INTRODUCTION

1. On May 29, 2014, Juneau Hydropower, Inc. (Juneau Hydro) filed, pursuant to Part 1 of the Federal Power Act (FPA), an application for an original license to construct and operate the proposed Sweetheart Lake Hydroelectric Project No. 13563 (Sweetheart Lake Project or project). The project will be located on Sweetheart Creek in the Tongass National Forest, approximately 30 miles south of the City and Borough of Juneau, Alaska. The project will occupy 2,058.24 acres of federal land administered by the U.S. Forest Service (Forest Service) as part of the Tongass National Forest. The project’s authorized capacity being licensed is 19.8 megawatts (MW).

2. As discussed below, this order issues an original license for the Sweetheart Lake Project.

BACKGROUND

3. On July 31, 2014, the Commission issued a public notice that was published in the Federal Register accepting the application for filing and setting September 29, 2014, as the deadline for filing motions to intervene and protests. The Forest Service and Alaska Electric Light and Power Company (Alaska Power) filed timely motions to intervene.

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2 Because the project would occupy federal land, section 23(b)(1) of the FPA, 16 U.S.C. § 817(1) (2012), requires that it be licensed.


4 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) (2016).
4. On November 17, 2014, the Commission issued a public notice that was published in the *Federal Register* indicating the application was ready for environmental analysis, and setting January 16, 2015, as the deadline for filing comments, recommendations, terms and conditions, and prescriptions, and March 2, 2015, for reply comments.\(^5\) The Forest Service, U.S. Department of the Interior (Interior), U.S. Environmental Protection Agency (EPA), Alaska Department of Natural Resources (Alaska DNR), and Alaska Department of Fish and Game (Alaska DFG) filed comments and recommendations. U.S. Senator Lisa Murkowski, U.S. Representative Don Young, Alaska State Senator Dennis Egan, Alaska State Representative Cathy Muñoz, and the Alaska Energy Authority filed comments. Juneau Hydro filed reply comments and modifications to its proposal on March 2, 2015.

5. A draft Environmental Impact Statement (EIS), analyzing the impacts of the proposed project and alternatives to it, was prepared by Commission staff and issued on October 29, 2015.\(^6\) The Forest Service, EPA, Interior, National Marine Fisheries Service (NMFS), Alaska DFG, Alaska DNR, State Representative Cathy Muñoz, Alaska Power, International Union of Operating Engineers, Carole Bookless, Scott Spickler, and Juneau Hydro filed comments on the draft EIS. On May 31, 2016, Commission staff issued a final EIS.

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

**PROJECT DESCRIPTION AND OPERATION**

**A. Project Area**

7. The entire Sweetheart Creek Basin is located in the Tongass National Forest and drains approximately 36 square miles. The basin includes Upper Sweetheart Lake, Lower Sweetheart Lake (hereafter, Sweetheart Lake), and Sweetheart Creek. The upper basin area consists of high peaks and ridges ranging in elevation from 2,500 to 4,500 feet, many containing glaciers and ice fields that drain down steep canyon walls and avalanche chutes into Upper Sweetheart Lake. Sweetheart Lake is a 5.4-mile-long, 0.6-mile-wide, glacially-formed lake with a surface area of 1,414 acres at a normal elevation of 551


\(^6\) The U.S. Army Corps of Engineers was a cooperating agency in the preparation of the draft and final EIS.
feet.\textsuperscript{7} Sweetheart Creek flows approximately 2.2 miles from the outlet of Sweetheart Lake to tidewater at Gilbert Bay.

### B. Proposed Project Facilities

8. The proposed project will consist of: a new dam constructed at the natural outlet of Sweetheart Lake; a reservoir outlet tunnel; an intake, power tunnel, and penstock; a powerhouse and switchyard; a tailrace; a transmission line and switchyard; and an access road.

9. The new 280-foot-long, 111-foot-high roller-compacted concrete dam will raise Sweetheart Lake from a water surface elevation of 551 feet and a surface area of 1,414 acres to a new maximum water surface elevation of 636 feet and surface area of 1,702 acres, impounding 128,019-acre-feet of water.\textsuperscript{8} The dam will have a 125-foot-wide ungated spillway that will spill flows into Sweetheart Creek when reservoir levels rise above 636 feet. A reservoir outlet tunnel that will be used to draw down the reservoir in an emergency will be constructed at the dam’s right abutment. A 45-foot-long, 25-foot-wide, 16-foot-high rectangular concrete intake also will be located at the dam’s right abutment. The intake will be fitted with six, 7-foot-diameter, 10-foot-high cylindrical fish screens to prevent fish entrainment. A conduit installed from the intake, through the reservoir outlet tunnel, will discharge a 3-cubic-foot-per-second (cfs) minimum instream flow into Sweetheart Creek below the dam.

10. Flows entering the intake will pass through a 9,612-foot-long, 15-foot-wide, 15-foot-high unlined underground power tunnel that will transition to an 896-foot-long, 9-foot-diameter steel penstock. The penstock will divide into three 160-foot-long, 7- to 9-foot-diameter buried steel penstocks connected to each of three 7.1-MW Francis turbines with 6.6-MW generators located within the 160-foot-long, 60-foot-wide, 30-foot-high concrete and steel powerhouse. The powerhouse will be located on Sweetheart Creek two miles downstream from the project dam on Sweetheart Lake.

11. Flows exiting the powerhouse will return to Sweetheart Creek about 1,300 feet upstream from the creek mouth on Gilbert Bay, through a 541-foot-long, 30- to 90-foot-wide rock tailrace. A fish exclusion structure will be installed near the powerhouse to prevent fish from entering the draft tubes. A 25-foot-long, 5-foot-wide, 4-foot-deep salmon smolt re-entry pool will be installed adjacent to the powerhouse and tailrace to hold sockeye salmon smolts collected and transported from Sweetheart Lake for

\textsuperscript{7} All elevations reported in this license are referenced to the mean lower low water level, which is the 19-year average of the lower of the two daily low tides.

\textsuperscript{8} The reservoir will have 94,069 acre-feet of active storage.
imprinting and eventual release into Sweetheart Creek. The project will bypass a 2-mile-long section of Sweetheart Creek.

12. To provide access to the powerhouse, a dock/landing site will be built on the east shore of Gilbert Bay and a 4,400-foot-long road will be constructed from the dock to the powerhouse. Access to the dam and reservoir will be by helicopter or floatplane.

13. A 4,225-square-foot caretaker’s facility will be constructed near the dock to house operation and maintenance staff, and a 400-square-foot shelter will be constructed at the dam for employee use during operation and maintenance activities, including annual smolt collection.

14. The project’s transmission facilities will include: a 22,000-square-foot switchyard containing a step-up transformer located adjacent to the powerhouse; an 8.69-mile-long, 138-kilovolt (kV) over-head transmission line and marine cable traversing Gilbert Bay, the Snettisham Peninsula, and Port Snettisham; and a 60-foot by 60-foot switchyard at the end of the transmission line on the north shore of Port Snettisham where it interconnects with the existing Snettisham transmission line. A 4,400-foot-long, 12.47-kV service transmission line and communication cable will extend from the powerhouse to the dock and caretaker’s facility, and a similar 10,000-foot-long, 12.47-kV service transmission line and communication cable will extend from the powerhouse to the dam.

C. Proposed Project Operation

15. The project will operate to provide continuous year-round flow to the powerhouse sufficient to meet a firm base-load for two units (13.2 MW) and a variable minimum instream flow in Sweetheart Creek below the project tailrace. The project’s third unit will operate when excess water is available. The project will draw on available storage during the low-flow winter months to reach a normal minimum pool level of 576 feet by April or May and capture flows between June and October to refill the reservoir to the maximum reservoir level of 636 feet, resulting in an annual reservoir fluctuation of about 60 feet.\(^9\)

16. In addition to the 3-cfs minimum instream flow to be released below the dam, the project will maintain a variable monthly minimum instream flow in the 1,300-foot-long section of Sweetheart Creek downstream of the project tailrace. The powerhouse will have a minimum hydraulic capacity of 55 cfs (one unit) and a maximum hydraulic

\(^9\) A reservoir elevation of approximately 558 feet is necessary to pass flow through the project. In the event that the reservoir level drops below this elevation, or flows are prevented from being passed through the powerhouse, flows would be routed through the project’s reservoir outlet tunnel at the base of the dam into the bypassed reach.
capacity of 460 cfs (three units). A synchronous bypass valve on each turbine will open to pass the minimum instream flows when the turbines are off-line.

17. The project will normally operate under automatic control, but could also be operated manually. The project is expected to generate an average of about 116,000 megawatt-hours (MWh) annually. A more detailed project description is contained in Ordering Paragraph B.

D. Project Boundary

18. The proposed project boundary encloses all of the project facilities listed above. In addition to the project facilities and lands that are within the Tongass National Forest, the dock/landing site and a portion of the coastal access road, and the submerged portion of the transmission line will be located on 131.18 acres of land owned by the State of Alaska.

E. Proposed Environmental Measures

19. In addition to some specific environmental measures, Juneau Hydro proposes various plans to protect resources affected by project construction and operation. Juneau Hydro intends to revise these resource plans as needed in consultation with resource agencies before filing final plans for Commission approval and implementation.

Construction-Related Measures and Plans

20. To document compliance with the provisions of the license, Juneau Hydro proposes to provide representatives of Alaska DFG access to project lands and waters, and project works, and as part of an Environmental Compliance Plan, provide an environmental compliance monitor during construction.

21. To control erosion and protect water quality from turbidity, storm water runoff, sewage, and fuel spills, Juneau Hydro proposes an Erosion and Sediment Control Plan.

10 The true maximum hydraulic capacity would be 650 cfs; however, due to generator limitations, the hydraulic discharge of the powerhouse will be limited to 460 cfs.

11 All of the plans were filed with the license application on May 29, 2014; however, the Aquatic Habitat Restoration and Monitoring Plan, Fish Mitigation and Monitoring Plan, Reservoir Management and Inundation Plan, Stream Flow Management Plan, and Stream Flow Measurement Plan were updated in response to a staff additional information request and filed on October 20, 2014.
(Erosion Control Plan), Storm Water and Pollution Prevention Plan (Storm Water Plan), and Solid Waste and Wastewater Plan (Solid Waste Plan).

22. To prevent the release of silt and sediment, promote the recovery of spoil sites, and prevent the potential release of acid-leachate from excavated material and spoils, Juneau Hydro proposes a Spoil Disposal Plan that includes an Acid Rock Disposal Contingency Plan. The Spoil Disposal Plan includes provisions for controlling erosion, testing for acid rock forming materials, using spoil materials, and stabilizing spoil sites. Additional measures would be developed if acid-producing materials are encountered.

23. To protect salmonids and their habitat, Juneau Hydro proposes to identify timing windows for instream construction activities and stream crossing in consultation with Alaska DFG.

24. To minimize effects on vegetation, Juneau Hydro proposes a Vegetation Management Plan that includes salvaging and transplanting native plants to revegetate disturbed areas, monitoring the effectiveness of the revegetation measures, measures to avoid introducing invasive plants, and avoiding the use of pesticides and herbicides within 500 feet of sensitive species and habitats.

25. To protect wildlife, Juneau Hydro proposes a Wildlife Mitigation and Monitoring and Threatened and Endangered Species Protection Plan that includes measures to avoid or minimize disturbing marine mammals and mountain goats, and harming bald eagles and other birds.

26. To minimize the risk of human-bear interactions, Juneau Hydro proposes a Bear Safety Plan that includes rules, policies, and procedures to reduce bear encounters and conflicts during project construction and operation.

27. To comply with National Forest land management objectives, Juneau Hydro proposes a Construction Plan that provides a detailed description of construction phasing.

28. To protect cultural resources, Juneau Hydro proposes a Heritage Resource Protection Plan that includes provisions to cease construction and consult with the Alaska State Historic Preservation Officer if any previously unknown archeological sites or human remains are discovered during project construction and maintenance activities.

Project Design and Operation-Related Measures and Plans

29. To protect aquatic resources, Juneau Hydro proposes a Stream Flow Management Plan\textsuperscript{12} that includes releasing a minimum flow of 3 cfs into the Sweetheart Creek

\textsuperscript{12} Juneau Hydro filed a Stream Flow Management Plan, Stream Flow Measurement Plan, and Reservoir Management Inundation Plan as part of its Water (continued ...
bypassed reach and maintaining a minimum flow through the powerhouse of 40 cfs from January through February, 45 cfs in March, 119 cfs in April, 300 cfs from May through October, and 117 cfs from November through December.

30. To document compliance with instream flow requirements, Juneau Hydro proposes a Stream Flow Measurement Plan that includes installing calibrated stream gages and integrating stream flow data into the powerhouse operations and control systems.

31. To stimulate returning sockeye salmon to enter Sweetheart Creek from the estuary, Juneau Hydro proposes to develop a pulse flow release and monitoring plan that includes releasing at least four pulse flows of 486 cfs between July 1 and August 31 for 3 to 5 years and monitoring salmon responses to determine if the pulse flows should be continued.

32. To monitor reservoir levels, maintain water quality, and manage floating debris in Sweetheart Lake, Juneau Hydro proposes a Reservoir Management and Inundation Plan.

33. To protect fisheries resources in Sweetheart Creek, Juneau Hydro proposes an Aquatic Habitat Restoration and Monitoring Plan that includes monitoring salmon spawning gravel availability after operation begins and augmenting gravel if needed.

34. To protect fisheries resources in Sweetheart Lake, Juneau Hydro proposes a Fish Mitigation and Monitoring Plan that includes monitoring Dolly Varden and rainbow trout recruitment in Sweetheart Lake and either stocking fish, improving access to spawning habitat, or providing offsite mitigation if there is no evidence of year-class\textsuperscript{13} survival.

35. To prevent fish from entering the turbine draft tubes, Juneau Hydro proposes to install and maintain a fish exclusion structure in the project tailrace.

