APPENDICES

A. Location Map and Figures

B. FERC License (11/09/1993)

C. Zones of Effect

D. Photos of Project

E. ADEC Section 401 Certification for Water Quality

   a. October 17, 2011, letter

   b. November 10, 1992, Original

F. FERC Environmental Assessment (07/01/1992)

G. Article 404 – Rainbow Trout Mitigation, FERC states requirements have been satisfied as of March 17, 2004 (Accession No. 20040324-0145)

H. Salmonid Monitoring, FERC on February 18, 2005, approves the discontinuation of salmonid monitoring (Accession No. 20050218-3026).

I. Article 402 Water Temperature Monitoring, FERC on October 23, 2001, states water temperature monitoring has been satisfied and no continued monitoring is necessary (FERC Accession No. 20020128-0223).

J. Article 411 Spotted Frog Monitoring, FERC stated on March 16, 1994, further protection and monitoring are not required at this time (Accession No. 19940328-0004).

K. Articles 107, 108, 109, and 413 Recreation Plan, FERC deleted these articles from the license because of off-site recreational mitigation (Accession No. 20060710-3011).

L. FERC Form 80, FERC determined on April 7, 2008, that the project is exempt from filing the Form 80 until further order of the Commission (Accession No. 20080410-0092).

APPENDIX A

LOCATION MAP AND FIGURES

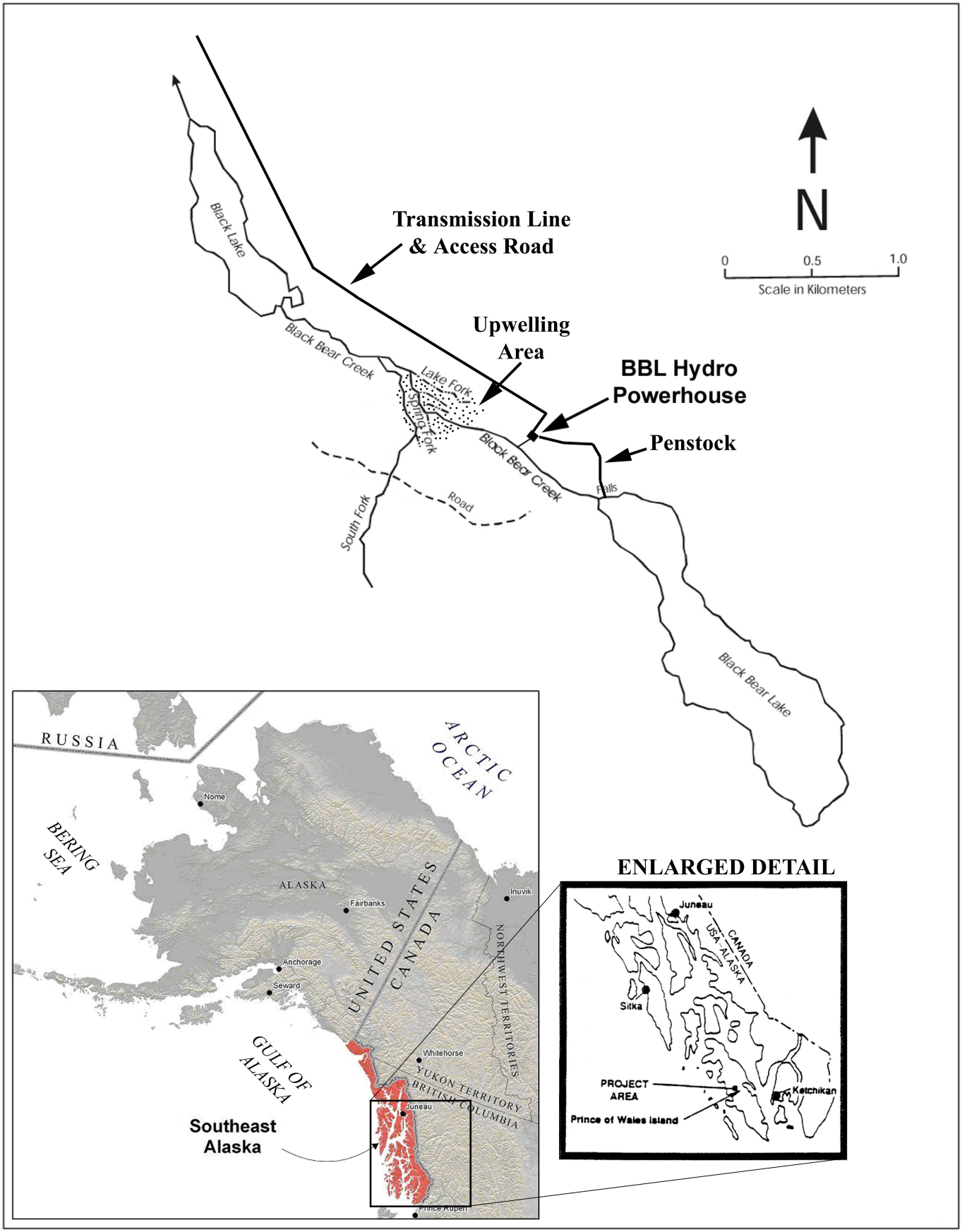


FIGURE 1 - LOCATION MAP

BLACK BEAR LAKE HYDRO
PROJECT DESCRIPTION

It took 5 years to license the Black Bear Lake Hydroelectric Project (BBL Hydro). Total project costs were approximately $10 Million. The BBL Hydro project is a 4.5 MW hydroelectric project at Black Bear Lake on Prince of Wales Island, approximately 15 miles NE of Klawock. The total drainage area of Black Bear Lake is 1.82 square miles. Flows into the lake consist primarily of intermittent streams that drain snowfields surrounding the lake. The lake spill elevation is 1,687 feet msl, with a surface size of 215 acres. With the licensed 15 foot drawdown, the lake provides approximately 3200 acre-feet of storage. The lake is used as a reservoir, rather than using a dam, which is accomplished by using a siphon. The project is load-following with the only restriction being that startups and stops cannot exceed 1 cfs per hour, but operations may follow load.

Because there are rainbow trout in the lake, a screened intake is used to prevent fish from going into the penstock. A siphon, which is set up on the crest of land at the edge of the lake, is used initially to draw water out of the lake. Once the siphon is established, water passes through both an HDPE and steel penstock to the valve house where flow can be turned on or shut off without losing the siphon. The valve house also has a bypass pipe for bypassing flows to the creek when additional water is needed in the anadromous reach below the powerhouse. When the valve is opened at the valve house, the water flows through approximately 4,900 feet of pipe, some of which is buried and other above ground, to the powerhouse and the turbine.

The water is pressurized by the amount of head the project has (i.e. 1,500 foot drop in elevation) and the small nozzle (needle) the water must pass through as it strikes the runner (a series of spoon-like protuberances on a wheel) in the turbine, which in turn turns the generator creating electricity. The electricity then goes to the substation where a step-up transformer adjusts the current to the voltage that is wanted on the electrical grid, in this case 34.5 kV. Switchgear in the powerhouse is located in the office where the operations are monitored and adjusted to meet load demand. Operations are also set up to monitor them from a remote location (i.e. one or more of our central offices).

As mentioned, there are rainbow trout in the lake that were stocked there in the 50's. ADF&G had been concerned that our annual drawdowns may be impacting the trout's sustainability by dewatering their spawning beds. Population surveys were conducted for 7 years and a habitat survey was conducted in 2002. The habitat survey found spawning habitat not just at the lake outlet but around the lake and at differing elevations, indicating that the lake trout spawn at other locations than just the lake outlet and are able to spawn when the lake experiences summer drawdowns. This proves the population is sustainable with project operations.

There are also salmonid species that use the creek below the projects tailrace, i.e. chum, pinks, sockeye, coho, and dolly varden. Because of this we are required to have a minimum flow in the creek that varies from month to month. Monitor of this anadromous reach was completed after five years in which no impacts were found from project operations.

Although, the original license required development of recreational facilities at Black Bear Lake with the U.S. Forest Service (FS), once the conceptual design was investigated on-site it was determined that it would be impractical. Off-site mitigation was then considered. The FS developed an off-site location for a recreation cabin on the Island that the licensee provided $200,000 for through a contractual agreement, which was paid to the FS in January 2006. That cabin is on the national registration system to rent and is known as Twelvemile Cabin.

BLACK BEAR LAKE HYDRO
FACT SHEET

Name of Project	Black Bear Lake Hydroelectric Project, FERC Project No. 10440	
Project Location	Sections 1 and 12; T73S, R82E, CRM. On Prince of Wales Island, Tongass National Forest; 8.6 miles east of Klawock in southeast Alaska. Approximate latitude 55°33' and longitude 132°53'.	
Intake	Submerged wedge wire screen at elevation 1,662.	
Reservoir	Name:	Black Bear Lake
	Surface Elevation:	1,687
	Surface Area:	215 Acres
	Storage Capacity:	
	Net:	3,200 Acre Feet
	Operation:	The net storage will be utilized by siphoning the reservoir down 15 feet to a minimum elevation of 1,672.
Siphon	Siphon 600-foot-long, 30-inch-diameter HDPE penstock with a vacuum pump assembly and structure at the high point elevation 1,695.	
Penstock	Total Length:	4,900 feet
	Diameter and Type:	30-inch HDPE and steel material
	Components:	820 feet buried intake and siphon 1,930 feet supported on concrete saddles 2,150 feet buried pipe to the powerhouse
Flow Continuation	24-inch diameter, 180-foot pipe to creek above falls	
Powerhouse	Size:	44 feet by 67 feet
	Number of Units:	1
	Type of Turbine:	Horizontal Twin-Jet Pelton
	Turbine Rating:	6350 hp
	Flow:	45 cfs
	Head:	
	Gross:	1,490
	Net:	1,440
	Generator Rating:	4.5 MW
	Voltage:	4,160 volts
Distribution Line	Voltage:	34.5 kV
	Length:	4.5 miles
	Type:	Overhead on wooden poles
Average Annual Energy Production		23,000 MWh

BLACK BEAR LAKE HYDRO JUST AFTER CONSTRUCTION; NOTE CLEARCUT.

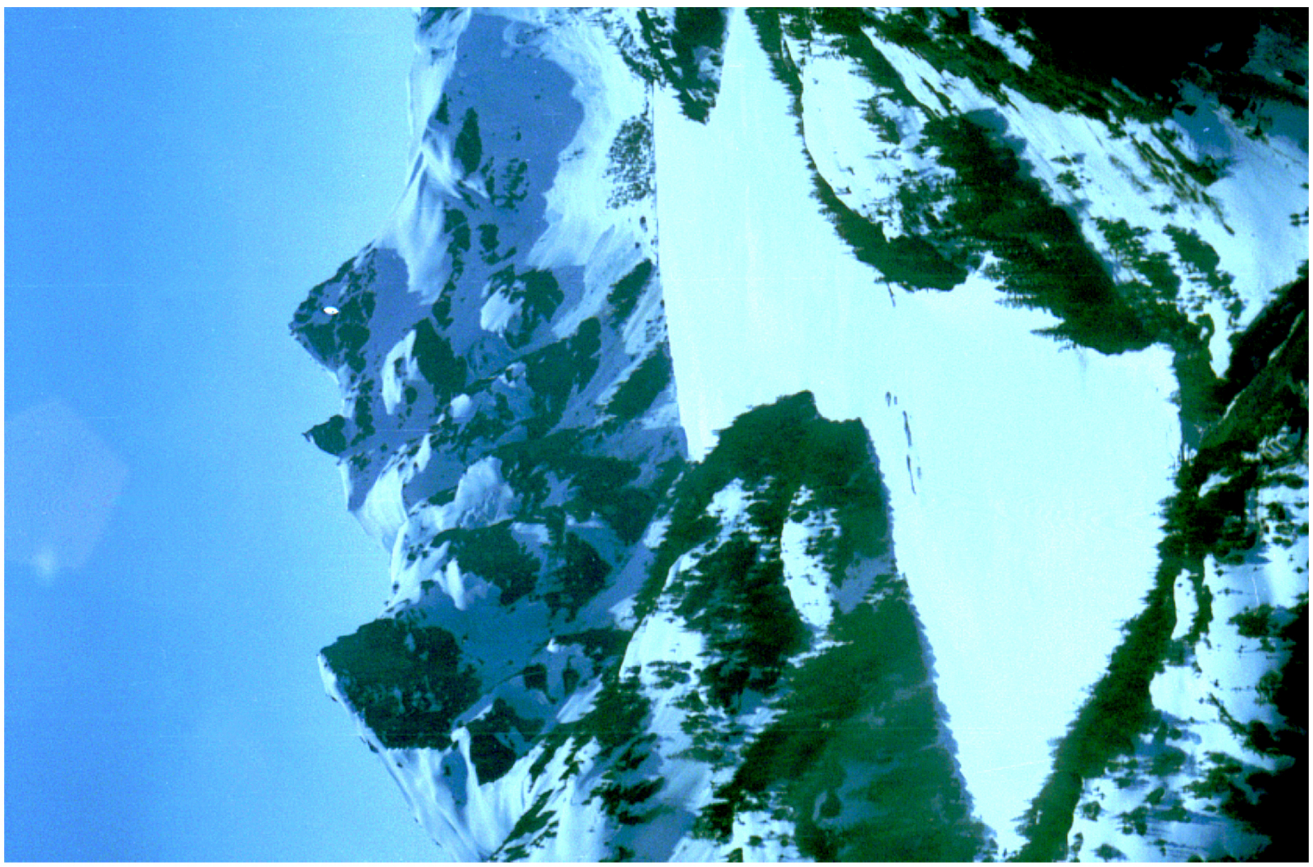
POWERHOUSE (2001)
THIS AREA WAS CLEARCUT IN MID-80's TO EARLY 90's. VEGETATION IS MOSTLY ALDER WHICH SINCE THE PHOTO WAS TAKE NOW TOWERS AROUND THE POWERHOUSE.

CONFLUENCE OF SPRING FORK & LAKE FORK ON BLACK BEAR CREEK; NOTE SALMON IN CREEK AND SALMON CARCASSES ON TREES ACROSS CREEK FROM BEAR ACTIVITY.

BLACK BEAR LAKE IN SPRING THAW; VIEW FROM NORTH END AT LAKE OUTLET.

VIEW OF BLACK BEAR LAKE FROM NORTH LOOKING SOUTH.

VIEW OF BLACK BEAR LAKE FROM THE SOUTH END.



BLACK BEAR LAKE WITH ITS WINTER MANTEL FROM THE NORTH END

APPENDIX B

FERC LICENSE

Alaska Power & Telephone Company
Project No. 10440-001-Alaska

ORDER ISSUING LICENSE
(Major Project)
Issued November 9, 1993

Alaska Power & Telephone Company (Alaska Power & Telephone) filed a license application under Part I of the Federal Power Act (FPA) to construct, operate, and maintain the 4.5-megawatt Black Bear Lake Project located on Black Bear Lake, in the First Judicial District on Prince of Wales Island, Alaska. The project would partially occupy lands of the United States within the Tongass National Forest.

Background

Notice of the application has been published. On March 27, 1992, Sealaska Corporation (Sealaska) filed a timely Motion to Intervene, Protest, Request for Studies and Request for Terms and Conditions. However, on September 24, 1993, Sealaska filed a notice of withdrawal of its Protest, Request for Studies, and Request for Terms and Conditions. Sealaska's notice of withdrawal was effective as of October 9, 1993.

No agency objected to issuance of this license. Comments received from interested agencies and individuals have been fully considered in determining whether to issue this license.

An Environmental Assessment (EA) was prepared by my staff and issued on June 25, 1992, and is attached to and made a part of the license. A Safety and Design Assessment was also prepared, and is available in the Commission's public file associated with this project.

Project Description

The project, which would use the existing Black Bear Lake as a reservoir, would consist of a submerged siphon intake, a partially buried penstock, a powerhouse, tailrace, transmission line, switchyard, and access road.

A more detailed description of the project proposal can be found under ordering paragraph (B), and under section III of the EA.

Water Quality Certification

Alaska Power & Telephone requested 401 certification on December 18, 1990. Alaska Department of Environmental Conservation (Department of Environmental Conservation) acknowledged receipt of Alaska Power & Telephone's request as of May 31, 1991. Commission order 533, which took effect on June 19, 1991, stipulates that agencies must act on pending 401 certification requests within one year from the effective date of that order. The Department of Environmental Conservation issued a 401 certification on May 31, 1992.

Section 10 (a)(2)(C): Conservation Efforts

Staff reviewed Alaska Power & Telephone Co's efforts to get their customers to conserve electricity and I concur with their finding that Alaska Power & Telephone is making a good-faith effort.

The state of Alaska has no regulatory authority over energy conservation nor has it promulgated any conservation policies, programs or plans that would affect Alaska Power & Telephone. Alaska Power & Telephone is a small isolated electric utility and states that an aggressive program to improve the efficiency of electricity generation and consumption is in-place throughout its service area.

Alaska Power & Telephone cooperates with the Alaska Energy Authority by providing to its customers literature and other conservation information supplied by the Alaska Energy Authority through means of a bill-stuffing program.

Coastal Zone Management Program

Section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA) of 1972, as amended requires that license applicants for projects "...in or outside the coastal zone, affecting any land or water use or natural resource of the coastal zone of that

state shall provide..." a [self] certification that the project complies with the state's approved (by the U.S. Department of Commerce) Coastal Zone Management Program (CZMP) and that the project would be consistent with the program. "At the same time, the applicant shall furnish to the state or its designated agency a copy of the certification..." It also states that no license shall be granted "...until the state or its designated agency has concurred with the applicant's certification or until, by the state's failure to act, the concurrence is conclusively presumed..."

Because the project is located in a coastal zone area, the Alaska Department of Environmental Conservation must review the proposed project for consistency with the state's CZMP. By

letter dated November 5, 1992, Alaska Department of Environmental Conservation concurred with Alaska Power & Telephone's certification of project consistency with the CZMP.

Section 4(e) reservation

Section 4(e) of the FPA, 16 U.S.C. • 797(e), requires that Commission licenses for projects located within United States 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. A portion of the Black Bear Lake Project is located in the Tongass National Forest, which is under the United States Forest Service's supervision.

By letter dated August 17, 1992, the Forest Service submitted its comments on the proposed project and its conditions for inclusion in any license. 1/ On February 8, 1993, the Forest Service deleted condition 9 from their license conditions.

Recommendations of Federal and State Fish and Wildlife Agencies

Section 10(j)(1) of the FPA requires the Commission to include license conditions based on recommendations of federal and state fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act, for the protection, mitigation, and enhancement of fish and wildlife.

I conclude that the fish and wildlife measures required in this license are consistent with the fish and wildlife agencies recommendations.

Comprehensive Plans

Section 10(a)(2)(A) of the FPA, 16 U.S.C. • 803(a)(2)(A), requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project. 2/ Under Section 10(a)(2)(A), federal and state agencies filed 14 comprehensive plans that address various resources in Alaska. Of these, the staff identified and

1/ These conditions are included in the license as articles 101 through 114.

2/ Comprehensive plans for this purpose are defined at 18 C.F.R. • 2.19 (1992).

reviewed two plans relevant to this license. 3/ No conflicts were found.

Comprehensive Development

Sections 4(e) and 10(a) of the FPA require the Commission to give equal consideration to all uses of the waterway on which a project is located. When the Commission reviews a proposed project, the recreational, fish and wildlife, and other nondevelopmental values of the involved waterway are considered equally with the power and other developmental values. In determining whether, and under what conditions, a hydropower license should be issued, the Commission must weigh the various economic and environmental trade offs involved in the decision.

In the EA, staff analyzed the following three alternatives for the Black Bear Lake Project: (1) the project as proposed by the applicant; (2) the project as proposed by the applicant with

Forest Service 4(e) conditions and staff-recommended measures; and (3) the no-action alternative. Staff recommends the second alternative -- the project as proposed by the applicant with Forest Service 4(e) conditions and staff-recommended measures -- as the preferred alternative.

The recommended alternative would give the public the greatest benefits from the waterway for the following reasons: (1) firm energy provided by the project would help meet a part of the projected power needed; (2) the staff's environmental recommendations--erosion control plan, water temperature monitoring plan, resident trout monitoring plan, bald eagle protection plan, raptor protection plan, beaver protection plan, spotted frog protection plan, visual resources plan, and cultural resources survey/plan--would supplement the applicant's proposal in mitigating project impacts and would protect the environment at a minor cost; (3) the project would economically generate an average of 12 GWh of energy under initial load and 23.1 GWh of energy under ultimate load.

The proposed project would have a minor impact to aquatic resources in Black Bear Lake, alter a small nearby meadow, and dry up the waterfall at the lake outlet (except at high flows when the lake is full). However, the fishery resource in Black Bear Lake is a stocked resident fish population that receives little use, and the minor alteration to the meadow would only increase the rate of succession to coniferous forest. As staff

3/ (1) Alaska Outdoor Recreation Plan: 1981-1985, 1981, Alaska Department of Natural Resources, Division of Parks; and (2) Southwest Prince of Wales Island Area Plan for State Lands, 1985, Alaska Department of Natural Resources, Division of Lands and Water Management.

states in section V.B.8, of the EA, the view of the waterfall is not readily accessible and other highly visible, cascading falls exist in the vicinity. Staff has considered this, and the fact that the project area receives only a few visits by recreationists each year. Staff believes the benefits of the proposed project outweigh the loss of the waterfall and the other minor environmental effects.

After evaluating the environmental and the economic effects of the project and the alternatives, I conclude that the proposed project, with the environmental measures staff recommends, would make the best use of the waterway.

Economic Evaluation

Alaska Power & Telephone intends to use the project's power to displace existing diesel generation. Initially the project would displace about 37,000 barrels of crude oil annually, and as loads increase, it would displace about 70,000 barrels of crude oil annually.

A project is economically beneficial so long as its levelized cost is less than the long-term levelized cost of the least cost alternative energy.

For June 1996--the projected operation date of the proposed project--staff estimates the projected levelized alternative energy cost for Alaska Power & Telephone would be about 194 mills/kWh. To derive the energy cost, staff used cost data for the diesel-fueled generator that supplies power to Alaska Power & Telephone.

Staff estimates the levelized cost of power from the project would be about 131 mills/kWh, with an 11-percent cost of financing. Comparing the project cost to the alternative energy cost, the project would be economically beneficial, with a net annual benefit of 63 mills/kWh. The reduced cost to Alaska Power & Telephone of power generation makes the proposal potentially financially feasible.

Determination of Licensable Transmission Facilities

The primary transmission line segment of the project would extend from the project generator, through voltage transformation, to a connection with the Alaska Power & Telephone system at the Klawock substation. This segment would include the 4.16-kilovolt (kV) generator leads, about 14-miles of 34.5-kV overhead transmission line from the switchyard to Alaska Power & Telephone's substation feeder, and appurtenant facilities. This segment will be included as part of the license.

Summary of Findings

The EA gives background information, analysis of impacts, support for related license articles, and the basis for a finding of no significant impact on the environment. Issuing this license is not a major federal action significantly affecting the quality of the human environment.

The project facilities, if constructed according to good engineering practices and if operated, and maintained in accordance with the requirements of this license, would be safe and adequate.

I conclude that the Black Bear Lake Project does not conflict with any planned or authorized development, and is best adapted to comprehensive development of the waterway for beneficial public uses.

The Director orders:

(A) This license is issued to Alaska Power & Telephone Company (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 Black Bear Lake Project. This license is subject to the terms and conditions of the FPA, which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, enclosed by the project boundary shown by exhibit G:

Exhibit G-	FERC No. 10440-	Showing
1	10	Facility Location Map (revised 2/92)
2	11	Site Plan
3	12	Transmission Line (Sheet 1)
4	13	Transmission Line (Sheet 2)

(2) Project works consisting of: (a) the existing 215-acre Black Bear Lake reservoir with a storage capacity of 23,750-acre-feet at elevation 1,687 feet msl; (b) a submerged siphon intake consisting of a 30-inch-diameter, 150-foot-long steel pipe ending at a manifold with five 48-inch-diameter, 61-inch-long steel wedge-wire cylindrical screens; (c) a vacuum pump house; (d) a 4-

foot-square, 8-foot-high concrete valve vault containing a 30-inch-diameter butterfly valve, 8-inch-diameter bypass and valve and an 8-inch air vacuum relief valve; (e) a 24-inch-diameter bypass pipe, upstream of valve vault diverting flow into Black Bear Creek; (f) a 30-inch-diameter, 4,900-foot-long partially buried penstock, ending at the powerhouse with a bifurcation into two 20-inch-diameter branches; (g) a 44-foot-wide, 67-foot-long, 20-foot-high powerhouse containing two, 3,175 horsepower twin jet, horizontal shaft Pelton turbines and associate 2,250 kW synchronous generators with a combined installed capacity of 4,500 kW; (h) a 100-foot-long tailrace channel discharging project flows into Black Bear Creek; (i) a switchyard; (j) 4.16-kV generator leads; (k) a 34.5-kV, 14-mile-long transmission line tying into the existing Klawock substation; (k) appurtenant facilities; and (l) 1 mile of new access road. Project access will be via 4 miles of improved existing logging road from state highway.

The project works generally described above are more specifically shown and described by the following exhibits that also form a part of the application for license and that are designated and described as:

Exhibit A-Table A-1, entitled Summary of Project Features

Exhibit F:

Exhibits	FERC No.10440-	Showing
F-1	1	Site Plan
F-2	2	Penstock Route Profile

F-3	3	Siphon Plan & Profile
F-4	4	Siphon Details
F-5	5	Penstock Details
F-6	6	Powerhouse Site Plan
F-7	7	Powerhouse Plan
F-8	8	Powerhouse Sections
F-9	9	One Line Diagram

(3) All of the structures, fixtures, equipment or facilities used to operate or maintain the project and located within the project boundary, all portable property that may be employed in connection with the project and located within or outside the project boundary, and all riparian or other rights

that are necessary or appropriate in the operation or maintenance of the project.

(C) Exhibits A, F, and G, as designated in ordering paragraph (B) above are approved and made part of the license.

(D) This license is subject to the following terms and conditions submitted by the U.S. Department of Agriculture, Forest Service under Section 4(e) of the FPA:

Article 101. Within 6 months following the date of issuance of this license and before starting any activities the Forest Service determines to be of a land-disturbing nature, the licensee shall obtain from the Forest Service a special-use authorization for the occupancy and use of National Forest System lands, and shall file that authorization with the Director, Office of Hydropower Licensing.

The licensee may commence land-disturbing activities authorized by the license and special-use authorization 60 days following the filing date of such authorization, unless the Director, Office of Hydropower Licensing, prescribes a different commencement schedule.

Notwithstanding the authorizations granted under the Federal Power Act, National Forest System (NFS) lands within the project boundaries shall be managed by the Forest Service under the laws, rules, and regulations applicable to the NFS. 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 NFS. The violation of such terms and conditions also shall be subject to applicable sanctions and enforcement procedures of the Commission at the request of the Forest Service. 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 on matters which the Forest Service deems to affect NFS resources.

Article 102. Before any construction of the project occurs on National Forest System land (NFS), the licensee shall obtain the prior written approval of the Forest Service for all final design plans for project components which the Forest Service deems as affecting or potentially affecting NFS resources. The licensee shall follow the schedules and procedures for design review and approval specified in the Forest Service special-use authorization. As part of such prior written approval, the Forest Service may require adjustments in final plans and facility locations to preclude or mitigate impacts and to assure that the project is compatible with on-the-ground conditions. Should such necessary adjustments be deemed by the Forest Service, the Commission, or the licensee to be 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 of the Secretary of Agriculture made pursuant to Section 4(e) of the Federal Power Act.

Article 103. Notwithstanding any Commission approval or license provisions to make changes to the project, the licensee shall get written approval from the Forest Service prior to making any changes in the location of any constructed project features or facilities, or in the uses of project lands and waters, or any departure from the requirements of any approved exhibits filed with the Commission. Following receipt of such approval from the Forest Service, and at least 60 days prior to

initiating any such changes or departure, 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 an exact copy of this report with the Forest Service at the same time it is filed with the Commission. This article does not relieve the licensee from the amendment or other requirements of Article 2 or Article 3 of this license.

Article 104. Each year during the 60 days preceding the anniversary date of the license, the licensee shall consult with the Forest Service with regard to measures needed to ensure protection and development of the natural resource values of the project area. 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 Commission reserves the right, after notice and opportunity for hearing, to require changes in the project and its operation that may be necessary to accomplish natural resource protection.

Article 105. The licensee shall insure that the public easement over the existing road from section 24, T.72 S., R.81 E., CRM, southeasterly to public land in T.73 S., R.83 E, CRM remains available and open for public use.

Article 106. Within 1 year following the date of issuance of this license and before starting any activities the Forest Service determines to be of a land-disturbing nature on NFS land, the licensee shall file with the Director, Office of Hydropower Licensing, a plan approved by the Forest Service describing how the licensee will work with other landowners in the project area to ensure that public access to the area is not curtailed.

Article 107. The licensee shall construct and maintain a barrier free dock with a floating finger/ramp, suitable for mooring a 8 ft. skiff. The floating section of the dock will be designed so that the skiff does not ground at any drawdown stage. The dock will be located as close as possible to Black Bear cabin. The designs will be mutually agreed to by the licensee

and the USDA Forest Service before any construction of the structure takes place.

Article 108. The licensee shall construct and maintain a trail that begins at the end of the Forest Service reserved access easement to the cabin site. Location and design features of this trail will be mutually agreed to by the licensee and the USDA Forest Service before any construction takes place.

Article 109. Within 1 year following the date of issuance of this license and before starting any activities the Forest Service determines to be of a land-disturbing nature on NFS land, the licensee shall file with the Director, Office of Hydropower Licensing, a plan approved by the Forest Service for construction and maintenance of the above required recreation facilities and for the accommodation of any project-induced recreation. Specifically, the plan will address the construction and maintenance of the floating dock, the construction and maintenance of the access trail to the Black Bear cabin.

The licensee shall not commence activities the Forest Service determines to be affected by the plan until after 60 days following the filing date, unless the Director, Office of Hydropower Licensing, prescribes a different commencement schedule.

Article 110. Within 1 year following the date of issuance of this license and before starting any activities the Forest Service determines to be of a land-disturbing nature on National Forest System land, the licensee shall file with the Director, Office of Hydropower Licensing, a plan, approved by the Forest Service, for the operation and maintenance of the reservoir. The plan must address at least the following: water storage and releases, including storage limitations (if any), dates and/or criteria for filling and release; procedures for flood conditions; erosion prevention in the reservoir area and spillway channel; and trash and debris removal. The plan must include an implementation schedule and maintenance program.

The licensee shall not commence activities the Forest Service determines to be affected by the plan until after 60 days following the filing date, unless the Director, Office of Hydropower Licensing, prescribes a different commencement schedule.

Article 111. Within 1 year following the date of issuance of this license and before starting any activities the Forest Service determines to be of a land-disturbing nature on NFS land,

the licensee shall file with the Director, Office of Hydropower Licensing, a plan approved by the Forest Service for the control of erosion, and soil mass movement.

The licensee shall not commence activities the Forest Service determines to be affected by the plan until after 60 days following the filing date, unless the Director, Office of Hydropower Licensing, prescribes a different commencement schedule.

Article 112. Within 1 year following the date of issuance of this license and before starting any activities the Forest Service determines to be of a land-disturbing nature on NFS land, the licensee shall file with the Director, Office of Hydropower Licensing, a plan, approved by the Forest Service, for the treatment and disposal of solid waste and waste water generated during construction and operation of the project. At a minimum, the plan must address the estimated quantity of solid waste and waste water generated each day; the location of disposal sites and methods of treatment; implementation schedule; areas available for disposal of wastes; design of facilities; comparisons between on and offsite disposal; and maintenance programs.

The licensee shall not commence activities the Forest Service determines to be affected by the plan until after 60 days following the filing date, unless the Director, Office of Hydropower Licensing, prescribes a different commencement schedule.

Article 113. Within 1 year following the date of issuance of this license and at least 60 days before starting any activities the Forest Service determines to be of a land-disturbing nature on NFS land, the licensee shall file with the Director, Office of Hydropower Licensing, a plan approved by the Forest Service for oil and hazardous substances storage and spill prevention and clean up.

