservoir access road will not cross BLM lands.⁸¹ Visual impacts from constructing the proposed upper reservoir access road were addressed in the final EIS; therefore, no further visual analysis of the new upper reservoir access road is needed.

environmental issues before a license is issued.

⁷⁹ See final EIS at 45.

⁸⁰ See License Application, Exhibit A, page A-7.

⁸¹ See License Application, Exhibit G.

121. Interior states that the final EIS should clearly state that any permanent project access roads crossing BLM lands will be closed to unauthorized public uses once construction is completed and that these roads will be gated, or bermed, or have some closure structure in place. Interior states that this information should be provided now rather than leaving the matter of potential unauthorized public use of these roads in a “to be determined” status with the promise that the proponent will work with the agencies on a traffic safety plan at some future time. Again, such details are not required to comply with NEPA or for an informed decision on the license application.⁸² Because the area in question is small (only about 1 mile of new permanent access road will be located on BLM land) and Swan Lake North Hydro will work with BLM to determine measures to control off-highway-vehicle access from these roads, it is reasonable to conclude that appropriate access controls can be developed and will be deployed to minimize adverse effects on BLM lands.⁸³ Article 418, requires Swan Lake North Hydro to consult with BLM to develop appropriate measures to control access on BLM lands, including gating or blocking project access roads.

122. Interior recommends that the access road that Swan Lake North Hydro proposes to retain and convert into a permanent road for BLM’s use be built consistent with BLM road construction BMPs. As discussed earlier, the license does not require that the licensee retain the road as a permanent road to provide BLM access to its lands for habitat improvements. Therefore, it is not necessary to require the licensee to follow BLM’s road construction BMPs when constructing this temporary access road. Nonetheless, Article 302 requires the licensee to consult BLM prior to constructing any access road or other feature on BLM lands and where appropriate include BLM’s recommendations in the design of those features. Further, BLM can condition its right-of-way permit as it sees fit.

123. Interior states that the final EIS does not show the exact locations of the transmission line and its poles and new roads, and BLM needs this information before issuing a Right of Way for the project. Exhibit G of the license application shows the general locations of project features. However, the exact locations cannot be provided because they will be determined during final project design.

2. Overflow and Emergency Dewatering of the Reservoirs

124. Interior recommends that the final EIS address the impacts of an overflow or emergency dewatering of the reservoirs on Swan Lake wetland values. Interior’s concerns are prompted by a response to a comment on the draft EIS that concluded the

⁸² See supra n.76

⁸³ Final EIS at 179, 180, 186, and 187.

project construction and operation would not affect Swan Lake “because no project feature would be located in these wetlands and all precipitation flowing to these lakes would continue unabated by the project except for the small amount directly captured by the project reservoirs.” In Interior’s view, staff’s response assumes no overflow or dam failure, which if those events were to occur, the water and associated sediment would end up in Swan Lake and have effects on Swan Lake wetland values.

125. Contrary to Interior’s assertion, staff explicitly addressed the potential impacts of an overflow or emergency dewatering of the reservoirs.⁸⁴ As discussed in the EIS, these are unlikely events. Regardless, if they were to occur, the Swan Lake wetland complex would only be affected by a dewatering or overtopping of the lower reservoir. Such flow releases would flow down the southeast portion of Grizzly Butte (approximately 0.3 mile), and once reaching the base would begin to fan out across flat agricultural land, traveling approximately 0.2 mile before reaching the wetland complex within Swan Lake Valley. If the lower reservoir were to be dewatered (3,300 acre-feet), this could result in the temporary inundation of parts of Swan Lake Valley before water eventually infiltrates into the ground. Erosion and sediment deposition are expected to minor and buffered by the agricultural parcels surrounding the wetland complex.

3. Cumulative Impacts on Visual and Cultural Resources

126. Interior states that the analysis in the final EIS of cumulative impacts on cultural resources needs substantially more detail and should address the cumulative effects of past destruction of archeological sites from the Ruby Pipeline (CP09-54) and other small gas lines, roads, fuel treatment projects, as well as agricultural development. Interior states that the geographic scope of the cumulative effects analysis should not be limited to the viewshed of Swan Lake Rim, but should include all areas from which the transmission line may be viewed, particularly the Bryant Mountain area and Horton and Harpold Rims.

127. While the construction of roads and other structures and agricultural development has likely resulted in the physical destruction of archeological sites, there is no information in the record on the extent of those effects; thus, staff could not quantify how project construction might add to those effects. Therefore, staff’s cumulative effects analysis focused on the changes in the viewshed that tribal practitioners have and will experience when the project is constructed.

128. The Ruby Pipeline crosses under existing transmission lines near the Malin Substation near its western terminus at the town of Malin, Oregon. The areas of potential effect for the Ruby Pipeline and the project transmission line overlap in the

⁸⁴ Final EIS at 36 -37, and 49.

Malin Substation area. The area around the town is considered a feeder location for energy transmission facilities, which contains the Malin substation, Captain Jack substation, a north/south pipeline, and two sets of powerlines. The addition of the project transmission line is not expected to have any meaningful cumulative effect because of the extensive disturbance and development in the area.

C. Klamath Tribe's Comments

129. The Klamath Tribes assert that the final EIS fails to adequately address adverse effects on significant cultural resources important to the Klamath Tribes, fails to identify a sufficient need for the project, fails to include and analyze a reasonable range of alternatives, fails to fully describe and analyze the no action alternative, and fails to adequately analyze environmental justice impacts of the project.

1. Cultural Resources

130. The Klamath Tribes oppose constructing the project at its current location because it would destroy and otherwise adversely affect many cultural and sacred resources in the Swan Lake Rim area that continue to have great spiritual value to its members, and would destroy a significant number of cultural features located on Grizzly Butte. The Klamath Tribes assert that the final EIS does not adequately address these effects, is based on incomplete information,⁸⁵ defines inadequate mitigation measures, and defers development of the HPMP to after licensing to resolve the adverse effects. In addition, the Klamath Tribes are concerned that staff acknowledge the adverse effects, yet propose mitigation measures (data recovery and recordation), which conflict with the Advisory Council's guidance on sites that possess special significance or have long-term preservation value, such as traditional and cultural and religious importance to an Indian tribe.

131. The final EIS describes the known historic and cultural resources in the area that will be directly and indirectly affected by the project and the direct and indirect adverse effects of constructing the project on those resources.⁸⁶ The final EIS found that the project will directly adversely affect 161 archeological sites in the Swan Lake Rim traditional cultural property⁸⁷ that are eligible or considered eligible for the National

⁸⁵ The Klamath Tribes state that the final EIS shows there are more historical sites within the project's Area of Potential Effects (APE) than had been identified when the draft EIS was issued and, because 297 acres remain unsurveyed, it is likely that the number of sites will increase.

⁸⁶ Final EIS at 158-179.

⁸⁷ As discussed in greater detail in the final EIS, the entire Swan Lake Rim,
(continued ...)

Register. An additional 49 archaeological sites found along the 32.8-mile-long transmission line will also be directly or indirectly affected, but their National Register eligibility has not been determined. While more survey work is needed on lands that could not be accessed by the licensee, sufficient information exists to describe project effects on cultural resources.

132. Staff also found the licensee's proposed measures to mitigate those effects lacking and recommended data recovery and recordation for those sites that would be destroyed, which is an accepted form of mitigation when such effects cannot be avoided. No entity recommended any other form of mitigation, and staff did not define any measures to avoid the indirect effects beyond the aesthetic measures proposed by the licensee to reduce the contrast of the project facilities on the landscape. Nonetheless, staff did recommend and the license requires the development of a more robust HPMP developed in consultation with the Klamath Tribes, Advisory Council, Oregon SHPO, BLM and Reclamation that may include other treatment plans (Article 417).⁸⁸

133. Regarding the Klamath Tribes' assertion that the final EIS is based on incomplete information, and inappropriately defers development of the HPMP until after the license is issued, the Commission is not required to have perfect information, or to definitively resolve all environmental issues, before a license is issued, in order to comply with NEPA⁸⁹ or section 106 of the National Historic Preservation Act. Nor is there a requirement that a fully developed mitigation plan be formulated and adopted prior to agency action.⁹⁰ NEPA only requires the federal action agency to take a "hard look" at the environmental consequences of its decisions and reasonable alternatives before it acts, which the EIS does. Similarly, section 106 of the National Historic Preservation Act does not require that the HPMP be completed prior to license issuance. While the Commission encourages completion of the HPMP prior to the issuance of the license, in some instances that may not be possible, and preparation and completion of the HPMP

including Grizzly Butte, was identified as a "traditional cultural property" due to the high density of archaeological sites. Final EIS at 164-167.

⁸⁸ Final EIS at 177.

⁸⁹ *U.S. Department of the Interior v. FERC*, 952 F.2d at 546.