36. To prevent entrainment of fish, Juneau Hydro proposes to install and maintain fish screens on the power tunnel intake that conform to NMFS criteria.

37. To maintain the personal use fishery in Sweetheart Creek, Juneau Hydro proposes to construct and operate a sockeye salmon smolt collection and transport system and to develop a smolt collection and transport plan.

38. To protect aquatic resources from any fuel or other hazardous substance spills, Juneau Hydro proposes a Hazardous Substances Plan.

Management Plan; however, each of these plans is considered an individual plan.

\textsuperscript{13} A year-class is a cohort or group of fish spawned in the same year.
39. To prevent barriers to wildlife movement, Juneau Hydro proposes to bury the penstock and construct a 94-foot-wide wildlife tailrace overpass with a connecting trail to the new access road.

40. To minimize visual impacts and protect migratory birds from collision and electrocution hazards, Juneau Hydro proposes to bury the service transmission and telecommunication lines along the new access road, and to construct and annually inspect the overhead transmission line in accordance with Avian Power Line Interaction Committee (APLIC) guidelines.

41. To minimize visual impacts, Juneau Hydro proposes a Scenic Management and Monitoring Plan\textsuperscript{14} that includes measures to reduce the contrast of project facilities with the surrounding landscape.

42. To prevent and control wildfires, Juneau Hydro proposes a Fire Prevention Plan.

43. To manage public access and ensure public safety at the project, Juneau Hydro proposes an Access Management Plan\textsuperscript{15} that prevents public access to dangerous and restricted facilities and construction sites.

44. To provide recreation opportunities, Juneau Hydro proposes to implement a Recreation Management Plan that includes installing interpretive displays, creating recreational access trails, visually screening project facilities from recreation areas, providing mooring buoys in Gilbert Bay, creating a tailrace fishing area, constructing a boat dock and ramp, and monitoring recreational use.

**SUMMARY OF LICENSE REQUIREMENTS**

45. As summarized below, this license, which authorizes 19.8 MW of renewable energy, requires the measures proposed above with some modifications and additions to address the Forest Service section 4(e) conditions and, in part, facilitate the Commission’s administration of the license.

\textsuperscript{14} While Juneau Hydro proposes to implement a Scenery Management and Monitoring Plan and Forest Service condition 22 requires a Scenery Management Plan, because the plans are meant to address the same issue, the plan names are interchangeable.

\textsuperscript{15} While Juneau Hydro proposes to implement the Access Management Plan and Forest Service condition 22 requires an Access and Road Management and Maintenance Plan, because the plans are meant to address the same issue, the plan names are interchangeable.
46. To control erosion and sedimentation, and protect water quality, the license requires Juneau Hydro to file: (1) a Soil Erosion and Sediment Control Plan that includes provisions for site-specific control measures and turbidity monitoring requirements; and (2) a Spoil Disposal Plan.

47. To protect fisheries and aquatic habitat during construction, the license requires Juneau Hydro to file a Construction Plan that includes a 100-foot construction set-back from streams for certain project facilities.

48. To monitor compliance with instream flow requirements, the license requires Juneau Hydro to file: (1) a Stream Flow Measurement Plan with descriptions of the type(s) gages to be installed, their specific locations, and procedures for maintaining and calibrating the gages; and (2) a Stream Flow Management Plan that describes how it will maintain records of instream flows and includes a provision to notify the Commission in the event of a deviation from the minimum flow requirements.

49. To monitor potential water quality changes within Sweetheart Lake and water quality of downstream minimum flow releases, the license requires Juneau Hydro to file a Reservoir Management and Inundation Plan that describes the criteria for determining deviations in turbidity, pH, and temperature levels; limit monitoring to the first five years of project operation; file a report with any recommendation for continuing or modifying monitoring program; and notify the Commission in the event that water quality deviations occur.

50. To protect aquatic habitat, the license requires Juneau Hydro to file: (1) an Aquatic Habitat Restoration and Monitoring Plan that describes the spawning gravel sampling methods and evaluation metrics, defines the criteria for determining if spawning gravel augmentation would be required, and includes a provision to file a report documenting the assessment results and providing either recommendations for continuing the assessment, plans to augment spawning gravel, or recommendations to discontinue the assessment; and (2) a Fish Mitigation and Monitoring Plan that describes the proposed sampling methods, sampling schedules, level of effort, and evaluation metrics for determining year-class survival of Dolly Varden and rainbow trout in Sweetheart Lake and includes a provision to file a report summarizing the monitoring results and any recommendations for continuing the monitoring or implementing mitigation measures.

51. To protect fisheries during project operation, the license requires Juneau Hydro to: (1) file fish exclusion and tailrace design plans, including testing, operation, and maintenance procedures, and an implementation schedule; (2) file fish screen design plans, including testing, operation, and maintenance procedures, and an implementation schedule; and (3) include a provision in the sockeye salmon smolt collection and transport plan to file reports with the Commission on the effectiveness of the collection system and any recommended changes in its operation or other corrective actions.
52. To ensure the successful revegetation of disturbed areas and the protection of two-color sedge plants, the license requires Juneau Hydro to file a Vegetation Management Plan that includes: (1) provisions for storing, treating, and transplanting salvaged plants; (2) criteria for determining successful revegetation of disturbed sites; (3) monitoring protocols; and (4) provisions for salvaging and transplanting two-color sedge plants from the reservoir area prior to inundation.

53. To prevent the spread of invasive plants, the license requires Juneau Hydro to develop an Invasive Species Management Plan that includes: (1) provisions for the use of weed-free fill materials and weed-free erosion control methods; (2) a monitoring schedule that addresses short-term (first 3 to 5 years) and long-term monitoring needs; and (3) a description of proposed eradication measures.

54. To protect wildlife resources, this license requires Juneau Hydro to file a Wildlife Mitigation and Monitoring Plan in consultation with agencies that includes measures to prevent disturbing mountain goats, bald eagles, and marine mammals during construction and minimize avian electrocution and collision hazards with the project transmission line.

55. To ensure that the proposed recreation measures are functioning as designed and recreation needs are being met, the license requires Juneau Hydro, to the review the plan four years after operation begins as well as in its proposed 20-year increments.

56. To protect aesthetic resources, the license requires Juneau Hydro to include in its Scenery Management Plan, specific monitoring protocols and a provision to file a report at the end of the proposed 10-year monitoring period with recommendations for any future monitoring.

57. To protect cultural resources, the license requires Juneau Hydro to file a Heritage Resource Protection Plan that includes cultural resources training and monitoring protocols.

**WATER QUALITY CERTIFICATION**

58. Under section 401(a)(1) of the Clean Water Act (CWA), 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 water quality certification shall become a condition of any federal license that authorizes construction or operation of the project.\footnote{Id. at § 1341(d).}

59. In a letter dated December 31, 2015, the Alaska Department of Environmental Conservation (Alaska DEC) waived its right to issue a water quality certification for the Sweetheart Lake Project.\footnote{See supplemental information filed January 25, 2016.}

COASTAL ZONE MANAGEMENT ACT

60. Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA),\footnote{16 U.S.C. § 1456(c)(3)(A) (2012).} 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 6 months of its receipt of the applicant’s certification.

61. On July 7, 2011, by Alaska State law, the federally-approved Alaska Coastal Management Program expired, resulting in a withdrawal from participation in the CZMA’s National Coastal Management Program. Therefore, the CZMA federal consistency provision, section 307, no longer applies in Alaska.

SECTION 4(e) FINDING AND CONDITIONS

62. Section 4(e) of the FPA\footnote{Id. at § 797(e).} provides that the Commission can issue a license for a project located within a federal reservation only if it finds that the license will not interfere or be inconsistent with the purpose for which such reservation was created or acquired. FPA section 4(e) further requires that Commission licenses for projects located within federal reservations must include all conditions that the Secretary of the department under whose supervision the reservation falls shall deem necessary for the adequate protection and utilization of such reservation.

63. Because the project occupies the Tongass National Forest, staff reviewed the Organic Administration Act of 1897,\footnote{Id. at § 473 et seq.} which established the purposes for forest
reservations, and the presidential proclamation that created the Tongass National Forest.\textsuperscript{22} No evidence or allegation exists in this proceeding to show that licensing the Sweetheart Lake Project would interfere with the purposes of the Tongass National Forest. Therefore, this license, as conditioned, will not interfere with or be inconsistent with the purposes for which the Tongass National Forest was created.\textsuperscript{23}

64. The Forest Service filed 22 final 4(e) conditions on December 24, 2015. The conditions are set forth in Appendix A of this order and incorporated into the license by Ordering Paragraph (D). Conditions 1-20 are general or administrative in nature; therefore they are not discussed further. Condition 21 and 22 are specific to the Sweetheart Lake Project.

65. Condition 21 requires Juneau Hydro to provide a qualified environmental compliance monitor to oversee the project during major construction activities (e.g., vegetative or land disturbing, spoil producing, blasting activities). In the final EIS, staff recommended that the compliance monitor be selected in consultation with Alaska DFG prior to beginning construction activities. Article 403 requires this measure.

66. Condition 22 requires Juneau Hydro to develop, in consultation with the Forest Service and applicable federal and state agencies, the following 20 plans: (1) Construction; (2) Spoil Disposal; (3) Access and Road Management and Maintenance; (4) Reservoir Management and Inundation; (5) Erosion Control; (6) Solid Waste and Wastewater; (7) Hazardous Substances; (8) Fire Prevention; (9) Heritage Resource Protection; (10) Scenery Management; (11) Vegetation Management; (12) Invasive

\textsuperscript{22} The Tongass National Forest was established on September 10, 1907 (Proclamation 35, Stat 2152). On July 1, 1908, the Alexander Archipelago was added (Executive Order 908). In 1974, the Tongass National Forest was divided administratively into three units: Chatham, Ketchikan, and Sitka. \textit{See, Encyclopedia of American Forest and Conservation History}, Volume 2, Appendix 1 (Richard C. Davis ed., MacMillian Publishing Co. 1983). The Organic Administration Act of 1897, 16 U.S.C. § 475 (2012), stipulated that all national forest lands were established and administered only for watershed protection and timber production.

\textsuperscript{23} The project is located within the 685,704-acre Taku-Snettisham Inventoried Roadless Area. Pursuant to the ruling of the U.S. District Court for the District of Alaska in \textit{Organized Village of Kake v. U.S. Department of Agriculture}, No. 1:09-cv-00023 (March 4, 2011) and upheld by the U.S. Court of Appeals, 795 F.3d. 956 (9th Cir. 2015), the Roadless Area Conservation Rule (36 C.F.R. Part 294) applies to the Tongass National Forest and generally prohibits construction or reconstruction of roads in inventoried roadless areas, but with some exceptions including hydroelectric development.
Species Management; (13) Wildlife Mitigation and Monitoring; (14) Fish Mitigation and Monitoring; (15) Threatened, Endangered, Proposed for Listing, and Sensitive Species; (16) Stream Flow Management; (17) Stream Flow Measurement; (18) Aquatic Habitat Restoration and Monitoring; (19) Environmental Compliance Monitoring; and (20) Storm Water and Pollution.

67. The Forest Service does not describe what must be included in the above plans. As noted earlier, Juneau Hydro filed drafts for each of the above plans, which were considered by staff in its environmental analysis. In the final EIS,\textsuperscript{24} staff recommended Juneau Hydro’s proposed Spoil Disposal, Solid Waste and Wastewater, Hazardous Substances, Fire Prevention, Storm Water and Pollution, and Access and Road Management and Maintenance Plans. Article 401 requires that these plans contain, at a minimum, the provisions proposed by Juneau Hydro in the draft plans filed on May 29, 2014. Staff’s recommended modifications to the remaining plans are discussed below.

68. To prevent adverse effects of erosion and sedimentation, staff recommended in the final EIS\textsuperscript{25} that the Erosion and Sediment Control Plan include the provisions proposed by Juneau Hydro in a draft plan filed on May 29, 2014, along with more detailed descriptions of spoil disposal sites, erosion control measures, and monitoring methods. Article 404 requires the plan to include these provisions.

69. To facilitate administration of the license, staff recommended in the final EIS,\textsuperscript{26} that the Reservoir Management and Inundation Plan include the provisions proposed by Juneau Hydro in a draft plan filed on October 20, 2014, along with the following additional provisions to its proposed water quality monitoring program: (1) establish thresholds for turbidity, pH, and water temperature that would constitute an “abnormal deviation” in water quality for the project; (2) continuously monitor water temperature, pH, and turbidity at hourly intervals for the first 5 years of project operation; (3) file a monitoring report with the Commission for approval at the end of the 5-year monitoring period that includes any recommendations for continued monitoring; and (4) notify the Commission of any such deviations, take any immediate reasonable actions to address the problem, and to file a report within 10 days that describes the deviation, the corrective actions taken, and proposals to modify procedures to avoid future deviations. Therefore, Article 409 requires that the plan include these provisions.

\textsuperscript{24}See final EIS at 5-2 – 5-5.

\textsuperscript{25}See final EIS at 5-2.

\textsuperscript{26}See final EIS at 5-10 – 5-11.
70. To facilitate administration of the license, staff recommended in the final EIS,\textsuperscript{27} that the Stream Flow Measurement Plan include the provisions proposed by Juneau Hydro in a draft plan filed on October 20, 2014, along with the following additional information: (1) a more detailed description of the flow monitoring equipment or gages; (2) the exact location of all flow monitoring equipment and gages; (3) justification for the placement of each monitoring location, including how each monitoring location relates to project operation; (4) procedures for maintaining and calibrating monitoring equipment; and (5) an implementation schedule. Article 407 requires that the plan include these provisions.