At a minimum, the plan must require the licensee to (1) maintain in the project area, a cache of spill cleanup equipment suitable to contain any spill from the project; (2) to periodically inform the Forest Service of the location of the

spill cleanup equipment on NSF System lands and of the location, type, and quantity of oil and hazardous substances stored in the project area; and (3) to inform the Forest Service immediately of the nature, time, date, location, and action taken for any spill.

The licensee shall not commence activities the Forest Service determines to be affected by the plan until after 60 days following the filing date, unless the Director, Office of Hydropower Licensing, prescribes a different commencement schedule.

Article 114. Within 1 year following the date of issuance of this license and before starting any activities the Forest Service determines to be of a land-disturbing nature on National

Forest System land (NFS), the licensee shall file with the Director, Office of Hydropower Licensing, a plan approved by the Forest Service for the design and construction of the project facilities in order to preserve or enhance its visual character. The plan must consider facility configurations and alignments, building materials, color, conservation of vegetation, landscaping, and screening. Project facilities of concern to this plan include, among other things, clearings, diversion structures, penstocks, pipes, ditches, transmission lines and corridors, and access roads.

The licensee shall not commence activities the Forest Service determines to be affected by the plan until after 60 days following the filing date, unless the Director, Office of Hydropower Licensing, prescribes a different commencement schedule.

(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", [except Article 20,] and the following additional articles:

Article 201. The licensee shall pay the United States the following annual charges as determined by the Commission, effective the first day of the month in which this license is issued for the purposes of:

a. Reimbursing the United States for the cost of administration of Part I of the Act. The authorized installed capacity for that purpose is 6,000 horsepower.

b. Recompensing the United States for the use, occupancy and enjoyment of 225 acres of its lands other than for transmission line right-of-way.

c. Recompensing the United States for the use, occupancy and enjoyment of 1.5 acres of its lands for transmission line right-of-way.

Article 202. 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 shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. The licensee shall set aside in a project amortization reserve account at the end of each fiscal year one half of the project surplus earnings, if any, accumulated after the first 20 years of operation under the license, in excess of the specified rate of return per annum on the net investment. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year after the first 20 years of operation under the license, the licensee shall

deduct the amount of that deficiency from the amount of any surplus earnings subsequently accumulated, until absorbed. The licensee shall set aside one-half of the remaining surplus earnings, if any, cumulatively computed, in the project amortization reserve account. The licensee shall maintain the amounts established in the project amortization reserved account until further order of the Commission.

The specified reasonable rate of return used in computing amortization reserves shall be calculated annually based on current capital ratios developed from an average of 13 monthly balances of amounts properly includible in the licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rate for such ratios shall be the weighted average cost of long-term debt and preferred stock for the year, and the cost of common equity shall

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 203. The licensee shall clear and keep clear to an adequate width all 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 result from maintenance, operation, or alteration of the project works. In addition, all trees along the periphery of project reservoir which may die during operation of the project shall be removed. All clearing of lands and disposal of unnecessary material shall be done with due diligence to the satisfaction of the authorized representative of the Commission and in accordance with appropriate federal, state, and local statues and regulations.

Article 204. (a) In accordance with the provisions of this article, the licensee shall 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 shall 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 shall 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 water 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 watercraft 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 shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall 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 shall: (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 reservoir shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensee may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expansion, realignment, or maintenance of bridges or roads where all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one

million gallons per day from a project reservoir. No later than January 31 of each year, the licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed. If no conveyance was made during the prior calendar year, the licensee shall so inform the Commission and the Regional Director in writing no later than January 31 of each year.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 watercraft 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 Exhibit R or 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 submit a letter to the Director, Office of Hydropower Licensing, 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 or K 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 Director, 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 shall 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 shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved exhibit R or approved report on recreational resources of an exhibit E; or, if the project does not have an approved exhibit R or 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 insure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project; and (iii) the grantee shall not unduly restrict public access to project waters.

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

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries.

The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised exhibit G or K 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 or K drawings would be filed for approval for other purposes.

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

Article 301. The licensee must begin construction of the project works within 2 years from the issuance date of the

license and must complete construction of the project within 4 years from the issuance date of the license.

Article 302. At least 60 days before starting construction, the licensee must submit one copy to the Commission's Regional Director and two copies to the Director of the Division of Dam Safety and Inspections of the final contract drawings and specifications for such pertinent features of the project as (1) water-retention structures, (2) all necessary transmission facilities, (3) the powerhouse, and (4) water conveyance structures. The Director of the Division of Dam Safety and Inspections and may require changes in the plans and specifications.

Article 303. Within 90 days after completion of construction, the licensee must file for Commission approval revised exhibits A, F, and G to describe and show the project as-built.

Article 401. The erosion control plan filed on

May 24, 1991, as Appendices E-6 consisting of pages 1 through 41 including the drawings is approved and made part of this license and shall be implemented when land-disturbing activities begin. Final drawings and specifications for the plan shall be filed along with plans and specifications required by Article 303. The Commission may require changes to the erosion control plan to ensure adequate protection of the environmental, scenic, and cultural values of the project area.

Article 402. At least 6 months before the start of project operation, the licensee shall file with the Commission for approval, a plan to monitor water temperature at the lake outlet, at the powerhouse site, and at Lake Fork.

The plan shall include but not be limited to: (a) a schedule for completing installation of the water quality monitoring equipment before the start of project operation; (b) details of the monitoring equipment to be installed, including location, type, sampling frequency and cost; (c) a provision for providing water quality data to the U.S. Fish and Wildlife Service and the Alaska Department of Fish and Game within 30 days from the date of the agency's request for the data; and (d) recommendations on needed measures.

The licensee shall prepare the plan after consultation with the Alaska Department of Fish and Game and the Fish and Wildlife Service. The licensee shall include with the plan documentation of consultation and 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 shall allow a minimum of 30 days for the agencies to comment and to make

recommendations prior to filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Project operation shall not begin until the licensee is notified by the Commission that the plan is approved. Upon

Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

If the results of monitoring indicate that changes in project structures or operations are necessary to ensure maintenance of the state water temperature standards in the project area, the Commission may direct the licensee to modify project structures or operations.

Article 403. The licensee shall design, construct and install the tailrace infiltration galleries according to the functional design as shown in exhibit F-6 of the application for license filed May 24, 1991, to protect the existing aquifer. The licensee shall file as-built drawings of the tailrace infiltration galleries with the Commission, as required by Article 303 of this license.

Article 404. At least 90 days before the start of project operation, the licensee shall file with the Commission for approval a plan for monitoring the resident trout population in Black Bear Lake to assess project-related impacts. The monitoring plan shall include a schedule for: (a) implementation of the program; (b) consultation with the appropriate federal and state agencies concerning the results of the monitoring; and (c) filing the results, agency comments, and licensee's response to agency comments with the Commission.

The licensee shall prepare the plan after consultation with the Alaska Department of Fish & Game and the U.S. Fish and Wildlife Service. The licensee shall include with the plan documentation of consultation and copies of comments and recommendations on the completed plan after it has been prepared and provided to the agency, and specific descriptions of how the agency's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agency to comment and to make recommendations prior to filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Project operation shall not begin until the licensee is notified by the Commission that the plan is approved. Upon

Commission approval the licensee shall implement the plan, including any changes required by the Commission.

Article 405. The licensee shall release from the Black Bear Lake Project into Black Bear Creek minimum flows according to the following table, as measured at the flow recording gage required by Article 406, to protect the downstream aquatic habitat in Black Bear Creek.

Staff's recommended minimum flow releases (in cubic feet per second) to Black Bear Creek downstream of the Black Bear Lake Project.

Month	Minimum Flow (cfs)	Month	Minimum Flow (cfs)
January	9	July	19
February	12	August	17
March	9	September	24
April	15	October	20
May	22	November	15
June	15	December	9

These flows may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods upon agreement between the licensee and the Alaska Department of Fish and Game. 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. At least 90 days before the start of project operation, the licensee shall file with the Commission for approval a plan to design, locate and operate a streamflow recording gage in Black Bear Creek below the powerhouse to ensure compliance with the minimum flow requirement of Article 405.

The plan shall include but not be limited to: (a) a schedule

for completing installation of the gage before the start of project operation; (b) details of the gaging equipment installed, including the location, type, sampling frequency and cost; (c) a provision for providing streamflow data to the U.S. Fish and Wildlife Service and the Alaska Department of Fish and Game within 30 days from the date of the agency's request for the data; and (d) as-built drawings of the gage, as required by Article 303 of this license.

The licensee shall prepare the plan after consultation with the Fish and Wildlife Service and Alaska Department of Fish and Game. The licensee shall include with the plan documentation of consultation and copies of comments and recommendations on the completed plan after it has been prepared and provided to the agency, and specific descriptions of how the agency's comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agency to comment and to make recommendations prior to filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

Article 407. The licensee shall design, construct and install the screened intake structure according to the functional design as shown in exhibit F-4 of the application for license filed May 24, 1991, to protect fish resources. The screen shall be installed and operational before commercial operation of the project. The licensee shall file as-built drawings of the screen intake device with the Commission, as required by Article 303 of this license.

Article 408. At least 90 days before the start of any land-disturbing or land-clearing activities, the licensee shall file with the Commission for approval a plan to protect bald eagles that nest or forage within 330 feet of areas disturbed by construction of the project transmission line. The plan shall include, but not be limited to, the following:

(a) the results of a pre-construction survey for bald eagles by a qualified wildlife biologist;
(b) a project construction schedule that will avoid disturbances to nesting bald eagles;
(c) a transmission line alignment that will avoid passing

within 330 feet of active eagle nests;
(d) other appropriate measures to protect nesting bald eagles; and
(e) an implementation schedule for the protection measures.

The licensee shall prepare the plan after consultation with the Alaska Department of Fish and Game, the U.S. Fish and Wildlife Service, and the Forest Service. The licensee shall 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 and recommendations are accommodated by the plan. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations prior to filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. The licensee shall not begin any land-disturbing activities until notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 409. The licensee shall design and construct the transmission line according to the guidelines in "Suggested Practices for Raptor Protection on Power Lines--the State of the Art in 1981," by the Raptor Research Foundation, Inc.

In adopting these guidelines, the licensee shall develop and implement a design that will provide adequate separation of energized conductors, groundwires, and other metal hardware, adequate insulation, and any other measures necessary to protect raptors from electrocution hazards.

The licensee shall file as-built drawings of the transmission line design with the Commission as required by Article 303 of this license.

Article 410. At least 90 days before the start of any land-disturbing or land-clearing activities, the licensee shall file

with the Commission for approval a plan to protect beavers in Black Bear Creek downstream of the site of the project powerhouse and upstream of Black Lake. The plan shall include, but not be limited to, the following:

(a) the results of a pre-construction survey for beavers by a professional wildlife biologist;
(b) appropriate measures to protect beavers;
(c) an implementation schedule for the protection measures;
(d) a monitoring proposal to evaluate the project's effects on beavers after start up of project operations; and
(e) an implementation schedule for the monitoring proposal.

The licensee shall file, within 60 days following the end of the first year of project operation, an initial report on the results of monitoring beaver populations during the first year of project operation. The report shall recommend the need for and a schedule for filing reports on the results of subsequent monitoring during the license term.

The licensee shall prepare the plan and all monitoring reports after consulting with the Alaska Department of Fish and Game and the U.S. Fish and Wildlife Service. The licensee shall include with the plan and monitoring reports documentation of consultation, copies of comments and recommendations on the completed plan and monitoring reports, and specific descriptions of how the agencies' comments and recommendations are accommodated. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations prior to

filing the plan and reports with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. The licensee shall not begin any land-disturbing activities until notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 411. At least 90 days before the start of any land-disturbing or land-clearing activities, the licensee shall file

with the Commission for approval a plan to protect spotted frogs (Rana pretiosa) in Black Bear Creek downstream of the site of the project powerhouse and upstream of Black Lake. The plan shall include, but not be limited to, the following:

(a) the results of a pre-construction survey for spotted frogs by a professional wildlife biologist;
(b) if found, appropriate measures to protect spotted frogs;
(c) an implementation schedule for the protection measures;
(d) a monitoring proposal to evaluate the project's effects on spotted frogs after start up of project operations; and
(e) an implementation schedule for the monitoring proposal.

The licensee shall file, within 60 days following the end of the first year of project operation, an initial report on the results of monitoring spotted frog populations during the first year of project operation. The report shall recommend the need for and a schedule for filing reports on the results of subsequent monitoring during the license term.

The licensee shall prepare the plan and all monitoring reports after consulting with the Alaska Department of Fish and Game and the U.S. Fish and Wildlife Service. The licensee shall include with the plan and monitoring reports documentation of consultation, copies of comments and recommendations on the completed plan and monitoring reports, and specific descriptions of how the agencies' comments and recommendations are accommodated. The licensee shall allow a minimum of 30 days for the agencies to comment and to make recommendations prior to filing the plan and reports with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. The licensee shall not begin any land-disturbing activities until notified by the Commission that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 412. At least 90 days prior to starting any land-clearing or land-disturbing activities, the licensee shall file with the Commission for approval, the public access plan described in Article 106. The plan shall describe how the licensee will work with other landowners in the project area to ensure that public access to the Black Bear Lake area is not curtailed. In addition, the plan, at a minimum, shall include: (a) provisions for providing public access to Black Bear Lake through the project access road; (b) installing public access signs along the project access road directing recreationists to the Black Bear Lake area; and (c) providing side-road gates or other similar restrictive barriers to ensure recreationists stay along the access route, if requested by private land owners.

The licensee shall prepare the plan after consultation with the Forest Service. The licensee shall include with the plan documentation of consultation with Forest Service before preparing the plan, copies of their comments or recommendations on the completed plan after it has been prepared and provided to the Forest Service, and specific descriptions of how all Forest Service comments were accommodated by the plan.

The licensee shall allow a minimum of 30 days for Forest Service to comment and to make recommendations prior to filing plans with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. No land-disturbing or land-clearing activities shall begin until the licensee is notified by the Commission that the plan is acceptable. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 413. At least 90 days prior to starting any land-clearing or land-disturbing activities, the licensee shall file with the Commission for approval, the recreation plan described in Article 109. The plan shall describe how the licensee will construct and maintain the floating dock at Black Bear Lake and the Black Bear Lake access trail. In addition, the plan, at a minimum, shall include: (a) provisions for providing a four-vehicle, trail head parking area near the end of the project

access road; (b) interpretive signing at the parking area that describes the natural and man-made features of the project and the types of access allowed; (c) a trail head access sign, and (d) an implementation schedule.

The licensee shall prepare the plan after consultation with the Forest Service. The licensee shall include with the plan documentation of consultation with Forest Service before preparing the plan, copies of their comments or recommendations

on the completed plan after it has been prepared and provided to Forest Service, and specific descriptions of how all Forest Service comments were accommodated by the plan.

The licensee shall allow a minimum of 30 days for Forest Service to comment and to make recommendations prior to filing plans with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. No land-disturbing or land-clearing activities shall begin until the licensee is notified by the Commission that the plan is acceptable. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 414. At least 90 days before the start of any land-disturbing or land-clearing activities, the licensee shall file with the Commission for approval a plan to avoid or minimize disturbances to the quality of the existing visual resources of the project area.

The plan, at a minimum, shall include: (a) the licensee's strategy for blending the project works and transmission lines into the existing landscape character; revegetating, stabilizing, and landscaping new construction areas and areas immediately adjacent to the project site disturbed by previous construction or that presently impact the visual resources of the surrounding area; grading, planting grasses, repairing slopes damaged by erosion, and preventing future erosion; (b) an implementation schedule; (c) monitoring and maintenance programs for project

construction and operation; and (d) provisions for periodic review and revision.

The licensee shall prepare the plan after consultation with the Forest Service, Alaska Department of Environmental Conservation, Alaska Department of Natural Resources, Alaska Division of Governmental Coordination for Coastal Zone Determination, the City of Craig, and the City of Klawock. The licensee shall include with the plan documentation of consultation and 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 shall allow a minimum of 30 days for the agencies to comment and to make recommendations prior to filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on visual and landscape conditions at the site.

The Commission reserves the right to require changes to the plan. No land-clearing or land-disturbing activities shall begin until the licensee is notified that the plan is approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 415. If archeological or historic sites are discovered during project operation, the licensee shall: (1) consult with the Alaska State Historic Preservation Officer and the Forest Service, Tongass National Forest (Forest Service); (2) prepare a cultural resources management plan and a schedule to evaluate the significance of the sites and to avoid or mitigate any impacts to any sites found eligible for inclusion in the National Register of Historic Places; (3) base the plan on the recommendations of the Alaska State Historic Preservation Officer and the Secretary of the Interior's Guidelines for Archeology and Historic Preservation; (4) file the plan for Commission approval, together with the written comments of the Alaska State Historic Preservation Officer and the Forest Service on the plan; and (5) take the necessary steps to protect the discovered sites from further impact until notified by the Commission that all of these requirements have been satisfied.

The Commission may require a cultural resources survey and changes to the cultural resources management plan based on the filings. The licensee shall not implement a cultural resources management plan or begin any land-clearing or land-disturbing activities in the vicinity of any discovered sites until informed by the Commission that the requirements of this article have been fulfilled.

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

(G) This order is issued under authority delegated to the Director and constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days from the issuance date of this order, pursuant to 18 C.F.R., Section 385.713. Failure to request rehearing shall constitute acceptance of the license.

Fred E. Springer
Director , Office of
Hydropower Licensing

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

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

cost, in an adverse environmental impact, or in impairment of the general scheme of development; but any of such minor changes made without the prior approval of the Commission, which in its judgment have produced or will produce any of such results, shall be subject to such alteration as the Commission may direct.

Upon the completion of the project, or at such other time as the Commission may direct, the Licensee shall submit to the Commission for approval revised exhibits insofar as necessary to

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

Article 4. The construction, operation, and maintenance of the project and any work incidental to additions or alterations shall be subject to the inspection and supervision of the Regional Engineer, Federal Energy Regulatory Commission, in the region wherein the project is located, or of such other officer or agent as the Commission may designate, who shall be the authorized representative of the Commission for such purposes. The Licensee shall cooperate fully with said representative and shall furnish him a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of the project and for any subsequent alterations to the project. Construction of the project works or any features or alteration thereof shall not be initiated until the program of inspection for the project works or any such feature thereof has been approved by said representative. The Licensee shall also furnish to said representative such further information as he may require concerning the construction, operation, and maintenance of the project, and of any alteration thereof, and shall notify him of the date upon which work will begin, as far in advance thereof as said representative may reasonably specify, and shall notify him promptly in

writing of any suspension of work for a period of more than one week, and of its resumption and completion. The Licensee shall allow said representative and other officers or employees of the United States, showing proper credentials, free and unrestricted access to, through, and across the project lands and project works in the performance of their official duties. The Licensee shall comply with such rules and regulations of general or special applicability as the Commission may prescribe from time to time for the protection of life, health, or property.

Article 5. The Licensee, within five years from the date of issuance of the license, shall acquire title in fee or the right to use in perpetuity all lands, other than lands of the United States, necessary or appropriate for the construction, maintenance, and operation of the project. The Licensee or its successors and assigns shall, during the period of the license, retain the possession of all project property covered by the license as issued or as later amended, including the project area, the project works, and all franchises, easements, water

rights, and rights of occupancy and use; and none of such properties shall be voluntarily sold, leased, transferred, abandoned, or otherwise disposed of without the prior written approval of the Commission, except that the Licensee may lease or otherwise dispose of interests in project lands or property without specific written approval of the Commission pursuant to the then current regulations of the Commission. The provisions of this article are not intended to prevent the abandonment or the retirement from service of structures, equipment, or other project works in connection with replacements thereof when they become obsolete, inadequate, or inefficient for further service due to wear and tear; and mortgage or trust deeds or judicial sales made thereunder, or tax sales, shall not be deemed voluntary transfers within the meaning of this article.

Article 6. In the event the project is taken over by the United States upon the termination of the license as provided in Section 14 of the Federal Power Act, or is transferred to a new licensee or to a 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 pro-

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

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

Article 8. The Licensee shall install and thereafter maintain gages and stream-gaging stations for the purpose of determining the state and flow of the stream or streams on which the project is located, the amount of water held in and withdrawn from storage, and the effective head on the turbines; shall provide for the required reading of such gages and for the adequate rating of such stations; and shall install and maintain standard meters adequate for the determination of the amount of electric energy generated by the project works. The number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, shall at all times be satisfactory to the Commission or its authorized representative. The Commission reserves the right, after notice and opportunity for

hearing, to require such alterations in the number, character and locations of gages, meters, or other measuring devices, and the method of operation thereof, as are necessary to secure adequate determinations. The installation of gages, the rating of said stream or streams, and the determination of the flow thereof, shall be under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region of the project, and the Licensee shall advance to the United States Geological Survey the amount of funds estimated to be necessary for such supervision, or cooperation for such periods as may be

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

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

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

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

Article 12. The operations of the Licensee, so far as they affect the use, storage and discharge from storage of waters affected by the license, shall at all times be controlled by such reasonable rules and regulations as the Commission may prescribe for the protection of life, health, and property, and in the interest of the fullest practicable conservation and utilization of such waters for power purposes and for other beneficial public

uses, including recreational purposes, and the Licensee shall release water from the project reservoir at such rate in cubic feet per second, or such volume in acre-feet per specified period of time, as the Commission may prescribe for the purposes hereinbefore mentioned.

Article 13. On the application of any person, association, corporation, Federal Agency, State or municipality, the Licensee shall permit such reasonable use of its reservoir or other project properties, including works, lands and water rights, or parts thereof, as may be ordered by the Commission, after notice and opportunity for hearing, in the interests of comprehensive development of the waterway or waterways involved and the conservation and utilization of the water resources of the region for water supply or for the purposes of steam-electric, irrigation, industrial, municipal or similar uses. The Licensee shall receive reasonable compensation for use of its reservoir or other project properties or parts thereof for such purposes, to include at least full reimbursement for any damages or expenses which the joint use causes the Licensee to incur. Any such compensation shall be fixed by the Commission either by approval of an agreement between the Licensee and the party or parties benefiting or after notice and opportunity for hearing. Applications shall contain information in sufficient detail to afford a full understanding of the proposed use, including satisfactory evidence that the applicant possesses necessary water rights pursuant to applicable State law, or a showing of cause why such evidence cannot concurrently be submitted, and a statement as to the relasionship of the proposed use to any State or municipal plans or orders which may have been adopted with respect to the use of such waters.

Article 14. In the construction or maintenance of the project works, the Licensee shall place and maintain suitable structures and devices to reduce to a reasonable degree the liability of contact between its transmission lines and telegraph, telephone and other signal wires or power transmission lines constructed prior to its transmission lines and not owned by the Licensee, and shall also place and maintain suitable structures and devices to reduce to a reasonable degree the liability of any structures and devices to reduce to a reasonable degree the liability of any structures or wires falling or obstructing traffic or endangering life. None of the provisions

of this article are intended to relieve the Licensee from any responsibility or requirement which may be imposed by any other lawful authority for avoiding or eliminating inductive interference.

Article 15. The Licensee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate, or arrange for the construction, maintenance, and operation of such reasonable facilities, and comply with such

reasonable modifications of the project structures and operation, as may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the fish and wildlife agency or agencies of any State in which the project or a part thereof is located, after notice and opportunity for hearing.

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

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

Commission during the term of this license upon its own motion or upon the recommendation of the Secretary of the Interior or other interested Federal or State agencies, after notice and opportunity for hearing.

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

Article 19. In the construction, maintenance, or operation of the project, the Licensee shall be responsible for, and shall take reasonable measures to prevent, soil erosion on lands adjacent to streams or other waters, stream sedimentation, and any form of water or air pollution. The Commission, upon request or

upon its own motion, may order the Licensee to take such measures as the Commission finds to be necessary for these purposes, after notice and opportunity for hearing.

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

Article 21. Timber on lands of the United State 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 disposal areas, shall be subject to the approval of the department or agency of the United States having supervision over the lands involved.

Article 27. The Licensee shall make provision, or shall bear the reasonable cost, as determined by the agency of the United States affected, of making provision for avoiding inductive interference between any project transmission line or other project facility constructed, operated, or maintained under the license, and any radio installation, telephone line, or other communication facility installed or constructed before or after construction of such project transmission line or other project

facility and owned, operated, or used by such agency of the United States in administering the lands under its jurisdiction.

Article 28. The Licensee shall make use of the Commission's guidelines and other recognized guidelines for treatment of transmission line rights-of-way, and shall clear such portions of transmission line rights-of-way across lands of the United States as are designated by the officer of the United States in charge of the lands; shall keep the areas so designated clear of new growth, all refuse, and inflammable material to the satisfaction of such officer; shall trim all branches of trees in contact with or liable to contact the transmission lines; shall cut and remove all dead or leaning trees which might fall in contact with the transmission lines; and shall take such other precautions against fire as may be required by such officer. No fires for the burning of waste material shall be set except with the prior written consent of the officer of the United States in charge of the lands as to time and place.

Article 29. The Licensee shall cooperate with the United States in the disposal by the United States, under the Act of July 3l, 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 ad 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.

FEDERAL ENERGY REGULATORY COMMISSION
Washington, D.C. 20426

DATE:

MEMORANDUM TO: Dean L. Shumway, Director
Division of Project Review

THROUGH : William C. Wakefield, II
Chief, Project Review -- West Branch

FROM : John K. Novak, Chief
Environmental Review -- West Section

SUBJECT : Environmental Assessment for the Black Bear Lake

Project, FERC Project No. 10440-001 -- AK
(State)

X Attached is the Environmental Assessment (EA) on the application filed on 05/24/91 and accepted on 01/09/92. The status of the Environmental Recommendations (ER) (5350 milestone) is as follows:

Complete; ER is not required.
Final ER is being transmitted concurrently.

Incomplete; Draft ER target date: / / .
Draft ER is transmitted concurrently;
Final ER target date: / /92.

Reason: 10(j). Other: .

The attached document supplements or revises the EA dated / / . The status of the ER is as follows:

Complete; ER or revised ER is not required.
Final revised ER is transmitted concurrently.

Incomplete; Draft revised ER target date: / / .
Draft revised ER is transmitted concurrently;
Final revised ER target date: / / .

Reason: 10(j). Other: .

Attachment: Environmental Assessment

cc: PRO, OGC, DPR, Secretary, PRB(Rm. 1000), PIB(Rm. 2214), RIMS,
R. Takacs-WB , Project Manager:D. Frazier-Stutely

ENVIRONMENTAL ASSESSMENT
FOR HYDROPOWER LICENSE

Black Bear Lake Hydroelectric Project

FERC Project No. 10440-001-Alaska

Federal Energy Regulatory Commission
Office of Hydropower Licensing
Division of Project Review
825 North Capital Street, NE
Washington, D.C. 20426

June 25, 1992

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SUMMARY

The applicant, Alaska Power and Telephone (AP&T), proposes to construct and operate a hydroelectric project on U.S. Forest Service (FS) and private lands on Black Bear Lake and Black Bear Creek. The project would be located about 8 miles east of the town of Klawock, on Prince of Wales Island in Southeast Alaska. As proposed, the project would have an installed capacity of 4.5 megawatts (MW), producing about 23.1 gigawatthours (GWh) of power annually.

In addition to AP&T's proposal, we (the staff) considered two alternative actions: (1) AP&T's proposal with our environmental recommendations and (2) no action. Under our alternative, in addition to AP&T's proposal, we recommend mitigation and enhancement measures to protect resources in the project area. Under the no-action alternative, no license would be issued. There would be no change to the existing environment, but no chance to use the hydro potential of the site to offload existing oil-fired units.

The proposed project would not conflict with any federal or state comprehensive plans for improving, developing, or conserving the Black Bear Creek drainage basin.

Based on our review of the proposed action and the alternatives under section 4(e) and 10(a) of the Federal Power Act (Act), we recommend the proposed action with our environmental measures. If AP&T follows our environmental measures, the project would not have significant effects on the environment, would be economically feasible to build, and would be best adapted to a comprehensive plan for the Black Bear Creek Basin.

Based on our independent environmental analysis, issuance of an order approving the proposed action, with our recommendations, is not a major federal action significantly affecting the quality of the human environment.

ENVIRONMENTAL ASSESSMENT

FEDERAL ENERGY REGULATORY COMMISSION
OFFICE OF HYDROPOWER LICENSING
DIVISION OF PROJECT REVIEW

Black Bear Lake Hydroelectric Project
FERC No. 10440-001-Alaska
June 25, 1992

I. APPLICATION

On May 24, 1991, Alaska Power and Telephone Company (AP&T) filed an application for major license, less than 5 megawatts (MW), for the Black Bear Lake Hydroelectric Project. The 4.8 MW project would be located on Black Bear Lake and Black Bear Creek, on private lands and 171.5 acres of U.S. Forest Service (FS) lands within the Tongass National Forest near the community of Klawock on Prince of Wales Island, Alaska (figure 1).

II. PURPOSE AND NEED FOR ACTION

A. Purpose

AP&T proposes to build the Black Bear Lake Project, which would provide about 23.1 gigawatthours of electrical energy a year. The project would use the natural flows into Black Bear Lake while using the upper 15 feet of the lake for storage to meet peak energy demands. AP&T would use the energy to meet system needs.

B. Need For Power

The applicant, Alaska Power and Telephone Company (AP&T), is an electric utility serving power needs on Prince of Wales Island (island). AP&T proposes to build and operate the Black Bear Lake Hydroelectric Project to (1) displace existing diesel generation and (2) meet future load growth in the cities of Craig and Klawock.

The island has five small load centers: the cities of Klawock, Craig, Hydaburg, Hollis, and Thorne Bay. Three of these

loads are completely isolated and two, Craig and Klawock, are interconnected; so the island has four isolated systems. AP&T owns, operates, or maintains electric generation and distribution facilities in all the towns except Thorne Bay.

Figure 1. Location of the proposed Black Bear Lake Project (FERC Project No. 10440),
Alaska.

In 1991, AP&T's diesel generating resources4/ totaled 7,565-kilowatts (kW) in nameplate capacity. Their service area peak load responsibility was 2,540-kW, and, of that total, about 2,100-kW was in the proposed project market of Craig and Klawock (market). Of the 7,565 kW total diesel capacity, 6,300-kW was in the project market.

Historical data shows that the City of Craig's energy sales totaled 918-megawatthours (MWh) in 1973. These sales increased at an average annual rate of 12.4 percent to 7,400-MWh in 1991. Sales in Klawock increased from 563-MWh in 1978 to 2,720-MWh in 1991, an average annual growth rate of 13.6 percent. The applicant estimates that the market energy sales will be 10,920-MWh in 1992.

Figure 2 shows AP&T's historical and projected annual energy sales for the Craig/Klawock market. AP&T's forecast includes planned loads that began coming on-line in 1991. AP&T expects more planned load from privately owned self-generating entities and from economic development in the market.

AP&T predicts the energy sales will grow at an average annual rate of 6 percent to 12,982 MWh by 1995. From 1996 to 2020, AP&T predicts a 2.5 percent growth in energy, with a 0.1 percent growth in energy for the rest of the forecast period.

If the load grows as AP&T predicts, the project would begin generating about 12.0 GWh annually and gradually increase to a full load generation of 23.1 GWh in about the year 2018. Because the annual generation of the Black Bear Lake project is large relative to the existing market, the timing of load growth would affect the economics of the Black Bear Hydro Project.

At full load, AP&T says the project would displace about 70,000 barrels of crude per year, eliminating the problems of handling that much oil if the existing diesel generating system was expanded.

On March 27, 1992, the Sealaska Corporation (Sealaska) filed a motion to intervene in the Black Bear Lake proceedings.

In their motion, Sealaska questions the need for the power the project would generate. Specifically, Sealaska says (1) AP&T uses a linear load forecast that relies solely on past load patterns and (2) AP&T predicts high load growth over the next 4 years and a somewhat high (about 2 percent) growth beyond that.