⁹⁰ *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332 (1989). See also *Pacific Gas and Electric Co.*, 106 FERC ¶ 61,065, at P 90 (2004), *order on reh'g*, 107 FERC ¶ 61,232 (2004), *order on reconsideration*, 108 FERC ¶ 61,266 (2004), *Friends of the Eel River v. FERC*, 9th Cir. No. 04-73862 (Aug. 5, 2004), *Cal. Sportfishing Protection Alliance v. FERC*, 9th Cir. No. 04-73498 (July 18, 2006).

may be deferred to after the license has been issued. Thus, no modification of the EIS is needed to address effects on cultural resources.

2. Project Need

134. The Klamath Tribes believe that the statement of purpose and need for power in the final EIS is too narrowly defined to meet the requirements of NEPA,⁹¹ and “can only lead to one result: allowing the project to move forward.” Further, the Klamath Tribes recommend that the Commission reconsider the need for the project’s power in Oregon given that several large solar projects are to come online soon in Oregon and note that project power may be sold to various Pacific Northwest and California utilities.

135. Regarding the final EIS’ statement of purpose and need, the Council on Environmental Quality regulations state that an EIS must include a statement to “briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.”⁹² Thus, the EIS need only describe the purpose and need of the project to the extent necessary to inform the alternatives analysis, and courts have upheld federal agencies’ use of applicants’ project purpose and need for this purpose.⁹³ The final EIS is clear that the purpose of the project is to provide a new source of hydroelectric power to meet “part of Oregon’s power requirements” and as discussed further below, to meet the regional needs of the Pacific Northwest and California.⁹⁴ Even if Oregon does not need all of the project’s power, the Commission can, as we do here, conclude that it is in the public interest to develop economically beneficial and environmentally acceptable hydroelectric projects to meet a regional need for power, displace non-renewable fossil fuels, and diversify the available mix of generation.⁹⁵ Thus the final EIS adequately defines the purpose and need for the project.

⁹¹ The Klamath Tribe cites to *Simmons v. United States Army Corps of Eng’rs*, 120 F.3d 664, 666 (7th Cir. 1997) (“One obvious way for an agency to slip past the strictures of NEPA is to contrive a purpose so slender as to define competing ‘reasonable alternatives’ out of consideration (and even out of existence).”) *See also, Friends of Southeast’s Future v. Morrison*, 153 F.3d 1059, 1066 (9th Cir. 1998) (stating that “[a]n agency may not define the objectives of its action in terms so unreasonably narrow that only one alternative from among the environmentally benign ones in the agency’s power would accomplish the goals of the agency’s action”).

⁹² 40 C.F.R. § 1502.13 (2018).

⁹³ *See, e.g. City of Grapevine, Tex. v. Dept. of Transp.*, 17 F.3d 1502, 1509 (D.C. Cir. 1994).

⁹⁴ Final EIS at 3 - 4.

⁹⁵ *Niagara Mohawk Power Corp., et al.*, 89 FERC ¶ 61,207, at p. 61,633 (1999).

3. Range of Alternatives and the No Action Alternative

136. The Klamath Tribes argue that the final EIS' alternatives analysis is inadequate because it only looks at three alternatives (No-Action, Applicant's Proposal, and Staff Alternative), dismisses without any significant analysis alternative designs considered by the applicant, and only includes modifications to the applicant's proposed plans that are still not in final form. The Klamath Tribes believe that without a detailed analysis of the various mitigation plans, including the HPMP, it remains difficult to analyze the full extent of the project's adverse effects. The Klamath Tribes add that while it supports the additional mitigation measures recommended by staff in the final EIS, the selection of the staff alternative as the preferred alternative is not surprising and "somewhat preordained," which is contrary to the NEPA process. In addition, the Klamath Tribe states that "given the 'significant unavoidable, irreversible adverse effects on the Swan Lake Rim Traditional Cultural Property", the other impacts of the project, and the lack of a clear need, the No Action Alternative deserves further consideration and analysis.

137. The range of alternatives that must be discussed under NEPA is a matter within the Commission's discretion;⁹⁶ and NEPA only requires the consideration of all "reasonable alternatives."⁹⁷ The final EIS analyzed a range of reasonable project alternatives, and provided a thorough discussion of the significant aspects of the probable environmental consequences of authorizing the construction and operation of the project on natural, cultural and socioeconomic resources, considering the proposed and recommended mitigation measures. Further, the final EIS fully explained why the various alternative designs and transmission line routes were not preferable.⁹⁸ In addition, regarding the Klamath Tribes' comment that the alternatives cannot be fully assessed until the mitigation measures are analyzed, as noted above, NEPA does not require fully developed mitigation plans.⁹⁹ Thus, the range of alternatives analyzed in the final EIS is compliant with NEPA.¹⁰⁰

⁹⁶ *Vermont Yankee Nuclear Power Corp. v. NRDC*, 435 U.S. 519, 551-52 (1976).

⁹⁷ 40 C.F.R. § 1502.14 (2018).

⁹⁸ Final EIS at 21-26.

⁹⁹ *Supra* P 132.

¹⁰⁰ The adequacy of the content of an EIS is determined by a rule of reason which requires only "[a] reasonably thorough discussion of the significant aspects of the probable environmental consequences." *PP&L Montana, LLP*, 97 FERC ¶ 61,060, at p. 61,322 (2001) (citing *Columbia Land Basin Protection Assn. v. Schlesinger*, 643 F.2d 585, 592 (9th Cir. 1981) (quoting *Trout Unlimited v. Morton*, 509 F.2d 1276, 1283 (9th (continued ...)

138. Regarding the analysis of the No-action Alternative, the final EIS concluded that if the project is not constructed, there would be no changes to the physical, biological, or cultural resources of the area and the electrical generation that would have been provided by the project would likely have to come from nonrenewable fuels.¹⁰¹ This accurately describes the result of adopting the No-action Alternative, thus no further analysis is warranted.

4. Environmental Justice

139. The Klamath Tribes state that the environmental justice section of the final EIS is cursory and would have been more thorough if the topic had been included in the draft EIS. The comment does not identify any project effect that the environmental justice section fails to address, nor does it explain how inclusion of the section in the draft EIS would have made the analysis more thorough. Therefore, this order does not address the Klamath Tribes' comment further.

D. Land Use Concerns

140. Several individuals express concern that the EIS is flawed because it does not accurately reflect the effects of the project on agricultural land uses, wildlife, wetlands, historical sites, the loss of property values owing to the presence of the project's transmission line, use of the aquifer and area wells that depend on the aquifer, and the "peaceful tranquility" of the area. Commenters also argue that the cultural resources inventory is incomplete due to the inability of the licensee to access private property, and therefore, the final EIS does not accurately address effects on cultural resources.

141. While the commenters disagree with the analysis in the final EIS, they offer no new information or raise new issues that are not already considered in the final EIS. While additional work will be required on lands that were not accessible to Swan Lake North Hydro when developing the license application, sufficient information exists to characterize the existing environment and the project's adverse effects on environmental and cultural resources. Therefore, no modification of the EIS is required.

142. Some of the commenters also state that the project would result in a net loss of power to Klamath County, which would increase electricity rates for farmers who now get a price break when they use power during off-peak times. The commenters add that the project would not be able to utilize solar-generated power during off-peak times for

Cir. 1974))).

¹⁰¹ Final EIS at 203.

pumped storage operation, because solar generation is not possible during the nighttime hours.

143. The EIS acknowledges that there will be some lost generation as the project completes the pump and release cycle. The purpose of the project as described in the EIS is not to be a net generator of power. Rather, the project would be utilized for storing power generated at off-peak times for use by the public during on-peak times.¹⁰² Although solar-generated power will not be available for use by the project during the nighttime hours, the project may utilize generation from other renewable sources, including wind, biomass, and non-renewable baseload sources including nuclear, coal, and fossil-fuel during off-peak times.

144. Some commenters state that Swan Lake North Hydro is taking advantage of the rural population by locating the project where there are fewer people rather than siting it in California where the power is needed and would affect more people. As explained in the final EIS,¹⁰³ the site of the project was not chosen due to the economic status or population density of the surrounding community but because Swan Lake Rim, which rises approximately 1,500 feet above Swan Lake Valley, provides the hydraulic head necessary for the operation of the pumped storage project, a ground water source to serve the project, and proximity to the grid.

145. Some commenters state that the EIS overstates the project benefits to the area economy because the project will result in only a short-term increase in jobs (40 to 60 families) and the county has no shopping, services, or other attractions to entice workers to buy or settle in Klamath County.

146. The commenters misinterpret the conclusions in the final EIS. The influx of up to 40 to 60 families to Klamath County is expected during project operation, not construction, and therefore, these would constitute long-term additions to the area not short-term as implied by the commenters.

ADMINISTRATIVE PROVISIONS

A. Annual Charges

147. The Commission collects annual charges from licensees for administration of the FPA and to compensate for the use and occupancy of United States land.¹⁰⁴ Article 201

¹⁰² Final EIS at 206-208.

¹⁰³ Final EIS at 191.

¹⁰⁴ Because this license is issued to a non-municipal licensee and authorizes an
(continued ...)

provides for the collection of funds for the administration of the FPA and the use and occupancy of federal land.