71. To facilitate administration of the license, staff recommended in the final EIS,\textsuperscript{28} that the Stream Flow Management Plan include the provisions proposed by Juneau Hydro in a draft plan filed on October 20, 2014, along with: (1) a clear description of how the project will be operated to maintain compliance with minimum instream flow requirements; and (2) a provision to file a report of any deviation from the minimum flow requirements with the Commission within 10 days of the deviation. The report must include a description of: (a) the cause, severity, and duration of the incident; (b) any observed or reported adverse environmental impacts resulting from the incident; (c) operational data necessary to determine compliance; (d) a description of any corrective measures implemented at the time of the incident and the measures implemented or proposed to ensure that similar incidents do not recur; and (e) comments or correspondence, if any, received from interested parties regarding the incident. Article 408 requires that the plan include these provisions.

72. To provide for the protection of aquatic resources, including salmonid spawning habitat, in the final EIS,\textsuperscript{29} staff recommended that the Aquatic Habitat And Restoration Monitoring Plan include the provisions proposed by Juneau Hydro in a draft of the plan filed on October 20, 2014, along with gravel augmentation monitoring and mitigation details, and a provision to file a report with the Commission by December 31 of year 3 of project operation describing the results of the gravel augmentation monitoring and including any recommendations for continuing the monitoring or implementing additional gravel augmentation measures. Article 410 requires that the plan include these provisions.

\textsuperscript{27} See final EIS at 5-11.

\textsuperscript{28} See final EIS at 5-11.

\textsuperscript{29} See final EIS at 5-14 and 5-15.
73. To protect rainbow trout and Dolly Varden in Sweetheart Lake and ensure an effective monitoring program, in the final EIS, staff recommended that the Fish Mitigation and Monitoring Plan include the provisions proposed by Juneau Hydro in a draft of the plan filed on October 20, 2014, along with a detailed description of monitoring protocols and schedule and a provision to file a report with the Commission by December 31 of year 3 of project operation describing the monitoring results and including any recommendations for continuing the monitoring program. Article 411 requires that the plan include these provisions.

74. To protect rare plant species from project-related activities, in the final EIS, staff recommended that the Vegetation Management Plan include the provisions proposed by Juneau Hydro in a draft of the plan filed on May 29, 2014, along with additional details to ensure the effectiveness of the revegetation efforts and a provision to relocate the rare two-color sedge plant to suitable habitat outside the inundation zone, prior to filling the reservoir. Article 416 requires that the plan include these provisions.

75. To prevent the spread of invasive species on project lands, in the final EIS, staff recommended that the Invasive Species Management Plan include the provisions proposed by Juneau Hydro in a draft of the plan filed on May 29, 2014, along with the following additional details and measures: (1) use of weed-free fill materials and weed-free erosion control methods; (2) a monitoring schedule that addresses short-term (first 5 years) and long-term monitoring needs; and (3) a description of proposed eradication measures that could be applied that would be consistent with Forest Service restrictions on the use of pesticides and herbicides. Article 417 requires that the plan include these provisions.

76. To protect endangered and threatened species during project construction, in the final EIS, staff recommended that the Threatened, Endangered, Proposed for Listing, and Sensitive Species Plan include the provisions proposed by Juneau Hydro in the plan filed on May 29, 2014, and supplemented on January 27, 2016, with specific mitigation measures to protect humpback whales and Steller sea lions. Article 419 requires that the plan include these supplemental marine mammal protection provisions.

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30 See final EIS at 5-15 – 5-16.

31 See final EIS at 5-16 – 5-17.

32 See final EIS at 5-17.

33 See final EIS at 5-3.
77. To protect wildlife on project lands from project-related activities, including construction, in the final EIS\textsuperscript{34} staff recommended that the Wildlife Mitigation and Monitoring Plan include certain provisions proposed in Juneau Hydro’s draft of the plan filed on May 29, 2014, and supplemented on January 27, 2016, with additional marine mammal protection measures. Article 418 requires that the plan include these provisions.

78. To minimize the aesthetic effects of the project on the landscape, staff recommended in the final EIS, that the Scenery Management Plan include the provisions proposed by Juneau Hydro in the plan filed May 29, 2014, along with a schedule to establish permanent photo points and the time(s) of the year that photos will be taken to monitor visual effects of the project over time and to file a report at the end of the proposed 10-year monitoring period with any recommendations for further monitoring. Article 423 requires that the plan include this provision.

SECTION 18 FISHWAY PRESCRIPTION

79. Section 18 of the FPA\textsuperscript{35} 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 Interior or the Secretary of Commerce, as appropriate.

80. No fishway prescriptions or reservations of authority were filed under section 18 of the FPA.

ESSENTIAL FISH HABITAT

81. Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act\textsuperscript{36} requires federal agencies to consult with the Secretary of Commerce regarding any action or proposed action authorized, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat (EFH) identified under the Act. Under section 305(b)(4)(A) of the Magnuson-Stevens Act, NMFS is required to provide EFH Conservation Recommendations for actions that would adversely affect EFH.\textsuperscript{37} Under section 305(b)(4)(B) of the Act, an agency must, within 30 days after receiving recommended conservation measures from NMFS or a Regional Fishery Management

\textsuperscript{34}See final EIS at 5-18 – 5-19.


\textsuperscript{36}Id. at § 1855(b)(2).

\textsuperscript{37}Id. at § 1855(b)(4)(A).
Council, describe the measures proposed by the agency for avoiding, mitigating, or offsetting the effects of the agency’s activity on EFH.\textsuperscript{38,39}

82. In the draft EIS, staff concluded that project construction and operation would not adversely affect pink and chum salmon EFH in lower Sweetheart Creek, or sockeye, pink and chum salmon EFH in Gilbert Bay.\textsuperscript{40} On October 29, 2015, Commission staff informed NMFS of staff’s conclusion.

83. By letter filed December 30, 2015, NMFS stated that it disagreed with Commission staff’s finding of no adverse effect for EFH for spawning and incubating pink and chum salmon. NMFS recommended that Juneau Hydro consult with NMFS on the development of the Aquatic Habitat Restoration and Monitoring Plan, to ensure the timely identification of any reduction in spawning gravels and timely and effective replacement of spawning habitat. Article 410 requires that the plan be developed after consultation with NMFS.

**THREATENED AND ENDANGERED SPECIES**

84. Section 7(a)(2) of the Endangered Species Act of 1973\textsuperscript{41} 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.

85. Federally listed threatened or endangered species that are known to occur in the project area include the humpback whale and the western district population segment (DPS) of the Steller sea lion.

86. In the final EIS, staff determined that implementing Juneau Hydro’s proposed noise mitigation measures, vessel speed restrictions, marine mammal monitoring protocols during construction, and protocols for defining flight paths and marine transportation routes that avoid disturbing Steller sea lions haul-outs would reduce the

\textsuperscript{38} Id. at § 1855(b)(4)(B).

\textsuperscript{39} The measures recommended by the Secretary of Commerce are advisory, not prescriptive. However, if the federal agency does not agree with the recommendations of the Secretary of Commerce, the agency must explain its reasons for not following the recommendations.

\textsuperscript{40} See draft EIS at 3-64.

\textsuperscript{41} 16 U.S.C. § 1536(a) (2012).
potential for vessel collisions and disturbance to humpback whales and Steller sea lions to discountable and insignificant levels.\textsuperscript{42} Thus, staff concluded that project construction and operation may affect but is not likely to adversely affect the humpback whale and the Steller sea lion.\textsuperscript{43} Staff requested NMFS concurrence on May 31, 2016. NMFS concurred with this determination in a filing of August 8, 2016.

**NATIONAL HISTORIC PRESERVATION ACT**

87. Under section 106 of the National Historic Preservation Act (NHPA)\textsuperscript{44} and its implementing regulations,\textsuperscript{45} 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 (National Register) (defined as historic properties) and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. This generally requires the Commission to consult with the State Historic Preservation Office (SHPO) to determine whether and how a proposed action may affect historic properties, and to seek ways to avoid or minimize any adverse effects.

88. Only one property eligible for listing on the National Register has been identified in the project area. Because this site can be avoided during project construction, Juneau Hydro concluded that project construction and operation would not affect cultural resources. The Alaska SHPO concurred with Juneau Hydro’s findings in a letter dated March 28, 2014.\textsuperscript{46} Commission staff has also determined that the project would not adversely affect cultural resources. Therefore, no further action under the National Historic Preservation Act is required.

89. At the request of the Forest Service and the Alaska SHPO, Juneau Hydro prepared a Heritage Resource Protection Plan to address any cultural resources that may be discovered during project construction and operation. The plan was filed on May 29, \textsuperscript{46} See letter from the Alaska State Historic Preservation Office filed with Juneau Hydro’s final cultural resources report on June 20, 2014.

\textsuperscript{42} Noise mitigation measures include ceasing pile driving when a marine mammal approaches within 1,000 meters (1,094 yards) of in-water pile driving activity, implementing pile driving ramp-up procedures to minimize exposure to sudden loud noises, and using hammer cushions to dampen noise levels during impact pile driving.

\textsuperscript{43} See final EIS at 3-109 – 3-115.

\textsuperscript{44} 16 U.S.C. § 470 et seq. (2012).

\textsuperscript{45} 36 C.F.R. Part 800 (2016).
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2014 and includes procedures to comply with section 106\textsuperscript{47} including stopping all activities at the discovery site; consulting with the SHPO, Forest Service, and Douglas Indian Association on what particular measures are needed to resolve any adverse effects on the historic properties; and preparing a historic properties management plan, if needed.

90. The plan also includes a provision to provide a cultural resource training program for construction workers to educate them about their responsibilities regarding cultural resources and the identification of cultural materials and human remains, but lacks sufficient details about the training program to approve the plan.

91. As noted above, Appendix A, condition 22 requires Juneau Hydro to develop a Heritage Resource Protection Plan. Article 422 requires that the plan include the provisions proposed by Juneau Hydro in its May 29, 2014 plan along with addition detail on the cultural resource training program.

92. In their comments on staff’s EIS, the Forest Service and Alaska SHPO recommended that an archaeological monitor be present during initial ground-breaking activities. Juneau Hydro’s proposed Heritage Resource Protection Plan does not provide for an archaeological monitor, but Juneau Hydro indicated in its response to comments on the draft EIS, filed on January 20, 2016, that it would work with the Douglas Indian Association to have a trained archeological monitor on site or on call during initial construction in coastal road and powerhouse areas. Article 422 requires that the Heritage Resource Protection Plan include a provision for the monitor and the criteria and schedule for identifying where and when the monitor would be required.

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

93. Section 10(j)(1) of the FPA\textsuperscript{48} requires the Commission, when issuing a license, to include conditions based on recommendations submitted by federal and state fish and wildlife agencies pursuant to the Fish and Wildlife Coordination Act,\textsuperscript{49} to “adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)” affected by the project.

\begin{footnotes}
\footnote[47]{36 C.F.R. § 800.4–800.6 (2016)}
\footnote[49]{Id. at §§ 661 et seq.}
\end{footnotes}
94. In response to the November 17, 2014, public notice that the project was ready for environmental analysis, Alaska DFG filed 22 recommendations under section 10(j). Four of the recommendations are outside the scope of section 10(j) and are discussed in the next section.

95. Of the remaining recommendations that are within the scope of 10(j), this license includes conditions consistent with all 18 as follows: (1) providing a minimum instream flow of 3 cfs in the bypassed reach (Article 405); (2) maintaining instream flows in the anadromous reach of Sweetheart Creek that vary by month (Article 406); (3) releasing pulse flows to stimulate sockeye movement and developing a monitoring plan to evaluate the effectiveness of the pulse flows (Article 415); (4) installing stream gaging and monitoring instream flow compliance (Article 407 and Article 408); (5) providing a bypass flow failsafe mechanism (Ordering Paragraph (B)(2)); (6) developing the final design of the fish exclusion structure in consultation with Alaska DFG and installing the fish exclusion structure in the tailrace (Article 412); (7) screening the intake to meet NMFS standards (Article 413); (8) preparing a sockeye salmon smolt collection and transport plan (Article 414); (9) preparing a biotic monitoring plan (Article 410 and Article 411); (10) establishing timing windows for instream construction activities (Article 402); (11) with certain exceptions, provide a buffer of 100 feet between waterways and construction of project facilities (Article 402 and Article 404); (12) constructing the transmission line to conform to FWS’s avian protection guidelines (Article 418); (13) implementing a bear safety plan (Article 420); (14) maintaining flight paths that are 1,500-foot away from mountain goats and their habitat (Article 418); (15) burying the penstock to maintain wildlife migration corridors (Article 418); (16) developing an erosion control plan (Article 404); (17) monitoring turbidity levels during construction to ensure effectiveness of erosion control measures (Article 404); and (18) implementing Juneau Hydro’s hazardous substances plan (Article 401).

SECTION 10(a)(1) OF THE FPA

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

A. Alaska Department of Fish and Game Recommendations

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50 Alaska DFG filed their recommendations on January 16, 2015.

97. Alaska DFG made four recommendations under section 10(j) that are not specific measures to protect, mitigate damages to, or enhance fish and wildlife. Consequently, these recommendations are considered under the broad public-interest standard of section 10(a)(1).

98. Two of the four agency-recommended measures were also recommended by staff in the final EIS and are included in the license. These measures require Juneau Hydro to: (1) notify the Commission, Forest Service, and Alaska DFG of non-compliance events (Article 408 and Article 409) and (2) provide an environmental compliance monitor during project construction (Appendix A, condition 21 and Article 403);

99. Alaska DFG recommended that its staff be allowed access to the project in order to evaluate and manage fish and wildlife resources in the Sweetheart Creek watershed. Standard Article 18, set forth in Form L-2 of this license, requires Juneau Hydro to provide public access to project waters and adjacent project lands owned by the licensee.

100. Alaska DFG recommended that Juneau Hydro restrict the licensee, employees and contractors from hunting, fishing, and trapping within one half-mile of project features. As discussed in the final EIS, enforcing state hunting, fishing, and trapping regulations, and the posting of fishing and hunting regulations, is the state’s responsibility, and if the state wishes to impose site-specific limitations for the project, it would be able to do so outside of the license.