4/ AP&T's Existing Generating Resources:
Craig-4830 kW, Klawock-1500 kW, Hydaburg-1085 kW, Hollis-150 kW.

Figure 2. Actual and projected energy sales for the cities of Craig and Klawock. AP&T = Alaska Power and Telephone, BBL = Black Bear Lake (Source: Alaska Power and Telephone, 1991).

On April 23, 1992, AP&T responded to Sealaska's motion. In their response, AP&T says (1) both the State of Alaska's and the City of Craig's population estimates support the load growth AP&T predicts, (2) the economic development plan for Craig shows that the economic infrastructure is in place to support a continued increase in economic activity and (3) the Forest Service is surveying more land for cutting, suggesting that there will be continued employment in the forest products industry.

Our review of the State of Alaska's population projections for 1990 to 2000, shows the State predicts an average growth rate for the Prince of Wales-Outer Ketchikan census area of 3.82 percent. Looking at Craig's estimate of future urban residential property needs, the City uses population growth rates for the next 20 years of 2 percent, as a low, and 7 percent, as a high.

Craig's economic development plan looks at (1) Craig's existing economy, (2) trends in Craig's basic industries--fisheries, timber, tourism, and mining--and (3) the potential for economic growth. Despite predicting a drop in the timber industry in about 5 years, the plan concludes that Craig has

excellent growth opportunities in both its basic and support industries and that a substantial amount of economic growth will take place regardless of what Craig and its elected officials do in the way of planning and promoting development.

The report recommends a strategy to keep Craig from losing some development opportunities that the City will need to sponsor and support--and proposes measures such as installing instruments and lights at the Klawock airport, so that fish processors have 24 hour direct jet service off the island, and expanding the docks at Craig, to relieve crowding.

After considering (1) the population forecasts by both the State of Alaska and the City of Craig and (2) Craig's economic development plan, we find AP&T's projected load growth for the Craig/Klawock service area is reasonable. As we've said, AP&T projects an increase in load for the Craig/Klawock service area for the future at decreasing annual rates of growth: moderate growth in the near term, with continued low growth beginning in 1996 through 2020, and very low growth from 2020 to 2040.

Using past population and load data, AP&T shows (1) that for about the past 20 years, the average load growth for the service area was 14.7 percent and (2) that load increases follow population growth. But to predict load, AP&T doesn't rely solely on past growth, as Sealaska says, or on Alaska's and Craig's population estimates. Instead, AP&T bases its near-term load prediction (1992-1995) mostly on known loads coming on line that will significantly increase power demand. To predict load beyond 1995, along with population estimates, AP&T uses current economic trends and future economic growth potential in the service area.

III. PROPOSED PROJECT AND ALTERNATIVES

A. Proposed Project

1. Project Description

AP&T's proposed project (figure 3) would consist of: (1) the existing 215 acre Black Bear Lake with a storage capacity of 23,750 acre-feet and a water surface elevation of 1,687 feet above mean sea level (msl); (2) a submerged siphon intake consisting of a 30-inch-diameter, 150-foot-long steel pipe ending at a manifold with five 48-inch-diameter, 61-inch-long steel wedge-wire cylindrical screens; (3) a vacuum pump house; (4) a 4-foot-square, 8-foot-high concrete valve vault containing a 30-inch-diameter butterfly valve, 8-inch-diameter bypass valve and an 8-inch vacuum relief valve; (5) a 24-inch-diameter bypass pipe, upstream of the valve vault diverting flow into Black Bear Creek; (6) a 30-inch-diameter, 4,900-foot-long partially buried penstock, ending at the powerhouse with a bifurcation into two

Figure 3. Major features of the proposed Black Bear Lake Project, FERC Project No. 10440 (Source: Alaska Power and Telephone Co. 1991, as modofied by Staff).

20-inch diameter branches; (7) a 44-foot wide, 67-foot-long, 20-foot-high powerhouse containing two 3,175 horsepower twin jet, horizontal shaft Pelton turbines and associated 2,250-kW, synchronous generators with a combined installed capacity of 4,500 kW; (8) a 100-foot-long tailrace channel discharging project flows into Black Bear Creek; (9) a switchyard; (10) a 34.5-kiloVolt, 14-mile-long transmission line tying into the existing Klawock substation; and (11) 1 mile of new access road.

AP&T says that the project would initially come on-line at about 6 percent of capacity, and predicts that project generation will increase over a 20- to 30-year period until the project capacity is reached. AP&T would operate the project, base load, run-of-river, depending on load power demands and the level of Black Bear Lake. The top 15 feet of storage would be used to supplement flow during periods of low runoff and high energy demands.

2. AP&T's Proposed Mitigative Measures

Geology and Soils

- è Schedule major land disturbing activities during the dry season and instream activities during low flow
- è Remove and stockpile all topsoil in disturbed areas
- è Stabilize and protect spoil piles
- è Construct control ditches and erosion control and sedimentation ponds (ESC ponds) prior to all project clearing and excavation
- è Remove erosion control measures including silt fences, ESC ponds, control ditches and straw bale barriers upon the development of vegetation
- è Restore all laydown helicopter pads and staging areas following functional project completion. Restoration

would include topsoil cover, reseeding and netting for slopes greater than 5 percent

Water Resources

è Minimize sediment load increases from erosion and excavation of the powerhouse area by the use of drainage ditches and sediment ponds

è Discharge wastewater from construction through a series of settling ponds prior to release to the drainage system

è Minimize erosion of excavated areas through the use of straw bale barriers, silt fences, sediment ponds, and revegetation

è Monitor water quality before and after construction at sites throughout the project area

è Design the tailrace to include infiltration galleries to return powerhouse flows underground as subsurface flow that resurfaces at the "upwelling area" (see figure 2), where groundwater flows return to the Black Bear Creek streambed

Fisheries

è Provide a minimum flow of 9 cubic feet per second (cfs) to Black Bear Creek in the wintertime by supplementing low winter natural flows with lake storage, thereby providing greater habitat for spawning coho salmon in Black Bear Creek

è Design features of the intake structure to minimize impacts to rainbow trout in Black Bear Lake

è Monitor trout populations in the lake for a period during project operation, and coordinate with the Alaska Department of Fish and Game (ADFG) and FS to plan additional steps, such as a stocking program, if determined necessary to offset project related impacts

Vegetation

- è Bury the penstock through the wet meadow and replace the topsoil following penstock burial

- è Regrade and replant areas disturbed by construction activities with grasses and clovers

Wildlife

- è Prevent raptor electrocution by constructing the transmission line with at least 60 inches between energized wires, ground wires, or metal hazards

- è Provide wildlife crossings by constructing a system of berms of rock and earth cover over the above-ground portions of the penstock

- è Monitor the beaver population in Black Bear Creek prior to and following project construction

- è Install a locked gate on the project access road to help

limit unauthorized entry to the upper project area

Visual Resources

- è Save existing vegetation where possible for replanting

- è Remove spoil materials promptly following construction and revegetate affected areas promptly

- è Place the powerhouse, construction staging areas, and new access road in areas that have been recently logged

- è Use colors and materials to blend structures with the surrounding rock and forest landscape

- è Transplant native trees and shrubs to create and maintain screening and natural transitions between project

facilities and the natural landscape.

- è Place the proposed transmission lines on wood poles with all natural materials or painted to blend with surrounding vegetation and land features.

We discuss each of these proposals in the individual resource sections.

3. Federal Land Management Conditions

The FS has provided conditions by letter dated April 10, 1992 (attachment 1). These conditions are considered here as part of AP&T's proposal. In summary, these conditions require that AP&T:

(a) ensure public access to the project area;

(b) construct and maintain an accessible dock with a floating finger/ramp near the Black Bear Lake FS cabin;

(c) construct and maintain a public access trail from the end of a logging road near Black Lake to the FS cabin; and

(d) restrict lake drawdown from June 1 to September 15.

B. Proposed Project with Staff's Mitigative Measures

Under our alternative, which includes the proposed mitigation measures and those measures FS requires under 4(e), the license would include the following additional mitigative measures:

- è Finishing the cleared and graded edges with natural materials to minimize any straight line effect

- è Developing a formal plan for approval for protecting beavers in Black Bear Creek downstream of the proposed powerhouse

- è Developing a formal plan for approval for protecting

bald eagles, incorporating the interagency eagle protection agreement and other appropriate measures

- è Constructing all access roads to be as visually unobtrusive as possible and only as wide as needed to accommodate slow-moving traffic. Siting turnouts in less visually sensitive areas, and making road cuts follow existing topography as much as possible

- è Providing a four-vehicle, trailhead parking area near the powerhouse and interpretive signing which describes the project and public access to the Black Bear Lake area

- è Not providing locked gates on the powerhouse access road to restrict public access

- è Designing the public access trail to follow the land contours, not be visible from the valley, and provide interesting views for recreationists, where possible

- è Burying the transmission line whenever possible

C. No-Action

Under the no-action alternative, the Commission would deny the proposed action. There would be no changes to the physical, biological, or cultural resources of the area. The enhancements that the applicant proposes would not occur.

IV. CONSULTATION AND COMPLIANCE

A. Agency Consultation

Commission regulations require prospective applicants to consult with the appropriate resource agencies before filing an application for license. This consultation is the first step in compliance with the Fish and Wildlife Coordination Act, the Endangered Species Act, the National Historic Preservation Act, and other federal statutes. Pre-filing consultation must be complete and documented in accordance with the Commission's regulations.

After the Commission accepts an application, formal comments may be submitted by concerned entities during a public notice

period. In addition, organizations and individuals may petition

to intervene and to become a party to any subsequent proceedings. The comments provided by concerned entities are made part of the record and are considered during the review of the proposed project. After the Commission issued a public notice of the Black Bear Lake Project on January 23, 1992, the following entities commented on the application:

Commenting entity	Date of letter
City of Thorne Bay	February 18, 1992
Department of the Interior	March 19, 1992
Forest Service	April 10, 1992

Intervenors	Date of Motion to Intervene
Sealaska Corporation	March 27, 1992

B. Water Quality Certification

On December 18, 1990, AP&T applied to the Alaska Department of Environmental Conservation (ADEC) for water quality certification. On May 13, 1991, ADEC accepted AP&T's request for water quality certification for the proposed project. Since ADEC did'nt act on the request within 1 year, the certificate is deemed waived pursuant to Commission Order 533.

C. State Agency Consistency Review (Coastal Zone Management Act).

Because the project is located in the coastal zone and may affect coastal resources, the Alaska Division of Governmental Coordination (DGC) must review the proposed project for consistency with the state's Coastal Management Program (CMP). Under the Coastal Zone Management Act of 1972, before a license can be issued, DGC must: (1) find the project consistent with the CMP or (2) waive the requirements by failing to act in a timely manner.

DGC has yet to concur on consistency for the proposed project. Coastal resources affected by hydroelectric development

in Alaska include anadromous fish, water quality, and sedimentation. In this EA, we quantify the expected impacts from the proposed project. In total, the project would result in a short-term increase in sedimentation that would have an adverse impact on water quality. Based on our analysis in this EA, we don't think the project would have a significant adverse effect on coastal resources.

V. ENVIRONMENTAL ANALYSIS

A. General Description of the Locale

1. Black Bear Creek Basin.

The proposed project would be located on Prince of Wales Island in southeastern Alaska. The proposed project is 14 road miles northeast of the town of Klawock. The primary project features would be located at the outlet of Black Bear Lake and along Black Bear Creek.

The Black Bear Lake basin has a drainage area of 1.82 square miles of steeply sloped forested land. Inflow into the lake consists primarily of intermittent streams that drain bedrock snowfields located in the alpine areas surrounding the lake. From Black Bear Lake, flows drain sequentially into Black Bear Creek, Black Lake, Black Creek, and into Big Salt Lake.

Black Bear Lake occupies a bedrock basin in a U-shaped hanging valley at an elevation of 1,687 feet msl. The elevations of the surrounding peaks and ridges are generally between 2,700 and 3,996 feet msl. The terrain on Prince of Wales Island is rugged and mountainous. Elevations in the project area are nearly 4,000 feet. The mountains are dissected by deep, steep-sided, glacial valleys and fjords.

The climate of the project area is maritime, typified by cool summers, relatively mild winters, long periods of almost continuous cloudy or foggy conditions, and year-round precipitation. The mean annual precipitation at the proposed project is 220 inches. Much of the precipitation falls as snow during the colder months, and Black Bear Lake is often frozen until early summer.

Land use in the vicinity of Black Bear Creek has been dominated by timber harvesting. Sealaska Corporation, which owns most of the proposed project lands, has harvested large blocks of timber within the last 3 years (Alaska Power and Telephone Co. 1991).

2. Proposed and Existing Hydropower Development

Other than the proposed Black Bear Lake project, there are no existing licensed projects, exempted projects, pending license applications, or exemption applications in the Black Bear Creek basin.

3. Target Resources

A target resource is an important resource that may be cumulatively affected by multiple hydropower development within the basin. Based on public and agency comments, we identified two target resources--Sitka black-tailed deer and anadromous fish (pink salmon, chum salmon, sockeye salmon, coho salmon, cutthroat trout, steelhead trout, and Dolly Varden)--which could be adversely affected in a cumulative manner by proposed hydropower projects in the Black Bear Creek Basin.

4. Cumulative Impacts

The Council on Environmental Quality defines cumulative impacts as impacts on the environment that result from the impacts of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. The Council says cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR, Part 1508.7). The geographical area included in this cumulative impact analysis is limited to the Black Bear Creek Basin.

The proposed project would be located on Black Bear Lake and Black Bear Creek, which drain into Black Lake, Black Creek and

Big Salt Lake. The only other significant impact to the project area is from periodic, extensive clear-cutting of timber for harvesting. Some old-growth forest, valuable as winter cover for black-tailed deer, would be cleared in order to construct the project facilities, but because the high elevation and steep terrain doesn't provide suitable winter cover, the impact would be insignificant. Increased erosion and run-off from timber-harvested riparian areas is likely to occur due to lack of soil stabilization. Sediment fines that wash downstream can silt over important spawning and rearing gravels for anadromous fish (specifically coho) that utilize the upper reaches of Black Bear Creek. Project related impacts on increased sedimentation would be minimal.

No significant adverse cumulative impacts to target resources in the Black Bear Creek drainage would occur as a result of either project construction or operation, if the project is constructed and operated with our proposed mitigative measures (see sections V.B.3 and V.B.5).

B. Proposed Project

1. Geology and Soils

Affected Environment: The project area is underlain with metamorphosed sedimentary and igneous rocks. These rocks are

very hard, slightly weathered, and typically thick-bedded. The soils consist of unconsolidated inorganic materials about 2 feet thick. The thick talus deposits of angular cobbles and boulders are at the base of the steep slopes while deposits of finer-grained (gravel-,sand-,and some silt-size) colluvium are on the less steep slopes. The steeper stream gradients consist of well-sorted materials, ranging from boulders to course gravels. At the flatter stream gradients, medium to fine sand is predominant. In some areas, the topsoil with plant life exists directly on top of the bedrock as a result of glacial scouring. The project area is seismically active, but is generally stable and well-maintained. No active erosion exists at the present time.

Environmental Impacts and Recommendations: During

construction of the siphon intake, surface and buried penstock, powerhouse, tailrace, transmission line, and new access road, short term localized erosion could occur. A penstock rupture during operation would cause erosion. Due to the most recent timbering operation adjacent to the project area, increased sediment load and erosion could occur that would not be related to the project.

AP&T included an erosion and sediment control plan with the application. Topsoil would be removed and stockpiled in all disturbed areas. Ditches and sedimentation ponds would be placed prior to all project construction. Erosion and sedimentation measures would also include silt fences, straw bale barriers, riprap, and restoration of all disturbed areas. An automatic shutoff valve is proposed for the penstock in case of a penstock failure. The project would be designed and constructed to withstand seismic activity that could occur in the project area. The measures proposed in the erosion control plan are appropriate and would be effective in controlling erosion and sedimentation from the site. The staff recommends that the plan be implemented.

Unavoidable Adverse Impacts: With implementation of the erosion control plan, localized and temporary erosion would be unavoidable during construction and until disturbed land surfaces are revegetated.

2. Water Resources

Affected Environment: The entire Black Bear lake drainage basin (Black Bear Lake, the free-flowing segments of Black Bear Creek, Black Lake, and Black Creek extending to Big Salt Lake) drains approximately 17.5 square miles of land. The total drainage area for Black Bear Lake is 1.82 square miles. Flows into Black Bear Lake consist primarily of intermittent streams that drain snowfields surrounding the lake. Black Bear Lake has a natural surface area of 215 acres and an estimated volume of 22,000 acre-feet.

The water quality of the Black Bear Creek system is typical of streams that drain glaciated watersheds in southeastern Alaska. Conductivity, total alkalinity, and total hardness are all extremely low and indicative of good water quality. The pH ranges from 6.3 to 7.0, and the low dissolved ion concentration is representative of the impervious bedrock substrate of the lake. Nutrient concentrations are also low, and thus so is biological productivity.

Water temperatures of Black Bear Lake and Black Bear Creek are seasonally variable, ranging from a monthly average low of 2.6è Celsius (C) in March to a high of 11.1èC in August. The presence of ice cover on Black Bear Lake is the primary influence on water temperatures. Early ice cover (early December) limits heat loss and results in warmer winter water temperatures (÷4èC). Late season ice formation (early January) results in colder temperatures (÷1èC). Similarly, early or late season ice melt also affects summer water temperatures. Black Bear Lake develops a thermocline during late summer and early fall at a depth of approximately 40 feet. The stratification typically breaks down by late September to early October.

At the base of the falls from Black Bear Lake, Black Bear Creek infiltrates into the coarse alluvial deposits and re-emerges about 1,000 feet downstream. This area is at times dewatered under natural conditions by the infiltration of creek flows into the naturally occurring subsurface aquifers. Due to the retention time as water passes through the aquifer, there is a moderating effect on flows and temperatures. Winter water temperatures are increased and summer water temperatures are decreased by 0.5 to 1.0è C. Dye studies indicate that the aquifer receives some additional water from other drainage sources in the basin besides Black Bear Lake, and Black Bear Creek flows are also significantly augmented by additional tributary flows.

The average annual discharge at the outlet of Black Bear Lake is 28 cfs, as determined from 1981-1991 data recorded at the U.S. Geological Survey gage (table 1). Low flows occur from February to March, preceding the spring run-off in May and June. Highest flows occur in October and November when precipitation is frequent.

There are no known existing water rights or withdrawals on Black Bear Creek (Alaska Power and Telephone Company 1991). AP&T has applied for a water right of 64 cfs. The water diversion

from Black Bear Lake will not affect any other existing water right nor any downstream waters since all water used will be returned to Black Bear Creek downstream.

Environmental Impacts and Recommendations:

Water level fluctuation in Black Bear Lake

By using the upper 15 feet of the lake as storage, project operation would fluctuate the water surface level in Black Bear Lake. Altering the normal flow pattern of water in the lake, which typically spills over the falls at the lake outlet, could affect the water quality and biological productivity of Black Bear Lake.

Table 1. Monthly average stream flows at the lake outlet site of Black Bear Lake in cubic feet per second (Source: Alaska Power and Telephone Co. 1991).

Month	Mean Flow	Month	Mean Flow
January	30	July	26
February	19	August	22
March	15	September	31
April	18	October	43
May	37	November	34
June	40	December	22

Mean Annual Flow = 28 cfs

AP&T says that the proposed project would primarily operate as a run-of-river facility, until demand increased sufficiently to warrant storage and peaking operation. At project start-up, demand would be low and AP&T estimates that the project would spill 40 percent of the time; at capacity, flows would spill over the falls 15 percent of the time. AP&T proposes to draw down the water level by a maximum of 0.22 inches per hour. Drawdown would

begin in December, with minimum lake levels occurring in April. The lake would then be replenished by spring run-off flows in May and June. AP&T proposes to draw down the lake during summer months (late June through August) and then to reduce flows used for generating to refill the lake before the winter.

In the draft 4(e) conditions, FS would require AP&T to operate the project without drawdown from June 1 to September 15, when most of the cabin use occurs. ADFG's concerns regarding lake drawdown apply primarily to project effects on resident trout, which we address in the fishery resource section. ADEC recommended that AP&T conduct water quality monitoring during and after construction.

Small daily and seasonal fluctuations in the water surface level of Black Bear Lake, such as would occur under project start-up conditions, would not likely alter water quality in the lake. Dissolved oxygen (DO) concentrations, typically of concern in projects that withdraw water from depth, would not be significantly affected by project operation. Even in late summer, when water temperature would be at the annual peak, DO levels below the thermocline (where project withdrawal would occur) would be at or above 10 milligrams per liter. Shoreline erosion, and additional suspended sediment that might typically occur from large-scale fluctuations in water surface level, would not occur due to the steep shoreline and composition of the bedrock substrate. Therefore, we expect any impacts due to water level fluctuation to be minimal.

Operating the project without lake drawdown from June 1 through September 15 would not likely affect project operation in the near future for AP&T. Over the life of the project, as demand increases, AP&T might need to amend its proposed operating plan to accommodate FS's requirement.

Effects of flow alteration on Black Bear Creek

The portion of Black Bear Creek that would be subject to dewatering by the proposed project diversion is the area between the base of the Black Bear Lake falls and the powerhouse site (see figure 2). AP&T refers to a naturally occurring "aquifer", an alluvial substrate in the streambed of the upper reaches of

Black Bear Creek, which results in a dewatered streambed due to subsurface flow during low-flow periods. Flow from the "aquifer" resurfaces below the site of the proposed powerhouse where it is augmented by additional tributary flows.

Operation of the proposed project would reduce the length of the existing subsurface "aquifer" between Black Bear Lake and Black Lake by bypassing the upper 400 to 600 feet of the alluvial substrate located in the proposed bypass reach. The reduction in total distance of subsurface flow through the alluvial substrate would be approximately 25 percent. Flows would only traverse the entire distance of the existing subsurface "aquifer" when Black Bear Lake was full and excess flows spilled over the falls into the proposed bypass reach.

AP&T proposes to design and construct the tailrace to include infiltration galleries to help return project flows to the aquifer before it resurfaces at the upwelling area. All project flows discharged from the tailrace would be available to the subsurface aquifer and to the upwelling area.

Dye studies conducted by AP&T to depict flow rates through the aquifer and sampling to determine the effect of the aquifer on water temperature of subsurface flows suggest that the aquifer

may receive additional water from other sources. However, the exact effect of the aquifer on flow rate is not known. The effect of a 25 percent reduction in aquifer length on flow rates through the alluvial deposits would likely be minimal, and would not significantly increase the rates of flow change that would naturally occur in Black Bear Creek. We expect the resulting downstream effect on flow to also be small since flows are augmented by significant unregulated tributary flow into Black Bear Creek below the proposed powerhouse return site.

Therefore, we recommend that AP&T construct the tailrace infiltrtation galleries as proposed, and submit as-built drawings to the Commission after construction.

Water Temperature

Altering the natural flow regime and withdrawing water from

25 feet below the surface of Black Bear Lake, would cause water temperature changes in subsequent flows to Black Bear Creek. The proposed project would reduce daily water temperature fluctuations. In the wintertime, the effect of the project (at capacity) would be to warm water temperatures by 1èC in Black Bear Creek. Modelling studies conducted by AP&T predict that, in the summertime, project operation (at capacity) would decrease water temperature up to 2èC.

The groundwater interaction that occurs in the aquifer naturally moderates water temperatures by 0.5 to 1.0 èC. Other sources of groundwater in the area would serve to additionally moderate the effect the project would have on water temperature in the upwelling area.

AP&T proposes to conduct water quality monitoring both during and after construction. The sites to be sampled would include Black Bear Lake near the lake outlet, near the proposed powerhouse site, and at Lake Fork (a tributary to Black Bear Creek). AP&T proposes to consult with ADEC to determine what specific water quality monitoring should be conducted.

Since flows would be withdrawn from depths of 10 to 25 feet, warming of the water at the surface of the lake would not be a factor. Wintertime lake drawdown would serve to alleviate some of the temperature increase, since colder water from near the surface would be released to Black Bear Creek. In the summer when a thermocline is present in Black Bear lake, drawing down the lake would have no impact on the water temperature of flows into Black Bear Creek.

It is not likely that the proposed project would have any appreciable effect on water temperature, from a water quality standpoint, within Black Bear Lake or in Black Bear Creek. Any slight change in temperature from project operations would likely

be masked by the natural variability in the system, as well as the moderating effects of the aquifer and the diffusive effect of tributary flows.

Sedimentation

Construction of the project facilities would cause short-term adverse impacts to the water quality of the project area. Temporary increases in sediment load and nutrient concentration would result from the erosion of disturbed land surfaces associated with construction. Due to the bedrock substrate and depth of Black Bear Lake, we expect sediment impacts would be minimal. Minor, short-term, adverse impacts due to increased sediment load from construction of the powerhouse and tailrace could affect the upper reaches of Black Bear Creek. Suspended sediment fines could settle out in the less steep, lower portions of Black Bear Creek, potentially silting in gravel habitat of anadromous fish.

AP&T proposes a comprehensive plan to prevent and reduce sediment impacts from construction activities. These measures include using sediment barriers, sediment ponds, and revegetation of exposed areas.

We recommend approval of AP&T's erosion and sediment control plan in the Geology section. If properly implemented, this plan would ensure that construction impacts to the water quality of the project area would be short term and negligible .

Unavoidable Adverse Impacts: Project construction would result in a minor adverse impact due to increased sediment load to Black Bear Creek.

3. Fishery Resources

Affected Environment: Black Bear Lake supports a self-sustaining population of rainbow trout introduced into the lake in 1956 by the ADFG. No other species of fish are known to inhabit the lake. Sampling studies estimate a population of between 500 to 800 adult fish. Spawning typically occurs in the spring (May to July) in the inlet and outlet streams of the lake. Due to the limited availability of substrate and stream habitat around the lake, beach spawning occurs in areas where run-off enters the lake.

Black Bear Creek, and the two waterways below it, Black Lake and Black Creek, support spawning runs of pink salmon, chum salmon, coho salmon, and sockeye salmon (listed in descending order of escapement returns). The peak escapement period for pink salmon ranges from mid-August to late September; for chum salmon, from late August to late September; for coho salmon, from

late August to early November; and for sockeye salmon, from early July to early September.

For the period 1960 to 1981, pink salmon escapement averaged 14,218 per year, with a peak year return of 62,000. Chum salmon runs have been recorded up to 10,000, coho up to 6,500, and sockeye up to 700.

In Black Bear Creek, the chief spawning areas are in the South Tributary and upstream of the confluence of the West Fork of the South Tributary. Black Bear Creek also has excellent coho salmon rearing habitat. The principal coho salmon rearing areas are the beaver ponds and the slow moving reach of the creek below the confluence of the West Fork of the South Tributary.

Peak out-migration of pink salmon fry is often related to high discharge and to ice leaving the lower lakes during mid-April and May. The peak out-migration of coho and sockeye fry from Black Bear Creek typically occurs from early April to mid-May. An estimated 440,000 to 460,000 pink salmon fry migrated from spawning habitat in Black Bear Creek in 1982, with an additional 16,258 sockeye fry and 7,606 coho fry.

In addition, Black Lake and Black Creek support populations of cutthroat trout, rainbow trout, steelhead trout, and Dolly Varden.

Environmental Impacts and Recommendations:

Minimum Flows Released to Black Bear Creek

By using the upper 15 feet of Black Bear Lake for storage, the project would alter the natural flow regime in the upper 1-mile of the 1.7-mile-long Black Bear Creek. Water that would typically spill from the lake outlet over the falls and into the aquifer would be stored and released during high-demand periods. Altering the flow regime downstream of the project could affect fisheries habitat in Black Bear Creek, potentially decreasing or dewatering portions of Black Bear Creek during periods of reduced flows (i.e. such as when the project is releasing flows that differ from natural flows).

AP&T proposes to release minimum flows to Black Bear Creek below the powerhouse based on existing seasonal patterns (table 2). The flow would be provided using a flow bypass in the penstock. No minimum flow would be provided to the proposed bypass reach beyond spill that would occasionally occur from the lake outlet. Minimum flows below the project would be provided during times of storage. AP&T says that this flow regime would have beneficial impacts because it would provide supplemental flows during low-flow winter periods when natural flows typically are lower than 9 cfs. Minimum flows would, at times, be higher

than pre-project conditions during the months of July to September. AP&T says that these flows may increase spawning success of salmon in Black Bear Creek.

Table 2. Minimum instream flow schedule for Black Bear Lake Project as proposed by AP&T (Source: Alaska Power and Telephone Co. 1991, as modified by staff).

Month	Existing Mean Monthly Flow (cubic feet per second)	Proposed Minimum Flow (cubic feet per second)	Percent Reduction of Mean Monthly Flow	Existing Percent Exceedence1
January	30	9	70	75
February	19	12	37	50
March	15	9	40	57
April	18	15	17	50
May	37	22	41	85
June	40	15	62	99
July	26	19	27	58
August	22	17	23	46
September	31	24	23	40

October	43	20	53	75
November	34	15	56	65
December	22	9	59	65

1 The percent of the time the existing flows spilled at the lake outlet of Black Bear Lake are greater than AP&T's proposed minimum flows.

No agency filed comments on the minimum flow proposal for this project. The National Marine Fisheries Service (NMFS) sent a letter of concurrence to AP&T in 1989 and again in 1990, stating that if the flows were the same as those proposed for the 1982 project, then they were still in agreement. The flows, as proposed, are similar but not identical to those from the 1982 proposed project (Federal Energy Regulatory Commission 1983), but NMFS has not commented.

Under project conditions, monthly flows would exceed 9 cfs 100 percent of the time, while under natural conditions, flows of 9 cfs are only equaled or exceeded 100 percent of the time in May and June. Since all project flows subsequently pass through the aquifer and become available to the lower reaches of Black Bear Creek, minimum flows below the powerhouse would occur only when the project was not operating and was storing water.

Significant tributary flows below the proposed powerhouse site and above the coho salmon rearing habitat augment Black Bear Lake flows. Flow data for Spring Fork, which is fed primarily from upwelling, would add from 5 to 25 cfs in additional flow to Black Bear Creek throughout the year. Additionally, the moderating effect of the aquifer on flows, as discussed in the water resources section, would reduce the magnitude of short-term flow fluctuations on downstream aquatic habitat.

Streamflow and dye study data suggests that during low-flow summer periods up to 80 percent of the flow to Black Bear Creek now comes from sources that would be unaffected by the project. Adding to low summertime flows would provide more near-shore

habitat for rearing coho salmon. The additional requirement by FS that AP&T not drawdown the lake from June 1 to September 15 would likely cause more spill to be released over the falls at the lake outlet after the maximum of 45 cfs (the maximum capacity of the 2 Pelton turbines) was used for generation.

Natural low winter flows in Black Bear Creek typically dewater portions of the streambed. Flow duration data shows that project operations, when the project reaches capacity, would reduce existing flows by 37 to 70 percent. During the early phase of project operation, minimum flows would exceed 15 cfs at all times.

We conclude that AP&T's proposed minimum flow schedule is adequate to protect and enhance aquatic habitat in Black Bear Creek. Any operational effects that could potentially adversely affect the aquatic habitat would be reduced by (1) the fact that the project would not operate at full capacity until well into the future; (2) the moderating effects of the aquifer; and (3) the additional tributaries that add flow to the upper reaches of Black Bear Creek.

Lake Level Fluctuation

Seasonal and daily fluctuation of water levels in Black Bear Lake could adversely impact resident trout spawning habitat and egg survival. Reductions in lake levels between June and August, as proposed by AP&T, could expose and desiccate rainbow trout eggs deposited in shallow water.

AP&T expects that impacts from lake level fluctuations would be expected to be minimal since flows of inlet streams where peak spawning occurs would not be affected by project operation. AP&T proposes to monitor the trout population in the lake during project operation. AP&T also proposes to coordinate with FS and ADFG to plan additional mitigation, such as a stocking program, if necessary.