B. Exhibit F and G Drawings

148. The Commission requires licensees to file sets of approved project maps and drawings in electronic file format. Exhibit F is to include only drawings providing plans, elevations, profiles, and sections. Swan Lake North Hydro included its single-line electrical diagram as part of Exhibit F (drawing IH-SWAN-F-000-LEV-0001).

Therefore, this drawing is not approved. However, the other drawings are approved and Article 202 requires the filing of the approved Exhibit F drawings in electronic format.

149. The Exhibit G drawings filed October 28, 2015 are not approved because some of the drawings use color to distinguish land ownership and project features that is not supported by the Commission's electronic format. The drawings should be revised to differentiate land ownership and project features in black and white. Therefore, Article 203 requires the licensee to file revised Exhibit G drawings.

C. Amortization Reserve

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

D. Project Financing

151. To ensure that there are sufficient funds available for project construction, operation, and maintenance, Article 206 requires the licensee to file for Commission approval documentation of project financing necessary for construction, operation, and maintenance of the project at least 90 days before starting any construction associated with the project.

E. Project Land Rights Progress Report

152. The project will occupy 1,040 acres of land. The Exhibit G.1-G.11 drawings filed as part of the application for license identify lands that Swan Lake North Hydro owns or intends to purchase. Standard Article 5 set forth in L-Form 2 requires the licensee to acquire title in fee or the right to use perpetuity all lands, other than lands of

unconstructed project, assessment of administrative annual charges will commence on the date by which the licensee is required to commence construction, or as may be extended. 18 C.F.R. § 11.1(c)(5) (2018).

the United States, necessary or appropriate for the construction, maintenance, and operation of the project, within five years. In order to monitor compliance with Article 5, Article 205 requires the licensee to file no later than four years after license issuance, a report detailing its progress on acquiring title in fee or the necessary rights to all lands within the project boundary. The report must include documentation on the status of the rights that have been acquired as of the filing date of the progress report, and a plan and schedule to acquire all remaining land prior to the five-year deadline.

F. Exhibit A

153. Exhibit A, filed on October 28, 2015 as part of the license application, was amended by a March 16, 2016 filing. To facilitate administration of the license, Article 207 requires Swan Lake North to consolidate the approved sections of the two filings (Ordering Paragraph (B)(2)) into a single document.

G. As-Built Drawings

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

H. Use and Occupancy of Project Lands and Waters

155. Requiring a licensee to obtain prior Commission for every use or occupancy of project land would be unduly burdensome. Therefore, Article 420 allows the licensee to grant permission, without prior Commission approval, for the use and occupancy of non-federal project lands for such minor activities as landscape planting. Such uses must be consistent with the purposes of protecting and enhancing the scenic, recreational, and environmental values of the project.

I. Start of Construction

156. Section 13 of the FPA requires the licensee to commence construction within two years from the issuance date of the license, or as extended.¹⁰⁵ Article 301 requires the licensee to commence construction of the project works within two years from the issuance date of the license and complete construction of the project within five years from the issuance date of the license.

J. Review of Final Plans and Specifications

157. Article 302 requires the licensee to provide the Commission's Division of Dam Safety and Inspections (D2SI)-Portland Regional Engineer with final contract drawings and specifications and a supporting design document, a Quality Control and Inspection Program, Temporary Construction Emergency Action Plan, and Soil Erosion and Sediment Control Plan.

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

159. Article 304 requires the licensee to retain a Board of Consultants (BOC) to review the designs, specifications, and construction of the project for safety and adequacy.

160. Article 305 requires the licensee to provide the Commission's D2SI-Portland Regional Engineer with an independent consultant inspection report.

161. Article 306 requires the licensee to submit to the Commission's D2SI-Portland Regional Engineer a public safety plan that includes safety devices and signage needed to warn the public of project-related hazards or to otherwise protect the public in the use of project lands and waters. As noted above, such measures must include, but not be limited to, specific measures to protect hikers, and minimize disruption of use, along the Oregon, California, and Eastern Woods Line State Trail during construction.

162. Article 307 requires the licensee to submit to the Commission's D2SI-Portland Regional Engineer a Project Owner's Dam Safety Program that demonstrates an acknowledgement of the project owner's responsibility for the safety of the project in accordance with the guidance information posted on the Commission's website.

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

163. Article 308 requires the licensee to coordinate with the Commission's D2SI-Portland Regional Engineer on any modifications that may affect project works or operation resulting from license environmental requirements.

STATE AND FEDERAL COMPREHENSIVE PLANS

164. Section 10(a)(2)(A) of the FPA¹⁰⁶ 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.¹⁰⁷ Staff reviewed 32 comprehensive plans that are applicable to the Swan Lake North Project, located in Oregon.¹⁰⁸ No conflicts were found.

CONSERVATION EFFORTS

165. Section 10(a)(2)(C) of the FPA¹⁰⁹ requires the Commission to consider the applicant's electricity consumption improvement program, including its plans, performance, and capabilities for encouraging or assisting its customers to conserve electricity cost-effectively, taking into account the published policies, restrictions, and requirements of state regulatory authorities. Swan Lake North Hydro plans to market the project's power to electric utilities serving the region. Given the limits of its ability to influence users of the electricity generated by the project, Swan Lake North Hydro complies with section 10(a)(2)(C) of the FPA.

SAFE MANAGEMENT, OPERATION, AND MAINTENANCE OF THE PROJECT

166. Staff reviewed Swan Lake North Hydro's preliminary plans to build the project as described in the license application. The project will be safe when constructed, operated, and maintained in accordance with the Commission's standards and provisions of the license.

NEED FOR POWER

167. To assess the need for power, staff looked at the needs in the operating region in which the project will be located and the region in which project power will be utilized.

¹⁰⁶ 16 U.S.C. § 803(a)(2)(A) (2012).

¹⁰⁷ Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2018).

¹⁰⁸ Final EIS at 259-261.

¹⁰⁹ 16 U.S.C. § 803(a)(2)(C) (2012).

The North American Electric Reliability Corporation (NERC) annually forecasts electrical supply and demand nationally and regionally for a 10-year period.¹¹⁰ NERC prepares seasonal and long-term assessments to examine the current and future reliability, adequacy, and security of the North American bulk power system. For these assessments, the bulk power system is divided into 21 assessment areas, both within and across eight regional boundaries.

168. The Swan Lake North Project will be located in the Northwest Power Pool, United States area (NWPP). The power generated from the Swan Lake North Project will also be sold to utilities located within the California area (CAMX). Both areas are sub-regions of the Western Electricity Coordinating Council, a region of NERC. According to NERC's 2017 forecast, average annual demand requirements are projected to grow at a rate of 0.6 percent over the next 10 years for the NWPP sub-region and 0.3 percent of the next 10 years for the CAMX sub-region. Based on this, the project's power and contribution to the region's diversified generation mix will help meet a need for power in the region.

PROJECT ECONOMICS

169. In determining whether to issue a license for a hydroelectric project, the Commission considers a number of public interest factors, including the economic benefits of project power. Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in *Mead Corp.*,¹¹¹ 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.

170. In applying this analysis to the Swan Lake North Project, Commission staff considered two options relative to the no-action alternative: Swan Lake North Hydro's proposal and the project as licensed herein. As proposed by Swan Lake North Hydro, the levelized annual cost of operating the project is \$114,951,400, or \$96.84/MWh. The proposed project will generate an estimated average of 1,187,000 MWh annually. When the estimated average annual generation is multiplied by the alternative power cost of

¹¹⁰ NERC is an international regulatory authority established to evaluate and improve reliability of the bulk power system in North America.

¹¹¹ 72 FERC ¶ 61,027, at p. 61,069 (1995).

\$108.09/MWh,¹¹² the total estimated value of the project's power is \$128,300,000 in 2018 dollars. To determine whether the proposed project is currently economically beneficial, the project's cost is subtracted from the value of the project's power.¹¹³ Therefore, in the first year of operation, the project costs \$13,346,600 or \$11.24/MWh, less than the cost of alternative power.

171. As licensed herein with staff measures, the levelized annual cost of operating the project will be about \$114,968,700, or \$96.86/MWh. Based on the same estimated average generation of 1,187,000 MWh, the project will produce power valued at \$128,300,000 when multiplied by the alternative power cost of \$108.09/MWh. Therefore, in the first year of operation, project power will cost \$13,329,300, or \$11.23/MWh, less than the cost of alternative power.

172. 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 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 putting them back online.

COMPREHENSIVE DEVELOPMENT

173. Sections 4(e) and 10(a)(1) of the FPA¹¹⁴ require the Commission to give equal consideration to the power development purposes and to the purposes of energy conservation; the protection, mitigation of damage to, and enhancement of fish and wildlife; the protection of recreational opportunities; and the preservation of other aspects of environmental quality. Any license issued must be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

¹¹² The alternative power cost is calculated based on the value of off-peak and on-peak electricity pricing as well as the value of ancillary services performed by the project provided by the applicant in the license application.

¹¹³ Details of the staff's economic analysis for the project as licensed herein and for various alternatives are included in the final EIS issued January 25, 2019.

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

174. The final EIS for the project contains background information, analysis of effects, and support for related license articles. The project will be safe if operated and maintained in accordance with the requirements of the license.