B. Sockeye Smolt Collection and Transport

101. Construction of the proposed dam at the outlet of Sweetheart Lake would block the downstream migration of sockeye salmon smolts that are stocked in Sweetheart Lake. To maintain the sockeye salmon fishery in the anadromous reach of Sweetheart Creek, Juneau Hydro proposes to construct and operate a sockeye salmon smolt collection and transport system. The system will consist of an attraction and collection system on a barge within Sweetheart Lake, aerial transport to a holding/acclimation pool near the powerhouse, and the eventual release of smolts to Sweetheart Creek through the tailrace. Success of the sockeye salmon smolt collection and transport system would be defined as the successful release of at least 21,000 live sockeye salmon smolts to the

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52 See final EIS at 5-18.

53 Since 1997, Douglas Island Pink and Chum, Inc., has annually planted about 500,000 sockeye salmon fry into Sweetheart Lake. The fry rear in the lake for 1 to 2 years before migrating down Sweetheart Creek and into Gilbert Bay. Salmon that survive the outmigration and ocean environment return to lower Sweetheart Creek and are available for harvest.
anadromous reach of Sweetheart Creek each year. If the collection and transport system is unsuccessful, Juneau Hydro proposes, for the first 3 years of operation of the system, to provide hatchery-reared sockeye salmon smolts as replacement stock, if needed. The hatchery-reared fish would be held in the project’s acclimation pool for a sufficient period of time for imprinting before release into the anadromous reach of Sweetheart Creek.

102. The sockeye salmon fishery on Sweetheart Creek is well established and a regionally important fishery. In the final EIS, staff concluded that taking steps to ensure that smolt outmigration survival is maintained at existing levels is necessary to help ensure that the fishery is maintained. In the final EIS, staff found that while 3 years was likely a sufficient period to evaluate the collection and transport system, it is unclear what Juneau Hydro would do after the initial 3 years to maintain the fishery in the anadromous reach of Sweetheart Creek if the collection and transport system does not function as needed. Therefore, staff recommended, and Article 414 requires, Juneau Hydro to provide an annual report on the effectiveness of the collection system, and at the end of the 3-year evaluation period, to file a report summarizing the cause of any system failure and any recommended corrective actions.

C. Worker Safety

103. Bears are common in the project area, especially near the mouth of Sweetheart Creek. To minimize the risk of human-bear interactions during project construction and operation, Juneau Hydro proposes to implement a Bear Safety Plan that includes provisions for training project personnel in bear avoidance measures and procedures to follow during bear encounters; properly disposing of food waste on the project site in bear-proof containers and regularly removing waste from the project area; minimizing the number of meals workers consume in the Sweetheart Lake area by serving meals in the camp on Gilbert Bay; extending the plan’s food-disposal and bear avoidance measures to onsite recreational activities of project workers; and providing protocols for dealing with problem bears. The proposed plan contains two measures concerning construction worker recreational activities: restricting construction workers from hunting and trapping on project lands at any time during project construction; and prohibiting firearms onsite, except as specifically approved by the construction manager.

104. In the final EIS, staff recommended Juneau Hydro’s proposed Bear Safety Plan. Article 420 requires a Bear Safety Plan for the project that includes the provisions proposed by Juneau Hydro with the exception of the provisions restricting certain individuals from recreational activities and firearms possession on project lands. The

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54 See final EIS at 5-13.
excepted provisions relate to administration of State fishing, hunting, trapping, and firearms regulations, which fall under the purview of the State.  

D. Recreation Management

105. The project area currently receives an average of about 200 visitors each year, most of whom are associated with the Alaska DFG’s permit-only personal use sockeye salmon fishery in Sweetheart Creek from late July to mid-August. Currently there are no recreational facilities in the area and visitors must moor their boats in Gilbert Bay and use a skiff or inflatable boat to access the shoreline, and then traverse unimproved and unmarked game and fishing trails to access Sweetheart Creek. Juneau Hydro proposes a number of measures that would enhance recreation and could increase use in the area.

106. To protect and enhance recreational opportunities in the project area, Juneau Hydro proposes a Recreation Management Plan that includes constructing permanent interpretive displays at the head of Sweetheart Creek Trail; constructing a trail system to the traditional fishing areas at Sweetheart Creek that would separate human activity from bear activity, constructing a trail from the boat dock to the powerhouse that could be used by fisherman and other recreationists; installing at least three mooring buoys in Gilbert Bay for boaters; constructing landform berms to provide scenic, sound, and light barriers between the powerhouse/switchyard area and Sweetheart Creek recreational use areas; and permitting personal use fishery permit holders to use the project dock and boat ramp.

107. Juneau Hydro also proposes, as part of its plan, to complete a comprehensive review the adequacy of its proposed recreational facilities in meeting recreation needs every 20 years after the license is issued. In order to determine the effects of new recreational enhancements in the project area, Interior recommends that Juneau Hydro review the adequacy of its recreation plan 4 to 8 years after project construction and revisit the plan every 10 years thereafter.

108. In the final EIS, staff recommended Juneau Hydro’s proposed recreation measures, but also recommended that Juneau Hydro complete its comprehensive review of project recreation facilities 4 years after project construction and every 10 years thereafter as recommended by Interior. However, the Commission’s Regulations require

See, First Iowa Hydroelectric Co-op v. Federal Power Commission, 328 U.S. 152 (1946) (First Iowa). The Federal Power Act establishes a dual system of control by separating those subjects which remain under the jurisdiction of the States from those which the Constitution delegates to the United States and over which Congress vests the Commission with authority to act.

See final EIS. at 5-19.
the licensee to file a Form 80 report every 6 years\textsuperscript{58} which should be sufficient to monitor recreational use at the project between the initial 4-year review and the proposed subsequent 20-year reviews. Article 421 requires Juneau Hydro to complete the comprehensive recreation reviews accordingly. However, because the plan lacks detail on the review methodology, Article 421 also requires Juneau Hydro to describe the comprehensive review methods.

109. Juneau Hydro proposes to only allow fisherman with permits to use the dock and ramp. Commission regulations and this license require reasonable public access to project lands and water for outdoor recreation, including fishing and hunting, except where it may be necessary to limit access for the protection of life, health, and property.\textsuperscript{59} Because Juneau Hydro did not explain why such access should be limited to permit holders, Article 421 requires Juneau Hydro to provide reasonable access to all recreationists to the extent it does not interfere with project operations.

**ADMINISTRATIVE PROVISIONS**

**A. Annual Charges**

110. The Commission collects annual charges from licensees for administration of the FPA, and the use and occupancy of federal lands.\textsuperscript{60} Article 201 provides for the collection of these funds.

**B. Exhibit F and G Drawings**

111. The Commission requires licensees to file sets of approved project drawings in electronic file format. Article 202 requires the filing of these drawings.

**C. Amortization Reserve**

112. The Commission requires that for original licenses for major projects, non-municipal licensees must set up and maintain an amortization reserve account after the first 20 years of operation of the project under license. Article 203 requires the establishment of the account.

\textsuperscript{58} 18 C.F.R., Section 8.11 (2016).

\textsuperscript{59} 18 C.F.R. § 2.7(2016) and L-form Article 18 attached to this license.

\textsuperscript{60} 18 C.F.R. §§ 11.1(c)(5) and 11.2 (2016).
D. Headwater Benefits

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

E. Project Financing

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

F. As-Built Exhibits

115. Where new construction or modifications to the project are involved, the Commission requires licensees to file revised exhibits of project features as-built. Article 206 provides for the filing of these exhibits.

G. Project Land Rights Progress Report

116. The project will occupy 2,189.42 acres of land, of which 131.18 acres are non-federal lands. Exhibits G-2 through G-4 of the license application show lands that Juneau Hydro will use for project purposes. Standard Article 5 set forth in Form L-2 requires Juneau Hydro to acquire title in fee or the right to use in perpetuity all lands, other than lands of the United States, necessary or appropriate for the construction, maintenance, and operation of the project, within 5 years. To monitor compliance with Article 5, Article 207 requires Juneau Hydro to file no later than 4 years after license issuance, a report detailing its progress in acquiring title in fee or the necessary rights to all lands within the project boundary. The report must include specific documentation on the status of the rights that have been acquired as of the filing date of the progress report, and a plan and schedule to acquire all remaining rights prior to the five-year deadline.

H. Use and Occupancy of Project Lands and Waters

117. Requiring a licensee to obtain prior Commission approval for every use or occupancy of project land would be unduly burdensome. Therefore, Article 424 allows Juneau Hydro to grant permission, without prior Commission approval, for the use and occupancy of project lands for such minor activities as landscape planting. Such uses must be consistent with the purposes of protecting and enhancing the scenic, recreational, and environmental values of the project.
I. Start of Construction

118. Article 301 requires Juneau Hydro 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

119. Article 302 requires Juneau Hydro to provide the Commission’s Division of Dam Safety and Inspections (D2SI)-Portland Regional Engineer with final contract drawings and specifications, together with a supporting design report consistent with the Commission’s engineering guidelines, and the following plans: a Quality Control and Inspection Program; a Temporary Construction Emergency Action Plan; and a Soil Erosion and Sediment Control Plan.

120. Article 303 requires Juneau Hydro to provide the Commission’s D2SI-Portland Regional Engineer with cofferdam construction drawings approved by a Professional Engineer.

121. Due to the challenging topography, scale and type of construction, and geologic conditions, a Board of Consultants will be necessary for the final design and construction of the project. Article 304 requires the licensee to retain a Board of Consultants comprising qualified independent engineering consultants with extensive experience in dam design and construction to review and oversee the complex design and construction of a project of this scale in challenging terrain.

122. Article 305 requires the licensee to file the initial independent consultant inspection report no later than five years from the date of first commercial operation or the date on which the impoundment first reaches its normal maximum surface elevation, whichever comes first.

123. To demonstrate awareness of the roles and responsibilities of project licensees and their staff for the safety of the project, Article 306 requires the licensee to submit an Owner’s Dam Safety Program to the Commission’s D2SI-Portland Regional Engineer.

124. To ensure the safety of the public at or near the project site, Article 307 requires the licensee to provide a Public Safety Plan to the Commission’s D2SI-Portland Regional Engineer.

125. Article 308 requires that any permanent or temporary modification resulting from license environmental requirements which may affect the project works or operations shall be coordinated with the Commission’s D2SI-Portland Regional Engineer at the beginning of the planning and design phase.
STATE AND FEDERAL COMPREHENSIVE PLANS

126. Section 10(a)(2)(A) of the FPA\textsuperscript{61} requires the Commission to consider the extent to which a project is consistent with federal and state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project.\textsuperscript{62} Under section 10(a)(2)(A), federal and state agencies filed 92 comprehensive plans that address various resources in Alaska. Of these, the staff identified and reviewed 18 comprehensive plans that are relevant to this project.\textsuperscript{63}

127. No conflicts were found with the plans, except with scenic integrity objectives of the Tongass National Forest Land and Resource Management Plan (Tongass Forest Plan).\textsuperscript{64} However, Forest Service condition 22 and Article 423 minimizes visual impacts to the extent practicable by requiring the licensee to develop and implement a Scenery Management Plan that includes: (1) choosing colors and materials in consultation with the Forest Service that reduce the contrast of project facilities with the surrounding environment, (2) minimizing vegetation removal and revegetating disturbed areas to promote screening of project facilities, (3) minimizing exterior lighting, and (4) periodically reviewing site development with the Forest Service to ensure visual effects continue to meet scenic integrity objectives to the extent practicable. These measures will reduce visual impacts to acceptable levels and minimize inconsistencies with the Tongass Forest Plan.

SAFE MANAGEMENT, OPERATION, AND MAINTENANCE OF THE PROJECT

128. Staff reviewed Juneau 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 this license.

NEED FOR POWER

129. To assess the need for power, staff looked at the needs in the operating region in which the project is located. According to Alaska Energy Authority’s Southeast Alaska


\textsuperscript{62} Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2016).

\textsuperscript{63} The list of applicable plans can be found in section 5.5 of the final EIS for the project.

\textsuperscript{64} See final EIS at 5-37 – 5-38.
Integrated Resource Plan, between 2015 and 2024 annual energy consumption could increase from 441,237 to 461,494 megawatt-hours, and peak demand could increase from 85.4 to 89.3 MW. The Juneau area has an isolated electric system, with some of its users dependent on diesel-fueled generation. Juneau Hydro indicates that it will have power sales agreements for all the project power by 2018, and that project power will displace current diesel generation for the users. Therefore, staff concludes that the project’s power and contribution to the region’s diversified generation mix will help meet a need for power in the region and reduce the Juneau area’s dependence on diesel generation.

**PROJECT ECONOMICS**

130. 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.* 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.

131. In applying this analysis to the Sweetheart Lake Project, staff considered two options: Juneau Hydro’s proposal and the project as licensed herein. As proposed by Juneau Hydro, the levelized annual cost of operating the project is $18,290,330, or $157.68/MWh. The proposed project will generate an estimated average of 116,000 MWh of electricity annually. When the estimated average annual generation is multiplied by the alternative power cost of $133.79/MWh, the total estimated value of the project’s power is $15,519,640 in 2016 dollars.

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65 See final EIS at 1-3 – 1-5.


67 The alternative power cost is based on a firm energy price of $140/MWh for the first 100,000 MWh, and a non-firm energy price of $95/MWh for the remaining 16,000 MWh, provided by Juneau Hydro in its license application based on an internal optimization analysis of factors such as underserved demand in the Juneau area, current and future demand over the life of the project stabilizing capacity, and current avoided costs from diesel-fueled power plants.

68 Cost values provided in the final EIS in 2014 were escalated to 2016 dollars ($2016) using the Bureau of Reclamation Construction Cost Trend indices.
project is currently economically beneficial, the project’s cost is subtracted from the value of the project’s power.\textsuperscript{69} Therefore, in the first year of operation, the project costs $2,770,690 or $23.89/MWh, more than the likely alternative cost of power.