The current population of rainbow trout in Black Bear Lake, though self-sustaining, is not large in proportion to the size of the lake. Given that the population is not native to begin with, and that it receives little recreational use due to better nearby

fishing, it is only of limited value as a resource. As such, the minor losses to spawning habitat that may occur during future project operation do not alone justify requiring AP&T to keep a constant lake level. FS, however, would require AP&T to restrict drawdown from occurring from June a to September 15, to retain access during the recreational season. Should significant impacts to the resident trout population occur from project operation, then AP&T would need to consult with FS and ADFG to determine appropriate re-stocking efforts.

Water Temperature

Changes in the downstream temperature regime from the proposed project could affect migratory and spawning cues of anadromous fish in Black Bear Creek. Changes in temperature (specifically summertime decreases) could decrease growth rates and lengthen development time of fry and early-smolts, and affect the onset of out-migration. Late summer temperature decreases could cause delays in the onset of spawning by anadromous salmonids in upper Black Bear Creek.

AP&T says that the degree day accumulations (typically quantified as a measure of development time for fry and juvenile salmonids) would be within the range of pre-project conditions. Post project average temperatures during late-summer would be on average 0.0 to 1.5 èC colder, based on modelling studies conducted by AP&T. The ranges of variability between pre- and post-project conditions, however, would be similar.

We do not expect project operations to impact fishery resources due to temperature effects. The moderating effect of the aquifer, and the tributary flow in Black Bear Creek would likely alleviate any downstream alterations in temperature that could adversely affect migratory or spawning cues, or significantly impact growth rates.

Fish Entrainment and Impingement

During project operation, there could be some entrainment of resident trout and possible turbine-related injury and mortality.

The diversion of flows from Black Bear Lake through the proposed penstock would remove resident trout from the lake and pass them through the proposed horizontal shaft Pelton turbine. High mortality (>70 percent) of fish has been noted during entrainment and passage through similar Pelton turbine designs (Gloss et al. 1982).

AP&T would construct the siphon intake manifold to have five 48-inch-diameter intake openings, each with steel wedge-wire cylindrical screens. The maximum approach velocity at each opening would be approximately 0.5 feet per second. These velocities are within limits that adult rainbow trout can tolerate, and trout fry are unlikely to be at depths within Black Bear Lake where they would be vulnerable to entrainment and/or impingement.

Mortality of trout from turbine passage with the proposed intake screens should be negligible. To ensure that project operation has minimal impact on the resident trout in Black Bear Lake, AP&T should construct the intake screens as proposed in their license application.

Fishery Habitat in Black Bear Creek

Damming activity by beaver populations has created pool habitat in the upper reaches of Black Bear Creek, which serves as excellent rearing habitat for coho salmon fry. These still-water areas in the upper reaches of Black Bear Creek, below the proposed powerhouse location, provide the best habitat in the Black Bear Creek drainage. Increased access to the project area could impact local beaver populations (see Wildlife section).

In the Wildlife section, we discuss AP&T's proposal to monitor beaver populations in the project vicinity. Minimizing impacts of the proposed project on beaver populations is essential to preventing impacts to coho salmon rearing habitat. Implementation of the monitoring plan recommended in the Wildlife section would adequately protect the fishery resource.

The proposed project would bypass the 1,400 foot waterfall and approximately 600 feet of Black Bear Creek. The loss of fishery habitat from diverting flows would be negligible since these areas are primarily inaccessible to anadromous fish. Surface flows in the upper reaches of Black Bear Creek only exist

during periods of high run-off and thus the area is seldom used by fish. The natural steepness (1,400 feet of vertical drop in 3,200 feet of stream run) precludes fish from inhabiting or passing this area. Therefore, we conclude that the project, as proposed, would not cause any direct loss of fishery habitat in Black Bear Creek.

Unavoidable adverse Impacts: Fluctuations in lake levels could impact spawning of resident trout by desiccating eggs.

4. Vegetation

Affected Environment: Prince of Wales Island lies in the northern half of the temperate rain forest region that extends along the coast from Cook Inlet, near Anchorage, Alaska, to northern California. Old-growth coniferous forest is the characteristic cover type of this region.

Several vegetative cover types occur in the project vicinity, but old-growth coniferous forest and recent clearcut comprise 25 and 45 percent of the acreage, respectively, within about 1,000 feet of the proposed facilities. The cover types and their dominant plant species are listed in Table 3.

Most of the old-growth timber surrounding Black Lake, which is about a mile downstream of the proposed powerhouse, was logged in the mid-1980's. More old growth remains in the area between Black Lake and Black Bear Lake -- in pockets along Black Bear Creek and adjacent to the falls -- but recent clearcuts cover most of the area. The powerhouse and most of the access road would be within recent clearcuts.

Table 3. Vegetation cover types and dominant species in the vicinity of the Black Bear Lake Project (Source: Alaska Power and Telephone Co. 1991).

Cover Type	Dominant Species
Old-growth Coniferous Forest	Sitka spruce, western hemlock, mountain hemlock, western red cedar
Mixed	Sitka spruce, western hemlock,

Coniferous/Deciduous Forest	western red cedar, Sitka alder, red alder
Deciduous Forest	Sitka alder, red alder
Deciduous Shrub	salmonberry, devil's club, blueberry, red alder
Recent Clearcut	salmonberry, devil's club, blueberry
Wet Meadow/Muskeg	sedges, bog candle, sphagnum moss, deer cabbage
Lake littoral zone	yellow pond-lily

Following logging, avalanches, or other disturbances, the pattern of plant succession in the project vicinity is

characterized by the rapid invasion of salmonberry, devil's club, blueberry, red alder, and other shrub species. Sitka spruce and western hemlock establish simultaneously and overtop the shrubs after 8 to 10 years. The trees develop into an even-aged stand for up to 300 years until decadence or further disturbances set the process back to earlier stages (Harris and Farr 1974 cited in Federal Energy Regulatory Commission 1983). Reforestation is accelerated by replanting tree seedlings, usually Sitka spruce.

AP&T identifies four wet meadows in the project vicinity; three near the upper end of Black Lake, and one near the outlet of Black Bear Lake along the proposed penstock route.

Environmental Impacts and Recommendations:

Effects of Construction

Construction would affect 16.3 acres of existing vegetation, mostly recent clearcut areas used as temporary staging areas (table 4).

Table 4. Effects of project construction on vegetation (Source: Alaska Power and Telephone Co. 1991, as modified by staff).

Project Feature	Acreage	Cover Types Affected1
Black Bear Lake staging area	0.5	Old-growth forest
Powerhouse staging area	5.0	Recent clearcut
Penstock staging area	5.0	Recent clearcut
Access road	4.3	Recent clearcut, deciduous forest, mixed coniferous/ deciduous forest
Penstock	1.0	Old-growth forest, recent clearcut, wet meadow, deciduous shrub, lake littoral zone
Powerhouse, tailrace, switchyard	0.5	Recent clearcut
Total	16.3	

1 Cover types listed approximately in descending order of acreage that would be cleared for the project feature.

AP&T proposes an erosion and sediment control plan that prescribes revegetation of disturbed areas with grasses and white clover. If the disturbed soils are promptly stabilized, native shrubs and trees would invade rapidly. The pattern of succession would be comparable to that in the extensive clearcut areas in the vicinity, except in the wet meadow area traversed by about 820 feet of the proposed penstock.

AP&T proposes to bury the penstock through the wet meadow and replace the upper layer of organic soil following penstock burial. This measure should ensure eventual recolonization by sedges and other wet meadow species.

We recommend approval of AP&T's erosion and sediment control

plan in the Geology section. If properly implemented, this plan would ensure short term and negligible construction impacts to the botanical resources of the project area.

Effects of Operations

The project would draw upon up to 15 vertical feet of storage (3,000 acre-feet) in Black Bear Lake during the winter and the lake would refill during the spring, which could affect shoreline and aquatic vegetation. This drawdown would expose a maximum of about 15 acres. The lake's surface area is 215 acres when full. The winter-time exposure of the fluctuation zone would probably reduce the area and density of rooted aquatic vegetation. Such losses of aquatic plant production may be partially offset by a general shift of the littoral zone to lower elevations. Regardless, the overall impact of lake level fluctuations on vegetation would be negligible due to the small acreage affected.

Reduced flow in the 0.8-mile bypass reach could affect streamside vegetation. This reach wouldn't receive outflow from the lake whenever project operations have drawn the lake below full capacity, which would occur more than 60 percent and 85 percent of the time under the start-up and full capacity operation modes, respectively. Except for a small, wet meadow discuused below, the riparian corridor is vegetated with species that are typical of the surrounding upland areas. Reduced streamflow wouldn't adversely affect this upland vegetation.

Reduced flow in the bypass reach is more likely to affect the wet meadow located near the outlet of Black Bear Lake. Black Bear Creek passes though the upstream end of this wet meadow, which lies alongside the creek on the slope leading from the lake to the falls. By partially drying this area, project operations would accelerate the process of succession from a wet meadow community to a coniferous forest. Due to its small size (less than 3 acres), the impact of this change would be minimal.

Unavoidable Adverse Impacts: Project construction would clear 16.3 acres of existing vegetation and project facilities would permanently occupy 5.8 acres. Lake drawdown due to project operations would reduce aquatic vegetation in the 15-acre

fluctuation zone. Project operations would partially dry a 3-acre wet meadow, accelerating its succession to coniferous forest.

5. Wildlife Resources

Affected Environment: The fauna of the project vicinity are typical of the temperate rain forest region of southeast Alaska, except that some mammals found on the mainland, such as moose, brown bear, and mountain goat, don't occur on Prince of Wales Island.

Sitka black-tailed deer is an important sport and subsistence game species in the region and on the island. Recent logging in the project vicinity has increased the availability of preferred deer forage species and decreased the availability of winter cover. Because the area has experienced a series of mild winters since the mid-1980's, the local deer population has greatly increased. The next severe winter will likely significantly reduce the deer population. As in other locations in southeast Alaska, the distribution of low-elevation old-growth forest, which provides critical winter habitat for deer, will limit the long-term carrying capacity of the project vicinity (Suring et al. 1988, cited in Alaska Power and Telephone 1991).

Black bears are abundant in the project vicinity due to the juxtaposition of early and late-successional forest cover types with riparian habitats. AP&T determined that 5 individuals, including 2 cubs, inhabited the immediate project area. Another large mammal, the gray wolf, also inhabits the project vicinity.

The project vicinity supports a variety of furbearers -- beaver, river otter, mink, ermine, and marten. Trapping, especially for beaver, is common.

AP&T reports observations of several species of waterfowl and shorebirds in the project area, including Canada goose, hooded merganser, red-breasted merganser, and spotted sandpiper. Two raptors are common: bald eagle and red-tailed hawk. Several other species of non-game birds occur in the project area, notably the American dipper, which uses high-gradient streams in forested areas.

Environmental Impacts and Recommendations:

Loss of Habitat

Most of the lands cleared for construction (10.5 of 16.3 acres) would be recently clearcut areas, which are common in the basin. The availability of shrub and young forest cover types isn't likely limiting the populations of any of the island's wildlife species.

Project construction would affect some old-growth forest, which is relatively more important to wildlife than shrub habitat. A chief value of the old growth is as winter cover for black-tailed deer and other large mammals. The old growth that would be cleared is at a relatively high elevation (above 1,000 feet msl) on steep terrain, and doesn't likely provide suitable winter cover. The loss of a small amount (less than 1.0 acre) would be insignificant.

Transmission Line

The proposed 14-mile-long aerial transmission line would pass through an area near the coast where bald eagles are known to nest. Because the line would parallel existing roads, no nest or perch trees would be removed. However, construction activities near nests or feeding areas could cause eagles to abandon these areas. Permanent aerial lines near nests or feeding areas could also pose a collision hazard. In determining the final alignment of the line, APT proposes to conduct eagle surveys and avoid placing the line near known nest trees or the mouths of salmon spawning streams, which are important feeding areas for eagles in southeast Alaska. Further, APT proposes to protect eagles and other raptors from electrocution by insuring a separation of at least 60 inches between energized wires, ground wires, and metal hardware. The Department of the Interior includes an endorsement of these proposals in its recommended terms and conditions.

We agree that APT should avoid impacts to bald eagles, but find that several details necessary for enforceable implementation of APT's proposal are lacking, such as the radius around nest trees that would be avoided. An interagency agreement between the FWS and FS in Alaska restricts disturbances within a 330-feet radius around bald eagle nest trees (Barton and Stieglitz 1990). This agreement would apply to those portions of

the transmission line that would cross FS lands, and lacking evidence to suggest otherwise, should apply to other portions as well. After consulting with the ADFG, FWS, and FS, and before building the transmission line, APT should file a bald eagle protection plan that incorporates this measure from the interagency agreement and other appropriate protection measures. As proposed, APT should design and construct the transmission line according to the guidelines described by the Raptor Research Foundation, Inc. (1981), and file as-built drawings with the Commission.

The Penstock as a Movement Barrier

The above-ground sections of the 30-inch diameter penstock (1,930 feet out of 4,900 feet) could create a barrier to wildlife movements in the project area. AP&T proposes to provide wildlife crossings by constructing a system of berms of rock and earth over the pipe. These berms would be placed about every 500 feet along the above-ground sections. We agree that these berms would provide adequate crossing opportunities for wildlife.

Effects of Improved Access

Trapping beavers and other furbearers is widespread and common on Prince of Wales Island. Trapping is greatest in areas of suitable habitat with roaded access. The project would require about a 1-mile extension of an existing logging road, which could increase trapping.

Beaver ponds provide important rearing habitat for economically important coho salmon in the creek downstream of the project (see Fisheries section). AP&T proposes to monitor the beaver population in Black Bear Creek before and after project construction, but does not specify survey methods. Further, AP&T proposes to install a locked gate on the project access road to help limit unauthorized entry to project facilities and beaver habitat areas. AP&T proposes to cooperate with the wildlife agencies to formulate appropriate measures to prevent or mitigate for any population declines based on the results of its monitoring.

We agree that AP&T should cooperate with the wildlife

agencies to protect beaver populations in the project vicinity. AP&T should file with the Commission for approval a plan to protect beavers in Black Bear Creek downstream of the site of the project powerhouse and upstream of Black Lake. The plan should include, but not be limited to, the following:

(a) the results of a pre-construction survey for beavers by a wildlife biologist;
(b) appropriate measures to protect beavers;
(c) an implementation schedule for the protection measures;
(d) a monitoring proposal to evaluate the project's effects on beavers after start up of project operations; and
(e) an implementation schedule for the monitoring proposal.

Effects of Operations

As we discussed in the Vegetation section, the effects of project operations on botanical resources would be minimal. With the exception of the American dipper, the effects of operations on wildlife dependent on riparian habitats would also be minimal. Habitat for the American dipper in the project area is likely to

be found only in the steep 0.8-mile bypass reach. Dippers forage in and nest along swift mountain streams that are below timberline. Project operations would dewater the bypass reach more than 90 percent of the time, thereby eliminating the area as suitable dipper habitat. Because dippers are fairly common in mountainous areas and habitat is widely available elsewhere on the island, the overall impact of this habitat loss is insignificant.

Unavoidable Adverse Impacts: Project construction would clear 16.3 acres of existing wildlife habitat and project facilities would permanently occupy 5.8 acres. Project operations would eliminate up to 0.8 mile of habitat for the American dipper.

6. Threatened and Endangered Species

Affected Environment: No federally proposed or listed threatened or endangered species are known to occur in the

project area (Gates 1992). However, three candidate species for listing may occur there: the northern goshawk (Accipiter gentilis), the marbled murrelet (Brachyrampus marmoratus), and the spotted frog (Rana pretiosa). DOI says its unlikely that the proposed project would have any significant impact on the two bird species, but says its unclear whether the project would affect the spotted frog. DOI recommends surveys of the project area and, if necessary, appropriate measures to minimize adverse impacts.

The spotted frog is a primarily aquatic species that inhabits cold permanent water [Federal Register 54(199):42529]. It breeds in the spring in peripheral areas along flowing streams, backwater areas of major rivers, springs, and wetlands. Its range extends from the islands of southeast Alaska to scattered locations in Utah and Nevada. The species may be declining in Idaho, Nevada, Oregon, Utah, and Washington, but its status in Alaska is unknown.

Environmental Impacts and Recommendations: Project operations could affect the spotted frog, if present in Black Bear Creek, by decreasing spring flows while refilling Black Bear Lake, which could reduce the amount of peripheral shallow water breeding habitat. It's unlikely that project operations would substantially reduce habitat availability because the areas that spotted frogs might use for breeding are found below the project tailrace where several beaver dams maintain water surface elevations. We recommend monitoring and protection of the beaver population under "Effects of improved access" in the wildlife resources section. If present, we expect that the project would have little or no impact to spotted frogs.

Because the spotted frog is a species of concern, however, we agree with DOI's recommendation to survey Black Bear Creek and, if necessary, formulate appropriate protection measures. This survey could coincide with the pre-construction beaver survey we recommend.

Unavoidable Adverse Impacts: None.

7. Recreation and Other Land and Water Uses

Affected Environment: Prince of Wales Island has few developed recreational facilities. The FS provides cabins, shelters, campgrounds, and small picnic areas at various locations on FS lands, and ther are some private campgrounds and lodges. Major recreational activities in the project area are dispersed fishing, hunting, hiking, and sight-seeing.

The only developed recreation facility in the project area is a 12-foot by 12-foot FS cabin at the southeast end of Black Bear Lake. Access to the cabin is achieved by float plane or float helicopter; however some people have hiked the steep slopes up to Black Bear Lake5/. FS requires a $20 registration fee per night to use the cabin and provides a lightweight skiff at the cabin for use on the lake (Alaska Power and Telephone Co. 1991). Recreationists use the cabin for fishing, hunting, and hiking. Fishing for rainbow trout--the only game fish present in Black Bear Lake--is considered poor to good.

FS records show little use of the cabin. During the past few years, only about 10 groups a year reserved the cabin; the total number of person days6/ has declined steadily--130 in 1987, 72 in 1988, 64 in 1989 (Alaska Power and Telephone Co. 1991). Public access and use in the project area is limited by remoteness, private land ownership, and steep and rugged topography.

Environmental Impacts and Recommendations: The project could have a minor effect on recreationists using the FS cabin at Black Bear Lake: fluctuations in the lake level, resulting from the project operations, might require users to pull the skiff further up or down the beach. FS has required AP&T to provide a floating dock to assist skiff users in accessing the lake (condition No. 7). FS has additionally required AP&T to restrict lake drawdown from occurring between June 1 and September 15, the

5/ Personal communication: Barbra Stanley, Recreation and Land Staff, Craig Ranger District, Forest Service, Craig, Alaska, March 24, 1992.

6/ We define a person day as a one-day stay for one person.

period of highest recreational use (condition No. 9). We believe this is appropriate mitigation.

To protect and ensure public use of National Forest lands and resources affected by the project, FS requires AP&T keep the 60-foot-wide public access easement, from the state highway to the National Forest/Sealaska boundary near Black Bear Lake, open for public use and access (Condition No. 5). Further, the FS wants AP&T to prepare a public access plan which describes how AP&T will work with other affected land owners to ensure that public access is not curtailed (Condition No. 6).

We agree with the FS that public access should be allowed through project lands to the Black Bear Lake area. For this reason, we recommend AP&T not restrict access to the project by installing locked gates, but rather install public access signs along the project access road directing recreationists to the Black Bear Lake area. If side-road gates are needed to ensure the public stays along the public access easement, AP&T should provide them.

FS also requires AP&T to construct and maintain a primitive trail along the public access easement from a logging road near Black Lake to the cabin at Black Bear Lake (Condition No. 8). We find this appropriate. To facilitate this, we recommend AP&T provide a four-vehicle, trail head parking area near the powerhouse that includes (1) interpretive signing that describes the natural and man-made features of the project and the types of access allowed and (2) a trail head access sign.

Unavoidable Adverse Impacts: None.

8. Visual Resources

Affected Environment: The area around Black Bear Lake is visually striking, characterized by steep wooded slopes, rocky outcrops and peaks, and waterfalls. This extremely rugged terrain of the Klawock Mountains surrounds the lake. Several waterfalls plunge off the steep rock faces of these mountains,

including a 1,400-foot waterfall that cascades from Black Bear Lake.

The Black Bear Creek area below the falls has been extensively clear cut by Sealaska Corporation, and this has produced a visually diverse landscape in the project area.

Environmental Impacts and Recommendations: At the lake, AP&T would submerge the intake manifold below the water line, then connect the manifold to a 820-foot-long, 30-inch-diameter buried intake and siphon pipe. The siphon pipe would connect to 1,930 feet of surface penstock supported on concrete saddles on

the downward slope of the mountain. The last 2150 feet of penstock, connected to the powerhouse, would be buried.

The proposed 14-mile-long, 34.5 kV-transmission line would tie into the existing Klawock substation. Four miles of existing logging road would be improved with an added 1 mile of new road constructed to access the powerhouse.

The diverted water from Black Bear Lake would lower the water level up to 15 feet and would dry the Black Bear Lake waterfall except in times of high rainfall or snow melt.

The proposed features that are on FS lands have been evaluated by the FS's visual quality management system. The project features include the siphon intake, the upper section of the penstock, and a portion of the transmission line along the State Highway to Klawock. The other project features including the remainder of the penstock, the powerhouse, access road, and most of the transmission lines are within lands owned by Sealaska Corporation. Sealaska Corporation does not have a visual quality plan for its lands.

The FS recommends the following aesthetic guidelines for the project:

- For structures: (i) use colors and textures to blend with the surrounding environment; (ii) use native or existing vegetation to minimize visual effects; (iii) plan the

topographic siting to blend into the landscape; and (vi) bury penstocks wherever physically and economically feasible.

è For above ground penstocks: (i) use vegetative screening; (ii) paint or cover pipe to match the surrounding area; (iii) manipulate soil placement to prevent erosion; (iv) contour land grading to minimize visual impact; and (v) encourage right of way sharing.

è For transmission lines and poles: (i) plan the form and structure of utility line configuration to blend with the landscape; (ii) design crossings to have the least visual impact; (iii) use wood poles whenever possible; (iv) use tapered clearing in the right-of-way; (v) place transmission lines across open areas to avoid tree clearing whenever possible; (vi) sculpture line siting to the landscape whenever possible.

Black Bear Lake waterfall would dry up except in times of high rainfall or snow melt during project operation. The only ability to view the waterfall would be from the FS public access easement on private land by foot or by vehicle. The waterfall is viewed primarily from airplanes. The site is remotely located

away from people and recreationists that could only see the waterfall if they were on the proposed FS public access easement over private land. Approximately 15 acres of land previously covered by water in Black Bear Lake would be exposed when maximum drawdown of the lake occurs.

Because there is limited access to view the waterfall, the value of the view diminishes (USDA Forest Service 1989). Also, because lake water surface levels would increase from June through September (see section V.B.3, table 2, and V.B.4), moderate visual impacts would occur during the summer recreation season. We believe that the measures proposed by AP&T and the FS would be adequate to minimize the impacts on visual resources. AP&T should develop a visual quality plan that addresses our concerns, as well as those of the FS and state and local agencies.

Unavoidable Adverse Impacts: The proposed project facilities would have a minor adverse visual impact because of the remote location of the project area.

9. Cultural Resources

Affected Environment: The Alaska State Historic Preservation Officer (SHPO) and FS, Tongass National Forest have stated, and staff concurs, that no historic or archeological sites listed or eligible for inclusion in the National Register of Historic Places would be affected by the project (Bittner 1990; Autrey 1990).

Environmental Impacts and Recommendations: The SHPO's and the FS's comments on the proposed project are based on the premise that the project would be constructed and operated as described in the application without significant changes. Changes to the project are occasionally found to be necessary after a license has been issued. Under these circumstances, whether or not an application for amendment of license is required, the SHPO's and the FS's comments would no longer reliably depict the cultural resources impacts that would result from implementing those changes.

Also, land-clearing, land-disturbing, or spoil-producing activities could adversely affect archeological and historic sites, such as buried sites, not previously identified in the vicinity of the proposed project. Therefore, if AP&T encounters such sites during the development of project works or related facilities, AP&T should stop land-clearing, land-disturbing, or spoil-disturbing activities in the vicinity of the sites, should consult with the SHPO and the FS on the eligibility of the sites, and should carry out any necessary measures to inventory and to avoid or to mitigate impacts to the sites.

Therefore, before starting any future land-clearing, land-disturbing, or spoil-producing activities associated with the project, other than those authorized in this license, or before resuming land-clearing, land-disturbing, or spoil-producing activities in the vicinity of any previously undiscovered sites, AP&T should consult with the SHPO and the FS about the need to

conduct a cultural resources survey and to implement avoidance or mitigative measures, and conduct any necessary survey. AP&T should file for Commission approval a report containing the results of any survey work and a cultural resources management plan for avoiding or mitigating impacts to inventoried cultural resources, along with copies of the SHPO's and the FS's written comments on the report. The survey and the report should be based on the recommendations of the SHPO and the FS, and adhere to the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservations. AP&T should not implement any cultural resources management plan or begin any land-clearing, land-disturbing, or spoil-producing activities until informed by the Commission that the requirements discussed above have been fulfilled.

Unavoidable Adverse Impacts: None.

C. Alternative of No Action

Carrying out the no-action alternative would not change the existing physical, biological or cultural resources of the area. However, it would preclude the opportunity to use the renewable water resource of Black Bear Lake. The energy that would be produced by AP&T's proposed project would not be available, and the island would have to rely on the existing diesel generation to meet its energy needs.

D. Consistency with Comprehensive Plans

Section 10(a)(2) of the Act requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project.

Under Section 10(a)(2), federal and state agencies filed 14 plans that address various resources in Alaska. Of these, we identified two plans relevant to this project.7/ No conflicts were found.

7/ Alaska Outdoor Recreation Plan: 1981-1985, 1981, Alaska Department of Natural Resources, Division of Parks, and Southwest Prince of Wales Island Area Plan for State Lands, 1985, Alaska Department of Natural Resources, Division of Lands and Water Management.

E. Comprehensive Development

We have considered both the proposed project and the alternatives under 4(e) and 10(a) of the Act. The alternatives we considered were:

1. The proposed project with our recommended mitigation measures and those measures required by the FS 4(e) conditions; and

2. The no-action alternative, in which case the proposed project would not be built and there would be no change to the existing environment.

We recommend that AP&T build the proposed project, with staff and FS measures. Though our recommended alternative would cause minor adverse environmental impacts, it would contribute significantly to a local reduction in the dependence on non-renewable fuels. Based on AP&T's economic assumptions in their feasability studies, our recommended alternative would cost $2.9 million less to operate annually over a 50-year period than continued use of oil.

With our recommended mitigation measures, which doesn't significantly add to the project's cost, the proposed project would have a minor impact to aquatic resources in Black Bear Lake, alter a small, nearby meadow, and dry up the waterfall at the lake outlet (except at high flows when the lake is full). The fishery resource in Black Bear Lake is a stocked resident fish population that receives little use, and the minor alteration to the meadow would only increase the rate of succession to coniferous forest. As we say in section V.B.8, the view of the waterfall is not readily accessible and other highly visible, cascading falls exist in the vicinity8/. We considered this, and the fact that the project area receives only a few visits by recreationists each year. We believe the benefits of the proposed project outweigh the loss of the waterfall and the other minor environmental effects.

Therefore, after evaluating the environmental and the

economic effects of the project and the alternatives, we conclude that the proposed project, with the environmental measures we recommend, would make the best use of the waterway.

Based on our review under Section 4(e) and 10(a) of the Act, the Black Bear Lake Project, if authorized with our recommended mitigative measures, would be best adapted to a comprehensive plan for developing the Black Bear Creek drainage basin.

Personal Communication, Gary Laver, U.S. Forest Service, Ketchikan, Alaska, February 27, 1992.

VI. FINDING OF NO SIGNIFICANT IMPACT

Project construction would cause: (1) localized and temporary erosion; (2) temporary increased sediment load to Black Bear Creek; (3) permanent loss of 5.8 acres of wildlife habitat; (4) disruption of traffic along state highway 929; (5) minor adverse visual impact.

Project operation would cause: (a) possible impact to spawning of resident trout in Black Bear Lake; (b) eliminate up to 0.8 mile of habitat for the American dipper; (c) partially dry a 3-acre wet meadow, accelerating its succession to coniferous forest; and (d) lake drawdown would reduce aquatic vegetation in the 15-acre fluctuation zone; (e) minor adverse visual impact due to the loss of the waterfall.

In accordance with the National Environmental Policy Act of 1969, we prepared this environmental assessment for the Black Bear Lake Hydroelectric Project. On the basis of the record and this environmental analysis, issuance of a license for the proposed project, with the mitigative measures we recommend, would not constitute a major federal action significantly affecting the quality of the human environment.

VII. CONSISTENCY OF FISH AND WILDLIFE RECOMMENDATIONS WITH THE FEDERAL POWER ACT AND APPLICABLE LAW

Under the provisions of the Federal Power Act (Act), as amended by the Electric Consumers Protection Act of 1986, each hydroelectric license issued by the Commission shall include conditions based on recommendations provided by federal and state fish and wildlife agencies for the protection, mitigation, and enhancement of such resources affected by the project.

Section 10(j) of the Act states that whenever the Commission believes that any fish and wildlife agency recommendation is inconsistent with the purposes and the requirements of the Act or other applicable law, the Commission and the agency shall attempt to resolve any such inconsistency, given due weight to the recommendations, expertise, and statutory responsibilities of such agency.

In this EA we address the concerns of the federal and state fish and wildlife agencies and make recommendations that are consistent with those filed by the federal and state fish and wildlife agencies.