175. Based on staff's independent review and evaluation of the Swan Lake North Project, recommendations from the resource agencies and other stakeholders, and the non-action alternative, as documented in the final EIS, the Swan Lake North Project, as licensed herein, is selected and found to be best adapted to a comprehensive plan for developing this water resource.

176. This alternative was selected because: (1) issuance of an original license will serve to provide a beneficial and dependable source of electric energy; and (2) the required environmental measures will protect and enhance soils, water quality, terrestrial resources, recreation and land use, cultural resources, and air quality.

LICENSE TERM

177. Section 6 of the FPA¹¹⁵ provides that original licenses for hydropower projects shall be issued for a period not to exceed 50 years.

178. On October 19, 2017, the Commission established a 40-year default license term policy for original and new licenses, effective as of October 26, 2017.¹¹⁶ The Policy Statement provides for exceptions to the 40-year default license term under certain circumstances: (1) establishing a shorter or longer license term if necessary to coordinate license terms for projects located on the same river basin; (2) deferring to a shorter or longer license term explicitly agreed to in a generally-supported comprehensive settlement agreement; and (3) establishing a longer license term upon a showing by the license applicant that substantial voluntary measures were either previously implemented during the prior license term, or substantial new measures are expected to be implemented under the new license. The policy statement also explains that the Commission will consider, on a case-by-case basis, whether the costs of non-developmental (i.e., environmental) measures, and power and developmental measures are significant and warrant a longer license term.¹¹⁷

¹¹⁵ 16 U.S.C. § 799 (2012).

¹¹⁶ *Policy Statement on Establishing License Terms for Hydroelectric Projects*, 161 FERC ¶ 61,078 (2017) (License Term Policy Statement).

¹¹⁷ Generally, the Commission has found that measures including the construction of pumped storage facilities, fish passage facilities, fish hatcheries, substantial recreation facilities, dams, and powerhouses warrant longer license terms. License Term Policy Statement at 9.

179. The license requires a substantial amount of new and costly construction, including: (1) a new upper and lower reservoir; (2) a high-pressure steel penstock between the upper reservoir and the powerhouse; (3) a powerhouse with generating/pumping facilities; (4) three low-pressure steel penstocks from the powerhouse to the lower reservoir; (5) a transmission line and substation; and (6) access roads to the lower and upper reservoir. Given the substantial investment in new facilities, a 50-year license for the Swan Lake North Pumped Storage Project is appropriate.

The Director orders:

(A) The license is issued to Swan Lake North Hydro LLC (licensee) for a period of 50 years, effective the first day of the month in which the license is issued, to construct, operate, and maintain the Swan Lake North Pumped Storage Hydroelectric Project. The license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of the license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

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

(2) Project works consisting of: (1) a 7,972-foot-long, 58-foot-high earthen embankment forming an asphalt concrete and geomembrane-lined upper reservoir, with a surface area of 64.21 acres and a storage capacity of 2,568 acre-feet at a maximum surface elevation of 6,128 feet above mean sea level (msl); (2) a 8,003-foot-long, 65-foot-high earthen embankment forming a geomembrane-lined lower reservoir, with a surface area of 60.14 acres and a storage capacity of 2,581 acre-feet at a maximum surface elevation of 4,457 feet msl; (3) a 500-foot-long, rip-rap lined trapezoidal spillway built into the crest of each embankment at an elevation of approximately 6,135 feet msl and 4,464 feet msl for the upper and lower reservoirs, respectively; (4) a drainage collection system for each reservoir consisting of a perforated polyvinyl chloride tube of varying diameter and an accompanying optical fiber cable to detect, collect, and monitor water leakage from the reservoirs; (5) a 25-inch-diameter bottom outlet with manual valve for gravitational dewatering of the lower reservoir; (6) an upper intake consisting of a bell mouth, 38.6-foot-wide by 29.8-foot-long inclined screen, head gate, and 13.8-foot-diameter foundational steel pipe; (7) a 13.8-foot-diameter, 9,655-foot-long steel high-pressure penstock from the upper reservoir to the powerhouse located predominantly aboveground with a 14-foot-long buried segment; (8) three 9.8-foot-diameter, 1,430-foot-long low-pressure steel penstocks from the lower reservoir to the powerhouse located predominantly aboveground with a 78-foot-long buried segment; (9) a partially buried

powerhouse with three 131.1- megawatt (MW) reversible pump-turbine units for a total installed capacity of 393.3 MW; (10) a fenced substation next to the powerhouse; (11) a 32.8-mile-long, 230-kilovolt aboveground transmission line interconnecting to the existing non-project Malin substation; (12) approximately 10.7 miles of improved project access road; (13) approximately 3.4 miles of new permanent project access road; (14) approximately 8.3 miles of temporary project access road; and (15) appurtenant facilities.

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

Exhibit A. Section 1, pages A-1 through A-7, entitled “Project Location, Facilities, and Operations”, Section 2, entitled “Turbines and Generators”, Section 3, entitled “Transmission Lines”, Section 4, entitled “Appurtenant Facilities”, and Section 6, entitled “Groundwater Conveyance System”, within the application for license as amended by the licensee’s March 16, 2016 additional information filing which further describes the Upper Reservoir, Overflow Spillway, Drainage System, Lower Reservoir, Bottom Outlet, Upper Intake, Penstock, Powerhouse, Access Roads, Turbines, Generators, Transmission Line, Appurtenant Facilities, and a Groundwater Conveyance System.

Exhibit F. The following Exhibit F drawings filed on October 28, 2015.

<u>Exhibit F Drawing</u>	<u>FERC No.</u> <u>13318-</u>	<u>Description</u>
IH-SWAN-F-000-10001	1001	General layout of PSP scheme – Plan View
IH-SWAN-F-030-10001	1002	Upper reservoir – Plan view
IH-SWAN-F-030-10002	1003	Upper reservoir – Drainage system – Plan view
IH-SWAN-F-030-10003	1004	Upper reservoir – Typical cross sections
IH-SWAN-F-030-10004	1005	Upper reservoir – Water intake – Plan view and x-section
IH-SWAN-F-040-10001	1006	Hydraulic Circuit – General Layout – Plan view
IH-SWAN-F-040-10002	1007	Hydraulic Circuit – General Layout – Long. & Typ. x-sections

IH-SWAN-F-050-10001	1008	Plan view at elevation 4248.30
IH-SWAN-F-050-10002	1009	Plan view at elevation 4231.5
IH-SWAN-F-050-10003	1010	Plan view at elevation 4217.6 and 4201
IH-SWAN-F-050-10004	1011	Transversal cross section A-A
IH-SWAN-F-050-10005	1012	Plan view at elevation 4263.2
IH-SWAN-F-070-10001	1013	Lower reservoir – Plan view
IH-SWAN-F-070-10002	1014	Lower reservoir – Drainage system – Plan view
IH-SWAN-F-070-10003	1015	Lower reservoir – Typical Cross Sections
IH-SWAN-F-070-10004	1016	Lower reservoir – Water Intake – Plan view and cross section

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

(C) The portions of Exhibits A and F described above are approved and made part of the license. The Exhibit G maps filed as part of the application for the license do not conform to Commission regulations and are not approved.

(D) The license is subject to the articles set forth in Form L-2 (October 1975), entitled “Terms and Conditions of License Order for Unconstructed Major Project Affecting Lands of the United States” (see 54 F.P.C. 1799 *et seq.*), as reproduced at the end of this order, and the following additional articles:

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

- (a) Effective as of the date by which the licensee is required to commence project construction, or as that date may be extended, but in no case longer than four years after license issuance, to reimburse the United States for the cost of

administration of Part 1 of the Federal Power Act. The authorized installed capacity for that purpose is 393.3 megawatts;

- (b) to recompense the United States for the use, occupancy and enjoyment of 20 acres of its lands (other than for transmission line right-of-way); and
- (c) to recompense the United States for the use, occupancy and enjoyment of 710 acres of its lands for transmission line right-of-way.

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

Digital images of the approved exhibit drawings must be prepared in electronic format. Prior to preparing each digital image, the FERC Project-Drawing Number (i.e., P-13318-1 through P-13318-16) must be shown in the margin below the title block of the approved drawing. Exhibit F drawings must be segregated from other project exhibits, and identified as **(CEII) material under 18 C.F.R. § 388.113(c)**. Each drawing must be a separate electronic file, and the file name must include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this license, and file extension in the following format [P-13318-1, F-1, Cofferdam Layout and Construction Sequencing, MM-DD-YYYY.TIF].

IMAGERY – black & white raster file

FILE TYPE – Tagged Image File Format, (TIFF) CCITT Group 4
(also known as T.6 coding scheme)

RESOLUTION – 300 dots per inch (dpi) desired, (200 dpi minimum)

DRAWING SIZE FORMAT – 22” x 34” (minimum), 24” x 36” (maximum)

FILE SIZE – less than 1 megabyte desired

Article 203. Exhibit G Drawings. Within 90 days of the issuance of this license, the licensee must file, for Commission approval, revised Exhibit G drawings that differentiate land ownership and project features in grayscale rather than color. The Exhibit G drawings must comply with sections 4.39 and 4.41(h) of the Commission’s regulations.