132. As licensed herein with mandatory conditions and staff recommended measures, the levelized annual cost of operating the project will be about $18,291,480, or $157.69/MWh. Based on the same estimated average generation of 116,000 MWh, the project will produce power valued at $15,519,640 when multiplied by the alternative power cost of $133.79/MWh. Therefore, in the first year of operation, project power will cost $2,771,840 or $23.90/MWh, more than the likely cost of alternative power.

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

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

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

COMPREHENSIVE DEVELOPMENT

136. Sections 4(e) and 10(a)(1) of the FPA\textsuperscript{70} require the Commission to give equal consideration to power development purposes and to the purposes of energy conservation; the protection, mitigation of damage to, and enhancement of fish and wildlife; the protection of recreational opportunities; and the preservation of other aspects of environmental quality. Any license issued shall be such as in the Commission’s

\textsuperscript{69} Details of staff’s economic analysis for the project as licensed herein and for various alternatives are included in the final EIS at 4-1.

\textsuperscript{70} 16 U.S.C. §§ 797(e) and 803(a)(1) (2012).
judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

137. 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 this license.

138. Based on Commission staff’s independent review and evaluation of the project, recommendations from the resource agencies and other stakeholders, and the no-action alternative, as documented in the final EIS, the proposed Sweetheart Lake Project, as licensed herein, is best adapted to a comprehensive plan for improving or developing Sweetheart Creek.

139. This alternative was selected because: (1) issuance of an original license will serve to provide a beneficial, dependable, and inexpensive source of electric energy; (2) the required environmental measures will protect and enhance fish and wildlife resources, water quality, recreational and aesthetic resources, and historic properties; and (3) the 19.8 MW of electric capacity comes from a renewable resource that does not contribute to atmospheric pollution.

LICENSE TERM

140. Section 6 of the FPA\textsuperscript{71} provides that original licenses for hydropower projects shall be issued for a period not to exceed 50 years. The Commission’s general policy is to establish 30-year terms for projects with little or no redevelopment, new construction, new capacity, or environmental mitigation and enhancement measures; 40-year terms for projects with a moderate amount of such activities; and 50-year terms for projects with extensive measures.\textsuperscript{72}

141. This license requires an extensive amount of new construction, including: a dam and intake; power tunnels and penstocks; a powerhouse with three generating units; two switchyards; underground, submarine, and overhead transmission lines; and an access road. Consequently, a license term of 50 years for the Sweetheart Creek Project is appropriate.

The Director orders:


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

(B) The project consists of:

(1) All lands, to the extent of the licensee’s interest in those lands, enclosed by the project boundary shown by Exhibit G filed May 29, 2014:

<table>
<thead>
<tr>
<th>Exhibit G Drawing</th>
<th>FERC No. 13563-</th>
<th>Description</th>
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<td>G-4</td>
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<td>Submarine and Overland Transmission Line</td>
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</table>

(2) Project works consisting of: (a) a 280-foot-long, 111-foot-high roller-compacted concrete dam to be constructed at the existing natural outlet of Lower Sweetheart Lake, with a 125-foot-long ungated overflow spillway at a crest elevation of 636 feet; (b) a 525-foot-long, 10-foot-high, 10-foot-wide arched reservoir outlet tunnel at the right dam abutment; (c) a 45-foot-long, 25-foot-wide, 16-foot-high rectangular concrete intake structure, with six 7-foot-diameter, 10-foot-high cylindrical fish screens adjacent to the right dam abutment; (d) a 9,612-foot-long, 15-foot-wide, 15-foot-high horseshoe-shaped, unlined underground power tunnel; (e) an 896-foot-long, 9-foot-diameter saddle-supported steel penstock installed within the lower portion of the power tunnel; (f) three 160-foot-long (mean length), 7- to 9-foot-diameter buried steel penstocks connecting the lower portion of the power tunnel to the powerhouse; (g) a 160-foot-long, 60-foot-wide, 30-foot-high concrete and steel powerhouse; (h) three 7.1-megawatt (MW) Francis turbines with synchronous bypass valves and three 6.6-MW generators, with a total installed capacity of 19.8 MW; (i) a 541-foot-long, 30- to 90-foot-wide rock tailrace with a fish exclusion structure, discharging to Sweetheart Creek; (j) a 4,400-foot-long coastal road from the powerhouse to a dock/landing site for aerial and marine vehicle access, located on the east shore of Gilbert Bay; (k) an 8.69-mile-long, 138-kilovolt (kV) transmission line traversing Gilbert Bay, the Snettisham Peninsula, and Port Snettisham, consisting of: (1) two buried segments, totaling 4,800 feet in length; (2) two submarine
segments, totaling 25,700 feet in length; and (3) one 15,400-foot-long overhead segment; (l) a 22,000-square-foot fenced switchyard adjacent to the powerhouse; (m) a 60-foot by 60-foot switchyard at the end of the transmission line on the north shore of Port Snettisham; (n) a 25-foot-long, 5-foot-wide, 4-foot-deep salmon smolt re-entry pool\(^73\) located adjacent to the powerhouse and tailrace; (o) a 4,225-square-foot caretaker’s facility near the dock; (p) a 4,400-foot-long, 12.47-kV service transmission line and communication cable extending from the powerhouse to the dock and caretaker’s facility, providing operational electricity and communications; (q) a 10,000-foot-long, 12.47-kV service transmission line and communication cable extending from the powerhouse to the dam site, providing operational electricity and communications; (r) a 400-square-foot shelter at the dam site for employee use during smolt transport facility operations; and (s) appurtenant facilities.

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

**Exhibit A:** The following sections of Exhibit A filed on May 29, 2014:

Exhibit A, pages A-1 through A-28, entitled “Exhibit A – Project Description”, describing the mechanical, electrical, and transmission equipment within the application for license.

**Exhibit F:** The following Exhibit F drawings filed on May 29, 2014, and Exhibit F-10 filed on October 20, 2014.

<table>
<thead>
<tr>
<th>Exhibit F Drawing</th>
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<th>Description</th>
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<td>F-2 (3)</td>
<td>4</td>
<td>Marine Access Plan and Sections, Coastal Road Plan and Profiles</td>
</tr>
</tbody>
</table>

\(^73\) The re-entry pool would provide temporary holding of sockeye salmon smolts collected and transported from Sweetheart Lake, for imprinting and release to the tailrace.
<table>
<thead>
<tr>
<th>Project No.</th>
<th>Page</th>
<th>Description</th>
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<td>F-2 (5)</td>
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<td>Marine Access Plan and Sections, Coastal Road Plan and Profiles</td>
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<tr>
<td>F-2 (6)</td>
<td>7</td>
<td>Marine Access Plan and Sections, Coastal Road Plan and Profiles</td>
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<td>Power Tunnel Outlet Plan and Profile</td>
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<td>F-8 (2)</td>
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<td>Typical Power Tunnel Ground Support</td>
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<td>F-9</td>
<td>17</td>
<td>Powerhouse, Switchyard, and Tailrace Site Plan</td>
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<td>Powerhouse Floor Plan (Rev. October 20, 2014)</td>
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<tr>
<td>F-12 (2)</td>
<td>21</td>
<td>Powerhouse and Tailrace Sections</td>
</tr>
</tbody>
</table>
(3) All of the structures, fixtures, equipment, or facilities used to operate or maintain the project, all portable property that may be employed in connection with the project, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

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

(D) This license is subject to the conditions submitted by the U.S. Forest Service under section 4(e) of the FPA, as those conditions are set forth in Appendix A to this order.

(E) This license is also subject to the articles set forth in Form L-2 (October, 1975), entitled “Terms and Conditions of License 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 I of the Federal Power Act. The authorized installed capacity for that purpose is 19.8 megawatts; and

(b) to recompense the United States for the use, occupancy and enjoyment of 2058.24 acres of its lands.

**Article 202. Exhibit Drawings.** Within 45 days of the date of issuance of the license, as directed below, the licensee must file two sets of the approved exhibit drawings, form FERC-587, and GIS data in electronic file format on compact disks with the Secretary of the Commission, ATTN: OEP/DHAC.
(a) Digital images of the approved exhibit drawings must be prepared in electronic format. Prior to preparing each digital image, the FERC Project-Drawing Number (i.e., P-13563-1 through P-13563-28) must be shown in the margin below the title block of the approved drawing. Exhibit F drawings must be segregated from other project exhibits, and identified as Critical Energy Infrastructure Information (CEII) material under 18 C.F.R. §388.113(c). Each drawing must be a separate electronic file, and the file name must include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this license, and file extension in the following format [P-13563-25, G-1, Location, Vicinity and Index Maps, MM-DD-YYYY.TIF].

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

All digital images of the exhibit drawings must meet the following format specification:

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

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

State Director  
Bureau of Land Management  
Division of Alaska Lands (AK-963)  
222 West 7th Avenue Stop 13  
Anchorage, AK 99513-7504  
ATTN: FERC Withdrawal Recordation

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

(b) Project boundary GIS data must be in a georeferenced electronic file format (such as ArcView shape files, GeoMedia files, MapInfo files, or a similar GIS format). The filing must include both polygon data and all reference points shown on the individual project boundary drawings. An electronic boundary polygon data file(s) is required for each project development. Depending on the electronic file format, the polygon and point data can be included in single files with multiple layers. The georeferenced electronic boundary data file must be positionally accurate to ±40 feet in order to comply with National Map Accuracy Standards for maps at a 1:24,000 scale. The file name(s) must include: FERC Project Number, data description, date of this license, and file extension in the following format [P-13563, boundary polygon/or point data, MM-DD-YYYY.SHP].

The filing must be accompanied by a separate text file describing the spatial reference for the georeferenced data: map projection used (i.e., UTM, State Plane, Decimal Degrees, etc.), the map datum (i.e., North American 27, North American 83, etc.), and the units of measurement (i.e., feet, meters, miles, etc.). The text file name must include: FERC Project Number, data description, date of this license, and file extension in the following format [P-13563, project boundary metadata, MM-DD-YYYY.TXT].

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

Article 203. Amortization Reserve. Pursuant to section 10(d) of the Act, after the first 20 years of operation of the project under license, a specified reasonable rate of return upon the net investment in the project must be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. One-half of the project surplus earnings, if any, accumulated after the first 20 years of operations under the license, in excess of the specified rate of return per annum on the net investment, must be set aside in a project amortization reserve account at the end of each fiscal year. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year after the first 20 years of operation under the license, the amount of that deficiency must be deducted from the amount of any surplus.
earnings subsequently accumulated, until absorbed. One-half of the remaining surplus earnings, if any, cumulatively computed, must be set aside in the project amortization reserve account. The amounts established in the project amortization reserved account must be maintained until further order of the Commission.

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

Article 204. Headwater Benefits. If the licensee’s project 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 must reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed. The benefits will be assessed in accordance with Subpart B of the Commission’s regulations.

Article 205. Documentation of Project Financing. At least 30 days before any land-disturbing activities, the licensee must file with the Commission, for approval, the licensee’s documentation for project financing. The documentation must show that the licensee has acquired the funds, or commitment for funds, necessary to construct the project in accordance with this license. The documentation must include, at a minimum, financial statements, including a balance sheet, income statement, and a statement of actual or estimated cash flows over the license term which provide evidence that the licensee has sufficient assets, credit, and projected revenues to cover project construction, operation, and maintenance expenses, and any other estimated project liabilities and expenses.

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

Article 206. As-built Exhibits. Within 90 days of completion of construction of the facilities authorized by this license, the licensee must file for Commission approval, revised exhibits A, F, and G, as applicable, to describe and show those project facilities
Article 207. Project Land Rights Progress Report. No later than four years after license issuance, the licensee must file a report with the Commission describing the status of acquiring title in fee or the rights for all the lands within the project boundary. The report must provide an overview map of each parcel and summary table identifying the licensee’s rights over each parcel within the project boundary. The report must also include specific supporting documentation showing the status of the land rights on all parcels of land within the project boundary that: (1) have been acquired up to the date of filing of the report, including pertinent deeds, lease agreements, and/or bill of sale information that specifically verify the licensee’s rights; and (2) the licensee’s plan and schedule for acquiring all remaining project lands prior to the five-year deadline, including a history of actions taken, current owner information, the type of ownership to be acquired whether in fee or by easement, and the timeline for completing property acquisition.

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

Article 302. Contract Plans and Specifications. At least 60 days prior to the start of any construction, the licensee must submit one copy of its plans and specifications and supporting design document to the Commission’s Division of Dam Safety and Inspections (D2SI)-Portland Regional Engineer, and two copies to the Commission (one of these shall 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. 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 and approve the design of contractor-designed cofferdams and deep excavations prior to the start of construction; and (2) ensure that construction of cofferdams and deep excavations is consistent with the approved design. At least 30 days before starting construction of any cofferdams or deep excavations, the licensee must submit one copy to the Commission’s Division of Dam Safety and Inspections (D2SI)-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 the final subsurface investigations, design, and construction of the project, the licensee must retain a Board of Consultants (BOC) of three or more qualified independent engineering consultants experienced in critical disciplines such as geology (rock mechanics), hydrology, and geotechnical, structural, mechanical, seismic, hydraulic, 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 dam, spillway, tunnels, powerhouse, electrical and mechanical equipment, and emergency power supply; (3) instrumentation; (4) the filling schedule for the reservoir 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 license 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. 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 307. Public Safety Plan.** At least 60 days before the 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 shall be a courtesy copy to the Commission’s Director, D2SI) of a Public Safety Plan. The plan must include a description of all safety devices and signage needed to warn the public of fluctuations in flow from the project or otherwise protect the public in the use of project lands and waters. The plan must also include a map showing the location of all public safety measures. For guidance on preparing public safety plans the licensee can review the *Guidelines for Public Safety at Hydropower Projects* on the FERC website.