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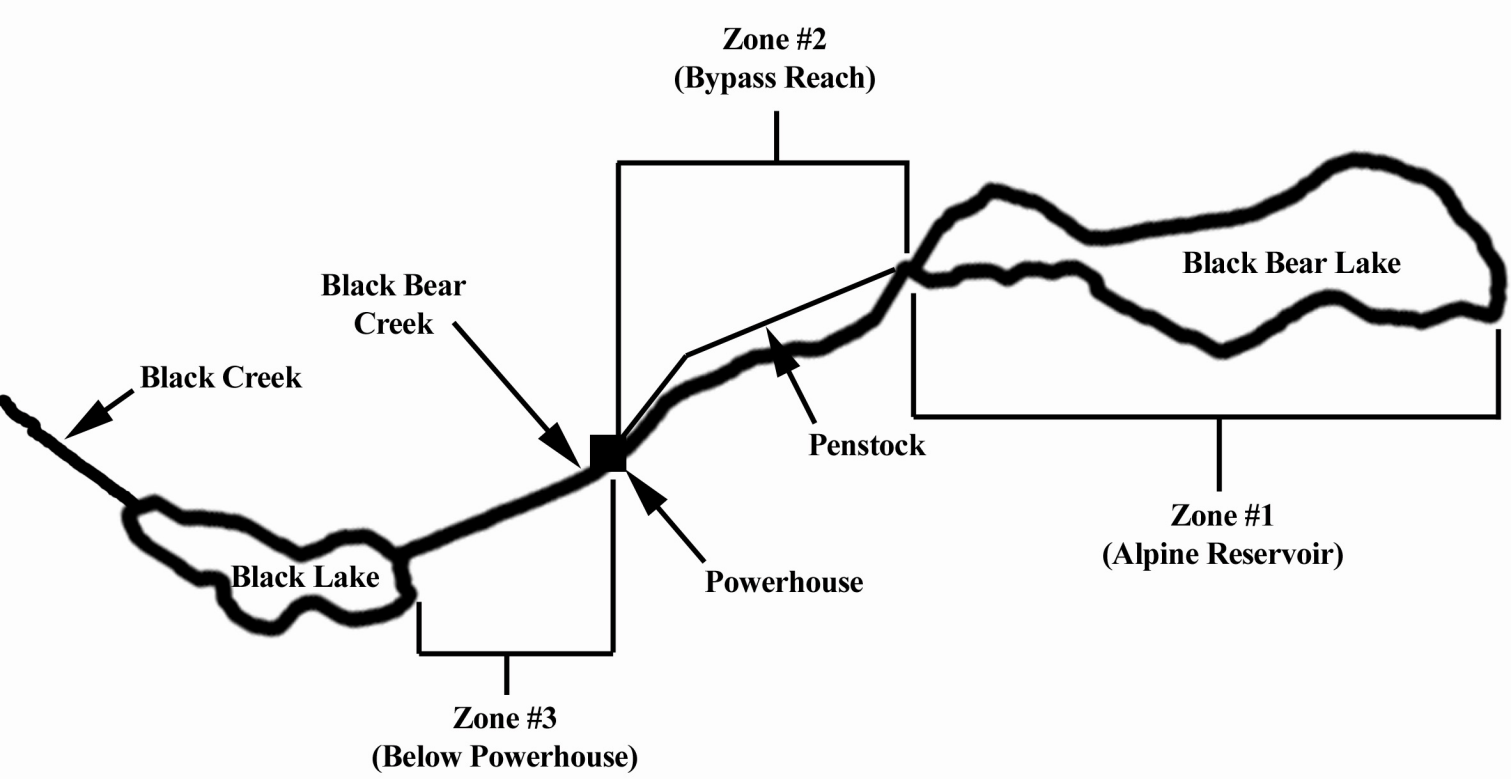
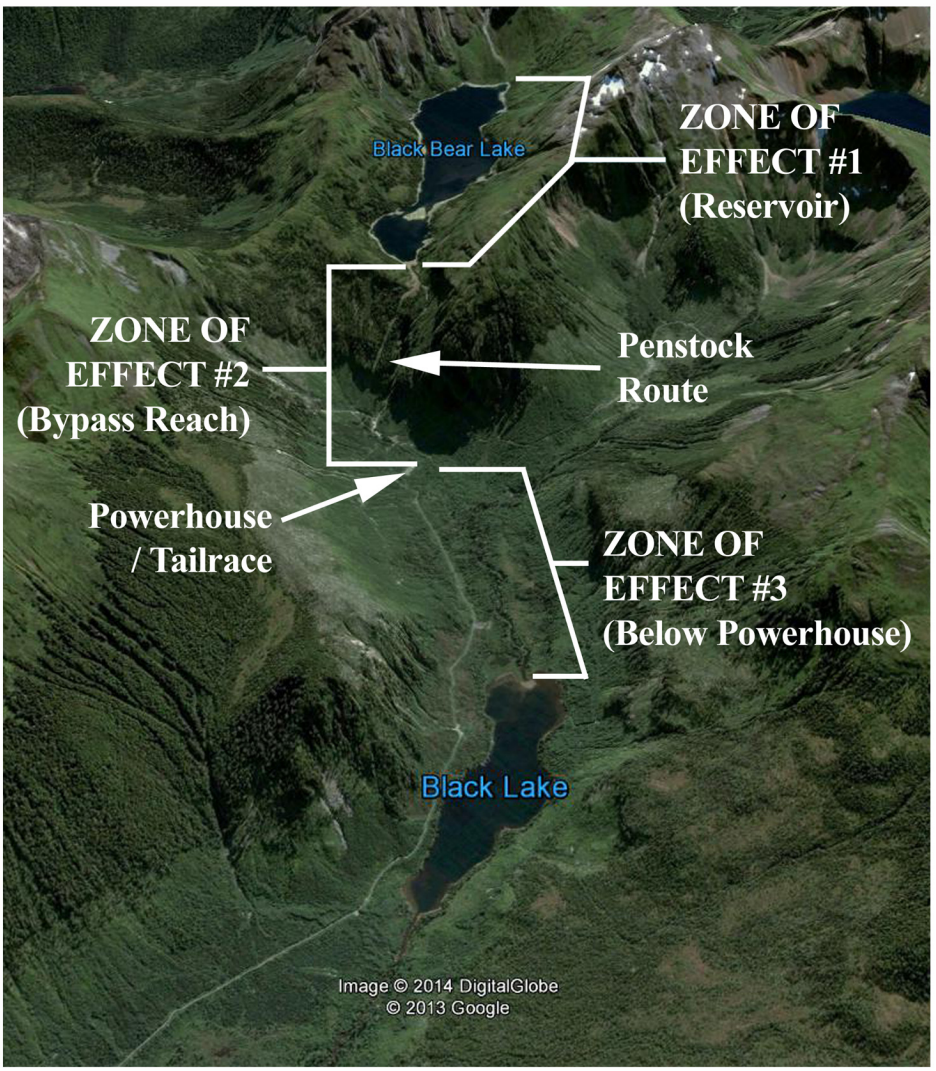
APPENDIX C

ZONE OF EFFECT


Zone #2
(Bypass Reach)
Black Bear Creek
Black Creek
Black Bear Lake
Penstock
Zone #1
(Alpine Reservoir)
Black Lake
Powerhouse
Zone #3
(Below Powerhouse)


Black Bear Lake
ZONE OF
EFFECT #1
(Reservoir)
ZONE OF
EFFECT #2
(Bypass Reach)
Penstock
Route
Powerhouse
/ Tailrace
ZONE OF
EFFECT #3
(Below Powerhouse)
Black Lake
Image © 2014 DigitalGlobe
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ZONE OF EFFECTS (ZoE)

Facility Name: Black Bear Lake Hydro **Zone of Effect: 1 of 3 (Reservoir)**

Criterion		*Alternative Standards Applied*				
		1	*2*	*3*	*4*	*Plus*
A-1	**Ecological Flow Regimes**		*X*			
B-1	**Water Quality**	*X*				
C-1	**Upstream Fish Passage**	*X*				
D-1	**Downstream Fish Passage**	*X*				
E-1	**Watershed and Shoreline Protection**	*X*				
F-1	**Threatened and Endangered Species Protection**	*X*				
G-1	**Cultural and Historic Resources Protection**	*X*				
H-1	**Recreational Resources**	*X*				

Facility Name: Black Bear Lake Hydro **Zone of Effect: 2 of 3 (Bypass Reach)**

Criterion		*Alternative Standards Applied*				
		1	*2*	*3*	*4*	*Plus*
A-1	**Ecological Flow Regimes**		*X*			
B-1	**Water Quality**	*X*				
C-1	**Upstream Fish Passage**	*X*				
D-1	**Downstream Fish Passage**	*X*				
E-1	**Watershed and Shoreline Protection**	*X*				
F-1	**Threatened and Endangered Species Protection**	*X*				
G-1	**Cultural and Historic Resources Protection**	*X*				
H-1	**Recreational Resources**	*X*				

Facility Name: Black Bear Lake Hydro **Zone of Effect: 3 of 3 (Powerhouse)**

Criterion		*Alternative Standards Applied*				
		1	*2*	*3*	*4*	*Plus*
A-2	**Ecological Flow Regimes**		*X*			
B-2	**Water Quality**	*X*				

C-2	**Upstream Fish Passage**	***X***				
D-2	**Downstream Fish Passage**	***X***				
E-2	**Watershed and Shoreline Protection**	***X***				
F-2	**Threatened and Endangered Species Protection**	***X***				
G-2	**Cultural and Historic Resources Protection**	***X***				
H-2	**Recreational Resources**	***X***				

APPENDIX D

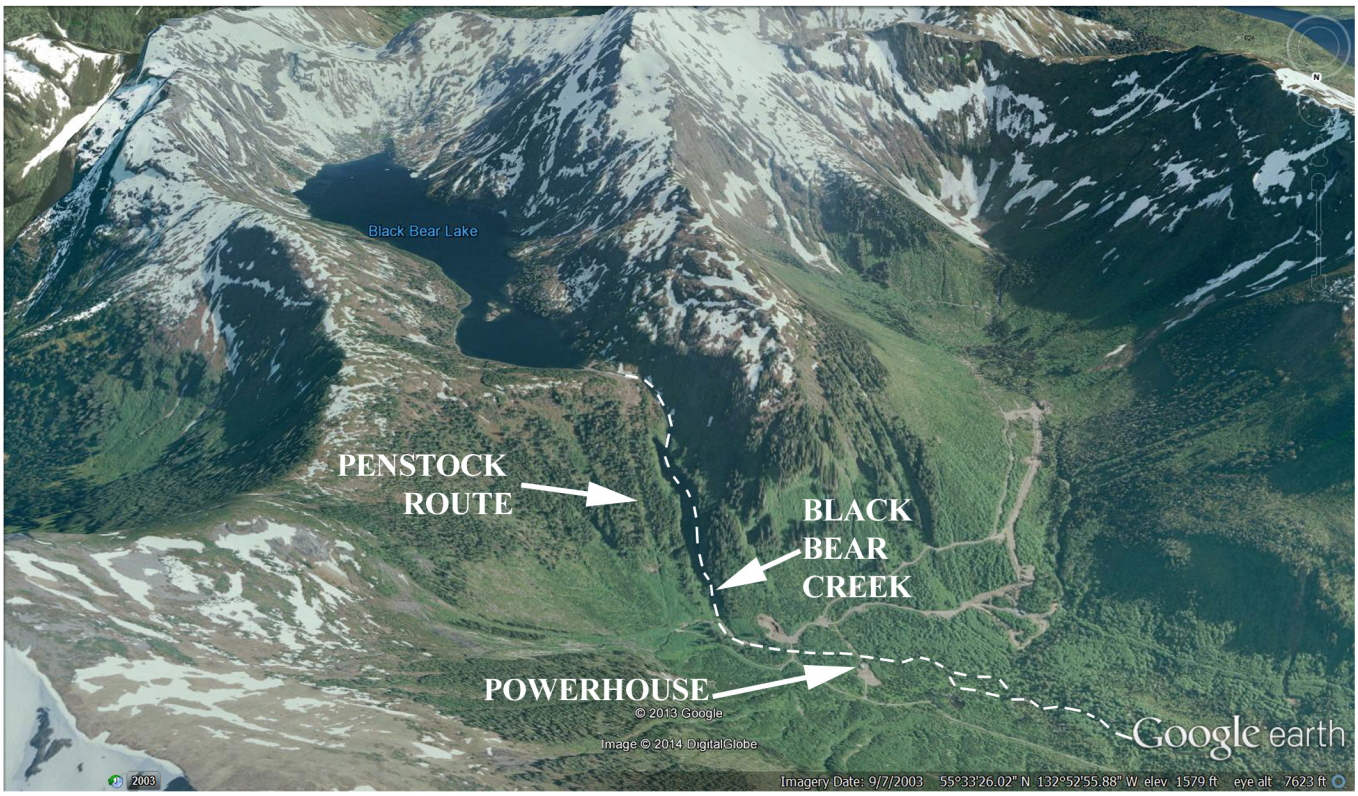
PHOTOS OF PROJECT

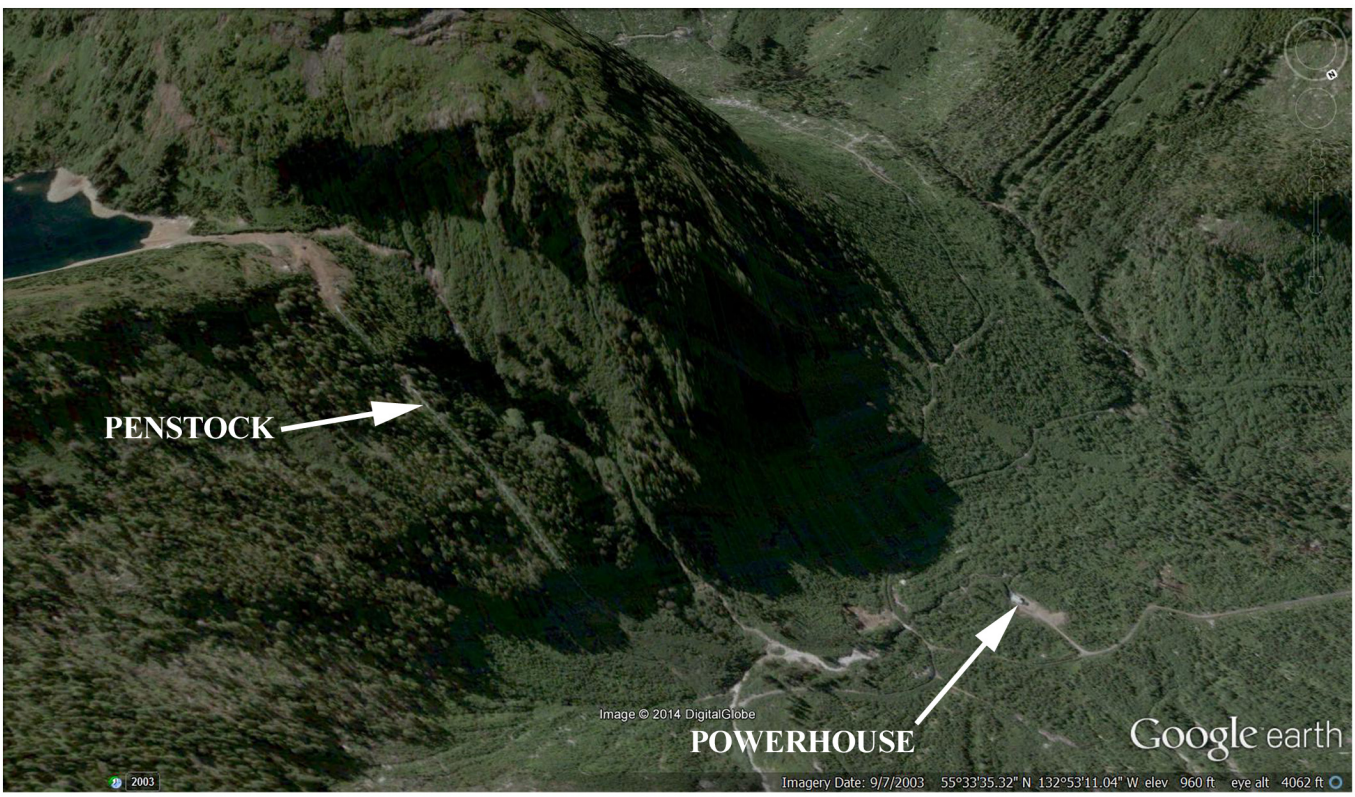
BLACK BEAR LAKE

BLACK BEAR LAKE ROCKY SHORELINE

INTAKE WITH SCREEN

BURIED PIPE TO INTAKE IN LAKE AT RIGHT IN PHOTO


Black Bear Lake
PENSTOCK
ROUTE
BLACK
BEAR
CREEK
POWERHOUSE
© 2013 Google
Image © 2014 DigitalGlobe
Google earth
2003
Imagery Date: 9/7/2003 55°33'26.02" N 132°52'55.88" W elev 1579 ft eye alt 7623 ft


PENSTOCK
Image © 2014 DigitalGlobe
POWERHOUSE
Google earth
2003
Imagery Date: 9/7/2003 55°33'35.32" N 132°53'11.04" W elev 960 ft eye alt 4062 ft

PENSTOCK COMING DOWN SLOPE FROM LAKE WITH OUTLET STREAM AT RIGHT

VIEW OF PENSTOCK GOING DOWN THE SLOPE

THE ABOVE PHOTO OF THE POWERHOUSE AT START UP;
THE BELOW PHOTO 10-15 YEARS LATER; THOUGH NOT VISIBLE
THE TAILRACE IS NOW SURROUNDED BY TREES AND BRUSH

BLACK BEAR CREEK
BELOW THE POWERHOUSE
AND ABOVE BLACK LAKE

APPENDIX E

WATER QUALITY CERTIFICATION

STATE OF ALASKA

DEPT. OF ENVIRONMENTAL CONSERVATION
DIVISION OF WATER
WASTEWATER DISCHARGE AUTHORIZATION PROGRAM

SEAN PARNELL, GOVERNOR
555 Cordova
Anchorage, Alaska 99501-2617
PHONE: (907) 269-6283
FAX: (907) 334-2415

October 17, 2011

Mr. Glen D. Martin, Project Manager
Alaska Power & Telephone Co.
PO Box 3222
Port Townsend, WA 98368

Dear Mr. Martin:

The Alaska Department of Environmental Conservation (DEC) understands that Alaska Power & Telephone Co. has a hydroelectric project on Prince of Wales Island in Southeast Alaska named the Black Bear Hydroelectric Project, FERC No. 10440. DEC is the state agency that would address water quality impacts from hydroelectric projects. However, since approximately 1999 DEC has waived 401 certification of FERC hydroelectric projects. For any FERC permitting renewal of your project DEC would waive 401 certification of your project.

If you have any questions please contact me at 907-269-6283 or William.ashton@alaska.gov

Sincerely,

William Ashton

William Ashton, Section Manager

Water Quality

Enclosed is a copy of the DEC 401 Certification for this Project. This Project does not impact dissolved oxygen levels because the water from the lake is not drawn from a deep enough elevation to significantly change oxygen content, and is often in the same thermo-cline as the surface of the lake during the summer. The water discharged from the tailrace also has 800-1000 feet to aerating before reaching the fish habitat. There are no on-going water quality monitoring required of this Project.

STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION

SOUTHEAST REGIONAL OFFICE
410 Willoughby Avenue, Suite 105
Juneau, AK 99801-1795

PHONE: (907) 465-5350
FAX: 465-5362

FOR YOUR RECORD & INFO.

Post-it™ brand fax transmittal memo 7671	# of pages ▸ 5
To VERN	From JOHN -
Co.	Co.
Dept.	Phone #
Fax #	Fax #

11/24/92

10 November 1992

NOV 20 1992

Mr. Robert Grimm, President
Alaska Power and Telephone Company
P.O. Box 222
Port Townsend, WA 98368

CERTIFIED MAIL RETURN
RECEIPT REQUESTED
#P-532 466 207

Re: FERC/Project No. 10440 AK920505-03J

In accordance with Section 401 of the Clean Water Act of 1977 and provisions of the Alaska Water Quality Standards, the Department of Environmental Conservation has issued the enclosed Certificate of Reasonable Assurance for the proposed Black Bear Lake hydroelectric project.

Department of Environmental Conservation regulations provide that any person who disagrees with this decision may request an adjudicatory hearing by filing a statement of issues under 18 AAC 15.200-310. The hearing request should be mailed or hand delivered to the Commissioner of the Alaska Department of Environmental Conservation, 410 Willoughby Avenue, Suite 105, Juneau, Alaska 99801-1795. Failure to submit a hearing request within thirty (30) days of receipt of this letter constitutes a waiver of your right to judicial review of this decision.

Sincerely,

Dick Stokes

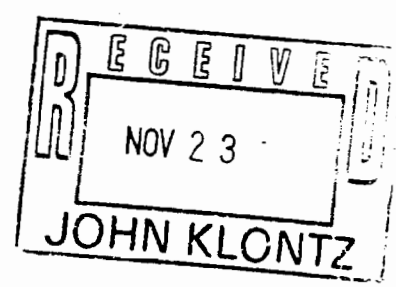
Dick Stokes
Regional Environmental Supervisor

Enclosure

cc: Joe Davis, FERC, Washington DC
Susan Cantor, EPA, Anchorage
Lorraine Marshall, ADGC, Juneau
Beth Kerttula, ADOL, Juneau
Jim Durst, ADF&G, Juneau
Steven Pennoyer, NMFS, Juneau
Nevin Holmberg, USFWS

RECEIVED
NOV 23 1992
JOHN KLONTZ

ADEC, SERO, Juneau
ADEC, Ketchikan District Office
Elizaveta Shadura, ADNR, Juneau
Marilyn Westfall, City of Klawock
Jon Bolling, City of Craig
Bob Loescher, Sealaska Corp.
Corrine Garza, Klawock/Heenya Corporation



STATE OF ALASKA

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

CERTIFICATE OF REASONABLE ASSURANCE

A Certificate of Reasonable Assurance, as required by Section 401 of the Clean Water Act, has been requested by the Alaska Power and Telephone Company, P.O. Box 222, Port Townsend, WA 98368 for the proposed hydroelectric project to generate renewable power for use on Prince of Wales Island replacing existing diesel powered electric generation facilities on the island. The project lies within several land management jurisdictions. Black Bear Lake, the intake, a small portion of penstock and part of the transmission line are on U.S. Forest Service lands. The lower portion of the penstock, powerhouse, access road, and majority of the transmission line are on lands owned by Sealaska Corporation. The remainder of the transmission line is on Klawock/Heenya Corporation and City of Klawock lands.

Black Bear Lake discharges through a notch cut in the bedrock rim at the lower end of the lake and drops 1,400 feet over a series of falls to form Black Bear Creek. These falls bar any upstream fish migration. At low flows, the creek infiltrates into the coarse alluvial depostis of Black Bear Creek valley at a point about .6 of a mile below the outlet of Black Bear Lake and at approximately 1,000 feet downstream, reemerges at several upwelling areas (Lake Fork). Other upwellings exist from natural springs (Spring Fork) which contribute to the flow of Black Bear Creek. Black Bear Lake supports a self-sustaining population of rainbow trout, and Black Bear Creek is catagloged as an anadromous fish stream. The provision of increased flows to Black Bear Creek during the summer low flow period will be a benefit from the project.

Project Description:

The project will utilize natural run-of-river flows into Black Bear Lake as well as the upper 15 feet of Black Bear Lake. The net storage capacity of the reservoir will be siphoned down 15 feet from elevation 1,687 to a minimum elevation of 1,672. A siphon intake will extend approximately 150 feet into Black Bear Lake from the shoreline near the lake outlet. Three helicopter landing areas (a total of 5 for the project), which will be cleared of trees, are anticipated in the vicinity of the intake.

The intake will convey water from the lake to a 30-inch penstock which will extend approximately a distance of 4,900 feet to the powerhouse in three sections: (1) The first section of the penstock (820 feet), which includes a siphon and flow bypass, will be buried or bermed over. Burial involves excavation 87 feet deep in muskeg organic soil. After the pipe exits the lake, the penstock raises slighty. A vacuum pump and valve will be located at the high point of the pipeline, at elevation 1, 695, to prime the siphon to fill the penstock with water. A valve vault will be located 400 feet downstream of the vacuum pump, to allow controlled operation of the siphon. A bypass pipe will be located

upstream of the valve vault, to divert flow from the sipon intake to Black Bear Creek above the falls to ensure continued flows into the creek when the lake level is below the nautral spillway crest. (2) The second section (1,930 feet) emerges below the valve vault and will be supported on concrete piers which will be founded in the near surface rock and saddles down gradual slopes and two steep rock cliffs. The pipe will be restrained to the piers and anchored by thrust blocks as required to resist thermal, gravitational, hydrostatic and dynamic forces. (3) The third section (2,150 feet) will be buried beginning at the lower steep slope area and connects to the powerhouse. At the time of project startup, a significant amount of water will spill from the lake; when the project reaches capacity, very little water will spill over the falls.

The powerhouse will be located adjacent to Black Bear Creek and will contain two turbines and synchronous generators for a total installed capacity of 4.5 MW. A tailrace channel will transport the turbine discharge 100 feet to a tailrace apron which will distribute the flow to the creek. The tailrace includes infiltration galleries, from which the inflow will aid in rechargiging subterranean water which resurfaces at the upwelling areas. A switchyard will be located adjacent to the powerhouse. A pole-mounted transmission line will begin at the switchyard and follow an existing logging road for a distance of five miles to the State highway and then turn southwest for about nine miles to the Klawock substation.

Access to the project will be by approximately four miles of improved existing logging roads from the State Highway and construction of a new road at the end of the existing northside Black Lake logging road to connect to the powerhouse site. During construction, the existing southside logging road will be used as additional site access. A temporary tram will be installed to transport material to the upper slope and intake area during construction. It will be partially dismantled after construction, with foundations and supports left in place for future maintenance.

In addition, the project description includes mitigation measures identified in the FERC application (pages E-18/19, E-49, E-65/67, and Appendix 6). The measures include monitoring for water quality and fish populations as well as practices to minimize impacts. Concerning water quality, the erosion and sediment control plan (ESCP), appendix 6, contains detailed site-specific measures for erosion and sedimentation as well as APT's adopition of general practices (standards and guidelines, best management practices) used by other government agencies, such as U.S. Environmental Protection Agency, U.S. Forest Service, and Alaska Department of Natural Resources forest practice guidelines. The mitigation measures address such things as drainage, settling ponds, straw bale barriers, silt fences, jute netting, revegetation, handling of soils, etc. APT proposes to perform water quality monitoring during and after construction, in the same manner as the pre-project program and at the previously sampled locations for comparision. Concerning fish, the mitigation measure address such things as culverts with sediment trap outlets, tailrace infiltration galleries, intake design, etc. In addition, APT states they will conduct monitoring of fish populations, and they will coordinate with DFG on the pre-

and post-project fish monitoring studies. All of the mitigation meaures are part of the proposal and are included in considerations upon which the State has developed its decision.

The proposed activity is located approximately nine miles northeast of Klawock on Prince of Wales Island, Sections 12 and 13, R. 82 E., T. 73 S., and R. 83 E., T. 73 S., Copper River Meridian.

Public notice of the application for this certification has been made in accordance with 18 AAC 15.180.

Water Quality Certification is required for the proposed activity because the activity will be authorized by the Federal Energy Regulatory Commission, Project No.10440, and a discharge may result from the proposed activity.

Having reviewed the application and comments received in response to the public notice, the Alaska Department of Environmental Conservation certifies that there is reasonable assurance that the proposed activity, as well as any discharge which may result, is in compliance with the requirements of Section 401 of the Clean Water Act which includes the Alaska Water Quality Standards, 18 AAC 70, and the Standards of the Alaska Coastal Management Program, 6 AAC 80. The stipulations were developed during the interagency project review by the Departments of Environmental Conservation, Fish and Game and Natural Resources and coordinated according to 6 AAC 50. They are necessary to ensure the project is consistent with the standards of the Alaska Coastal Management Program 6 AAC 80.040-150.

1. Any significant impacts in water quality shall be immediately reported to DEC and DFG within 24 hours of discovery.

2. The fisheries and water quality monitoring activities and findings shall be continued both during constrcution and for at least five years following the completion of this project, and the findings shall be documented and reported to DFG and DEC on an annual basis. If after five years of project implementation, it appears there are still unresolved fisheries or water quality concerns, then monitoring shall continue. The monitoring program may end when it has been determined to the satisfaction of DFG and DEC that no correction action will be necessary as a result of this project.

3. The project shall be configured so as to not interfere with Sealaska's ability to explore and develop the breccia mineralized areas at the project site.

11/10/92
Date

Dick Stokes
Regional Environmental Supervisor

APPENDIX F

FERC ENVIRONMENTAL ASSESSMENT

JULY 1, 1992

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D. C. 20426

JUL 1 1992

To the Agency/Party Addressed:

In accordance with the National Environmental Policy Act of 1969 and the Federal Energy Regulatory Commission's regulations, 18 CFR Part 380 (Order No. 486, 52 F.R. 47897), the Office of Hydropower Licensing staff reviewed the development application, and prepared the attached Environmental Assessment (EA). The EA contains staff's analysis of the environmental impacts of the proposal and concludes that approval with mitigative measures, would not constitute a major federal action significantly affecting the quality of the human environment.

The attached EA is for your information.

Sincerely,

Lois D. Cashell
Director, Division
of Project Review

Enclosure:
List of Addressees
Environmental Assessment

ENVIRONMENTAL ASSESSMENT
FOR HYDROPOWER LICENSE

Black Bear Lake Hydroelectric Project

FERC Project No. 10440-001

Alaska

Federal Energy Regulatory Commission
Office of Hydropower Licensing
Division of Project Review
825 North Capital Street, NE
Washington, D.C. 20426

June 25, 1992

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SUMMARY

The applicant, Alaska Power and Telephone (AP&T), proposes to construct and operate a hydroelectric project on U.S. Forest Service (FS) and private lands on Black Bear Lake and Black Bear Creek. The project would be located about 8 miles east of the town of Klawock, on Prince of Wales Island in Southeast Alaska. As proposed, the project would have an installed capacity of 4.5 megawatts (MW), producing about 23.1 gigawatthours (GWh) of power annually.

In addition to AP&T's proposal, we (the staff) considered two alternative actions: (1) AP&T's proposal with our environmental recommendations and (2) no action. Under our alternative, in addition to AP&T's proposal, we recommend mitigation and enhancement measures to protect resources in the project area. Under the no-action alternative, no license would be issued. There would be no change to the existing environment, but no chance to use the hydro potential of the site to offload existing oil-fired units.

The proposed project would not conflict with any federal or state comprehensive plans for improving, developing, or conserving the Black Bear Creek drainage basin.

Based on our review of the proposed action and the alternatives under section 4(e) and 10(a) of the Federal Power Act (Act), we recommend the proposed action with our environmental measures. If AP&T follows our environmental measures, the project would not have significant effects on the environment, would be economically feasible to build, and would be best adapted to a comprehensive plan for the Black Bear Creek Basin.

Based on our independent environmental analysis, issuance of an order approving the proposed action, with our recommendations, is not a major federal action significantly affecting the quality of the human environment.

ENVIRONMENTAL ASSESSMENT

FEDERAL ENERGY REGULATORY COMMISSION
OFFICE OF HYDROPOWER LICENSING
DIVISION OF PROJECT REVIEW

Black Bear Lake Hydroelectric Project
FERC No. 10440-001-Alaska
June 25, 1992

I. APPLICATION

On May 24, 1991, Alaska Power and Telephone Company (AP&T) filed an application for major license, less than 5 megawatts (MW), for the Black Bear Lake Hydroelectric Project. The 4.8 MW project would be located on Black Bear Lake and Black Bear Creek, on private lands and 171.5 acres of U.S. Forest Service (FS) lands within the Tongass National Forest near the community of Klawock on Prince of Wales Island, Alaska (figure 1).

II. PURPOSE AND NEED FOR ACTION

A. Purpose

AP&T proposes to build the Black Bear Lake Project, which would provide about 23.1 gigawatthours of electrical energy a year. The project would use the natural flows into Black Bear Lake while using the upper 15 feet of the lake for storage to meet peak energy demands. AP&T would use the energy to meet system needs.

B. Need For Power

The applicant, Alaska Power and Telephone Company (AP&T), is an electric utility serving power needs on Prince of Wales Island (island). AP&T proposes to build and operate the Black Bear Lake Hydroelectric Project to (1) displace existing diesel generation and (2) meet future load growth in the cities of Craig and Klawock.

The island has five small load centers: the cities of Klawock, Craig, Hydaburg, Hollis, and Thorne Bay. Three of these loads are completely isolated and two, Craig and Klawock, are interconnected; so the island has four isolated systems. AP&T owns, operates, or maintains electric generation and distribution facilities in all the towns except Thorne Bay.