Article 204. Amortization Reserve. Pursuant to section 10(d) of the Act, after the first 20 years of operation of the project under license, a specified reasonable rate of return upon the net investment in the project must be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. One-half of the project surplus earnings, if any, accumulated after the first 20 years of operations under the license, in excess of the specified rate of return per annum on the net investment, must be set aside in a project amortization reserve account at the end of each

fiscal year. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year after the first 20 years of operation under the license, the amount of that deficiency must be deducted from the amount of any surplus earnings subsequently accumulated, until absorbed. One-half of the remaining surplus earnings, if any, cumulatively computed, must be set aside in the project amortization reserve account. The amounts established in the project amortization reserved account must be maintained until further order of the Commission.

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

Article 205. *Project Land Rights Progress Report.* No later than four years after license issuance, the licensee must file a report with the Commission describing the status of acquiring title in fee or the rights for all the lands within the project boundary. The report must provide an overview map of each parcel and summary table identifying the licensee's rights over each parcel within the project boundary. The report must also include specific supporting documentation showing the status of the land rights on all parcels of land within the project boundary that: (1) have been acquired up to the date of filing of the report, including pertinent deeds, lease agreements, and/or bill of sale information that specifically verify the licensee's rights, and (2) the licensee's plan and schedule for acquiring rights to all remaining project lands prior to the five-year deadline, including a history of actions taken, current owner information, the type of rights to be acquired whether in fee or by easement, and the timeline for completing property acquisition.

Article 206. *Documentation of Project Financing.* At least 90 days before starting construction, the licensee must file with the Commission, for approval, the licensee's documentation for the project financing. The documentation must show that the licensee has acquired the funds, or commitment for funds, necessary to construct the project in accordance with the license. The documentation must include, at a minimum, financial statements, including a balance sheet, income statement, and a statement of actual or estimated cash flows over the license term, which provide evidence that the licensee has sufficient assets, credit and projected revenues to cover project construction,

operation, and maintenance expenses, and any other estimated project liabilities and expenses.

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

Article 207. Exhibit A. Within 30 days of the issuance date of this license, the licensee must file a complete Exhibit A consisting of the approved sections filed on October 28, 2015 and March 16, 2016, as a single comprehensive document.

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

Article 301. Start of Construction. The licensee must commence construction of the project works within two years from the issuance date of this license and must complete construction of the project within 5 years from the issuance date of this license.

Article 302. Contract Plans and Specifications. At least 60 days prior to the start of any construction, the licensee must submit one copy of its plans and specifications and supporting design document to the Commission's Division of Dam Safety and Inspections (D2SI)-Portland 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-Portland 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. Where project features, such as access roads, are located on U.S. Bureau of Reclamation (Reclamation) or U.S. Bureau of Land Management (BLM) lands, the licensee must consult with Reclamation or BLM prior to filing the plans and specifications with the Commission and explain how it has addressed any Reclamation or BLM recommendations in the plans and specifications. The licensee may not begin construction until the D2SI-Portland Regional Engineer has reviewed and commented on the plans and specifications, determined that all preconstruction requirements have been satisfied, and authorized start of construction.

Article 303. Cofferdam and Deep Excavation Construction Drawings. Should construction require cofferdams or deep excavations, the licensee must: (1) have a Professional Engineer who is independent from the construction contractor, review the designs of any contractor-designed cofferdams and deep excavations and issue letters of approval regarding the designs prior to the start of construction; and (2) ensure that construction of cofferdams and deep excavations is consistent with the approved designs. 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)-Portland Regional Engineer and two copies to the Commission (one of these copies shall be a courtesy copy to the Commission's Director, D2SI), of the approved cofferdam and deep excavation construction drawings and specifications, and the letters of approval.

Article 304. Board of Independent Engineering Consultants. Before starting construction, the licensee must retain a Board of Consultants (BOC) of three or more qualified independent engineering consultants experienced in critical disciplines such as geotechnical, mechanical, and civil engineering to review the design, specifications, and construction of the project for safety and adequacy.

The licensee must submit one copy of a letter with the names and qualifications of the BOC members to the Commission's Director, Division of Dam Safety and Inspections (D2SI), for approval, and one copy must be sent to the D2SI-Portland Regional Engineer.

Among other things, the BOC must assess the following: (1) the geology of the project site and surroundings; (2) the design, specifications, and construction of the dike(s), dam(s), spillway(s), powerhouse(s), electrical and mechanical equipment, and emergency power supply; (3) instrumentation; (4) the filling schedule for the reservoir(s) and plans and surveillance during the initial filling; and (5) construction procedures and progress.

Before each meeting, the licensee must furnish members of the BOC the following: (1) a statement of the specific level of review the BOC is expected to provide; (2) an agenda for the meeting; (3) a list of the items to be discussed; (4) a discussion of significant events in the design and construction that have occurred since the last BOC meeting; (5) drawings of the design and construction features; and (6) documentation for the details and analyses of the design and construction features to be discussed.

The licensee must ensure that the BOC has sufficient time to review these items before each meeting.

At the same time as a copy of these items is provided to the BOC, the licensee must also send two copies to the Commission (one of these shall be a courtesy copy sent to the Director, D2SI) and one copy to the D2SI-Portland Regional Engineer.

Within 30 days after each BOC meeting, the licensee must submit to the Commission copies of the BOC's report, and a statement of intent to comply with the BOC's recommendations or a statement of a plan to resolve the issue(s). The licensee must provide detailed reasons for any recommendation of the BOC not implemented. The licensee must send two copies of this submission to the Commission (one of these

shall be a courtesy copy sent to Director, D2SI) and one copy to the D2SI– Portland Regional Engineer.

The BOC's review comments must be submitted prior to or simultaneously with the submission of the final contract drawings and specifications accompanied by a supporting design report required to be filed with the Commission.

Within one year after completion of construction, the licensee must file two copies with the Commission (one of these shall be a courtesy copy to the Director, D2SI) and one copy to the D2SI– Portland Regional Engineer of the BOC's final report, which must contain a statement indicating the BOC's opinion with respect to the construction, safety, and adequacy of the project structures.

Article 305. Inspection by Independent Consultant. In accordance with Part 12D §12.38 of the Commission's regulations, the initial independent consultant's inspection of the project must be completed and the report on the inspection filed no later than five years from the date of first commercial operation or the date on which the impoundment first reaches its normal maximum surface elevation, whichever comes first. Information on specific inspection and report requirements can be found in Part 12D §12.35 and §12.37 of the Commission's regulations.

Article 306. Public Safety Plan. At least 60 days before start of construction, the licensee must submit one copy to the Commission's Division of Dam Safety and Inspections (D2SI)-Portland Regional Engineer and two copies to the Commission (one of these copies must be a courtesy copy to the Commission's Director, D2SI) of a Public Safety Plan. The plan must include a description of all safety devices and signage needed to warn the public of project-related hazards or to otherwise protect the public in the use of project lands and waters. Such measures must include, but not be limited to, specific measures to protect hikers from possible hazards related to project construction activities, and minimize disruption of use, along the Oregon , California, and Eastern Woods Line State Trail during construction, including notification procedures, signage, and establishing a temporary alternative route around the construction area.

Article 307. Owner's Dam Safety Program. Within 90 days of the issuance date of the license, the licensee must submit to the Commission's Division of Dam Safety and Inspections–Portland Regional Engineer, an Owner's Dam Safety Program which at a minimum must demonstrate a clear acknowledgement of the dam owner's responsibility for the safety of the project, an outline of the roles and responsibilities of the dam safety staff, and access of the dam safety official to the Chief Executive Officer. For guidance on preparing an Owner's Dam Safety Program the licensee should reference the information posted on the FERC website.

Article 308. Project Modification Resulting from Environmental Requirements. If environmental requirements under this license require modification that may affect the project works or operations, the licensee must consult with the Commission's Division of Dam Safety and Inspections (D2SI)–Portland 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. Reservoir Water Quality Monitoring Plan. Within one year of license issuance, the licensee must file for Commission approval, a reservoir water quality monitoring plan.

The plan must include, at a minimum:

(1) specific methods to be used to annually monitor the levels of total dissolved solids, nutrients, and heavy metals in the project reservoirs, including type(s) of equipment, sampling location(s), and timing of monitoring;

(2) a provision for filing with the Commission a report by March 31 of each year that contains the water quality data recorded during the previous year along with any recommendations to address deteriorating water quality or modifications to the monitoring program. The licensee must allow a minimum of 30 days for the Oregon Department of Environmental Quality (Oregon DEQ), and Oregon Department of Fish and Wildlife (Oregon DFW) to comment on the report before filing it with the Commission; and

(3) an implementation schedule.