**Article 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. Spoil Disposal Plan, Solid Waste and Wastewater, Hazardous Substance, Fire Prevention, and Storm Water and Pollution, Access and Road Management and Maintenance Plans.** The Solid Waste and Wastewater, Hazardous Substance, Fire Prevention, Storm Water and Pollution Plan, Access and Road Management and Maintenance Plans required by Appendix A, condition 22 must include, at a minimum, the provisions of the licensee’s plans filed on May 29, 2014 (Appendix Z of the license application).

The plans must be developed after consultation with the U.S. Forest Service and Alaska Department of Fish and Game. The licensee must include with the plans documentation of consultation, copies of comments and recommendations on the completed plans after they have been prepared and provided to the agencies, and specific descriptions of how the agencies’ comments are accommodated by the plans. 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 plans. Implementation of the plans must not begin until the licensee is notified by the Commission that the plans are approved. Upon Commission approval, the licensee must implement the plans, including any changes required by the Commission.

**Article 402. Construction Plan.** The Construction Plan required by Appendix A, condition 22 must include, at a minimum, the provisions of the licensee’s plan filed on May 29, 2014 (Appendix Z of the license application) and the following additional items:

1. specification of timing windows for instream construction activities and stream crossings;

2. a provision to site construction activities (with the exception of clearings and road/ trail corridors for the powerhouse and appurtenant facilities, penstock, tailrace, recreational trails, and stream crossings) a minimum of 100 feet, measured horizontally, away from the ordinary high water of Sweetheart Creek and its tributaries; and

3. a provision to site the transmission line corridor and clearings (with the exception of stream crossings) a minimum of 100 feet, measured horizontally, away from the ordinary high water of all streams identified in Alaska Department of Fish and Game 2011 Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes.
The plan must be developed after consultation with the U.S. Forest Service and Alaska Department of Fish and Game. 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. 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. Environmental Compliance Monitor. The Environmental Compliance Monitor required by Appendix A, condition 21 must be selected in consultation with Alaska Department of Fish and Game at least 30 days before the start of any land-disturbing activities.

Article 404. Erosion and Sediment Control Plan. The Soil Erosion and Sediment Control Plan required by Article 302 and Appendix A, condition 22 must include, at a minimum, the provisions of the licensee’s plan filed on May 29, 2014 (Appendix Z of the license application) and the following additional items:

(1) a detailed description of the location for storage or deposition of removed overburden and spoil;

(2) site-specific design drawings that:
   a. show the location of specific erosion control measures that will be employed during construction to stabilize and limit erosion from disturbed soils, stockpiled overburden, and spoil;
   b. show a 100-foot or greater stream setback (i.e., stream buffer) from streams and intertidal areas for storage and deposition activities, consistent with the requirements of Article 402; and
   c. identify specific plant species to be used for the stabilization of disturbed soils, and their planting locations;

(3) a turbidity monitoring program for Sweetheart Creek during project construction that includes:
   a. a provision to analyze turbidity samples at least daily;
   b. a description of the monitoring equipment; and
   c. a provision to cease soil-disturbing activities and take immediate corrective actions if turbidity samples collected 100 feet or more
downstream from construction areas exceed 25 nephelometric turbidity units above natural conditions upstream of the construction area.

The plan must be developed after consultation with the U.S. Forest Service and Alaska Department of Fish and Game. 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. 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. Bypassed Reach Minimum Instream Flow Release.** The licensee must release a minimum flow of 3 cubic feet per second, as measured at a flow meter in the bypass flow conduit (as required by Article 407), from the project dam into the Sweetheart Creek bypassed reach.

The minimum flow release may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods upon mutual agreement among the licensee, Alaska Department of Fish and Game, U.S. Forest Service, and National Marine Fisheries Service. If the flow is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

**Article 406. Anadromous Reach Minimum Instream Flow Releases.** The licensee must release from the project tailrace into the anadromous reach of Sweetheart Creek the minimum flows listed below, in cubic feet per second (cfs), as measured at the streamflow gage installed in the project tailrace (as required by Article 407).

<table>
<thead>
<tr>
<th>Period</th>
<th>Flow (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January – February</td>
<td>40</td>
</tr>
<tr>
<td>March</td>
<td>45</td>
</tr>
<tr>
<td>April</td>
<td>119</td>
</tr>
<tr>
<td>May – October</td>
<td>300</td>
</tr>
<tr>
<td>November – December</td>
<td>117</td>
</tr>
</tbody>
</table>

The flow release requirements may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods upon mutual agreement among the licensee, Alaska Department of Fish and Game, U.S. Forest
Service, and National Marine Fisheries Service. If the flow is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident.

**Article 407. Stream Flow Measurement Plan.** The Stream Flow Measurement Plan required by Appendix A, condition 22 must include, at a minimum, the provisions of the licensee’s plan filed on October 20, 2014, with the following modifications:

1. include a provision to install, operate, and maintain: (a) flow meter device in the bypass flow conduit, and (b) a streamflow gage in the project tailrace that conforms to U.S. Geological Survey standards and is capable of recording flows at a frequency of no greater than 15-minute intervals;

2. include a detailed description of the type(s) of flow meters or gages to be installed, including a map showing their specific locations and coordinates;

3. include a detailed description of the procedures for maintaining and calibrating the flow meters and gages;

4. include an implementation schedule; and

5. exclude the provision for developing ramping rates for the anadromous reach of Sweetheart Creek.

The plan must be developed after consultation with the U.S. Forest Service, U.S. Geological Survey, and Alaska Department of Fish and Game. 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. 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. Stream Flow Management Plan.** The Stream Flow Management Plan required by Appendix A, condition 22 must include, at a minimum, the provisions of the licensee’s plan filed on October 20, 2014, with the following additional items:
include a detailed description of how the project will document compliance with minimum instream flows in the bypassed reach and anadromous reach of Sweetheart Creek required by Article 405 and 406, respectively;

(2) include a provision for maintaining a record of instream flow releases, that would be provided to the Commission and other interested parties upon request; and

(3) include a provision to notify the Commission, U.S. Forest Service, and Alaska Department of Fish and Game in the event that a deviation from the minimum flow requirements is detected, and file a report with the Commission within 10 days of any deviation that includes, at a minimum:

a. description of the cause, severity, and duration of the incident;
b. any observed or reported adverse environmental impacts resulting from the incident;
c. operation data for the period immediately prior to the deviation;
d. a description of any corrective measures implemented at the time of the incident and the measures implemented or proposed to ensure that similar incidents do not recur; and
e. comments, or correspondence, if any, received from interested parties regarding the incident.

The plan must be developed after consultation with the U.S. Forest Service and Alaska Department of Fish and Game. 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. 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. Reservoir Management and Inundation Plan. The Reservoir Management and Inundation Plan required by Appendix A, condition 22 must include, at a minimum, the provisions of the licensee’s plan filed on October 20, 2014 with the following additional items:

(1) include a provision to monitor water temperature, pH, and turbidity at the project intake for the first five years of project operation;
(2) include the criteria for determining if deviations in turbidity, pH, and temperature levels occur due to project operation;

(3) include a provision to file a report with the Commission for approval by June 30 following the five year monitoring period that documents the results of the water quality monitoring and includes any recommendation for continuing or modifying monitoring program; and

(4) include a provision to notify the Commission, U.S. Forest Service, and Alaska Department of Fish and Game in the event that water quality deviations are detected and file a report with Commission within 10 days that describes the deviation, corrective actions, and proposals to modify procedures.

The plan must be developed after consultation with the U.S. Forest Service and Alaska Department of Fish and Game. 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. 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 410. Aquatic Habitat Restoration and Monitoring Plan. The Aquatic Habitat Restoration and Monitoring Plan required by Appendix A, condition 22 must include, at a minimum, all of the provisions of the licensee’s plan filed on October 20, 2014, except for the provision to monitor salmon spawning in the anadromous reach of Sweetheart Creek, and the following additional items:

(1) a detailed description of spawning gravel sampling methods within the anadromous reach of Sweetheart Creek and evaluation metrics;

(2) the criteria for determining if spawning gravel augmentation is needed; and

(3) a provision to file a report with the Commission by December 31 of year 3 of project operation that documents the assessment results and provides either recommendations for continuing the assessment, plans to augment spawning gravel, or recommendations to discontinue the assessment.
The plan must be developed after consultation with the U.S. Forest Service, National Marine Fisheries Service, and Alaska Department of Fish and Game. 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. 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 411. Fish Mitigation and Monitoring Plan. The Fish Mitigation and Monitoring Plan required by Appendix A, condition 22 must include, at a minimum, the provisions of the licensee’s plan filed on October 20, 2014, and the following additional items:

1. a detailed description of the sampling methods, sampling schedules, level of effort, and evaluation metrics for determining year-class survival of Dolly Varden and rainbow trout in Sweetheart Lake; and

2. a provision to file a report with the Commission by December 31 of year 3 of project operation that summarizes the monitoring results and includes any recommendations for continuing the monitoring program, or implementing measures to improve fish recruitment (e.g., stock fish, improve access to spawning habitat, or conduct offsite mitigation).

The plan must be developed after consultation with the U.S. Forest Service and Alaska Department of Fish and Game. 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. 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 412. Fish Exclusion and Tailrace Design Plan. Within one year of license
issuance, the licensee must file with the Commission, for approval, a fish exclusion and
tailrace design plan detailing the design of the fish exclusion structure and project tailrace
such that:

(1) the project tailrace provides unsuitable spawning habitat for pink and chum
  salmon so as not to attract pink and chum salmon; and

(2) fish are excluded from entering the turbine draft tubes through the tailrace.

The plan must also include testing, operation, and maintenance procedures, and an
implementation schedule.

The plan must be developed after consultation with Alaska Department of Fish
and Game, National Marine Fisheries Service, and U.S. Forest Service. The licensee
must include with the plan documentation of consultation, copies of comments and
recommendations on the completed plan after it has been prepared and provided to the
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. Fish Screen Design Plan. Within one year of license issuance, the
licensee must file with the Commission, for approval, a fish screen design plan that
provides an intake approach velocity of no more than 0.4 foot per second and screen
mesh no larger than 3/32 inch.

The plan must also include detailed design drawings; testing, operation, and
maintenance procedures; and an implementation schedule.

The plan must be developed after consultation with Alaska Department of Fish
and Game, National Marine Fisheries Service, and U.S. Forest Service. The licensee
must include with the plan documentation of consultation, copies of comments and
recommendations on the completed plan after it has been prepared and provided to the
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 414. Sockeye Salmon Smolt Collection and Transport Plan.** Within one year of license issuance, the licensee must file with the Commission, for approval, a sockeye salmon smolt collection and transport plan.

The plan must include, at a minimum, the following:

1. detailed design drawings of the smolt collection and transport system;
2. a description of the methods and facilities that will be used to capture, hold, transport, and release sockeye salmon smolts;
3. a description of how the survival rate of smolts will be monitored at each step in the collection and transportation process;
4. a description of the contingency provisions to be used to ensure that sockeye smolts are successfully released and imprinted to Sweetheart Creek if the smolt collection and transport system is unsuccessful;
5. provisions to file an annual report to the Commission on the effectiveness of the collection system and at the end of its proposed 3-year evaluation, file a report with the Commission for approval summarizing the results of its evaluation, and if applicable, any recommended changes in operation or corrective actions; and
6. an implementation schedule.

The plan must be developed after consultation with the U.S. Forest Service and Alaska Department of Fish and Game. 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 415. Pulse Flow Release and Monitoring Plan. Within one year of license issuance, the licensee must file with the Commission, for approval, a pulse flow release and monitoring plan. The purpose of the pulse flows is to stimulate sockeye migration into Sweetheart Creek.

The plan must include, at a minimum, the following:

1. a provision to conduct a 3 to 5-year evaluation of the release of at least four pulse flows of up to 486 cubic feet per second (cfs) between July 1 and August 1 of each year;

2. a pulse flow release schedule that identifies: the day of week; the time of day; the tidal stage; the recommended pulse flow volume; environmental conditions, and the duration of pulse flow;

3. the methods and criteria for visually determining the effectiveness of the pulse flows in stimulating migration of sockeye salmon into Sweetheart Creek;

4. a provision to file an annual report with the Alaska Department of Fish and Game that includes the date, time, and duration of each provided pulse flow, supported by the tailrace gage data (required by Article 407) from before, during, and after the pulse flow release event, and observations of sockeye salmon moving into the pools in response to the pulse flows; and

5. a provision to file a report with the Commission, for approval, on the effectiveness of the pulse flows by December 31 following the first three complete sockeye salmon spawning seasons. The report must summarize the results of the evaluation, and include recommendations for either: (1) continuing the monitoring program for another two years if the results are inconclusive; (2) discontinuing the monitoring program but continuing to provide the pulse flows if sufficient upstream migration responses of sockeye salmon are observed; or, (3) discontinuing the pulse flows if no upstream migration response is observed from the provided pulse flows. The report must be prepared in consultation with the Alaska Department of Fish and Game, U.S. Forest Service, and National Marine Fisheries Service. The license must allow the agencies at least 30 days to review and comment on the report before filing it with the Commission.
The plan must be developed after consultation with the U.S. Forest Service, National Marine Fisheries Service, and Alaska Department of Fish and Game. 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 416. Vegetation Management Plan. The Vegetation Management Plan required by Appendix A, condition 22 must include, at a minimum, the provisions of the licensee’s plan filed on May 29, 2014 (Appendix Z of the license application) and the following additional items:

(1) a detailed description of the methods for storage and treatment of salvaged plants;

(2) a species list for supplemental plantings, if needed;

(3) the criteria and monitoring methods to determine whether revegetation measures are successful;

(4) a provision for monitoring and supplemental plantings, as needed, until success criteria are met for two consecutive growing seasons;

(5) a provision to relocate the rare twocolor sedge plant to suitable habitat outside the inundation zone, prior to filling the reservoir;

(6) an implementation schedule; and

(7) a provision to notify the Commission within 60 days of achieving successful revegetation of disturbed areas.