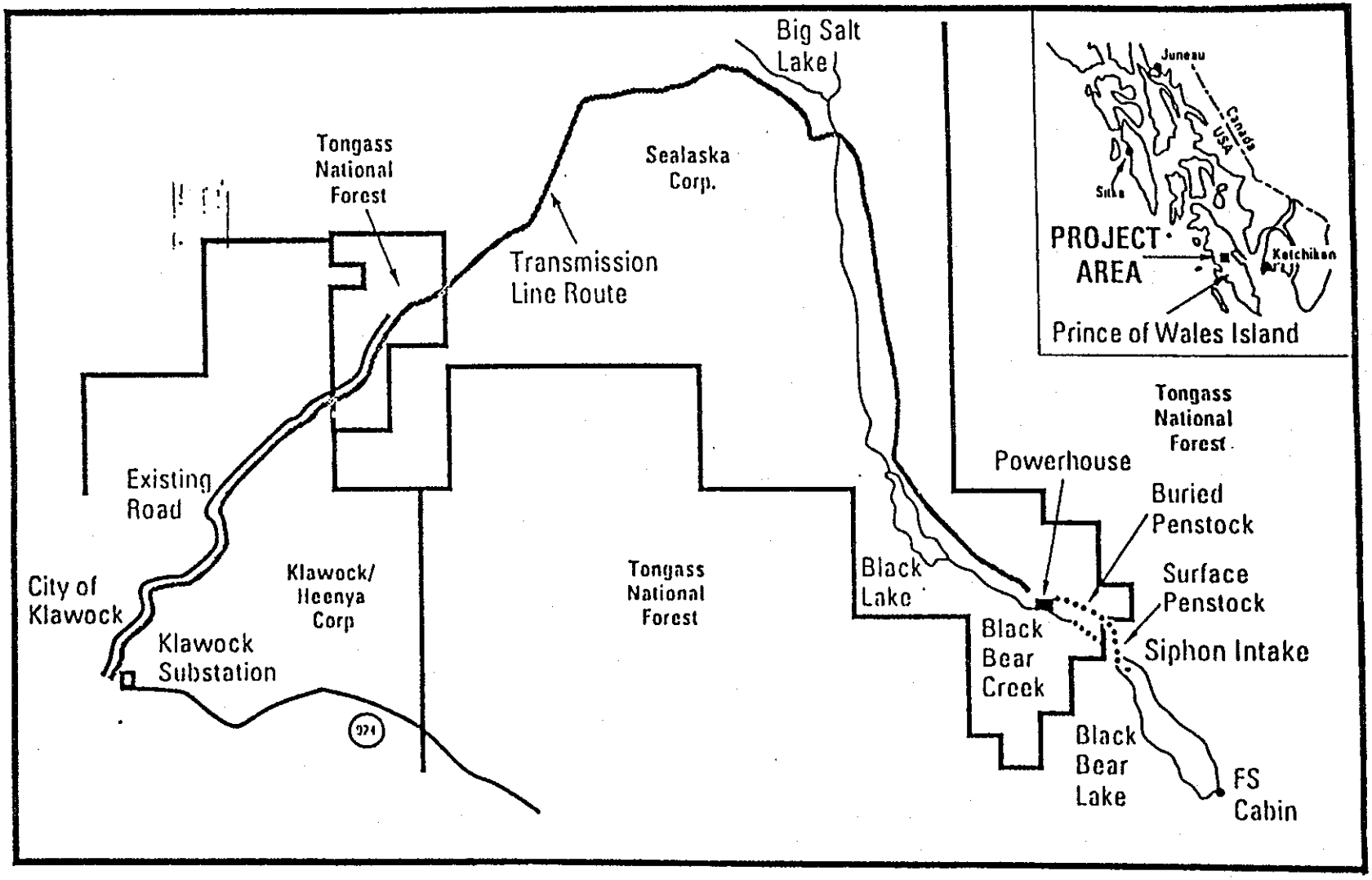

Figure 1. Location of the proposed Black Bear Lake Project (FERC Project No. 10440), Alaska.

In 1991, AP&T's diesel generating resources[1/] totaled 7,565-kilowatts (kW) in nameplate capacity. Their service area peak load responsibility was 2,540-kW, and, of that total, about 2,100-kW was in the proposed project market of Craig and Klawock (market). Of the 7,565 kW total diesel capacity, 6,300-kW was in the project market.

Historical data shows that the City of Craig's energy sales totaled 918-megawatthours (MWh) in 1973. These sales increased at an average annual rate of 12.4 percent to 7,400-MWh in 1991. Sales in Klawock increased from 563-MWh in 1978 to 2,720-MWh in 1991, an average annual growth rate of 13.6 percent. The applicant estimates that the market energy sales will be 10,920-MWh in 1992.

Figure 2 shows AP&T's historical and projected annual energy sales for the Craig/Klawock market. AP&T's forecast includes planned loads that began coming on-line in 1991. AP&T expects more planned load from privately owned self-generating entities and from economic development in the market.

AP&T predicts the energy sales will grow at an average annual rate of 6 percent to 12,982 MWh by 1995. From 1996 to 2020, AP&T predicts a 2.5 percent growth in energy, with a 0.1 percent growth in energy for the rest of the forecast period.

If the load grows as AP&T predicts, the project would begin generating about 12.0 GWh annually and gradually increase to a full load generation of 23.1 GWh in about the year 2018. Because the annual generation of the Black Bear Lake project is large relative to the existing market, the timing of load growth would affect the economics of the Black Bear Hydro Project.

At full load, AP&T says the project would displace about 70,000 barrels of crude per year, eliminating the problems of handling that much oil if the existing diesel generating system was expanded.

On March 27, 1992, the Sealaska Corporation (Sealaska) filed a motion to intervene in the Black Bear Lake proceedings.

In their motion, Sealaska questions the need for the power the project would generate. Specifically, Sealaska says (1) AP&T uses a linear load forecast that relies solely on past load patterns and (2) AP&T predicts high load growth over the next 4 years and a somewhat high (about 2 percent) growth beyond that.

1/ AP&T's Existing Generating Resources:
Craig-4830 kW, Klawock-1500 kW, Hydaburg-1085 kW,
Hollis-150 kW.

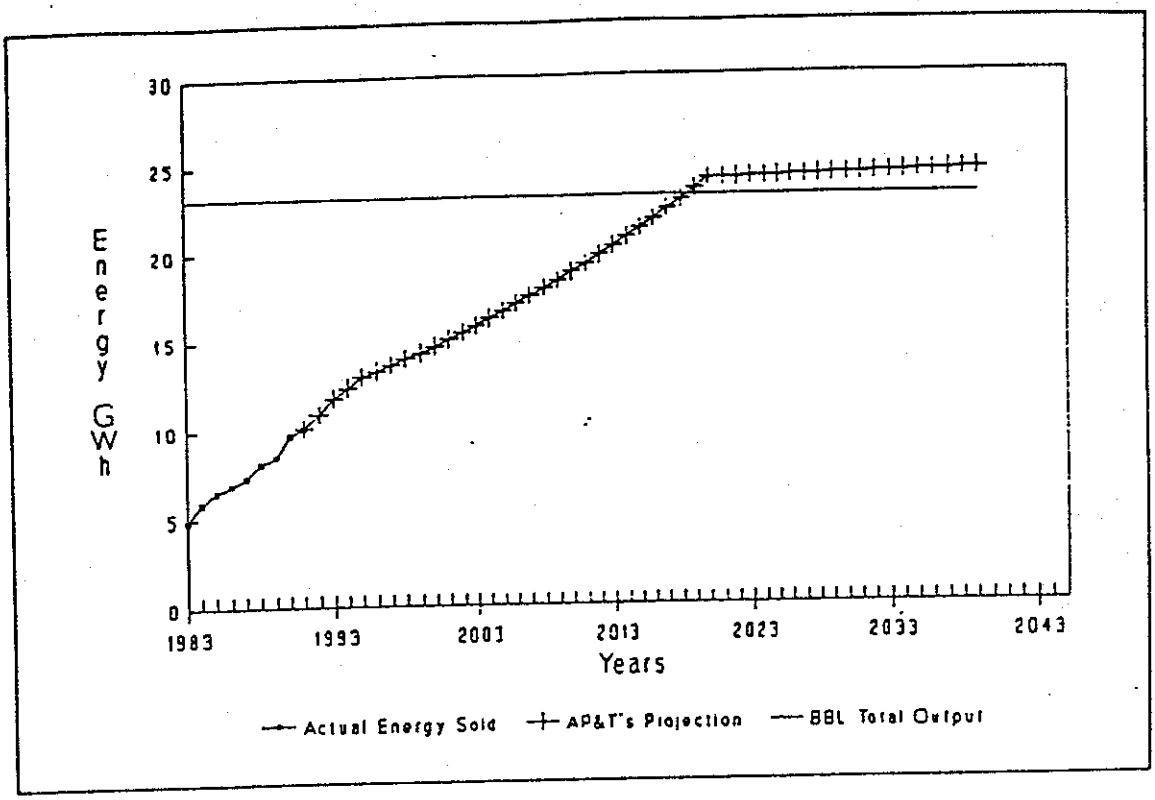

Figure 2. Actual and projected energy sales for the cities of Craig and Klawock. AP&T = Alaska Power and Telephone, BBL = Black Bear Lake (Source: Alaska Power and Telephone, 1991).

On April 23, 1992, AP&T responded to Sealaska's motion. In their response, AP&T says (1) both the State of Alaska's and the City of Craig's population estimates support the load growth AP&T predicts, (2) the economic development plan for Craig shows that the economic infrastructure is in place to support a continued increase in economic activity and (3) the Forest Service is surveying more land for cutting, suggesting that there will be continued employment in the forest products industry.

Our review of the State of Alaska's population projections for 1990 to 2000, shows the State predicts an average growth rate for the Prince of Wales-Outer Ketchikan census area of 3.82 percent. Looking at Craig's estimate of future urban residential property needs, the City uses population growth rates for the next 20 years of 2 percent, as a low, and 7 percent, as a high.

Craig's economic development plan looks at (1) Craig's existing economy, (2) trends in Craig's basic industries--fisheries, timber, tourism, and mining--and (3) the potential for economic growth. Despite predicting a drop in the timber industry in about 5 years, the plan concludes that Craig has

excellent growth opportunities in both its basic and support industries and that a substantial amount of economic growth will take place regardless of what Craig and its elected officials do in the way of planning and promoting development.

The report recommends a strategy to keep Craig from losing some development opportunities that the City will need to sponsor and support--and proposes measures such as installing instruments and lights at the Klawock airport, so that fish processors have 24 hour direct jet service off the island, and expanding the docks at Craig, to relieve crowding.

After considering (1) the population forecasts by both the State of Alaska and the City of Craig and (2) Craig's economic development plan, we find AP&T's projected load growth for the Craig/Klawock service area is reasonable. As we've said, AP&T projects an increase in load for the Craig/Klawock service area for the future at decreasing annual rates of growth: moderate growth in the near term, with continued low growth beginning in 1996 through 2020, and very low growth from 2020 to 2040.

Using past population and load data, AP&T shows (1) that for about the past 20 years, the average load growth for the service area was 14.7 percent and (2) that load increases follow population growth. But to predict load, AP&T doesn't rely solely on past growth, as Sealaska says, or on Alaska's and Craig's population estimates. Instead, AP&T bases its near-term load prediction (1992-1995) mostly on known loads coming on line that will significantly increase power demand. To predict load beyond 1995, along with population estimates, AP&T uses current economic trends and future economic growth potential in the service area.

III. PROPOSED PROJECT AND ALTERNATIVES

A. Proposed Project

1. Project Description

AP&T's proposed project (figure 3) would consist of: (1) the existing 215 acre Black Bear Lake with a storage capacity of 23,750 acre-feet and a water surface elevation of 1,687 feet above mean sea level (msl); (2) a submerged siphon intake consisting of a 30-inch-diameter, 150-foot-long steel pipe ending at a manifold with five 48-inch-diameter, 61-inch-long steel wedge-wire cylindrical screens; (3) a vacuum pump house; (4) a 4-foot-square, 8-foot-high concrete valve vault containing a 30-inch-diameter butterfly valve, 8-inch-diameter bypass valve and an 8-inch vacuum relief valve; (5) a 24-inch-diameter bypass pipe, upstream of the valve vault diverting flow into Black Bear Creek; (6) a 30-inch-diameter, 4,900-foot-long partially buried penstock, ending at the powerhouse with a bifurcation into two

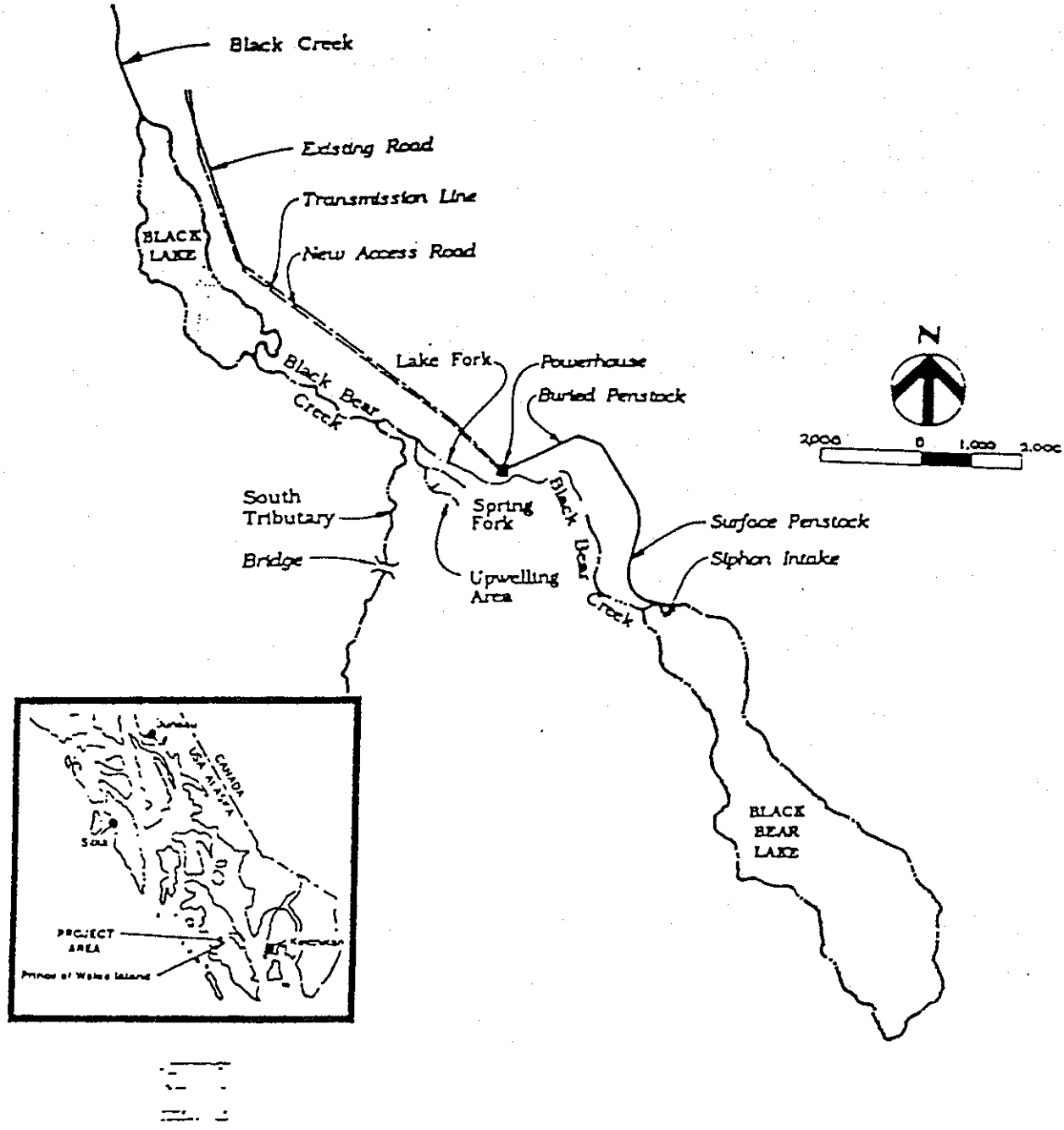

Figure 3. Major features of the proposed Black Bear Lake Project, FERC Project No. 10440 (Source: Alaska Power and Telephone Co. 1991, as modofied by Staff).

20-inch diameter branches; (7) a 44-foot wide, 67-foot-long, 20-foot-high powerhouse containing two 3,175 horsepower twin jet, horizontal shaft Pelton turbines and associated 2,250-kW, synchronous generators with a combined installed capacity of 4,500 kW; (8) a 100-foot-long tailrace channel discharging project flows into Black Bear Creek; (9) a switchyard; (10) a 34.5-kiloVolt, 14-mile-long transmission line tying into the existing Klawock substation; and (11) 1 mile of new access road.

AP&T says that the project would initially come on-line at about 6 percent of capacity, and predicts that project generation will increase over a 20- to 30-year period until the project capacity is reached. AP&T would operate the project, base load, run-of-river, depending on load power demands and the level of Black Bear Lake. The top 15 feet of storage would be used to supplement flow during periods of low runoff and high energy demands.

2. AP&T's Proposed Mitigative Measures

Geology and Soils

- Schedule major land disturbing activities during the dry season and instream activities during low flow
- Remove and stockpile all topsoil in disturbed areas
- Stabilize and protect spoil piles
- Construct control ditches and erosion control and sedimentation ponds (ESC ponds) prior to all project clearing and excavation
- Remove erosion control measures including silt fences, ESC ponds, control ditches and straw bale barriers upon the development of vegetation
- Restore all laydown helicopter pads and staging areas following functional project completion. Restoration would include topsoil cover, reseeding and netting for slopes greater than 5 percent

Water Resources

- Minimize sediment load increases from erosion and excavation of the powerhouse area by the use of drainage ditches and sediment ponds
- Discharge wastewater from construction through a series of settling ponds prior to release to the drainage system

- Minimize erosion of excavated areas through the use of straw bale barriers, silt fences, sediment ponds, and revegetation

- Monitor water quality before and after construction at sites throughout the project area

- Design the tailrace to include infiltration galleries to return powerhouse flows underground as subsurface flow that resurfaces at the "upwelling area" (see figure 2), where groundwater flows return to the Black Bear Creek streambed

Fisheries

- Provide a minimum flow of 9 cubic feet per second (cfs) to Black Bear Creek in the wintertime by supplementing low winter natural flows with lake storage, thereby providing greater habitat for spawning coho salmon in Black Bear Creek

- Design features of the intake structure to minimize impacts to rainbow trout in Black Bear Lake

- Monitor trout populations in the lake for a period during project operation, and coordinate with the Alaska Department of Fish and Game (ADFG) and FS to plan additional steps, such as a stocking program, if determined necessary to offset project related impacts

Vegetation

- Bury the penstock through the wet meadow and replace the topsoil following penstock burial

- Regrade and replant areas disturbed by construction activities with grasses and clovers

Wildlife

- Prevent raptor electrocution by constructing the transmission line with at least 60 inches between energized wires, ground wires, or metal hazards

- Provide wildlife crossings by constructing a system of berms of rock and earth cover over the above-ground portions of the penstock

- Monitor the beaver population in Black Bear Creek prior to and following project construction

- Install a locked gate on the project access road to help

limit unauthorized entry to the upper project area

Visual Resources

- Save existing vegetation where possible for replanting
- Remove spoil materials promptly following construction and revegetate affected areas promptly
- Place the powerhouse, construction staging areas, and new access road in areas that have been recently logged
- Use colors and materials to blend structures with the surrounding rock and forest landscape
- Transplant native trees and shrubs to create and maintain screening and natural transitions between project facilities and the natural landscape.
- Place the proposed transmission lines on wood poles with all natural materials or painted to blend with surrounding vegetation and land features.

We discuss each of these proposals in the individual resource sections.

3. Federal Land Management Conditions

The FS has provided conditions by letter dated April 10, 1992 (attachment 1). These conditions are considered here as part of AP&T's proposal. In summary, these conditions require that AP&T:

(a) ensure public access to the project area;

(b) construct and maintain an accessible dock with a floating finger/ramp near the Black Bear Lake FS cabin;

(c) construct and maintain a public access trail from the end of a ~~logging~~ road near Black Lake to the FS cabin; and

(d) ~~re~~restrict lake drawdown from June 1 to September 15.

B. Proposed Project with Staff's Mitigative Measures

Under our alternative, which includes the proposed mitigation measures and those measures FS requires under 4(e), the license would include the following additional mitigative measures:

- Finishing the cleared and graded edges with natural materials to minimize any straight line effect

- Developing a formal plan for approval for protecting beavers in Black Bear Creek downstream of the proposed powerhouse
- Developing a formal plan for approval for protecting bald eagles, incorporating the interagency eagle protection agreement and other appropriate measures
- Constructing all access roads to be as visually unobtrusive as possible and only as wide as needed to accommodate slow-moving traffic. Siting turnouts in less visually sensitive areas, and making road cuts follow existing topography as much as possible
- Providing a four-vehicle, trailhead parking area near the powerhouse and interpretive signing which describes the project and public access to the Black Bear Lake area
- Not providing locked gates on the powerhouse access road to restrict public access
- Designing the public access trail to follow the land contours, not be visible from the valley, and provide interesting views for recreationists, where possible
- Burying the transmission line whenever possible

C. No-Action

Under the no-action alternative, the Commission would deny the proposed action. There would be no changes to the physical, biological, or cultural resources of the area. The enhancements that the applicant proposes would not occur.

IV. CONSULTATION AND COMPLIANCE

A. Agency Consultation

Commission regulations require prospective applicants to consult with the appropriate resource agencies before filing an application for license. This consultation is the first step in compliance with the Fish and Wildlife Coordination Act, the Endangered Species Act, the National Historic Preservation Act, and other federal statutes. Pre-filing consultation must be complete and documented in accordance with the Commission's regulations.

After the Commission accepts an application, formal comments may be submitted by concerned entities during a public notice period. In addition, organizations and individuals may petition

to intervene and to become a party to any subsequent proceedings. The comments provided by concerned entities are made part of the record and are considered during the review of the proposed project. After the Commission issued a public notice of the Black Bear Lake Project on January 23, 1992, the following entities commented on the application:

Commenting entity	Date of letter
City of Thorne Bay	February 18, 1992
Department of the Interior	March 19, 1992
Forest Service	April 10, 1992

Intervenors	Date of Motion to Intervene
Sealaska Corporation	March 27, 1992

B. Water Quality Certification

On December 18, 1990, AP&T applied to the Alaska Department of Environmental Conservation (ADEC) for water quality certification. On May 13, 1991, ADEC accepted AP&T's request for water quality certification for the proposed project. Since ADEC did'nt act on the request within 1 year, the certificate is deemed waived pursuant to Commission Order 533.

C. State Agency Consistency Review (Coastal Zone Management Act).

Because the project is located in the coastal zone and may affect coastal resources, the Alaska Division of Governmental Coordination (DGC) must review the proposed project for consistency with the state's Coastal Management Program (CMP). Under the Coastal Zone Management Act of 1972, before a license can be issued, DGC must: (1) find the project consistent with the CMP or (2) waive the requirements by failing to act in a timely manner.

DGC has yet to concur on consistency for the proposed project. Coastal resources affected by hydroelectric development in Alaska include anadromous fish, water quality, and sedimentation. In this EA, we quantify the expected impacts from the proposed project. In total, the project would result in a short-term increase in sedimentation that would have an adverse impact on water quality. Based on our analysis in this EA, we don't think the project would have a significant adverse effect on coastal resources.

V. ENVIRONMENTAL ANALYSIS

A. General Description of the Locale

1. Black Bear Creek Basin.

The proposed project would be located on Prince of Wales Island in southeastern Alaska. The proposed project is 14 road miles northeast of the town of Klawock. The primary project features would be located at the outlet of Black Bear Lake and along Black Bear Creek.

The Black Bear Lake basin has a drainage area of 1.82 square miles of steeply sloped forested land. Inflow into the lake consists primarily of intermittent streams that drain bedrock snowfields located in the alpine areas surrounding the lake. From Black Bear Lake, flows drain sequentially into Black Bear Creek, Black Lake, Black Creek, and into Big Salt Lake.

Black Bear Lake occupies a bedrock basin in a U-shaped hanging valley at an elevation of 1,687 feet msl. The elevations of the surrounding peaks and ridges are generally between 2,700 and 3,996 feet msl. The terrain on Prince of Wales Island is rugged and mountainous. Elevations in the project area are nearly 4,000 feet. The mountains are dissected by deep, steep-sided, glacial valleys and fjords.

The climate of the project area is maritime, typified by cool summers, relatively mild winters, long periods of almost continuous cloudy or foggy conditions, and year-round precipitation. The mean annual precipitation at the proposed project is 220 inches. Much of the precipitation falls as snow during the colder months, and Black Bear Lake is often frozen until early summer.

Land use in the vicinity of Black Bear Creek has been dominated by timber harvesting. Sealaska Corporation, which owns most of the proposed project lands, has harvested large blocks of timber within the last 3 years (Alaska Power and Telephone Co. 1991).

2. Proposed and Existing Hydropower Development

Other than the proposed Black Bear Lake project, there are no existing licensed projects, exempted projects, pending license applications, or exemption applications in the Black Bear Creek basin.

3. Target Resources

A target resource is an important resource that may be cumulatively affected by multiple hydropower development within the basin. Based on public and agency comments, we identified two target resources--Sitka black-tailed deer and anadromous fish (pink salmon, chum salmon, sockeye salmon, coho salmon, cutthroat trout, steelhead trout, and Dolly Varden)--which could be adversely affected in a cumulative manner by proposed hydropower projects in the Black Bear Creek Basin.

4. Cumulative Impacts

The Council on Environmental Quality defines cumulative impacts as impacts on the environment that result from the impacts of an action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. The Council says cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR, Part 1508.7). The geographical area included in this cumulative impact analysis is limited to the Black Bear Creek Basin.

The proposed project would be located on Black Bear Lake and Black Bear Creek, which drain into Black Lake, Black Creek and Big Salt Lake. The only other significant impact to the project area is from periodic, extensive clear-cutting of timber for harvesting. Some old-growth forest, valuable as winter cover for black-tailed deer, would be cleared in order to construct the project facilities, but because the high elevation and steep terrain doesn't provide suitable winter cover, the impact would be insignificant. Increased erosion and run-off from timber-harvested riparian areas is likely to occur due to lack of soil stabilization. Sediment fines that wash downstream can silt over important spawning and rearing gravels for anadromous fish (specifically coho) that utilize the upper reaches of Black Bear Creek. Project related impacts on increased sedimentation would be minimal.

No significant adverse cumulative impacts to target resources in the Black Bear Creek drainage would occur as a result of either project construction or operation, if the project is constructed and operated with our proposed mitigative measures (see sections V.B.3 and V.B.5).

B. Proposed Project

1. Geology and Soils

Affected Environment: The project area is underlain with metamorphosed sedimentary and igneous rocks. These rocks are

very hard, slightly weathered, and typically thick-bedded. The soils consist of unconsolidated inorganic materials about 2 feet thick. The thick talus deposits of angular cobbles and boulders are at the base of the steep slopes while deposits of finer-grained (gravel-,sand-,and some silt-size) colluvium are on the less steep slopes. The steeper stream gradients consist of well-sorted materials, ranging from boulders to course gravels. At the flatter stream gradients, medium to fine sand is predominant. In some areas, the topsoil with plant life exists directly on top of the bedrock as a result of glacial scouring. The project area is seismically active, but is generally stable and well-maintained. No active erosion exists at the present time.

Environmental Impacts and Recommendations: During construction of the siphon intake, surface and buried penstock, powerhouse, tailrace, transmission line, and new access road, short term localized erosion could occur. A penstock rupture during operation would cause erosion. Due to the most recent timbering operation adjacent to the project area, increased sediment load and erosion could occur that would not be related to the project.

AP&T included an erosion and sediment control plan with the application. Topsoil would be removed and stockpiled in all disturbed areas. Ditches and sedimentation ponds would be placed prior to all project construction. Erosion and sedimentation measures would also include silt fences, straw bale barriers, riprap, and restoration of all disturbed areas. An automatic shutoff valve is proposed for the penstock in case of a penstock failure. The project would be designed and constructed to withstand seismic activity that could occur in the project area. The measures proposed in the erosion control plan are appropriate and would be effective in controlling erosion and sedimentation from the site. The staff recommends that the plan be implemented.

Unavoidable Adverse Impacts: With implementation of the erosion control plan, localized and temporary erosion would be unavoidable during construction and until disturbed land surfaces are revegetated.

2. Water Resources

Affected Environment: The entire Black Bear lake drainage basin (Black Bear Lake, the free-flowing segments of Black Bear Creek, Black Lake, and Black Creek extending to Big Salt Lake) drains approximately 17.5 square miles of land. The total drainage area for Black Bear Lake is 1.82 square miles. Flows into Black Bear Lake consist primarily of intermittent streams that drain snowfields surrounding the lake. Black Bear Lake has a natural surface area of 215 acres and an estimated volume of 22,000 acre-feet.

The water quality of the Black Bear Creek system is typical of streams that drain glaciated watersheds in southeastern Alaska. Conductivity, total alkalinity, and total hardness are all extremely low and indicative of good water quality. The pH ranges from 6.3 to 7.0, and the low dissolved ion concentration is representative of the impervious bedrock substrate of the lake. Nutrient concentrations are also low, and thus so is biological productivity.

Water temperatures of Black Bear Lake and Black Bear Creek are seasonally variable, ranging from a monthly average low of 2.6° Celsius (C) in March to a high of 11.1°C in August. The presence of ice cover on Black Bear Lake is the primary influence on water temperatures. Early ice cover (early December) limits heat loss and results in warmer winter water temperatures (≈4°C). Late season ice formation (early January) results in colder temperatures (≈1°C). Similarly, early or late season ice melt also affects summer water temperatures. Black Bear Lake develops a thermocline during late summer and early fall at a depth of approximately 40 feet. The stratification typically breaks down by late September to early October.

At the base of the falls from Black Bear Lake, Black Bear Creek infiltrates into the coarse alluvial deposits and re-emerges about 1,000 feet downstream. This area is at times dewatered under natural conditions by the infiltration of creek flows into the naturally occurring subsurface aquifers. Due to the retention time as water passes through the aquifer, there is a moderating effect on flows and temperatures. Winter water temperatures are increased and summer water temperatures are decreased by 0.5 to 1.0° C. Dye studies indicate that the aquifer receives some additional water from other drainage sources in the basin besides Black Bear Lake, and Black Bear Creek flows are also significantly augmented by additional tributary flows.

The average annual discharge at the outlet of Black Bear Lake is 28 cfs, as determined from 1981-1991 data recorded at the U.S. Geological Survey gage (table 1). Low flows occur from February to March, preceding the spring run-off in May and June. Highest flows occur in October and November when precipitation is frequent.

There are no known existing water rights or withdrawals on Black Bear Creek (Alaska Power and Telephone Company 1991). AP&T has applied for a water right of 64 cfs. The water diversion from Black Bear Lake will not affect any other existing water right nor any downstream waters since all water used will be returned to Black Bear Creek downstream.

Environmental Impacts and Recommendations:

Water level fluctuation in Black Bear Lake

By using the upper 15 feet of the lake as storage, project operation would fluctuate the water surface level in Black Bear Lake. Altering the normal flow pattern of water in the lake, which typically spills over the falls at the lake outlet, could affect the water quality and biological productivity of Black Bear Lake.

Table 1. Monthly average stream flows at the lake outlet site of Black Bear Lake in cubic feet per second (Source: Alaska Power and Telephone Co. 1991).

Month	Mean Flow	Month	Mean Flow
January	30	July	26
February	19	August	22
March	15	September	31
April	18	October	43
May	37	November	34
June	40	December	22
Mean Annual Flow = 28 cfs			

AP&T says that the proposed project would primarily operate as a run-of-river facility, until demand increased sufficiently to warrant storage and peaking operation. At project start-up, demand would be low and AP&T estimates that the project would spill 40 percent of the time; at capacity, flows would spill over the falls 15 percent of the time. AP&T proposes to draw down the water level by a maximum of 0.22 inches per hour. Drawdown would begin in December, with minimum lake levels occurring in April. The lake would then be replenished by spring run-off flows in May and June. AP&T proposes to draw down the lake during summer months (late June through August) and then to reduce flows used for generating to refill the lake before the winter.

In the draft 4(e) conditions, FS would require AP&T to operate the project without drawdown from June 1 to September 15, when most of the cabin use occurs. ADFG's concerns regarding lake drawdown apply primarily to project effects on resident trout, which we address in the fishery resource section. ADEC recommended that AP&T conduct water quality monitoring during and after construction.

Small daily and seasonal fluctuations in the water surface level of Black Bear Lake, such as would occur under project start-up conditions, would not likely alter water quality in the lake. Dissolved oxygen (DO) concentrations, typically of concern in projects that withdraw water from depth, would not be significantly affected by project operation. Even in late summer, when water temperature would be at the annual peak, DO levels below the thermocline (where project withdrawal would occur) would be at or above 10 milligrams per liter. Shoreline erosion, and additional suspended sediment that might typically occur from large-scale fluctuations in water surface level, would not occur due to the steep shoreline and composition of the bedrock substrate. Therefore, we expect any impacts due to water level fluctuation to be minimal.

Operating the project without lake drawdown from June 1 through September 15 would not likely affect project operation in the near future for AP&T. Over the life of the project, as demand increases, AP&T might need to amend its proposed operating plan to accommodate FS's requirement.

Effects of flow alteration on Black Bear Creek

The portion of Black Bear Creek that would be subject to dewatering by the proposed project diversion is the area between the base of the Black Bear Lake falls and the powerhouse site (see figure 2). AP&T refers to a naturally occurring "aquifer", an alluvial substrate in the streambed of the upper reaches of Black Bear Creek, which results in a dewatered streambed due to subsurface flow during low-flow periods. Flow from the "aquifer" resurfaces below the site of the proposed powerhouse where it is augmented by additional tributary flows.