The plan must be developed after consultation with the Oregon DFW and Oregon DEQ. The licensee must include with the plan documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to Oregon DFW and Oregon DEQ, and specific descriptions of how Oregon DFW's and Oregon DEQ's comments are accommodated by the plan. The licensee must allow a minimum of 30 days for Oregon DFW and Oregon DEQ to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

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

The Commission reserves the right to direct the licensee to modify project structures or operations, or conduct other appropriate actions if the monitoring results or other applicable information indicate that such actions are necessary to protect water quality within the project reservoirs.

Article 402. Hazardous Substances Spill Prevention and Cleanup Plan. At least six months prior to the start of project construction, the licensee must file for Commission approval, a hazardous substances spill prevention and cleanup plan.

The plan must include, at a minimum, measures to:

(1) establish fueling areas at locations that will avoid or minimize potential spills into nearby waterbodies;

(2) inspect vehicles and equipment for leaks;

(3) store hazardous materials in protective containers;

(4) clean up spills immediately;

(5) provide employee training to prevent and respond to spills; and

(6) report any spills to Oregon Department of Environmental Quality (Oregon DEQ) and the Commission within 48 hours.

The plan must be developed after consultation with the Oregon DEQ. The licensee must include with the plan documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to Oregon DEQ, and specific descriptions of how Oregon DEQ's comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the Oregon DEQ to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

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

Article 403. Wildlife Habitat Restoration and Enhancement Plan. Within one year of license issuance, or at least 90 days prior to the start of any ground-disturbing activity, whichever comes first, the licensee must file for approval a wildlife habitat restoration and enhancement plan to mitigate the loss of wildlife habitat from project construction. The plan must include the measures in the draft Wildlife Habitat and Restoration and Enhancement Plan filed on April 18, 2016, and supplemented on July 25,

2016, except for the following: providing U.S. Bureau of Land Management (BLM) administrative access to a private road and making road improvements to a temporary access road for BLM's sole use in conducting its habitat improvement projects, and funding BLM to conduct western juniper removal and mixed conifer forest thinning. The plan must also include the following measures:

(1) a description of the 585 acres of wildlife conservation land to be purchased or acquired under a long-term lease, a map showing the parcels, an explanation as to how the parcels were selected based on their proximity to the project site and their habitat values, management plans for the parcels, and a schedule for acquisition of the parcels and implementation of the management plans;

(2) a map identifying the 232 acres of western juniper/mixed conifer forest habitats to be thinned and replanted with bitterbrush and mountain mahogany on Bryant Mountain and the 50 acres of juniper and mixed conifer forest thinning in areas near the reservoirs or along the transmission line to improve wildlife habitat, the specific actions to be implemented, a monitoring plan to ensure successful revegetation, and an implementation schedule;

(3) a map identifying the location of the two wildlife waterers that are to be constructed/repared and operated for the life of the license, and a description of the inspection and maintenance procedures that will be followed to ensure that they continue to function properly; and:

(4) a provision for filing with the Commission by March 31 of each year, a report that describes the activities undertaken the prior year, activities planned for the following year, and proposed modifications to the plan, if any. The licensee must allow a minimum of 30 days for the Klamath Tribes, Oregon Department of Fish and Wildlife (Oregon DFW), U.S. Fish and Wildlife Service (FWS), and BLM to comment on the report before filing it with the Commission.

The licensee must prepare the plan after consultation with the Oregon DFW, the Klamath Tribes, BLM, and the FWS. The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Klamath Tribes and agencies, and specific descriptions of how the Klamath Tribes' and agencies' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the Klamath Tribes and agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

Because the licensee will be responsible for the ongoing maintenance of habitat improvements on the 585 acres conservation land, the licensee must file revised Exhibit

G drawings incorporating the conservation land acquired by item 1 above within 60 days of the Commission's approval of the acquired lands.

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

Article 404. *Revegetation and Noxious Weed Management Plan.* Within one year of license issuance, or at least 90 days prior to the start of any ground-disturbing activity, whichever comes first, the licensee must file for approval a Revegetation and Noxious Weed Management Plan. The plan must include the provisions in the draft Revegetation and Noxious Weed Management Plan filed on October 28, 2015 (Appendix E-7 of the license application). The plan must also include the following items:

(1) a description of the seed mixes and plant species to be used (including culturally important plant species if available), the planting densities and methods, and fertilization and irrigation requirements;

(2) detailed monitoring methods, criteria for measuring the success of revegetation efforts, and a monitoring schedule that addresses short-term (first 3 to 5 years) and long-term monitoring needs;

(3) protocols for managing vegetation and noxious weeds on project lands during project operation; and

(4) an implementation schedule; and

(5) a provision for filing with the Commission a report by March 31 of each year that contains the revegetation monitoring results with recommendations for either continuing, discontinuing, or modifying monitoring efforts, and recommendations, if any, for additional revegetation or noxious weed control. The licensee must allow a minimum of 30 days for the Klamath Tribes, Oregon Department of Fish and Wildlife (Oregon DFW), U.S. Fish and Wildlife Service (FWS), U.S. Bureau of Land Management (BLM), and Klamath County Public Works to comment on the report before filing it with the Commission.

The licensee must prepare the plan after consultation with the Oregon DFW, FWS, BLM, the Klamath Tribes, and Klamath County Public Works. The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the Klamath Tribes and agencies, and specific descriptions of how the Klamath Tribes' and agencies' comments are accommodated by the plan. The licensee must allow a minimum

of 30 days for the Klamath Tribes and agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

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

Article 405. Avian Protection Plan. Within one year of license issuance, or at least 90 days prior to the start of any ground-disturbing activity, whichever comes first, the licensee must file for Commission approval an avian protection plan. The plan must include the avian protection measures included in the draft Wildlife Habitat and Restoration and Enhancement Plan filed on April 18, 2016, and supplemented on July 25, 2016, with the following modifications:

(1) conduct a preconstruction survey in February to identify any early nesting raptors in addition to the two planned surveys between May 1 and July 31; expand the preconstruction survey area from 0.25 mile to 0.5 mile around project features; and based on the survey results, adjust the spatial and temporal restrictions for construction activities defined in the draft plan based on site-specific environmental conditions and nesting status and following consultation with Oregon Department of Fish and Wildlife (Oregon DFW), the U.S. Bureau of Land Management (BLM), and the U.S. Fish and Wildlife Service (FWS);

(2) install flight diverters on the approximately 2-mile-long section of transmission line between Hopper Hill and the temporary access road in Swan Lake Valley, in addition to the five high-risk areas identified in the draft Wildlife Habitat and Restoration and Enhancement Plan; and

(3) include a detailed avian collision and electrocution monitoring plan, that describes methods, implementation schedule, quantifiable thresholds for determining when corrective measures would need to be implemented to address high-collision and electrocution areas along the transmission line or at the reservoir fences, and procedures for documenting and reporting bird fatalities and injuries to Oregon DFW, BLM, and the FWS; and

(4) a provision for filing with the Commission a report by March 31 of each year that includes: the results of any surveys or monitoring, any occurrence of project-related avian injuries/mortalities, estimated fatality rates, and any recommendations for corrective measures, if necessary. The licensee must allow a minimum of 30 days for the resource agencies to comment on the report before filing it with the Commission.

The plan must address how the licensee considered the Avian Power Line Interaction Committee's recommendations provided in the *Avian Power Line Interaction Committee's Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006*, and *Reducing Avian Collisions with Power Lines: The State of the Art in 2012* (or the most recent version of these guidance documents) in the design specifications.

The licensee must prepare the plan after consultation with the Klamath Tribes, Oregon DFW, FWS, and BLM. The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

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

Article 406. Eagle Conservation Plan. Within six months of license issuance, the licensee must file for approval an eagle conservation plan to protect nesting and roosting bald and golden eagles during project construction. The plan must include the eagle conservation measures included in the draft Wildlife Habitat and Restoration and Enhancement Plan filed on April 18, 2016, and supplemented on July 25, 2016, with the following additional measures:

- (1) conduct two preconstruction winter roost surveys for two winter seasons; and
- (2) include helicopter flight paths, except for the flight path from the airport to construction site, in preconstruction surveys for eagle nests and winter roosts; and
- (3) a provision for filing with the Commission a report by March 31 of each year that surveys are conducted and construction is underway that includes: the results of any surveys or monitoring, measures taken to prevent disturbing nesting and roosting eagles, and any occurrence of project-related disturbance of nesting or roosting eagles. The licensee must allow a minimum of 30 days for the resource agencies to comment on the report before filing it with the Commission.

The licensee must prepare the plan after consultation with the Klamath Tribes, Oregon Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and U.S.

Bureau of Land Management. The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

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

Article 407. Ungulate Protection Plan. Within one year of license issuance, or at least 90 days prior to the start of any ground-disturbing activity, whichever comes first, the licensee must file for Commission approval an ungulate (deer, elk, and pronghorn antelope) protection plan. The plan must include the ungulate protection measures included in the draft Wildlife Habitat and Restoration and Enhancement Plan filed on April 18, 2016, and supplemented on July 25, 2016. The plan must also include the following measures:

- (1) install a big game waterer near the upper reservoir and one near the lower reservoir; a description of the type and location of the waterers chosen in consultation with Oregon Department of Fish and Wildlife (Oregon DFW); and a schedule for operating, inspecting and maintaining the waterers;
- (2) a schedule for inspecting and making any necessary reservoir fence repairs;
- (3) a provision to file a map, as built drawings, and pictures of the waterers within 30 days of installing the waterers; and
- (4) a provision for filing a report with the Commission by March 31 of each year documenting any occurrence of project-related ungulate injuries/mortalities, and the results of its reservoir fence monitoring. The licensee must allow a minimum of 30 days for the resource agencies to comment on the report before filing it with the Commission.