The plan must be developed after consultation with the U.S. Forest Service and Alaska Department of Fish and Game. 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. 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 417. Invasive Species Management Plan. The Invasive Species Management Plan required by Appendix A, condition 22 must include, at a minimum, the provisions of the licensee’s plan filed on May 29, 2014 (Appendix Z of the license application, as part of the Vegetation Management Plan) and the following additional items:

1. a provision to use weed-free materials and erosion control methods;
2. a monitoring schedule that addresses short-term (first 3 to 5 years) and long-term monitoring needs;
3. a description of the proposed eradication measures for invasive species; and
4. an implementation schedule.

The plan must be developed after consultation with the U.S. Forest Service and Alaska Department of Fish and Game. 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. 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 418. Wildlife Mitigation and Monitoring Plan. The Wildlife Mitigation and Monitoring Plan required by Appendix A, condition 22 must include, at a minimum, all of the provisions of the licensee’s plan filed on May 29, 2014 (Appendix Z of the license application) and supplemented on January 27, 2016, except for the provisions to develop a wildlife trail to bypass the caretaker’s facility; restrict employees, contractors,
and subcontractors from hunting, fishing, and trapping within 0.5 mile of project features during construction of the project; post hunting and fishing regulations onsite; and prohibit personal firearms onsite. The plan must include the following additional items:

1. A provision to stop pile driving if a marine mammal monitor observes a marine mammal approaching within a marine mammal monitoring area of 1,000 meters radius centered on the pile driving activities;

2. A provision to use the pile driving equipment in conjunction with compatible hard composite reinforced, thermosetting plastic hammer cushions;

3. A provision to employ a marine mammal monitor during project construction that: (a) is able to identify the designated wildlife and be equipped with binoculars, range finder, two-way radio communication with the equipment operator, and log book; (b) has the authority to stop pile driving or removal if a marine mammal is observed approaching the monitoring area; (c) has no other primary duty than to watch for and report on events related to marine mammals; and (d) will record observations of marine mammals near or within the marine mammal monitoring areas.

4. A provision to prohibit project-related aircraft or marine vessel traffic within 1,000 meters of the Mist Steller sea lion haulout in Port Snettisham;

5. A provision to file a report with the NMFS within 60 days following project construction, documenting all marine mammal monitor sightings or confirmation on absence of sightings, estimated distance of sightings from project operations, and any shutdown of pile driving activities due to a marine mammal approaching or occurring within the shutdown zone;

6. A provision to immediately report to the NMFS any observations of harm or harassment to marine mammals; and

7. An implementation schedule.

The plan must be developed after consultation with the U.S. Forest Service, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and Alaska Department of Fish and Game. 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. 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 419. Threatened, Endangered, Proposed for Listing, and Sensitive Species Plan.** The Threatened, Endangered, Proposed for Listing, and Sensitive Species Plan required by Appendix A, condition 22, must include the provisions of the licensee’s plan filed on May 29, 2014 (Appendix Z of the license application) and supplemented on January 27, 2016, with the following additional items:

1. A provision to stop pile driving if a marine mammal monitor observes a humpback whale or Stellar sea lion approaching within a marine mammal monitoring area of 1,000 meters radius centered on the pile driving activities;

2. A provision to use the pile driving equipment in conjunction with compatible hard composite reinforced, thermosetting plastic hammer cushions;

3. A provision to employ a marine mammal monitor during project construction that: (a) is able to identify the designated wildlife and be equipped with binoculars, range finder, two-way radio communication with the equipment operator, and log book; (b) has the authority to stop pile driving or removal if a marine mammal is observed approaching the monitoring area; (c) has no other primary duty than to watch for and report on events related to marine mammals; and (d) will record observations of marine mammals near or within the marine mammal monitoring areas.

4. A provision to prohibit project-related aircraft or marine vessel traffic within 1,000 meters of the Mist Steller sea lion haulout in Port Snettisham;

5. A provision to file a report with the NMFS within 60 days following project construction, documenting all marine mammal monitor sightings or confirmation on absence of sightings, estimated distance of sightings from project operations, and any shutdown of pile driving activities due to a marine mammal approaching or occurring within the shutdown zone;

6. A provision to immediately report to the NMFS any observations of harm or harassment to marine mammals; and

7. An implementation schedule.
The plan must be developed after consultation with the U.S. Forest Service, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and Alaska Department of Fish and Game. 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. 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 420. Bear Safety Plan. Within 90 days of license issuance, the licensee must file with the Commission, for approval, a Bear Safety Plan. The plan must include at a minimum the provisions of the plan filed on May 29, 2014 (Appendix Z of the license application) with the following modifications:

1. remove the provision to prohibit project workers from hunting and trapping on project lands at any time during project construction and remove the provision prohibiting hunting or trapping on Forest Service lands within a mile of the construction site; and

2. remove the provision to prohibit personal firearms in the construction area.

The plan must be developed after consultation with the U.S. Forest Service and Alaska Department of Fish and Game. 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 421. Recreation Management Plan.** Within one year of license issuance, the licensee must file with the Commission, for approval, a Recreation Management Plan. The plan must include the provisions of the plan filed on May 29, 2014, (Appendix Z of the license application) with the following modifications:

1. to the extent it does not interfere with project operations, allow all recreationists reasonable access to the project boat dock and boat ramp;

2. in addition to completing a comprehensive review of the Recreation Plan every 20 years following license issuance, conduct a comprehensive review four years after the constructing the project recreation facilities;

3. include a description of the comprehensive plan review methodology, which must be developed in consultation with the U.S. Forest Service, National Park Service, and Alaska Department of Fish and Game; and

4. include a provision to file with the Commission, for approval, a report by December 31 of the year in which the comprehensive review required by item 2 was completed, describing the results of the review and any proposals to revise the plan to accommodate future recreation needs;

The plan must be developed after consultation with the U.S. Forest Service, National Park Service, and Alaska Department of Fish and Game. The licensee must include with the plan, documentation of agency consultation and copies of comments and recommendations on the 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 422. Heritage Resource Protection Plan.** The Heritage Resource Protection Plan, required by Appendix A, Condition 22, must include, at a minimum, all of the provisions of the licensee’s plan filed on May 29, 2014 (Appendix Z of the license application) and the following additional items:

1. a detailed description of a cultural resources training program that will be provided to all project construction staff;
(2) a provision to provide during project construction, an archeological monitor in areas likely to have previously-undiscovered cultural resources; and

(3) a description of the areas that are likely to yield previously-undiscovered cultural resources, and the criteria used to identify those areas and determine when an archeological monitor will be required.

The plan must be developed after consultation with the U.S. Forest Service and Alaska State Historic Preservation Officer. 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. 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 423. Scenery Management Plan. The Scenery Management Plan, required by Appendix A, condition 22, must include, at a minimum, the provisions of the licensee’s plan filed on May 29, 2014 (Appendix Z of the license application) and the following additional items: (1) a schedule to establish permanent photo points and the time(s) of year that photos will be taken to monitor visual effects of the project over time; and (2) a provision to file a report with the Commission at the end of the 10-year monitoring period with recommendations for any further monitoring, developed in consultation with the U.S Forest Service.

The plan must be developed after consultation with the U.S. Forest Service. The licensee must include with the final 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. 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 424. 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 kilovolt or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project impoundment. No later than January 31 of each year, the licensee must file with the Commission a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

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

(e) The following additional conditions apply to any intended conveyance under paragraph (c) or (d) of this article:
(1) Before conveying the interest, the licensee must consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

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

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

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

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

(G) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section
313(a) of the FPA, 16 U.S.C. § 825l (2012), and section 385.713 of the Commission’s regulations, 18 C.F.R. § 385.713 (2016). The filing of a request for rehearing does not operate as a stay of the effective date of this license or of any other date specified in this order. The licensee’s failure to file a request for rehearing shall constitute acceptance of this order.

Ann F. Miles
Director
Office of Energy Projects
FORM L-2  
(October 1975)

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 exhibit theretofore made a part of the license as may be specified by the Commission.

Article 3. The project works shall be construction 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 Power 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 feature 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 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 non-power licensee under the provisions of Section 15 of said Act, the Licensee, its successors and assigns shall be responsible for, and shall make good any defect of title to, or of right of occupancy and use in, any of such project property that is necessary or appropriate or valuable and serviceable in the maintenance and operation of the project, and shall pay and discharge, or shall assume responsibility for payment and discharge of, all liens or encumbrances upon the project or project property created by the Licensee or created or incurred after the issuance of the license: Provided, That the provisions of this article are not intended to require the Licensee, for the purpose of transferring the project to the United States or to a new licensee, to acquire any different title to, or right of occupancy and use in, any of such project property than was necessary to acquire for its own purposes as the Licensee.

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

**Article 8.** The Licensee shall install and thereafter maintain gages and stream-gaging stations for the purpose of determining the stage and flow of the stream or streams on which the project is located, the amount of water held in and withdrawn from storage, and the effective head on the turbines; shall provide for the required reading of such gages and for the adequate rating of such stations; and shall install and maintain standard meters adequate for the determination of the amount of electric energy generated by the project works. The number, character, and location of gages, meters, or other measuring devices and the method of operation thereof, shall at all times be satisfactory to the Commission or its authorized representative. The Commission reserves the right, after notice and opportunity for hearing, to require such alteration in the number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, as are necessary to secure adequate determinations. The installation of gages, the rating of said stream or streams, and the determination of the flow thereof, shall be under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region of the project, and the Licensee shall advance to the United States Geological Survey the amount of funds estimated to be necessary for such supervision, or cooperation for such periods as may be mutually agreed upon. The Licensee shall keep accurate and sufficient records of the foregoing determinations to the satisfaction of the Commission, and shall make return of such records annually at such time and in such form as the Commission may prescribe.
Article 9. The Licensee shall, after notice and opportunity for hearing, install additional capacity or make other changes in the project as directed by the Commission, to the extent that it is economically sound and in the public interest to do so.

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

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

Article 12. The 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 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 of 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. This license shall not be construed as conferring upon the Licensee any right of use, occupancy, or enjoyment of the lands of the United States other than for the construction, operation, and maintenance of the project as stated in the license.

**Article 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
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 this 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.
Final 4(e) Terms and Conditions filed by the U.S. Department of Agriculture, Forest Service (Forest Service) Pursuant to Section 4(e) of the Federal Power Act, for the Sweetheart Lake Hydroelectric Project No. 13563

General
License articles contained in the Federal Energy Regulatory Commission’s (Commission) Standard Form L-2 issued by Order No. 540, dated October, 1975, cover those general requirements that the Secretary of Agriculture, acting by and through the USDA Forest Service, considers necessary for adequate protection and use of the land and related resources of the Tongass National Forest. Under authority of section 4(e) of the Federal Power Act (16 U.S.C. 797(e)), the following terms and conditions are deemed necessary for adequate protection and use of Tongass National Forest lands and resources. These terms and conditions are based on those resources enumerated in the Organic Administration Act of 1897 (30 Stat. 11), the Multiple-Use Sustained Yield Act of 1960 (74 Stat. 215), the National Forest Management Act of 1976 (90 Stat. 2949), and any other law specifically establishing a unit of the National Forest System or prescribing the management thereof (such as the Wilderness Act or Wild and Scenic Rivers Act), as such laws may be amended from time to time, and as implemented by regulations and approved Land and Resources Management Plans prepared in accordance with the National Forest Management Act. Therefore, under section 4(e) of the Federal Power Act, the following conditions covering specific requirements for protection and use of the National Forest System lands shall also be included in any license or license amendment issued for the Sweetheart Lake Hydroelectric Project.

Condition No. 1 – Requirement to Obtain a Forest Service Special Use Authorization
The Licensee shall obtain a special use authorization from the Forest Service for the occupancy and use of National Forest System lands. The licensee shall obtain the executed authorization before beginning ground-disturbing activities on National Forest System lands or within one year of license issuance if no construction or reconstruction was proposed in the application for license.

The Licensee may commence ground-disturbing activities authorized by the License and special use authorization no sooner than 60 days following the date the licensee files the Forest Service special-use authorization with the Commission, unless the Commission prescribes a different commencement schedule.

In the event there is a conflict between any provisions of the license and Forest Service special-use authorization, the special use authorization shall prevail to the extent that the Forest Service, in consultation with the Commission, deems necessary to protect and use
National Forest System lands and resources.

**Condition No. 2 – Forest Service Approval of Final Design**

Prior to undertaking activities on National Forest System lands, the Licensee shall obtain written approval from the Forest Service for all final design plans for project components that the Forest Service deems as affecting or potentially affecting National Forest System lands and resources. As part of such prior written approval, the Forest Service may require adjustments in final design plans and facility locations to preclude or mitigate impacts and to assure that the project is compatible with on-the-ground conditions. Should the Forest Service, the Commission, or the Licensee determine that necessary changes are a substantial change; the Licensee shall follow the procedures of Article 2 of the license. Any changes to the license made for any reason pursuant to Article 2 or Article 3 shall be made subject to any new terms and conditions the Secretary of Agriculture may make pursuant to section 4(e) of the Federal Power Act.

**Condition No. 3 – Approval of Changes**

Notwithstanding any license authorization to make changes to the Project, the Licensee shall obtain written approval from the Forest Service prior to making any changes in any constructed Project features or facilities, or in the uses of Project lands and waters the Forest Service deems as affecting or potentially affecting National Forest System lands and resources. Following receipt of such approval from the Forest Service, and a minimum of 60-days prior to initiating any such changes, the Licensee shall file a report with the Commission describing the changes, the reasons for the changes, and showing the approval of the Forest Service for such changes. The Licensee shall file a copy of this report with the Forest Service at the same time it is filed with the Commission. This condition does not relieve the Licensee from other requirements of this license.