Operation of the proposed project would reduce the length of the existing subsurface "aquifer" between Black Bear Lake and Black Lake by bypassing the upper 400 to 600 feet of the alluvial substrate located in the proposed bypass reach. The reduction in total distance of subsurface flow through the alluvial substrate would be approximately 25 percent. Flows would only traverse the entire distance of the existing subsurface "aquifer" when Black Bear Lake was full and excess flows spilled over the falls into the proposed bypass reach.

AP&T proposes to design and construct the tailrace to include infiltration galleries to help return project flows to the aquifer before it resurfaces at the upwelling area. All project flows discharged from the tailrace would be available to the subsurface aquifer and to the upwelling area.

Dye studies conducted by AP&T to depict flow rates through the aquifer and sampling to determine the effect of the aquifer on water temperature of subsurface flows suggest that the aquifer

may receive additional water from other sources. However, the exact effect of the aquifer on flow rate is not known. The effect of a 25 percent reduction in aquifer length on flow rates through the alluvial deposits would likely be minimal, and would not significantly increase the rates of flow change that would naturally occur in Black Bear Creek. We expect the resulting downstream effect on flow to also be small since flows are augmented by significant unregulated tributary flow into Black Bear Creek below the proposed powerhouse return site.

Therefore, we recommend that AP&T construct the tailrace infiltrtation galleries as proposed, and submit as-built drawings to the Commission after construction.

Water Temperature

Altering the natural flow regime and withdrawing water from 25 feet below the surface of Black Bear Lake, would cause water temperature changes in subsequent flows to Black Bear Creek. The proposed project would reduce daily water temperature fluctuations. In the wintertime, the effect of the project (at capacity) would be to warm water temperatures by 1°C in Black Bear Creek. Modelling studies conducted by AP&T predict that, in the summertime, project operation (at capacity) would decrease water temperature up to 2°C.

The groundwater interaction that occurs in the aquifer naturally moderates water temperatures by 0.5 to 1.0 °C. Other sources of groundwater in the area would serve to additionally moderate the effect the project would have on water temperature in the upwelling area.

AP&T proposes to conduct water quality monitoring both during and after construction. The sites to be sampled would include Black Bear Lake near the lake outlet, near the proposed powerhouse site, and at Lake Fork (a tributary to Black Bear Creek). AP&T proposes to consult with ADEC to determine what specific water quality monitoring should be conducted.

Since flows would be withdrawn from depths of 10 to 25 feet, warming of the water at the surface of the lake would not be a factor. Wintertime lake drawdown would serve to alleviate some of the temperature increase, since colder water from near the surface would be released to Black Bear Creek. In the summer when a thermocline is present in Black Bear lake, drawing down the lake would have no impact on the water temperature of flows into Black Bear Creek.

It is not likely that the proposed project would have any appreciable effect on water temperature, from a water quality standpoint, within Black Bear Lake or in Black Bear Creek. Any slight change in temperature from project operations would likely

be masked by the natural variability in the system, as well as the moderating effects of the aquifer and the diffusive effect of tributary flows.

Sedimentation

Construction of the project facilities would cause short-term adverse impacts to the water quality of the project area. Temporary increases in sediment load and nutrient concentration would result from the erosion of disturbed land surfaces associated with construction. Due to the bedrock substrate and depth of Black Bear Lake, we expect sediment impacts would be minimal. Minor, short-term, adverse impacts due to increased sediment load from construction of the powerhouse and tailrace could affect the upper reaches of Black Bear Creek. Suspended sediment fines could settle out in the less steep, lower portions of Black Bear Creek, potentially silting in gravel habitat of anadromous fish.

AP&T proposes a comprehensive plan to prevent and reduce sediment impacts from construction activities. These measures include using sediment barriers, sediment ponds, and revegetation of exposed areas.

We recommend approval of AP&T's erosion and sediment control plan in the Geology section. If properly implemented, this plan would ensure that construction impacts to the water quality of the project area would be short term and negligible .

Unavoidable Adverse Impacts: Project construction would result in a minor adverse impact due to increased sediment load to Black Bear Creek.

3. Fishery Resources

Affected Environment: Black Bear Lake supports a self-sustaining population of rainbow trout introduced into the lake in 1956 by the ADFG. No other species of fish are known to inhabit the lake. Sampling studies estimate a population of between 500 to 800 adult fish. Spawning typically occurs in the spring (May to July) in the inlet and outlet streams of the lake. Due to the limited availability of substrate and stream habitat around the lake, beach spawning occurs in areas where run-off enters the lake.

Black Bear Creek, and the two waterways below it, Black Lake and Black Creek, support spawning runs of pink salmon, chum salmon, coho salmon, and sockeye salmon (listed in descending order of escapement returns). The peak escapement period for pink salmon ranges from mid-August to late September; for chum salmon, from late August to late September; for coho salmon, from

late August to early November; and for sockeye salmon, from early July to early September.

For the period 1960 to 1981, pink salmon escapement averaged 14,218 per year, with a peak year return of 62,000. Chum salmon runs have been recorded up to 10,000, coho up to 6,500, and sockeye up to 700.

In Black Bear Creek, the chief spawning areas are in the South Tributary and upstream of the confluence of the West Fork of the South Tributary. Black Bear Creek also has excellent coho salmon rearing habitat. The principal coho salmon rearing areas are the beaver ponds and the slow moving reach of the creek below the confluence of the West Fork of the South Tributary.

Peak out-migration of pink salmon fry is often related to high discharge and to ice leaving the lower lakes during mid-April and May. The peak out-migration of coho and sockeye fry from Black Bear Creek typically occurs from early April to mid-May. An estimated 440,000 to 460,000 pink salmon fry migrated from spawning habitat in Black Bear Creek in 1982, with an additional 16,258 sockeye fry and 7,606 coho fry.

In addition, Black Lake and Black Creek support populations of cutthroat trout, rainbow trout, steelhead trout, and Dolly Varden.

Environmental Impacts and Recommendations:

Minimum Flows Released to Black Bear Creek

By using the upper 15 feet of Black Bear Lake for storage, the project would alter the natural flow regime in the upper 1-mile of the 1.7-mile-long Black Bear Creek. Water that would typically spill from the lake outlet over the falls and into the aquifer would be stored and released during high-demand periods. Altering the flow regime downstream of the project could affect fisheries habitat in Black Bear Creek, potentially decreasing or dewatering portions of Black Bear Creek during periods of reduced flows (i.e., such as when the project is releasing flows that differ from natural flows).

AP&T proposes to release minimum flows to Black Bear Creek below the powerhouse based on existing seasonal patterns (table 2). The flow would be provided using a flow bypass in the penstock. No minimum flow would be provided to the proposed bypass reach beyond spill that would occasionally occur from the lake outlet. Minimum flows below the project would be provided during times of storage. AP&T says that this flow regime would have beneficial impacts because it would provide supplemental flows during low-flow winter periods when natural flows typically are lower than 9 cfs. Minimum flows would, at times, be higher

than pre-project conditions during the months of July to September. AP&T says that these flows may increase spawning success of salmon in Black Bear Creek.

Table 2. Minimum instream flow schedule for Black Bear Lake Project as proposed by AP&T (Source: Alaska Power and Telephone Co. 1991, as modified by staff).

Month	Existing Mean Monthly Flow (cubic feet per second)	Proposed Minimum Flow (cubic feet per second)	Percent Reduction of Mean Monthly Flow	Existing Percent Exceedence[1]
January	30	9	70	75
February	19	12	37	50
March	15	9	40	57
April	18	15	17	50
May	37	22	41	85
June	40	15	62	99
July	26	19	27	58
August	22	17	23	46
September	31	24	23	40
October	43	20	53	75
November	34	15	56	65
December	22	9	59	65

[1] The percent of the time the existing flows spilled at the lake outlet of Black Bear Lake are greater than AP&T's proposed minimum flows.

No agency filed comments on the minimum flow proposal for this project. The National Marine Fisheries Service (NMFS) sent a letter of concurrence to AP&T in 1989 and again in 1990, stating that if the flows were the same as those proposed for the 1982 project, then they were still in agreement. The flows, as proposed, are similar but not identical to those from the 1982 proposed project (Federal Energy Regulatory Commission 1983), but NMFS has not commented.

Under project conditions, monthly flows would exceed 9 cfs 100 percent of the time, while under natural conditions, flows of 9 cfs are only equaled or exceeded 100 percent of the time in May and June. Since all project flows subsequently pass through the aquifer and become available to the lower reaches of Black Bear Creek, minimum flows below the powerhouse would occur only when the project was not operating and was storing water.

Significant tributary flows below the proposed powerhouse site and above the coho salmon rearing habitat augment Black Bear Lake flows. Flow data for Spring Fork, which is fed primarily from upwelling, would add from 5 to 25 cfs in additional flow to Black Bear Creek throughout the year. Additionally, the moderating effect of the aquifer on flows, as discussed in the water resources section, would reduce the magnitude of short-term flow fluctuations on downstream aquatic habitat.

Streamflow and dye study data suggests that during low-flow summer periods up to 80 percent of the flow to Black Bear Creek now comes from sources that would be unaffected by the project. Adding to low summertime flows would provide more near-shore habitat for rearing coho salmon. The additional requirement by FS that AP&T not drawdown the lake from June 1 to September 15 would likely cause more spill to be released over the falls at the lake outlet after the maximum of 45 cfs (the maximum capacity of the 2 Pelton turbines) was used for generation.

Natural low winter flows in Black Bear Creek typically dewater portions of the streambed. Flow duration data shows that project operations, when the project reaches capacity, would reduce existing flows by 37 to 70 percent. During the early phase of project operation, minimum flows would exceed 15 cfs at all times.

We conclude that AP&T's proposed minimum flow schedule is adequate to protect and enhance aquatic habitat in Black Bear Creek. Any operational effects that could potentially adversely affect the aquatic habitat would be reduced by (1) the fact that the project would not operate at full capacity until well into the future; (2) the moderating effects of the aquifer; and (3) the additional tributaries that add flow to the upper reaches of Black Bear Creek.

Lake Level Fluctuation

Seasonal and daily fluctuation of water levels in Black Bear Lake could adversely impact resident trout spawning habitat and egg survival. Reductions in lake levels between June and August, as proposed by AP&T, could expose and desiccate rainbow trout eggs deposited in shallow water.

AP&T expects that impacts from lake level fluctuations would be expected to be minimal since flows of inlet streams where peak spawning occurs would not be affected by project operation. AP&T proposes to monitor the trout population in the lake during project operation. AP&T also proposes to coordinate with FS and ADFG to plan additional mitigation, such as a stocking program, if necessary.

The current population of rainbow trout in Black Bear Lake, though self-sustaining, is not large in proportion to the size of the lake. Given that the population is not native to begin with, and that it receives little recreational use due to better nearby fishing, it is only of limited value as a resource. As such, the minor losses to spawning habitat that may occur during future project operation do not alone justify requiring AP&T to keep a constant lake level. FS, however, would require AP&T to restrict drawdown from occurring from June a to September 15, to retain access during the recreational season. Should significant impacts to the resident trout population occur from project operation, then AP&T would need to consult with FS and ADFG to determine appropriate re-stocking efforts.

Water Temperature

Changes in the downstream temperature regime from the proposed project could affect migratory and spawning cues of anadromous fish in Black Bear Creek. Changes in temperature (specifically summertime decreases) could decrease growth rates and lengthen development time of fry and early-smolts, and affect the onset of out-migration. Late summer temperature decreases could cause delays in the onset of spawning by anadromous salmonids in upper Black Bear Creek.

AP&T says that the degree day accumulations (typically quantified as a measure of development time for fry and juvenile salmonids) would be within the range of pre-project conditions. Post project average temperatures during late-summer would be on average 0.0 to 1.5 °C colder, based on modelling studies conducted by AP&T. The ranges of variability between pre- and post-project conditions, however, would be similar.

We do not expect project operations to impact fishery resources due to temperature effects. The moderating effect of the aquifer, and the tributary flow in Black Bear Creek would likely alleviate any downstream alterations in temperature that could adversely affect migratory or spawning cues, or significantly impact growth rates.

Fish Entrainment and Impingement

During project operation, there could be some entrainment of resident trout and possible turbine-related injury and mortality.

The diversion of flows from Black Bear Lake through the proposed penstock would remove resident trout from the lake and pass them through the proposed horizontal shaft Pelton turbine. High mortality (>70 percent) of fish has been noted during entrainment and passage through similar Pelton turbine designs (Gloss et al. 1982).

AP&T would construct the siphon intake manifold to have five 48-inch-diameter intake openings, each with steel wedge-wire cylindrical screens. The maximum approach velocity at each opening would be approximately 0.5 feet per second. These velocities are within limits that adult rainbow trout can tolerate, and trout fry are unlikely to be at depths within Black Bear Lake where they would be vulnerable to entrainment and/or impingement.

Mortality of trout from turbine passage with the proposed intake screens should be negligible. To ensure that project operation has minimal impact on the resident trout in Black Bear Lake, AP&T should construct the intake screens as proposed in their license application.

Fishery Habitat in Black Bear Creek

Damming activity by beaver populations has created pool habitat in the upper reaches of Black Bear Creek, which serves as excellent rearing habitat for coho salmon fry. These still-water areas in the upper reaches of Black Bear Creek, below the proposed powerhouse location, provide the best habitat in the Black Bear Creek drainage. Increased access to the project area could impact local beaver populations (see Wildlife section).

In the Wildlife section, we discuss AP&T's proposal to monitor beaver populations in the project vicinity. Minimizing impacts of the proposed project on beaver populations is essential to preventing impacts to coho salmon rearing habitat. Implementation of the monitoring plan recommended in the Wildlife section would adequately protect the fishery resource.

The proposed project would bypass the 1,400 foot waterfall and approximately 600 feet of Black Bear Creek. The loss of fishery habitat from diverting flows would be negligible since these areas are primarily inaccessible to anadromous fish. Surface flows in the upper reaches of Black Bear Creek only exist during periods of high run-off and thus the area is seldom used by fish. The natural steepness (1,400 feet of vertical drop in 3,200 feet of stream run) precludes fish from inhabiting or passing this area. Therefore, we conclude that the project, as proposed, would not cause any direct loss of fishery habitat in Black Bear Creek.

Unavoidable adverse Impacts: Fluctuations in lake levels could impact spawning of resident trout by desiccating eggs.

4. Vegetation

Affected Environment: Prince of Wales Island lies in the northern half of the temperate rain forest region that extends along the coast from Cook Inlet, near Anchorage, Alaska, to northern California. Old-growth coniferous forest is the characteristic cover type of this region.

Several vegetative cover types occur in the project vicinity, but old-growth coniferous forest and recent clearcut comprise 25 and 45 percent of the acreage, respectively, within about 1,000 feet of the proposed facilities. The cover types and their dominant plant species are listed in Table 3.

Most of the old-growth timber surrounding Black Lake, which is about a mile downstream of the proposed powerhouse, was logged in the mid-1980's. More old growth remains in the area between Black Lake and Black Bear Lake -- in pockets along Black Bear Creek and adjacent to the falls -- but recent clearcuts cover most of the area. The powerhouse and most of the access road would be within recent clearcuts.

Table 3. Vegetation cover types and dominant species in the vicinity of the Black Bear Lake Project (Source: Alaska Power and Telephone Co. 1991).

Cover Type	Dominant Species
Old-growth Coniferous Forest	Sitka spruce, western hemlock, mountain hemlock, western red cedar
Mixed Coniferous/Deciduous Forest	Sitka spruce, western hemlock, western red cedar, Sitka alder, red alder
Deciduous Forest	Sitka alder, red alder
Deciduous Shrub	salmonberry, devil's club, blueberry, red alder
Recent Clearcut	salmonberry, devil's club, blueberry
Wet Meadow/Muskeg	sedges, bog candle, sphagnum moss, deer cabbage
Lake littoral zone	yellow pond-lily

Following logging, avalanches, or other disturbances, the pattern of plant succession in the project vicinity is

characterized by the rapid invasion of salmonberry, devil's club, blueberry, red alder, and other shrub species. Sitka spruce and western hemlock establish simultaneously and overtop the shrubs after 8 to 10 years. The trees develop into an even-aged stand for up to 300 years until decadence or further disturbances set the process back to earlier stages (Harris and Farr 1974 cited in Federal Energy Regulatory Commission 1983). Reforestation is accelerated by replanting tree seedlings, usually Sitka spruce.

AP&T identifies four wet meadows in the project vicinity; three near the upper end of Black Lake, and one near the outlet of Black Bear Lake along the proposed penstock route.

Environmental Impacts and Recommendations:

Effects of Construction

Construction would affect 16.3 acres of existing vegetation, mostly recent clearcut areas used as temporary staging areas (table 4).

Table 4. Effects of project construction on vegetation (Source: Alaska Power and Telephone Co. 1991, as modified by staff).

Project Feature	Acreage	Cover Types Affected[1]
Black Bear Lake staging area	0.5	Old-growth forest
Powerhouse staging area	5.0	Recent clearcut
Penstock staging area	5.0	Recent clearcut
Access road	4.3	Recent clearcut, deciduous forest, mixed coniferous/ deciduous forest
Penstock	1.0	Old-growth forest, recent clearcut, wet meadow, deciduous shrub, lake littoral zone
Powerhouse, tailrace, switchyard	0.5	Recent clearcut
Total	16.3	

[1] Cover types listed approximately in descending order of acreage that would be cleared for the project feature.

AP&T proposes an erosion and sediment control plan that prescribes revegetation of disturbed areas with grasses and white clover. If the disturbed soils are promptly stabilized, native shrubs and trees would invade rapidly. The pattern of succession would be comparable to that in the extensive clearcut areas in the vicinity, except in the wet meadow area traversed by about 820 feet of the proposed penstock.

AP&T proposes to bury the penstock through the wet meadow and replace the upper layer of organic soil following penstock burial. This measure should ensure eventual recolonization by sedges and other wet meadow species.

We recommend approval of AP&T's erosion and sediment control plan in the Geology section. If properly implemented, this plan would ensure short term and negligible construction impacts to the botanical resources of the project area.

Effects of Operations

The project would draw upon up to 15 vertical feet of storage (3,000 acre-feet) in Black Bear Lake during the winter and the lake would refill during the spring, which could affect shoreline and aquatic vegetation. This drawdown would expose a maximum of about 15 acres. The lake's surface area is 215 acres when full. The winter-time exposure of the fluctuation zone would probably reduce the area and density of rooted aquatic vegetation. Such losses of aquatic plant production may be partially offset by a general shift of the littoral zone to lower elevations. Regardless, the overall impact of lake level fluctuations on vegetation would be negligible due to the small acreage affected.

Reduced flow in the 0.8-mile bypass reach could affect streamside vegetation. This reach wouldn't receive outflow from the lake whenever project operations have drawn the lake below full capacity, which would occur more than 60 percent and 85 percent of the time under the start-up and full capacity operation modes, respectively. Except for a small, wet meadow discuused below, the riparian corridor is vegetated with species that are typical of the surrounding upland areas. Reduced streamflow wouldn't adversely affect this upland vegetation.

Reduced flow in the bypass reach is more likely to affect the wet meadow located near the outlet of Black Bear Lake. Black Bear Creek passes though the upstream end of this wet meadow, which lies alongside the creek on the slope leading from the lake to the falls. By partially drying this area, project operations would accelerate the process of succession from a wet meadow community to a coniferous forest. Due to its small size (less than 3 acres), the impact of this change would be minimal.

Unavoidable Adverse Impacts: Project construction would clear 16.3 acres of existing vegetation and project facilities would permanently occupy 5.8 acres. Lake drawdown due to project operations would reduce aquatic vegetation in the 15-acre fluctuation zone. Project operations would partially dry a 3-acre wet meadow, accelerating its succession to coniferous forest.

5. Wildlife Resources

Affected Environment: The fauna of the project vicinity are typical of the temperate rain forest region of southeast Alaska, except that some mammals found on the mainland, such as moose, brown bear, and mountain goat, don't occur on Prince of Wales Island.

Sitka black-tailed deer is an important sport and subsistence game species in the region and on the island. Recent logging in the project vicinity has increased the availability of preferred deer forage species and decreased the availability of winter cover. Because the area has experienced a series of mild winters since the mid-1980's, the local deer population has greatly increased. The next severe winter will likely significantly reduce the deer population. As in other locations in southeast Alaska, the distribution of low-elevation old-growth forest, which provides critical winter habitat for deer, will limit the long-term carrying capacity of the project vicinity (Suring et al. 1988, cited in Alaska Power and Telephone 1991).

Black bears are abundant in the project vicinity due to the juxtaposition of early and late-successional forest cover types with riparian habitats. AP&T determined that 5 individuals, including 2 cubs, inhabited the immediate project area. Another large mammal, the gray wolf, also inhabits the project vicinity.

The project vicinity supports a variety of furbearers -- beaver, river otter, mink, ermine, and marten. Trapping, especially for beaver, is common.

AP&T reports observations of several species of waterfowl and shorebirds in the project area, including Canada goose, hooded merganser, red-breasted merganser, and spotted sandpiper. Two raptors are common: bald eagle and red-tailed hawk. Several other species of non-game birds occur in the project area, notably the American dipper, which uses high-gradient streams in forested areas.

Environmental Impacts and Recommendations:

Loss of Habitat

Most of the lands cleared for construction (10.5 of 16.3 acres) would be recently clearcut areas, which are common in the basin. The availability of shrub and young forest cover types isn't likely limiting the populations of any of the island's wildlife species.

Project construction would affect some old-growth forest, which is relatively more important to wildlife than shrub habitat. A chief value of the old growth is as winter cover for black-tailed deer and other large mammals. The old growth that would be cleared is at a relatively high elevation (above 1,000 feet msl) on steep terrain, and doesn't likely provide suitable winter cover. The loss of a small amount (less than 1.0 acre) would be insignificant.

Transmission Line

The proposed 14-mile-long aerial transmission line would pass through an area near the coast where bald eagles are known to nest. Because the line would parallel existing roads, no nest or perch trees would be removed. However, construction activities near nests or feeding areas could cause eagles to abandon these areas. Permanent aerial lines near nests or feeding areas could also pose a collision hazard. In determining the final alignment of the line, APT proposes to conduct eagle surveys and avoid placing the line near known nest trees or the mouths of salmon spawning streams, which are important feeding areas for eagles in southeast Alaska. Further, APT proposes to protect eagles and other raptors from electrocution by insuring a separation of at least 60 inches between energized wires, ground wires, and metal hardware. The Department of the Interior includes an endorsement of these proposals in its recommended terms and conditions.

We agree that APT should avoid impacts to bald eagles, but find that several details necessary for enforceable implementation of APT's proposal are lacking, such as the radius around nest trees that would be avoided. An interagency agreement between the FWS and FS in Alaska restricts disturbances within a 330-feet radius around bald eagle nest trees (Barton and Stieglitz 1990). This agreement would apply to those portions of the transmission line that would cross FS lands, and lacking evidence to suggest otherwise, should apply to other portions as well. After consulting with the ADFG, FWS, and FS, and before building the transmission line, APT should file a bald eagle protection plan that incorporates this measure from the interagency agreement and other appropriate protection measures. As proposed, APT should design and construct the transmission line according to the guidelines described by the Raptor Research Foundation, Inc. (1981), and file as-built drawings with the Commission.

The Penstock as a Movement Barrier

The above-ground sections of the 30-inch diameter penstock (1,930 feet out of 4,900 feet) could create a barrier to wildlife movements in the project area. AP&T proposes to provide wildlife crossings by constructing a system of berms of rock and earth over the pipe. These berms would be placed about every 500 feet along the above-ground sections. We agree that these berms would provide adequate crossing opportunities for wildlife.

Effects of Improved Access

Trapping beavers and other furbearers is widespread and common on Prince of Wales Island. Trapping is greatest in areas of suitable habitat with roaded access. The project would require about a 1-mile extension of an existing logging road, which could increase trapping.

Beaver ponds provide important rearing habitat for economically important coho salmon in the creek downstream of the project (see Fisheries section). AP&T proposes to monitor the beaver population in Black Bear Creek before and after project construction, but does not specify survey methods. Further, AP&T proposes to install a locked gate on the project access road to help limit unauthorized entry to project facilities and beaver habitat areas. AP&T proposes to cooperate with the wildlife agencies to formulate appropriate measures to prevent or mitigate for any population declines based on the results of its monitoring.

We agree that AP&T should cooperate with the wildlife agencies to protect beaver populations in the project vicinity. AP&T should file with the Commission for approval a plan to protect beavers in Black Bear Creek downstream of the site of the project powerhouse and upstream of Black Lake. The plan should include, but not be limited to, the following:

(a) the results of a pre-construction survey for beavers by a wildlife biologist;
(b) appropriate measures to protect beavers;
(c) an implementation schedule for the protection measures;
(d) a monitoring proposal to evaluate the project's effects on beavers after start up of project operations; and
(e) an implementation schedule for the monitoring proposal.

Effects of Operations

As we discussed in the Vegetation section, the effects of project operations on botanical resources would be minimal. With the exception of the American dipper, the effects of operations on wildlife dependent on riparian habitats would also be minimal. Habitat for the American dipper in the project area is likely to

be found only in the steep 0.8-mile bypass reach. Dippers forage in and nest along swift mountain streams that are below timberline. Project operations would dewater the bypass reach more than 90 percent of the time, thereby eliminating the area as suitable dipper habitat. Because dippers are fairly common in mountainous areas and habitat is widely available elsewhere on the island, the overall impact of this habitat loss is insignificant.

Unavoidable Adverse Impacts: Project construction would clear 16.3 acres of existing wildlife habitat and project facilities would permanently occupy 5.8 acres. Project operations would eliminate up to 0.8 mile of habitat for the American dipper.

6. Threatened and Endangered Species

Affected Environment: No federally proposed or listed threatened or endangered species are known to occur in the project area (Gates 1992). However, three candidate species for listing may occur there: the northern goshawk (Accipiter gentilis), the marbled murrelet (Brachyrampus marmoratus), and the spotted frog (Rana pretiosa). DOI says its unlikely that the proposed project would have any significant impact on the two bird species, but says its unclear whether the project would affect the spotted frog. DOI recommends surveys of the project area and, if necessary, appropriate measures to minimize adverse impacts.

The spotted frog is a primarily aquatic species that inhabits cold permanent water [Federal Register 54(199):42529]. It breeds in the spring in peripheral areas along flowing streams, backwater areas of major rivers, springs, and wetlands. Its range extends from the islands of southeast Alaska to scattered locations in Utah and Nevada. The species may be declining in Idaho, Nevada, Oregon, Utah, and Washington, but its status in Alaska is unknown.

Environmental Impacts and Recommendations: Project operations could affect the spotted frog, if present in Black Bear Creek, by decreasing spring flows while refilling Black Bear Lake, which could reduce the amount of peripheral shallow water breeding habitat. It's unlikely that project operations would substantially reduce habitat availability because the areas that spotted frogs might use for breeding are found below the project tailrace where several beaver dams maintain water surface elevations. We recommend monitoring and protection of the beaver population under "Effects of improved access" in the wildlife resources section. If present, we expect that the project would have little or no impact to spotted frogs.

Because the spotted frog is a species of concern, however, we agree with DOI's recommendation to survey Black Bear Creek and, if necessary, formulate appropriate protection measures. This survey could coincide with the pre-construction beaver survey we recommend.

Unavoidable Adverse Impacts: None.

7. Recreation and Other Land and Water Uses

Affected Environment: Prince of Wales Island has few developed recreational facilities. The FS provides cabins, shelters, campgrounds, and small picnic areas at various locations on FS lands, and ther are some private campgrounds and lodges. Major recreational activities in the project area are dispersed fishing, hunting, hiking, and sight-seeing.

The only developed recreation facility in the project area is a 12-foot by 12-foot FS cabin at the southeast end of Black Bear Lake. Access to the cabin is achieved by float plane or float helicopter; however some people have hiked the steep slopes up to Black Bear Lake[2/]. FS requires a $20 registration fee per night to use the cabin and provides a lightweight skiff at the cabin for use on the lake (Alaska Power and Telephone Co. 1991). Recreationists use the cabin for fishing, hunting, and hiking. Fishing for rainbow trout--the only game fish present in Black Bear Lake--is considered poor to good.

FS records show little use of the cabin. During the past few years, only about 10 groups a year reserved the cabin; the total number of person days[3/] has declined steadily--130 in 1987, 72 in 1988, 64 in 1989 (Alaska Power and Telephone Co. 1991). Public access and use in the project area is limited by remoteness, private land ownership, and steep and rugged topography.

Environmental Impacts and Recommendations: The project could have a minor effect on recreationists using the FS cabin at Black Bear Lake: fluctuations in the lake level, resulting from the project operations, might require users to pull the skiff further up or down the beach. FS has required AP&T to provide a floating dock to assist skiff users in accessing the lake (condition No. 7). FS has additionally required AP&T to restrict lake drawdown from occurring between June 1 and September 15, the

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2/ Personal communication: Barbra Stanley, Recreation and Land Staff, Craig Ranger District, Forest Service, Craig, Alaska, March 24, 1992.

3/ We define a person day as a one-day stay for one person.

period of highest recreational use (condition No. 9). We believe this is appropriate mitigation.

To protect and ensure public use of National Forest lands and resources affected by the project, FS requires AP&T keep the 60-foot-wide public access easement, from the state highway to the National Forest/Sealaska boundary near Black Bear Lake, open for public use and access (Condition No. 5). Further, the FS wants AP&T to prepare a public access plan which describes how AP&T will work with other affected land owners to ensure that public access is not curtailed (Condition No. 6).

We agree with the FS that public access should be allowed through project lands to the Black Bear Lake area. For this reason, we recommend AP&T not restrict access to the project by installing locked gates, but rather install public access signs along the project access road directing recreationists to the Black Bear Lake area. If side-road gates are needed to ensure the public stays along the public access easement, AP&T should provide them.

FS also requires AP&T to construct and maintain a primitive trail along the public access easement from a logging road near Black Lake to the cabin at Black Bear Lake (Condition No. 8). We find this appropriate. To facilitate this, we recommend AP&T provide a four-vehicle, trail head parking area near the powerhouse that includes (1) interpretive signing that describes the natural and man-made features of the project and the types of access allowed and (2) a trail head access sign.

Unavoidable Adverse Impacts: None.

8. Visual Resources

Affected Environment: The area around Black Bear Lake is visually striking, characterized by steep wooded slopes, rocky outcrops and peaks, and waterfalls. This extremely rugged terrain of the Klawock Mountains surrounds the lake. Several waterfalls plunge off the steep rock faces of these mountains, including a 1,400-foot waterfall that cascades from Black Bear Lake.

The Black Bear Creek area below the falls has been extensively clear cut by Sealaska Corporation, and this has produced a visually diverse landscape in the project area.

Environmental Impacts and Recommendations: At the lake, AP&T would submerge the intake manifold below the water line, then connect the manifold to a 820-foot-long, 30-inch-diameter buried intake and siphon pipe. The siphon pipe would connect to 1,930 feet of surface penstock supported on concrete saddles on

the downward slope of the mountain. The last 2150 feet of penstock, connected to the powerhouse, would be buried.

The proposed 14-mile-long, 34.5 kV-transmission line would tie into the existing Klawock substation. Four miles of existing logging road would be improved with an added 1 mile of new road constructed to access the powerhouse.

The diverted water from Black Bear Lake would lower the water level up to 15 feet and would dry the Black Bear Lake waterfall except in times of high rainfall or snow melt.

The proposed features that are on FS lands have been evaluated by the FS's visual quality management system. The project features include the siphon intake, the upper section of the penstock, and a portion of the transmission line along the State Highway to Klawock. The other project features including the remainder of the penstock, the powerhouse, access road, and most of the transmission lines are within lands owned by Sealaska Corporation. Sealaska Corporation does not have a visual quality plan for its lands.

The FS recommends the following aesthetic guidelines for the project:

- For structures: (i) use colors and textures to blend with the surrounding environment; (ii) use native or existing vegetation to minimize visual effects; (iii) plan the topographic siting to blend into the landscape; and (vi) bury penstocks wherever physically and economically feasible.