The licensee must prepare the plan after consultation with the Klamath Tribes, Oregon DFW, U.S. Fish and Wildlife Service, and U.S. Bureau of Land Management. The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the

Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

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

Article 408. Sensitive Plant Survey Plan. Within one year of license issuance, the licensee must file for Commission approval a plan for conducting preconstruction surveys for sensitive plants. The plan must include, but not be limited to, the following:

(1) a description of the preconstruction survey methodology for sensitive plants, including slender Orcutt grass and Greene's tuctoria;

(2) a provision for filing a report containing a map showing the areas surveyed, the results of the surveys, and specific measures to be employed to protect species if they are affected by construction, operation, or maintenance of the project. Specific species' location information should be included as an appendix to the report and marked "Confidential, Contains Privileged Information, Do Not Release" and filed separately with a request that the Secretary file it in the Commission's privileged file; and

(3) an implementation schedule.

The licensee must develop the plan after consultation with the Oregon Department of Fish and Wildlife, the U.S. Fish and Wildlife, and the U.S. Bureau of Land Management. The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

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

Article 409. Columbia River Basin Fish and Wildlife Program. The Commission reserves the authority to order, upon its own motion or upon the recommendation of federal and state fish and wildlife agencies, affected Indian Tribes, or the Northwest Power and Conservation Council, alterations of project structures and operations to take

into account to the fullest extent practicable the regional fish and wildlife program developed and amended pursuant to the Pacific Northwest Electric Power Planning and Conservation Act.

Article 410. Inspections of Facilities and Records. The licensees must allow state regulatory agencies, access to, through, and across Swan Lake North Hydroelectric Project lands and works for the purpose of inspecting facilities and records, including monitoring data, to monitor compliance with this license. The licensees must allow such inspections only after the entity requesting the inspection provides the licensees reasonable notice of such inspections and agrees to follow the licensee's standard safety and security procedures when engaged in such inspections. The licensee must also provide state and federal agencies with monitoring data, for information purposes, within 15 days of the agency's written request for the data.

Article 411. Wildlife Emergency Notification Procedures. In the event of emergencies or unanticipated circumstance in which wildlife are being endangered, harmed, or killed by the project or its operation, the licensee must:

- (1) notify the Oregon Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and U.S. Bureau of Land Management (if its lands are involved) within 24 hours (six hours for state or federal listed species);
- (2) take immediate reasonable action to remediate the incident;
- (3) inform the Commission within 10 days after each occurrence and specify the nature of the occurrence and restorative measures taken; and
- (4) prepare and file a report within 30 days of the incident that describes: (i) the nature and chronology of the event, (ii) the circumstances that lead-up to the event, (iii) any observed or reported adverse environmental impacts resulting from the event, (iv) any corrective actions taken, and (v) any recommended measures to reduce the likelihood of similar events occurring in the future.

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.

Article 412. Fire Prevention Plan. Within one year of license issuance, or at least 90 days prior to the start of any ground-disturbing activity, whichever comes first, the licensee must file, for Commission approval, a fire prevention plan. The plan must include, at a minimum, the following measures to prevent and control fires:

(1) a provision that any vegetation slash created during site clearing is removed within one year of creation, by means other than burning; and

(2) measures to prevent and control fires, such as ensuring appropriate firefighting equipment is conveniently located onsite during construction and operation of the project and that spark arrestors are being used on mechanized equipment.

The licensee must prepare the plan after consultation with Klamath County and the U.S. Bureau of Land Management. The licensee must include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the agencies to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

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

Article 413. Interpretive Facility Design and Location. Within one year of license issuance, or at least 90 days prior to the start of any ground-disturbing activity, whichever comes first, the licensee must file for Commission approval, conceptual drawings of its proposed interpretive facility; a map showing the location of the interpretive facility, including the location of signage and the staging area for guided tours; and revised Exhibit G drawings, if revision of the project boundary is necessary to include the facility.

The Commission reserves the right to require changes to the design and location of the facility. The interpretive facility must not be constructed until the licensee is notified by the Commission that the drawings and location of the facility are approved. Upon Commission approval the licensee must construct the facility, and incorporate any changes required by the Commission.

Article 414. Harpold Dam and Quarry Coordination Plan. At least 90 days before the start of any land-disturbing or land-clearing activities, the licensee must file for Commission approval, a plan for coordinating the timing of installation and placement of the transmission line to avoid or minimize disrupting the operations of the Harpold Dam and Quarry where feasible.

The plan must include, at a minimum, a map showing the location of transmission line poles in relation to the dam and quarry, a description of transmission line and construction impacts on these operations, and measures proposed to avoid or mitigate such impacts.

The plan must be developed in consultation with the Klamath Irrigation District, the Horsefly Irrigation District, and Klamath County Public Works. The licensee must include with the plan documentation of consultation, copies of recommendations on the plan after it has been prepared and provided to the entities above, and specific descriptions of how these entities' comments are accommodated in the plan. The licensee must allow a minimum of 30 days for these entities to comment and to make recommendations prior to filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons based on project-specific reasons.

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

Article 415. Agricultural Operations Coordination Plan. At least 90 days before the start of any land-disturbing or land-clearing activities, the licensee must file for Commission approval, a plan to coordinate the timing of the installation and placement of transmission line poles to minimize adverse effects on area farming practices where feasible.

The plan must include, at a minimum, a map showing the location of transmission line poles in relation to specific agricultural operations, a description of transmission line impacts on these operations, and measures proposed to avoid or mitigate such impacts.

The plan must be developed in consultation with all agricultural landowners whose land would be crossed by the transmission line, including, but not limited to, the following landowners: 3MC Ranches (David McLin), Jespersen Swan Lake, Inc., Edgewood Ranch, Inc., Patrick Colohan and Alta Cochran, and Delbert Fox. The licensee must include with the plan documentation of consultation, copies of recommendations on the plan after it has been prepared and provided to the entities above, and specific descriptions of how these entities' comments are accommodated in the plan. The licensee must allow a minimum of 30 days for these entities to comment and to make recommendations prior to filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons based on project-specific reasons.

The Commission reserves the right to require changes to the plan. The plan must not be implemented until the licensee is notified by the Commission that the plan is

approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Article 416. Visual Resources Protection. The licensee must implement the following visual resource protection measures during the project construction period:

- (1) Use locally-quarried rock for the outer berm of the reservoirs to match the colors of the surrounding landscape and plant vegetation to minimize the visibility of the reservoirs;
- (2) Paint the powerhouse, maintenance structures, and appurtenant facilities with Bureau of Land Management-approved paint colors that match the surrounding landscape and dull the surfaces that cannot be painted;
- (3) Screen project facilities with vegetation to the extent practicable;
- (4) Keep facility yards clean of debris and unused materials to minimize the appearance of these structures;
- (5) Use lamps, covers, timers, and motion sensors on outdoor lighting to minimize light pollution;
- (6) Install mono-pole-type transmission line structures that consist of weathering COR-TEN-type steel and install conductors with non-specular materials where possible to minimize visibility and contrast of the transmission line with the surrounding landscape;
- (7) Reduce the prominence of land-scarring and vegetation changes from the construction or modification of access and service roads to the extent possible by (a) using low-impact construction techniques such as helicopter to place and maintain transmission line poles in sensitive or difficult to access locations; using locally quarried aggregate to match colors of the surrounding landscape; modifying road surface color to match the surrounding landscape; minimizing the widening and grading of roads; employing dust-suppression measures during construction; and replanting all disturbed areas with permanent vegetation consistent with the Revegetation and Noxious Weed Management Plan required by Article 404.

The licensee must also implement the light pollution mitigation measures identified in item (5) above during project operation.

Within 90 days of the completion of project construction, the licensee shall file, in the form of photographs or as-built drawings, documentation of completion of the above measures.

Article 417. Programmatic Agreement and Historic Properties Management Plan. The licensee must implement the “Programmatic Agreement Between the Federal Energy Regulatory Commission, and the Oregon State Historic Preservation Office, and The Advisory Council of Historic Preservation for Managing Historic Properties that May be Affected by Issuing a License to Swan Lake North Hydro LLC for the Operation and Maintenance of the Swan Lake North Pumped Storage Hydroelectric Project in Klamath County, Oregon (FERC No. 13318-003),” executed on April 3, 2019, and including but not limited to the Historic Properties Management Plan (HPMP) for the project. Pursuant to the requirements of this Programmatic Agreement, the licensee must file, for Commission approval, a HPMP within one year of issuance of this order. The Commission reserves the authority to require changes to the HPMP at any time during the term of this license. If the Programmatic Agreement is terminated prior to Commission approval of the HPMP, the licensee must obtain approval from the Commission, the Oregon State Historic Preservation Office, and Advisory Council of Historic Preservation before engaging in any ground-disturbing activities or taking any other action that may affect any historic properties within the project’s area of potential effects.