**Condition No. 4 – Consultation**

Each year during the 60-days preceding the anniversary of this license, or as arranged with the Forest Service, the Licensee shall consult with the Forest Service with regard to measures needed to ensure protection and use of the National Forest System lands and resources affected by the Project. Representatives from the National Marine Fisheries Service, U.S. Fish and Wildlife Service, Alaska Department of Fish and Game, interested tribes, other agency representatives, and other interested parties concerned with operation of the Project may attend the meeting.

The goal of the meeting is to share information. Consultation will include, but not be limited to

- A status report regarding implementation of license conditions
- Results of any monitoring studies performed over the previous year in formats agreed to by the Forest Service and the Licensee during development of resource management plans
• Review of any non-routine maintenance
• Discussion of any foreseeable changes to Project facilities or features
• Discussion of any revisions or modifications to plans approved as part of this license
• Discussion of needed protection measures for species newly listed as threatened, endangered, or sensitive, or changes to existing management plans that may no longer be warranted due to delisting of species or, to incorporate new knowledge about a species requiring protection
• Discussion of current year maintenance plans and operation and maintenance activities planned for the next calendar year
• Discussion of any planned pesticide use.

Within 60-days following such consultation, the Licensee shall file with the Commission evidence of the consultation with any recommendations made by the Forest Service.

The Forest Service reserves the right, after notice and opportunity for comment, to require changes in the Project and its operation through revision of the 4(e) conditions to accomplish protection and use of National Forest System lands and resources.

**Condition No. 5 – Compliance with USDA Regulations and Other Laws**
The Licensee shall comply with the regulations of the Department of Agriculture and all applicable Federal, State, county and municipal laws, ordinances, or regulations in regards to the area or operations covered by this license, to the extent those laws, ordinances or regulations are not preempted by federal law.

**Condition No. 6 – Surrender of License or Transfer of Ownership**
Prior to any surrender of this license, the Licensee shall restore any National Forest System lands to a condition satisfactory to the Forest Service. At least one year in advance of the proposed application for license surrender, the Licensee shall file with the Commission a restoration plan approved by the Forest Service. The restoration plan shall identify improvements to be removed, restoration measures, and time frames for implementation and estimated restoration costs. In addition, the Licensee shall pay for an independent audit to assist the Forest Service in determining whether the Licensee has the financial ability to fund the surrender and restoration work specified in the plan.

As a condition of any transfer of the license or sale of the Project, the Licensee shall guarantee or assure, in a manner satisfactory to the Forest Service, that the Licensee or transferee will provide for the costs of surrender and restoration.

**Condition No. 7 – Deleted**
**Condition No. 8 – Self Insurance**

The Licensee shall indemnify, defend, and hold the United States harmless for any violations incurred under any laws and regulations applicable to, or judgments, claims, penalties, fees, or demands assessed against the United States caused by, or costs, damages, and expenses incurred by the United States caused by, or the releases or threatened release of any solid waste, hazardous substances, pollutant, contaminant, or oil in any form in the environment related to the construction, maintenance, or operation of the Project works or of the works appurtenant or accessory thereto under the license.

The Licensee’s indemnification of the United States shall include any loss by personal injury, loss of life or damage to property caused by the construction, maintenance, or operation of the Project works or of the works appurtenant or accessory thereto under the license.

Indemnification shall include, but is not limited to, the value of resources damaged or destroyed; the costs of restoration, cleanup, or other mitigation; fire suppression or other types of abatement costs; third party claims and judgments; and all administrative, interest, and other legal costs. Upon surrender, transfer, or termination of the license, the Licensee’s obligation to indemnify and hold harmless the United States shall survive for all valid claims for actions that occurred prior to such surrender, transfer or termination.

**Condition No. 9 – Damage to Land, Property, and Interests of the United States**

The Licensee, including any agents or employees of the licensee acting within the scope of their employment, has an affirmative duty to protect the land, property, and interests of the United States from damage arising from the Licensee’s construction, maintenance, or operation of the Project works or the works appurtenant or accessory thereto under the license. The Licensee’s liability for fire and other damages to National Forest System lands shall be determined in accordance with the Federal Power Act and standard Form L-2 Articles 22 and 24.

**Condition No. 10 – Risks and Hazards on National Forest System Lands**

As part of the occupancy and use of the Project area, the Licensee has a continuing responsibility to reasonably identify and report all known or observed hazardous conditions on or directly affecting National Forest System lands within the Project boundary that would affect the improvements, resources, or pose a risk of injury to individuals. Licensee will abate those conditions, except those caused by third parties or not related to the occupancy and use authorized by the License. Any non-emergency actions to abate such hazards on National Forest System lands shall be performed after consultation with the Forest Service. In emergency situations, the Licensee shall notify the Forest Service of its actions as soon as possible, but not more than 48 hours, after such actions have been taken. Whether or not the Forest Service is notified or provides
consultation, the Licensee shall remain solely responsible for all abatement measures performed. Other hazards should be reported to the appropriate agency as soon as possible.

**Condition No. 11 – Protection of Forest Service Special Status Species After Initial Construction**

Before taking actions to construct new project features on National Forest System lands that may affect Forest Service special status species or their critical habitat, the Licensee shall prepare and submit a biological evaluation (BE) for Forest Service approval. The BE shall evaluate the potential impact of the action on the species or its habitat. In coordination with the Commission, the Forest Service may require mitigation measures for the protection of the affected species.

The biological evaluation shall:
- Include procedures to minimize adverse effects to special status species.
- Ensure project-related activities meet restrictions included in management plans for special status species.
- Develop implementation and effectiveness monitoring of measures taken or employed to reduce effects to special status species.

**Condition No. 12 – Access**

The Forest Service reserves the right to use or permit others to use any part of the licensed area on National Forest System lands for any purpose, provided such use does not interfere with the rights and privileges authorized by this license or the Federal Power Act.

**Condition No. 13 – Maintenance of Improvements**

The Licensee shall maintain all its improvements and premises on National Forest System lands to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the Forest Service. The Licensee shall comply with all applicable Federal, State, and local laws, regulations, including but not limited to, the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., the Resources Conservation and Recovery Act, 42 U.S.C. 6901 et seq., the Comprehensive Environmental Response, Control, and Liability Act, 42 U.S.C. 9601 et seq., and other relevant environmental laws, as well as public health and safety laws and other laws relating to the siting, construction, operation, maintenance of any facility, improvement, or equipment.

**Condition No. 14 – Boundary Markers and Survey**
The Licensee shall avoid disturbance to all public land survey monuments, private property corners, and forest boundary markers. In the event that any such land markers or monuments on National Forest System lands are destroyed by an act or omission of the Licensee, in connection with the use and/or occupancy authorized by this license, depending on the type of monument destroyed, the Licensee shall reestablish or reference same in accordance with (1) the procedures outlined in the “Manual of Instructions for the Survey of the Public Land of the United States,” or (2) the specifications of the Forest Service. Further, the Licensee shall ensure that any such official survey records affected are amended as provided by law.

**Condition No. 15 – Pesticide and Herbicide Use Restrictions**

Herbicides may not be used to control undesirable woody and herbaceous vegetation, and aquatic plants, and pesticides may not be used to control undesirable insects, rodents, non-native fish, etc., on National Forest System lands without the prior written approval of the Forest Service. The Licensee shall submit a request for approval of planned uses of herbicides and pesticides. The request must cover annual planned use and be updated as required by the Forest Service. The Licensee shall provide information essential for review in the form specified by the Forest Service.

The Licensee shall provide at a minimum the following information
- whether pesticide applications are essential for use
- specific locations of use
- specific herbicides and pesticides proposed for use
- application rates
- dose and exposure rates
- safety risks and timeframes for application.

Exceptions to this schedule may be allowed only when unexpected outbreaks of pests require control measures that were not anticipated at the time the report was submitted. In such an instance, an emergency request and approval may be made.

Pesticide use will be excluded from National Forest System (NFS) lands within 500 feet of known locations of Rough-skinned newt, Western Toad, or known locations of Forest Service Special Status or culturally significant plant populations. Application of pesticides must be consistent with Forest Service riparian conservation objectives.

The Licensee shall use on NFS lands only those materials registered by the U.S. Environmental Protection Agency for the specific purpose planned. The Licensee must strictly follow label instructions in the preparation and application of herbicides and pesticides and disposal of excess materials and containers.
Condition No. 16 – Revision of Forest Service 4(e) Terms and Conditions

The Forest Service reserves the right, after notice and opportunity for comment, to require changes in the Project and its operation through revision of the Section 4(e) conditions to accomplish protection and use of National Forest System lands and resources.

The Forest Service also reserves the right to modify these conditions, if necessary, to respond to any significant changes that warrant a revision of these conditions, for example, a Final Biological Opinion issued for this Project by the National Marine Fisheries Service or United States Fish and Wildlife Service or certifications issued for this Project by the State of Alaska.

Condition No. 17 – Signs

The Licensee shall consult with the Forest Service prior to erecting any signs on National Forest System lands relating to this license. The Licensee must obtain the approval of the Forest Service as to the location, design, size, color, and message. The Licensee shall be responsible for maintaining all Licensee erected signs to neat and presentable standards.

Condition No. 18 – Additional National Forest System Lands

If the Licensee proposes ground-disturbing activities on or directly affecting National Forest System lands that were not analyzed in the Commission’s Environmental Impact Statement, the Licensee, in consultation with the Forest Service, shall determine the scope of work and potential for Project-related effects, and whether additional information is required to proceed with the planned activity.

The Licensee shall conduct or fund the necessary environmental analysis including, but not limited to, scoping, site-specific resource analysis, and cumulative effects analysis sufficient to meet the criteria set forth in Forest Service regulations for National Environmental Policy Act (NEPA) implementation in existence at the time the process is initiated. The Licensee may refer to or rely on previous NEPA analysis for the activity to the extent the analysis is not out of date as determined by the Forest Service. Any contractors selected by the Licensee to conduct the NEPA process shall be approved by the Forest Service in advance of initiating the work.

Additional lands authorized for use by the Licensee in a new or amended special use authorization shall be subject to laws, rules, and regulations applicable to the National Forest System. The terms and conditions of the Forest Service special use authorization are enforceable by the Forest Service under the laws, rules, and regulations applicable to the National Forest System.
Condition No. 19 – Implementation of Activities on National Forest System Lands
(Applies only to issuance of Special Use Permit)

The Licensee is precluded from commencing implementation of habitat or ground disturbing activities on National Forest System lands pending completion of the project-level predecisional administrative review process for occupancy or use of National Forest System Lands and Resources (36 CFR 218) process that may be invoked upon publication of a Forest Service decision document.

The Forest Service reserves the authority to modify Forest Service 4(e) terms and conditions if upon completion of the Forest Service administrative review process, the Chief of the Forest Service, or Secretary of Agriculture directs that substantial changes to the terms and conditions submitted herein be made.

Condition No. 20 – Use of Explosives

In the use of explosives, the Licensee shall exercise the utmost care not to endanger life or property and shall comply with Federal, State and local laws and ordinances. The Licensee shall contact the Forest Service prior to blasting to obtain the requirements of the Forest Service. The Licensee shall be responsible for any and all damages resulting from the use of explosives and shall adopt precautions to prevent damage to surrounding objects. The Licensee shall furnish and erect special signs to warn the public of the Licensee's blasting operations. The Licensee shall place and maintain such signs so they are clearly evident to the public during all critical periods of the blasting operations.

The Licensee shall store all explosives in compliance with all applicable Federal, State and local laws and ordinances. When using explosives on National Forest System lands, the Licensee shall adopt precautions to prevent damage to landscape features and other surrounding objects. When directed by the Forest Service, the Licensee shall leave trees within an area designated to be cleared as a protective screen for surrounding vegetation during blasting operations. The Licensee shall remove and dispose of trees so left when blasting is complete. When necessary, and at any point of special danger, the Licensee shall use suitable mats or some other approved method to smother blasts.

Condition No. 21 – Environmental Compliance Monitor

Several important items will need monitoring during the construction phase of the project especially since the Sweetheart Lake Hydroelectric project is in a remote location. To ensure adherence to license conditions, mitigation measures, and other environmental aspects of project construction, the Forest Service will require the Licensee to provide a qualified environmental compliance monitor to oversee the project during major construction activities (e.g., vegetative or land disturbing, spoil producing, blasting activities). Items to be monitored include, but are not limited to those stated in the
Resource Management Plans listed in Condition No. 22.

The compliance monitor would be a liaison between the Forest Service and Licensee. The compliance monitor should have the authority to stop work or issue change orders in the field should conditions so warrant. The compliance monitor should be a third party contractor independent of the Licensee, subject to approval by both the Licensee and the Forest Service. Once major construction activities are complete the compliance monitor will no longer be needed.

**Condition No. 22 – Resource Management Plans**

Within one year of license issuance, and in consultation with the Forest Service and applicable Federal and State agencies, the Licensee shall file with the Commission the following plans addressing specific resource issues covered by the Tongass National Forest Land and Resource Management Plan. The Licensee shall submit the draft plans for Forest Service review and approval, prior to submitting the plans to the Commission. The Licensee shall provide at least 90 days for Forest Service review and approval before the filing deadline in the license. Upon Commission approval, Licensee shall implement the Plans.

The required plans include the following:

- Construction Plan
- Spoils Disposal Plan
- Access and Road Management and Maintenance Plan
- Reservoir Management and Inundation Plan
- Erosion Control Plan
- Solid Waste and Wastewater Plan
- Hazardous Substances Plan
- Fire Prevention Plan
- Heritage Resource Protection Plan
- Scenery Management Plan
- Vegetation Management Plan
- Invasive Species Management Plan
- Wildlife Mitigation and Monitoring Plan
- Fish Mitigation and Monitoring Plan
- Threatened, Endangered, Proposed for Listing, and Sensitive Species Plan
- Stream Flow Management Plan
- Stream Flow Measurement Plan
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- Aquatic Habitat Restoration and Monitoring Plan
- Environmental Compliance Monitoring Plan
- Storm Water and Pollution Plan