- For above ground penstocks: (i) use vegetative screening; (ii) paint or cover pipe to match the surrounding area; (iii) manipulate soil placement to prevent erosion; (iv) contour land grading to minimize visual impact; and (v) encourage right of way sharing.

- For transmission lines and poles: (i) plan the form and structure of utility line configuration to blend with the landscape; (ii) design crossings to have the least visual impact; (iii) use wood poles whenever possible; (iv) use tapered clearing in the right-of-way; (v) place transmission lines across open areas to avoid tree clearing whenever possible; (vi) sculpture line siting to the landscape whenever possible.

Black Bear Lake waterfall would dry up except in times of high rainfall or snow melt during project operation. The only ability to view the waterfall would be from the FS public access easement on private land by foot or by vehicle. The waterfall is viewed primarily from airplanes. The site is remotely located

away from people and recreationists that could only see the waterfall if they were on the proposed FS public access easement over private land. Approximately 15 acres of land previously covered by water in Black Bear Lake would be exposed when maximum drawdown of the lake occurs.

Because there is limited access to view the waterfall, the value of the view diminishes (USDA Forest Service 1989). Also, because lake water surface levels would increase from June through September (see section V.B.3, table 2, and V.B.4), moderate visual impacts would occur during the summer recreation season. We believe that the measures proposed by AP&T and the FS would be adequate to minimize the impacts on visual resources. AP&T should develop a visual quality plan that addresses our concerns, as well as those of the FS and state and local agencies.

Unavoidable Adverse Impacts: The proposed project facilities would have a minor adverse visual impact because of the remote location of the project area.

9. Cultural Resources

Affected Environment: The Alaska State Historic Preservation Officer (SHPO) and FS, Tongass National Forest have stated, and staff concurs, that no historic or archeological sites listed or eligible for inclusion in the National Register of Historic Places would be affected by the project (Bittner 1990; Autrey 1990).

Environmental Impacts and Recommendations: The SHPO's and the FS's comments on the proposed project are based on the premise that the project would be constructed and operated as described in the application without significant changes. Changes to the project are occasionally found to be necessary after a license has been issued. Under these circumstances, whether or not an application for amendment of license is required, the SHPO's and the FS's comments would no longer reliably depict the cultural resources impacts that would result from implementing those changes.

Also, land-clearing, land-disturbing, or spoil-producing activities could adversely affect archeological and historic sites, such as buried sites, not previously identified in the vicinity of the proposed project. Therefore, if AP&T encounters such sites during the development of project works or related facilities, AP&T should stop land-clearing, land-disturbing, or spoil-disturbing activities in the vicinity of the sites, should consult with the SHPO and the FS on the eligibility of the sites, and should carry out any necessary measures to inventory and to avoid or to mitigate impacts to the sites.

Therefore, before starting any future land-clearing, land-disturbing, or spoil-producing activities associated with the project, other than those authorized in this license, or before resuming land-clearing, land-disturbing, or spoil-producing activities in the vicinity of any previously undiscovered sites, AP&T should consult with the SHPO and the FS about the need to conduct a cultural resources survey and to implement avoidance or mitigative measures, and conduct any necessary survey. AP&T should file for Commission approval a report containing the results of any survey work and a cultural resources management plan for avoiding or mitigating impacts to inventoried cultural resources, along with copies of the SHPO's and the FS's written comments on the report. The survey and the report should be based on the recommendations of the SHPO and the FS, and adhere to the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservations. AP&T should not implement any cultural resources management plan or begin any land-clearing, land-disturbing, or spoil-producing activities until informed by the Commission that the requirements discussed above have been fulfilled.

Unavoidable Adverse Impacts: None.

C. Alternative of No Action

Carrying out the no-action alternative would not change the existing physical, biological or cultural resources of the area. However, it would preclude the opportunity to use the renewable water resource of Black Bear Lake. The energy that would be produced by AP&T's proposed project would not be available, and the island would have to rely on the existing diesel generation to meet its energy needs.

D. Consistency with Comprehensive Plans

Section 10(a)(2) of the Act requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project.

Under Section 10(a)(2), federal and state agencies filed 14 plans that address various resources in Alaska. Of these, we identified two plans relevant to this project.[4/] No conflicts were found.

4/ Alaska Outdoor Recreation Plan: 1981-1985, 1981, Alaska Department of Natural Resources, Division of Parks, and Southwest Prince of Wales Island Area Plan for State Lands, 1985, Alaska Department of Natural Resources, Division of Lands and Water Management.

E. Comprehensive Development

We have considered both the proposed project and the alternatives under 4(e) and 10(a) of the Act. The alternatives we considered were:

1. The proposed project with our recommended mitigation measures and those measures required by the FS 4(e) conditions; and

2. The no-action alternative, in which case the proposed project would not be built and there would be no change to the existing environment.

We recommend that AP&T build the proposed project, with staff and FS measures. Though our recommended alternative would cause minor adverse environmental impacts, it would contribute significantly to a local reduction in the dependence on non-renewable fuels. Based on AP&T's economic assumptions in their feasability studies, our recommended alternative would cost $2.9 million less to operate annually over a 50-year period than continued use of oil.

With our recommended mitigation measures, which doesn't significantly add to the project's cost, the proposed project would have a minor impact to aquatic resources in Black Bear Lake, alter a small, nearby meadow, and dry up the waterfall at the lake outlet (except at high flows when the lake is full). The fishery resource in Black Bear Lake is a stocked resident fish population that receives little use, and the minor alteration to the meadow would only increase the rate of succession to coniferous forest. As we say in section V.B.8, the view of the waterfall is not readily accessible and other highly visible, cascading falls exist in the vicinity[5/]. We considered this, and the fact that the project area receives only a few visits by recreationists each year. We believe the benefits of the proposed project outweigh the loss of the waterfall and the other minor environmental effects.

Therefore, after evaluating the environmental and the economic effects of the project and the alternatives, we conclude that the proposed project, with the environmental measures we recommend, would make the best use of the waterway.

Based on our review under Section 4(e) and 10(a) of the Act, the Black Bear Lake Project, if authorized with our recommended mitigative measures, would be best adapted to a comprehensive plan for developing the Black Bear Creek drainage basin.

[5/] Personal Communication, Gary Laver, U.S. Forest Service, Ketchikan, Alaska, February 27, 1992.

VI. FINDING OF NO SIGNIFICANT IMPACT

Project construction would cause: (1) localized and temporary erosion; (2) temporary increased sediment load to Black Bear Creek; (3) permanent loss of 5.8 acres of wildlife habitat; (4) disruption of traffic along state highway 929; (5) minor adverse visual impact.

Project operation would cause: (a) possible impact to spawning of resident trout in Black Bear Lake; (b) eliminate up to 0.8 mile of habitat for the American dipper; (c) partially dry a 3-acre wet meadow, accelerating its succession to coniferous forest; and (d) lake drawdown would reduce aquatic vegetation in the 15-acre fluctuation zone; (e) minor adverse visual impact due to the loss of the waterfall.

In accordance with the National Environmental Policy Act of 1969, we prepared this environmental assessment for the Black Bear Lake Hydroelectric Project. On the basis of the record and this environmental analysis, issuance of a license for the proposed project, with the mitigative measures we recommend, would not constitute a major federal action significantly affecting the quality of the human environment.

VII. CONSISTENCY OF FISH AND WILDLIFE RECOMMENDATIONS WITH THE FEDERAL POWER ACT AND APPLICABLE LAW

Under the provisions of the Federal Power Act (Act), as amended by the Electric Consumers Protection Act of 1986, each hydroelectric license issued by the Commission shall include conditions based on recommendations provided by federal and state fish and wildlife agencies for the protection, mitigation, and enhancement of such resources affected by the project.

Section 10(j) of the Act states that whenever the Commission believes that any fish and wildlife agency recommendation is inconsistent with the purposes and the requirements of the Act or other applicable law, the Commission and the agency shall attempt to resolve any such inconsistency, given due weight to the recommendations, expertise, and statutory responsibilities of such agency.

In this EA we address the concerns of the federal and state fish and wildlife agencies and make recommendations that are consistent with those filed by the federal and state fish and wildlife agencies.

VIII. LITERATURE CITED

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IX. LIST OF PREPARERS

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Reply To: 2770

Date: [illegible] 1995

Ms. Lois D. Cashell
Secretary
Federal Energy Regulatory Commission
825 North Capitol Street, NE
Washington, DC 20426

Dear Ms. Cashell:

This is our response to your letter requesting comments on the application for license of the Black Bear Lake Hydroelectric Project (Project No. 10440-001-Alaska) filed by Alaska Power and Telephone Company.

The Alaska Region, USDA Forest Service wishes to participate fully in the National Environmental Policy Act (NEPA) process for the Black Bear Lake project. To do so requires that we be designated a cooperating agency, as provided for at 40 CFR 1501.6. We also recognize the Federal Energy Regulatory Commission (FERC) as the lead agency.

The following comments and conditions comprise the report of the Secretary of Agriculture in accordance with section 4(e) of the Federal Power Act. Please note that we consider these conditions and stipulations to be preliminary. We may require additional stipulations after participating as a cooperating agency in the NEPA process.

This project does not conflict with any project of which we are aware that should be or has been constructed by the United States. It neither interferes with nor is inconsistent with the purposes for which the Tongass National Forest was created or acquired. We have no objection to a license being issued, subject to certain conditions necessary for the protection and utilization of National Forest System lands and resources affected by the project. We will issue a special-use authorization for the project if it is licensed by FERC.

Enclosure I contains comments on the application.

Enclosure II contains conditions, in the form of articles to be included in the license, necessary for protection and utilization of affected National Forest System lands. The conditions are based on the Forest Service review of the application, coordination with other Federal and State agencies, and consultation with the applicant. The Secretary of Agriculture considers these conditions necessary to avoid or mitigate resource and environmental impacts caused by proposed project operations.

Enclosure III is a copy of our Decision Memo.

Enclosure IV contains a copy of the special-use authorization we would anticipate issuing, should FERC license the project.

Sincerely,

James A Wolfe

MICHAEL A. BARTON
for Regional Forester

Enclosures 4

cc:
Alaska Power and Telephone Co.

Enclosure II

LICENSE CONDITIONS NECESSARY FOR PROTECTION AND UTILIZATION OF THE TONGASS NATIONAL FOREST IN CONNECTION WITH THE APPLICATION FOR LICENSE PROJECT NO. 10440-001-AK

I. GENERAL

License articles contained in the Commission's Standard Form L-2 (revised October 1975) issued by Order No. 540, dated October 31, 1975, cover general requirements that the Secretary of Agriculture, acting by and through the Forest Service, considers necessary for adequate protection and utilization of the land and resources of the Tongass National Forest. For the purposes of section 4(e) of the Federal Power Act (16 U.S.C. 797(e)), the purposes for which National Forest System (NFS) lands were created or acquired shall be the protection and utilization of 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 NFS 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 Forest Plans prepared in accordance with the National Forest Management Act. Therefore, pursuant to said section 4(e) of the Federal Power Act, the following conditions covering specific requirements for protection and utilization of NFS lands shall also be included in any license issued.

II. STANDARD FOREST SERVICE PROVISIONS

Condition No. 1 - Requirement to Obtain a Forest Service Special-Use Authorization.

Within 6 months following the date of issuance of this license and before starting any activities the Forest Service determines to be of a land-disturbing nature, the Licensee shall obtain from the Forest Service a special-use authorization for the occupancy and use of NFS lands, and shall file that authorization with the Director, Office of Hydropower Licensing.

The Licensee may commence land-disturbing activities authorized by the license and special-use authorization 60 days following the filing date of such authorization, unless the Director, Office of Hydropower Licensing, prescribes a different commencement schedule.

Notwithstanding the authorizations granted under the Federal Power Act, NFS lands within the project boundaries shall be managed by the Forest Service under the laws, rules, and regulations applicable to the NFS. 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 NFS. The violation of such terms and conditions also shall be subject to applicable sanctions and enforcement procedures of the Commission at the request of the Forest Service. 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 on matters which the Forest Service deems to affect NFS resources.

Condition No. 2 - Forest Service Approval of Final Design

Before any construction of the project occurs on NFS land, the Licensee shall obtain the prior written approval of the Forest Service for all final design plans for project components which the Forest Service deems as affecting or potentially affecting National Forest System resources. The Licensee shall follow the schedules and procedures for design review and approval specified in the Forest Service special-use authorization. As part of such prior written approval, the Forest Service may require adjustments in final plans and facility locations to preclude or mitigate impacts and to assure that the project is compatible with on-the-ground conditions. Should such necessary adjustments be deemed by the Forest Service, the Commission, or the Licensee to be 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 of the Secretary of Agriculture made pursuant to section 4(e) of the Federal Power Act.

Condition No. 3 - Approval of Changes After Initial Construction

Notwithstanding any Commission approval or license provisions to make changes to the project, the Licensee shall get written approval from the Forest Service prior to making any changes in the location of any constructed project features or facilities, or in the uses of project lands and waters, or any departure from the requirements of any approved exhibits filed with the Commission. Following receipt of such approval from the Forest Service, and at least 60 days prior to initiating any such changes or departure, 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 an exact copy of this report with the Forest Service at the same time it is filed with the Commission. This article does not relieve the Licensee from the amendment or other requirements of Article 2 or Article 3 of this License.

Condition No. 4 - Consultation

Each year during the 60 days preceding the anniversary date of the license, the Licensee shall consult with the Forest Service with regard to measures needed to ensure protection and development of the natural resource values of the project area. 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 Commission reserves the right, after notice and opportunity for hearing, to require changes in the project and its operation that may be necessary to accomplish natural resource protection.

III. OTHER FOREST SERVICE PROVISIONS

A. PUBLIC ACCESS

Condition No. 5 - Access to Area

The Licensee shall insure that the public easement over the existing road from section 24, T.72 S., R.81 E., CRM, southeasterly to public land in T.73 S., R.83 E. CRM remains available and open for public use.

Condition No. 6 - Public Access Plan

Within 1 year following the date of issuance of this license and before starting any activities the Forest Service determines to be of a land-disturbing nature on NFS land, the Licensee shall file with the Director, Office of Hydropower Licensing, a plan approved by the Forest Service describing how the Licensee will work with other landowners in the project area to ensure that public access to the area is not curtailed.

B. RECREATION RESOURCE MANAGEMENT

Condition No. 7 - Floating Dock

The Licensee shall construct and maintain a dock with a floating finger/ramp, suitable for mooring a 8 ft. skiff. The floating section of the dock will be designed so that the skiff does not ground at any drawdown stage. The dock will be located as close as possible to Black Bear cabin. The designs will be mutually agreed to by the Licensee and the Forest Service before any construction of the structure takes place.

Condition No. 8 - Trail to Black Bear Lake Cabin

The Licensee shall construct and maintain a trail on the reserved public access easement from the end of an existing logging road near Black Lake to the Forest Service recreation cabin on Black Bear Lake. Location and design features of this trail will be mutually agreed to by the Licensee and the Forest Service before any construction takes place.

Condition No. 9 - Restriction on Draw Down.

The Licensee shall be restricted from drawing the lake down between June 1 and September 15, the period of highest recreational use.

Condition No. 10 - Project Recreation Plan

Within 1 year following the date of issuance of this license and before starting any activities the Forest Service determines to be of a land-disturbing nature on NFS land, the Licensee shall file with the Director, Office of Hydropower Licensing, a plan approved by the Forest Service for construction and maintenance of the above required recreation facilities and for the accommodation of any project-induced recreation. Specifically, the plan will address the construction and maintenance of the floating dock, and the construction and maintenance of the access trail to the Black Bear Lake cabin.

The Licensee shall not commence activities the Forest Service determines to be affected by the plan until after 60 days following the filing date, unless the Director, Office of Hydropower Licensing, prescribes a different commencement schedule.

C. RESERVOIR OPERATION

Condition No. 11 - Reservoir Operation Plan

Within 1 year following the date of issuance of this license and before starting any activities the Forest Service determines to be of a land-disturbing nature on NFS land, the Licensee shall file with the Director, Office of Hydropower Licensing, a plan, approved by the Forest Service, for the operation and maintenance of the reservoir. The plan must address at least the following: water storage and releases, including storage limitations (if any), dates and/or criteria for filling and release; procedures for flood conditions; erosion prevention in the reservoir area and spillway channel; and trash and debris removal. The plan must include an implementation schedule and maintenance program.

The Licensee shall not commence activities the Forest Service determines to be affected by the plan until after 60 days following the filing date, unless the Director, Office of Hydropower Licensing, prescribes a different commencement schedule.

Condition No. 12 - Erosion Control Plan

Within 1 year following the date of issuance of this license and before starting any activities the Forest Service determines to be of a land-disturbing nature on NFS land, the Licensee shall file with the Director, Office of Hydropower Licensing, a plan approved by the Forest Service for the control of erosion, and soil mass movement.

The Licensee shall not commence activities the Forest Service determines to be affected by the plan until after 60 days following the filing date, unless the Director, Office of Hydropower Licensing, prescribes a different commencement schedule.

Condition No. 13 - Solid Waste and Waste Water Plan

Within 1 year following the date of issuance of this license and before starting any activities the Forest Service determines to be of a land-disturbing nature on NFS land, the Licensee shall file with the Director, Office of Hydropower Licensing, a plan, approved by the Forest Service, for the treatment and disposal of solid waste and waste water generated during construction and operation of the project. At a minimum, the plan must address the estimated quantity of solid waste and waste water generated each day; the location of disposal sites and methods of treatment; implementation schedule; areas available for disposal of wastes; design of facilities; comparisons between on and off site disposal; and maintenance programs.

The Licensee shall not commence activities the Forest Service determines to be affected by the plan until after 60 days following the filing date, unless the Director, Office of Hydropower Licensing, prescribes a different commencement schedule.

Condition No. 14 - Hazardous Substances Plan

Within 1 year following the date of issuance of this license and at least 60 days before starting any activities the Forest Service determines to be of a land-disturbing nature on NFS land, the Licensee shall file with the Director, Office of Hydropower Licensing, a plan approved by the Forest Service for oil and hazardous substances storage and spill prevention and cleanup.

At a minimum, the plan must require the Licensee to (1) maintain in the project area, a cache of spill cleanup equipment suitable to contain any spill from the project; (2) to periodically inform the Forest Service of the location of the spill cleanup equipment on NFS lands and of the location, type, and quantity of oil and hazardous substances stored in the project area; and (3) to inform the Forest Service immediately of the nature, time, date, location, and action taken for any spill.

The Licensee shall not commence activities the Forest Service determines to be affected by the plan until after 60 days following the filing date, unless the Director, Office of Hydropower Licensing, prescribes a different commencement schedule.

E. AESTHETICS

Condition No. 15 - Visual Resource Protection Plan

Within 1 year following the date of issuance of this license and before starting any activities the Forest Service determines to be of a land-disturbing nature on NFS land, the Licensee shall file with the Director, Office of Hydropower Licensing, a plan approved by the Forest Service for the design and construction of the transmission lines, corridors and trail in order to preserve or enhance its visual character.

The Licensee shall not commence activities the Forest Service determines to be affected by the plan until after 60 days following the filing date, unless the Director, Office of Hydropower Licensing, prescribes a different commencement schedule.

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APPENDIX G

ARTICLE 404

RAINBOW TROUT MITIGATION

On March 17, 2004, FERC States that the requirements for Rainbow Trout Mitigation under Article 404 have been satisfied and no further studies are needed; *FERC Accession No. 20040324-0145*.

APPENDIX H

SALMONID MONITORING DISCONTINUED

UNITED STATES OF AMERICA 110 FERC ¶ 62, 157
FEDERAL ENERGY REGULATORY COMMISSION

BBL Hydro, Inc. Project No. 10440-092--Alaska

ORDER APPROVING DISCONTINUATION OF SALMONID MONITORING UNDER THE AUGUST 18, 1995 ORDER[1]

(Issued February 18, 2005)

On December 13, 2004, BBL Hydro, Inc. (licensee) filed a request to discontinue salmonid monitoring in Black Bear Creek below the powerhouse for the Black Bear Lake Project. The project is located on Black Bear Lake and Black Bear Creek on Prince of Wales Island in southeast Alaska.

BACKGROUND

Under the "Order Modifying and Approving Streamflow Gaging Plan" issued August 18, 1995, the licensee's proposal was approved to monitor the distribution of spawning salmonids annually until the project has operated at full capacity for five years. In lieu of installing a streamflow gage downstream of the project powerhouse the licensee proposed to monitor salmonid distribution as part of its streamflow gaging plan. This proposed salmonid monitoring was concurred on by the U.S. Fish and Wildlife Service (FWS) and the Alaska Department of Fish and Game (ADFG).

The licensee is requesting relief from salmonid monitoring because of the danger posed to monitoring staff from black bears that feed on the salmon in Black Bear Creek. The licensee states that two people are required to conduct the monitoring for safety as there have been occasions when aggressive black bears have prevented the completion of salmonid monitoring. Further, the licensee adds that conducting the monitoring is expensive, and that it has completed the required monitoring.

The licensee's filing includes monitoring data for salmonids collected since 1998; the licensee states that this information shows that the habitat in Black Bear Creek has not changed significantly since the project started operation in 1996. The licensee's data shows that counts for chum, sockeye and coho salmon peaked in 2000. Since 2000 coho numbers have declined, but counts of chum salmon have stabilized while sockeye counts have increased every year since 2000. Counts of pink salmon have shown the greatest increase since monitoring began.

[1] 72 FERC 62,154 (1995)

The licensee states that project operation has provided more stable flows during the summer with the exception of a drought year (2003) and as result habitat has improved. The licensee adds that changing ocean productivity and climatic conditions have some effect on habitat productivity in Black Bear Creek.

RESOURCE AGENCY CONSULTATION

By letter dated June 15, 2004, the licensee requested comments from the FWS, ADFG, National Marine Fisheries Service (NMFS), and the Alaska Department of Natural Resources (ADNR). The NMFS, ADFG, and FWS responded by letters dated August 17, 2004, August 20, 2004, and August 24, 2004, respectively. The ADNR did not comment.

The responding resource agencies commented as follows. The FWS stated it had no objection to elimination of the requirement to monitor the distribution of spawning salmonids. The NMFS commented that the licensee's monitoring data had some omissions, there were no measurements of water visibility, a description of how observer bias was minimized should have been included with the monitoring data, and peak escapement should be calculated instead of total escapement. However, NMFS added that the licensee's monitoring data did not show any trend in salmonid spawning numbers that could be linked to operations of the Black Bear Lake Project. Therefore, NMFS supported the licensee's request to discontinue the annual monitoring of spawning salmonids in Black Bear Creek. The NMFS did suggest that the licensee retain a consultant to be available on as needed basis to document and remedy the effects of any emergency on the fishery resources in Black Bear Creek. The ADFG's comments were similar to those of NMFS; the ADFG supported the licensee's request to discontinue salmonid monitoring.

DISCUSSION AND CONCLUSIONS

The NMFS and the ADFG comment that the licensee should retain a consultant on an as needed basis to document and evaluate ongoing and potential impacts to salmonids as result of any emergencies. Paragraph (C) of the "Order Modifying and Approving Streamflow Gaging Plan" issued August 18, 1995, requires the licensee to file with the Commission a report on a minimum flow deficiency within 30 days of the incident. In this report the licensee is required to include an analysis of any adverse environmental impacts resulting from the incident which would include impacts to salmonids in Black Bear Creek. Therefore, it is expected that the licensee would employ a biologist to conduct this environmental analysis.

The licensee's request to discontinue the monitoring of spawning salmonids in Black Bear Creek is based largely on concerns for the safety of personnel conducting the surveys. Black bears feed on spawning salmonids in Black Bear Creek and since the project was constructed thick growths of alder now line the banks of the creek thus creating a potentially dangerous situation to monitoring personnel. The licensee has been using two people to conduct the monitoring surveys due to the concerns about aggressive black bears which have on occasion prevented the completion of the surveys. Further, the licensee's monitoring data collected since 1998 as the ADFG points out does not show any downward trend in salmonid spawning numbers. Factors occurring outside the Black Bear Creek basin influence salmonid survival and thus contribute some uncertainty in how much of an effect operation of the project is having on the salmonid runs in Black Bear Creek. Therefore, the licensee's request to discontinue the monitoring of spawning salmonids in Black Bear Creek should be approved.

The Director orders:

(A) The request filed December 13, 2004, by BBL Hydro, Inc. to discontinue the monitoring of spawning salmonids in Black Bear Creek is approved.

(B) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 CFR 385.713.

George H. Taylor
Chief, Biological Resources Branch
Division of Hydropower Administration
and Compliance

APPENDIX I

ARTICLE 402

WATER TEMPERATURE MONITORING

DISCONTINUED

FEDERAL ENERGY REGULATORY COMMISSION
Washington, D. C. 20426

OFFICE OF ENERGY PROJECTS

Project No. 10440-069--Alaska
Black Bear Lake Project
Alaska Power & Telephone Company

OCT 23 2001

Mr. Glen Martin
Compliance Manager
Alaska Power & Telephone Company
191 Otto Street
Port Townsend, WA 98368

Subject: Final Monitoring Report Pursuant to August 18, 1995 Order

Dear Mr. Martin:

We have received the final temperature monitoring report filed on August 15, 2001, for the Black Bear Lake Project. This report was filed pursuant to paragraph (B) of the "Order Modifying and Approving Water Temperature Monitoring Plan" issued August 18, 1995. Paragraph (B) requires the filing of a report upon completion of the 5-year long water temperature monitoring program approved by the subject order. Further, if results of the monitoring indicate that changes in project operation are necessary to ensure maintenance of state water temperature standards, you are required to file for Commission approval, measures to offset project effects on water temperature. If there are unresolved temperature concerns, then you are required to file for Commission approval recommendations, developed in consultation with the resource agencies on the need to continue the water temperature monitoring. Your filing includes documentation that you provided the report to the resource agencies for comments.

Data summarized in your report indicates that water temperatures during project operation were on average less than pre-project averages but within the range of pre-project temperatures. You conclude that there has not been a significant change in water temperatures during the first 5 years of project operation and that further monitoring should be discontinued. No resource agencies responded to your request for comments on the report.

Your report satisfies the requirements of paragraph (B) of the August 18, 1995 order. We concur that no further water temperature monitoring is necessary, however, please be advised that should conditions change regarding project operations you may be requested to resume water temperature monitoring.

020128-0223-3

FERC DOCKETED

Thank you for your cooperation. If you have any questions regarding this letter, please contact John K. Novak at (202) 219-2828.

Sincerely,

George H. Taylor
Chief, Biological Resources Branch
Division of Hydropower Administration
and Compliance

APPENDIX J

ARTICLE 411

SPOTTED FROG MONITORING

DISCONTINUED

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Alaska Power & Telephone Co. — Project No. 10440-005
Alaska

ORDER APPROVING ANNUAL MONITORING PLAN FOR SPOTTED FROGS

(Issued March 16, 1994)

On February 16, 1994, Alaska Power & Telephone Co. (licensee) filed the results of a pre-construction survey for spotted frogs (Rana pretiosa), pursuant to Article 411 of the license for the Black Bear Lake Hydroelectric Project. Article 411 requires the licensee to file the results of a pre-construction survey as well as a protection plan and an annual monitoring plan with the Commission, along with the comments of the Alaska Department of Fish and Game, the U.S. Fish and Wildlife Service (FWS), and the U.S. Forest Service (FS).

In a pre-construction survey, no spotted frogs, tadpoles, or egg-masses were observed or heard. The study also indicated that, based on the best available literature, no spotted frogs have been observed on Prince of Wales Island.

Both FWS and the FS had no comments or suggestions as a result of the study according to letters dated January 4, 1994 and February 4, 1994, respectively.

Because no spotted frogs were found in the project area, further protection plans and monitoring plans are not required at this time.

The licensee's pre-construction survey for spotted frogs satisfies the requirements of Article 411. Implementation of this plan will provide adequate protection of spotted frogs in the project area; this plan should be approved.

The Director orders:

(A) The pre-construction survey for spotted frogs filed on February 16, 1994, pursuant to Article 411, is approved.

(B) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this order, pursuant to 18 CFR § 385.713.

J. Mark Robinson
Director, Division of Project
Compliance and Administration

APPENDIX K

ARTICLES 107, 108, 109, AND 413

RECREATION PLAN

UNITED STATES OF AMERICA 116 FERC ¶62,018
FEDERAL ENERGY REGULATORY COMMISSION

BBL Hydro, Inc. Project No. 10440-096

ORDER DELETING ARTICLES 107, 108, 109 AND 413

(Issued July 10, 2006)

On February 27, 2006, BBL Hydro, Inc. (licensee) filed a request to amend the license for the Black Bear Project No. 10440[1] to delete articles 107, 108, 109, and 413. The licensee states that its request is to reflect changes in the recreation mitigation requested by the Forest Service (FS). The Black Bear Project is located on Black Bear Lake, in the First Judicial District on Prince Wales Island, Alaska. The project partially occupies lands of the U.S. within the Tongass National Forest.

Article 107 requires the licensee to construct and maintain a barrier free dock with a floating finger/ramp, with the designs mutually agreed to by the licensee and the FS. Article 108 requires the licensee to construct and maintain a trail that begins at the end of the FS reserved access easement to the cabin site. Location and design features of this trail are to be mutually agreed to by the licensee and the FS before any construction takes place. Article 109 requires the licensee to file with the Commission a plan, approved by the FS, for construction and maintenance of the above required recreation facilities and for the accommodation of any project-induced recreation. Article 413 requires the licensee to file the recreation plan described in Article 109 with the Commission for approval.

The licensee states that it entered into a cost collection agreement with the FS in which they were to provide a one-time lump sum payment of $200,000 towards the purchase and construction of a cabin approved by the FS. This is a one-time settlement for mitigating the impacts to recreation in the Black Bear Lake project area. According to a February 14, 2006, letter, the FS concurs with deleting these articles and states that the funding for the off-site cabin addresses recreation resource mitigation for the Black Bear Project. The FS letter also states that a payment of $200,000 was received into the FS account, spending of the money was approved as of January 5, 2006, and that the agreement has, therefore, been fulfilled.

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[1] 65 FERC ¶62,122 (November 9, 1993).

The licensee's request to delete articles 107, 108, 109, and 413 reflects changes in mitigation for recreation resources at the Black Bear Project that were requested and agreed to by the FS. The licensee provided documentation that the cost collection agreement to provide $200,000 for the purchase and construction of a cabin, to be located outside of the project area, has been met. Therefore, recreation mitigation for the project has been satisfied, and articles 107, 108, 109, and 413 are no longer necessary. The licensee's request to delete articles 107, 108, 109, and 413 should be approved.

The Director orders:

(A) The licensee's request to amend the license for the Black Bear Project No. 10440 to delete articles 107, 108, 109, and 413, filed February 27, 2006, is approved.

(B) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of this order, pursuant to 18 C.F.R. §385.713.

John E. Estep
Chief, Land Resources Branch
Division of Hydropower
Administration and Compliance

APPENDIX L

FERC FORM 80

EXEMPTION

FEDERAL ENERGY REGULATORY COMMISSION
Washington, D. C. 20426

OFFICE OF ENERGY PROJECTS

Project No. 10440-104—Washington
Black Bear Lake Hydroelectric Project
Alaska Power & Telephone Company

April 7, 2008

Mr. Glen D. Martin
Alaska Power & Telephone Company
Post Office Box 3222
Port Townsend, WA 98368

Subject: Form 80 exemption

Dear Mr. Martin:

This is in response to your January 22, 2008 filing regarding the FERC Form 80. Your filing requests exemption from future filing of the FERC Form 80.

Commission staff has reviewed the project files, including the project license and applicable inspection reports. Available information indicates that there is little recreation potential at the above referenced project. Therefore, in accordance with section 8.11(c) of the Commission's regulations, you are exempted from filing the Form 80 for this project until further order of the Commission. If you have any questions, please contact me at 202-502-8674.

Sincerely,

Shana C. High

Shana C. High
Outdoor Recreation Planner
Division of Hydropower
Administration and Compliance