Article 418. Traffic Safety Plan. At least 90 days before the start of any land-disturbing or land-clearing activities, the licensee must file for Commission approval, a traffic safety plan to minimize construction impacts on local public roads, including but not limited to, Swan Lake Road, Highway 140, Harpold Road, North Poe Valley Road, and Burgdorf Road.

The plan must include, at a minimum, a detailed description of:

- (1) how work shifts would be scheduled to minimize traffic;
- (2) specific traffic safety measures to be employed during project construction;
- (3) procedures to notify the public of traffic changes;
- (4) how construction traffic would be coordinated to minimize interference with Klamath County Public Works roadway and drainage facility maintenance and operations, including snow removal and dust control; and
- (5) specific measures to control off-highway vehicle access to project lands and adjoining lands from project access roads, such as gating or blocking access roads.

The plan must be developed in consultation with the Oregon Department of Transportation, Klamath County Public Works, Klamath Irrigation District, Horsefly Irrigation District, the Bureau of Land Management, the Oregon Department of Fish and Wildlife, and the Oregon Parks and Recreation Department. The licensee must include with the plan documentation of consultation, copies of recommendations on the plan after it has been prepared and provided to the entities above, and specific descriptions of how the entities' comments are accommodated in the plan. The licensee must allow a minimum of 30 days for the entities to comment and to make recommendations prior to filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons based on project-specific reasons.

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

Article 419. Air Quality Control Plan. At least 90 days before the start of any land-disturbing or land-clearing activities, the licensee must file for Commission approval, an Air Quality Control Plan to minimize the emission of fugitive dust and vehicle exhaust during construction.

The plan must include, at a minimum, a narrative description, a map (where applicable) showing the anticipated locations of, and a schedule for implementing the following Best Management Practices (BMPs):

- (1) stabilizing truck exit areas for washing the wheels of all trucks that enter paved roadways from the construction site and dirt roads leading from the construction site;
- (2) installing tracking pads at construction exits to prevent dirt from being tracked onto roadways;
- (3) applying water or dust reducing agents to all exposed surfaces on project lands, as needed during dry weather, including, but not limited to soil piles, graded areas, unpaved parking areas, staging areas, and project access roads or, in cases where project access roads would remain in place for an extended duration, covering the routes with gravel to avoid re-suspension of dust;
- (4) covering and maintaining at least two feet of free board space on haul trucks transporting soil, sand, or other loose material at the project;

- (5) paving all project roadways, driveways, sidewalks, and parking lots as soon as possible and laying building pads as soon as possible after grading unless seeding or soil binders are used; and
- (6) incorporating dust control measures (e.g., dust collectors and covers limiting pathways for dust) into the temporary concrete batch plant, if used at the construction site; and
- (7) establishing inspection and maintenance programs and signage to minimize idling time of construction equipment on project lands.

The plan must be developed in consultation with the Oregon Department of Environmental Quality. The Commission reserves the right to require changes to the plan. Implementation of the plan must not begin until the licensee is notified by the Commission that the plan is approved. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Article 420. 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 with the Commission a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 water craft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally,

from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 60 days before conveying any interest in project lands under this paragraph (d), the licensee must file a letter with the Commission, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Commission's authorized representative, within 45 days from the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

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

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

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

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

(H) 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 relating to that filing. Proof of service on these entities must accompany the filing with the Commission.

(I) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the FPA, 16 U.S.C. § 8251 (2012), and section 385.713 of the Commission's regulations, 18 C.F.R. § 385.713 (2018). The filing of a request for rehearing does not operate as a stay of the effective date of the license or of any other date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

Terry L. Turpin
Director
Office of Energy Projects

FEDERAL ENERGY REGULATORY COMMISSION

**TERMS AND CONDITIONS OF LICENSE FOR
UNCONSTRUCTED MAJOR PROJECT AFFECTING
LANDS OF THE UNITED STATES**

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

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

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

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

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

Article 4. The construction, operation, and maintenance of the project and any work incidental to additions or alterations shall be subject to the inspection and supervision of the Regional Engineer, Federal Energy Regulatory Commission, in the region wherein the project is located, or of such other officer or agent as the Commission may designate, who shall be the authorized representative of the Commission for such purposes. The Licensee shall cooperate fully with said representative and shall furnish him a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of the project and for any subsequent alterations to the project. Construction of the project works or any features or alteration thereof shall not be initiated until the program of inspection for the project works or any such feature thereof has been approved by said representative. The Licensee shall also furnish to said representative such further information as he may require concerning the construction, operation, and maintenance of the project, and of any alteration thereof, and shall notify him of the date upon which work will begin, as far in advance thereof as said representative may reasonably specify, and shall notify him promptly in writing of any suspension of work for a period of more than one week, and of its resumption and completion. The Licensee shall allow said representative and other officers or employees of the United States, showing proper credentials, free and unrestricted access to, through, and across the project lands and project works in the performance of their official duties. The Licensee shall comply with such rules and regulations of general or special applicability as the Commission may prescribe from time to time for the protection of life, health, or property.

Article 5. The Licensee, within five years from the date of issuance of the license, shall acquire title in fee or the right to use in perpetuity all lands, other than lands of the United States, necessary or appropriate for the construction, maintenance, and operation of the project. The Licensee or its successors and assigns shall, during the period of the license, retain the possession of all project property covered by the license as issued or as later amended, including the project area, the project works, and all franchises, easements, water rights, and rights of occupancy and use; and none of such properties shall be voluntarily sold, leased, transferred, abandoned, or otherwise disposed of without the prior written approval of the Commission, except that the Licensee may lease or otherwise dispose of interests in project lands or property without specific written approval of the Commission pursuant to the then current regulations of the Commission.

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

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

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

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

may be mutually agreed upon. The Licensee shall keep accurate and sufficient records of the foregoing determinations to the satisfaction of the Commission, and shall make return of such records annually at such time and in such form as the Commission may prescribe.

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

Article 10. The Licensee shall, after notice and opportunity for hearing, coordinate the operation of the project, electrically and hydraulically, with such other projects or power systems and in such manner as the Commission may direct in the interest of power and other beneficial public uses of water resources, and on such conditions concerning the equitable sharing of benefits by the Licensee as the Commission may order.

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

Article 12. The 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 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 Commission may prescribe for the purposes hereinbefore mentioned.

Article 13. On the application of any person, association, corporation, Federal Agency, State or municipality, the Licensee shall permit such reasonable use of its reservoir or other project properties, including works, lands and water rights, or parts thereof, as may be ordered by the Commission, after notice and opportunity for hearing, in the interests of comprehensive development of the waterway or waterways involved and the conservation and utilization of the water resources of the region for water supply

or for the purposes of steam-electric, irrigation, industrial, municipal or similar uses. The Licensee shall receive reasonable compensation for use of its reservoir or other project properties or parts thereof for such purposes, to include at least full reimbursement for any damages or expenses which the joint use causes the Licensee to incur. Any such compensation shall be fixed by the Commission either by approval of an agreement between the Licensee and the party or parties benefiting or after notice and opportunity for hearing. Applications shall contain information in sufficient detail to afford a full understanding of the proposed use, including satisfactory evidence that the applicant possesses necessary water rights pursuant to applicable State law, or a showing of cause why such evidence cannot concurrently be submitted, and a statement as to the relationship of the proposed use to any State or municipal plans or orders which may have been adopted with respect to the use of such waters.

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

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

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

construct or improve fish and wildlife facilities or to relieve the Licensee of any obligation under this license.

Article 17. The Licensee shall construct, maintain, and operate, or shall arrange for the construction, maintenance, and operation of such reasonable recreational facilities, including modifications thereto, such as access roads, wharves, launching ramps, beaches, picnic and camping areas, sanitary facilities, and utilities, giving consideration to the needs of the physically handicapped, and shall comply with such reasonable modifications of the project, as may be prescribed hereafter by the Commission during the term of this license upon its own motion or upon the recommendation of the Secretary of the Interior or other interested Federal or State agencies, after notice and opportunity for hearing.

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

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

Article 20. The Licensee shall consult with the appropriate State and Federal agencies and, within one year of the date of issuance of this license, shall submit for Commission approval a plan for clearing the reservoir area. Further, the Licensee shall clear and keep clear to an adequate width lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which results from the clearing of lands or from the maintenance or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. Upon approval of the clearing plan all clearing of the lands and disposal of the unnecessary material shall be done with due diligence and to the satisfaction of the authorized representative of the Commission and in accordance with appropriate Federal, State, and local statutes and regulations.

Article 21. 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 22. 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 23. 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 24. 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 25. 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. The 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 26. 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 27. 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 28. 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 29. 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 30. 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 31. 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 the license.

Article 32. The terms and conditions expressly set forth in the license shall not be construed as impairing any terms and conditions of the Federal Power Act which are not expressly set forth herein.