October 25, 2010

Kimberly Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: Review of Notice of Intent to File License Application, Filing of Pre-Application Document (PAD); and Approving Use of ALP; Sweetheart Lake Hydroelectric Project; FERC No. 13563-001

Dear Ms. Bose:

The U.S. Fish and Wildlife Service (FWS) has reviewed Juneau Hydropower’s Notice of Intent to File License Application and Pre-Application Document (PAD) for the proposed Sweetheart Lake hydroelectric project (FERC No. 13563-001). The project, which would be located approximately 35 miles southeast of Juneau, Alaska, would include a concrete and rock-faced dam approximately 500 feet long and 90 feet high at the outlet Lower Sweetheart Lake. Water would be conveyed 1,650 feet through a 9-foot diameter penstock to a 30-megawatt powerhouse. Tailrace flows would be returned to lower Sweetheart Creek. A 138-kilovolt transmission line would carry generated power to an existing transmission line associated with nearby Snettisham Hydroelectric Project by either 8.9 miles of overhead transmission line or 0.4 miles of overhead line and 8.0 miles of submarine cable (PAD, pages 5 and 10). The PAD identifies issues and briefly describes how each issue would be addressed. Below we offer additional information on several of the issues discussed, and recommend approaches that would minimize impacts to fish and wildlife resources.

Endangered and Threatened Species

The Notice of Intent requests initiation of informal consultation with the FWS under section 7 of the Endangered Species Act. There are no formally-listed species under the jurisdiction of the FWS within the project area. Two candidates for listing as threatened or endangered may be present. Kittlitz’s murrelet (Brachyramphus brevirostris) and Yellow-billed loon (Gavia adamsii) may use marine waters seasonally within the project area.
Kittlitz’s murrelet is a seabird that uses marine waters from Thomas Bay near Petersburg, north through coastal western Alaska. This species often feeds near tidewater glaciers and in areas affected by glacier streams and rivers, and typically nests in rocky, recently de-glaciated landscapes.

Yellow-billed loons are found throughout Southeast Alaska, especially during winter and during spring and fall migrations. Some non-breeding individuals may remain in Southeast Alaska during the summer.

As candidates, these species have no formal legal protection under the Endangered Species Act. Our recognition of the species as candidates, however, indicates that we are concerned about the viability of the species and believe that listing may be appropriate. We recommend, therefore, that you conduct no activities that would further compromise security of the species.

Please refer to consultation log number 71440-2011-SL-0005 in future correspondence concerning this consultation.

**Raptors**

Other species of concern in the project are include bald eagle (Haliaeetus leucocephalus) and Queen Charlotte goshawk (Accipiter gentilis laingi). Bald eagles are known to nest in the project area, and goshawks may. Either could be affected by project construction activities. Various migratory birds also use the project area seasonally.

Bald eagles, their eggs, and their nests are protected throughout the United States by the Bald and Golden Eagle Protection Act, and by the Migratory Bird Treaty Act. These federal laws forbid “take”, which is defined to include pursue, hunt, shoot, shoot at, poison, wound, kill, capture, trap, collect, possess, molest, or disturb.

Eagles can be sensitive to habitat alterations and disruptive activities near their nests, leading, in some cases, to nest abandonment, mortality of eggs or young, or destruction of a nest. To help landowners, developers, and others avoid such impacts, the U.S. Fish and Wildlife Service has developed guidelines for management of nest sites. Compliance with the guidelines is voluntary, not mandatory. Those who follow the guidelines reduce the risk of impacting eagles, and of violating the laws that protect these birds. Those who do not follow the guidelines increase the risk of impacts and of prosecution if “take” occurs. The National Bald Eagle Management Guidelines can be downloaded at:


In November, 2009, the Fish and Wildlife Service initiated a new program that provides for permits to disturb eagles and take nests in some circumstances. Additional information is available at our eagle permit website: http://alaska.fws.gov/eaglepermit/index.htm.
The FWS has conducted eagle nest surveys in the project area in the past (see attachment 1). Eagle nest locations change, however, as old nests deteriorate and new nests are constructed. Additional nests likely exist that were not detected in previous surveys. The attached map shows eagle nest tree locations in the Sweetheart Lake area that we are currently aware of. We recommend that the applicant update this information with a new eagle nest survey for the entire project area, including the alternative transmission line corridors. This will provide important information that will allow the applicant and FERC, working with FWS, to avoid and minimize impacts to nesting eagles, to the extent possible.

The Queen Charlotte goshawk is a large forest raptor that nests and hunts in mature and old growth forests throughout Southeast Alaska. The FWS has considered a petition to list the subspecies as threatened or endangered. Although we have concluded that listing is not necessary in Alaska, we have found listing appropriate for the British Columbia population. We recommend that forest habitat be protected around all goshawk nests, to minimize disturbance of nesting pairs and their young. The U.S. Forest Service has established standard goshawk nesting protocols that we recommend the applicant adopt for the Sweetheart Lake Hydroelectric Project. The entire project area, including potential transmission line corridors, should be surveyed. If goshawk nesting stands are detected, the project should be adjusted as necessary to avoid impacts to the birds and their nesting stands.

Other Migratory Birds

A winter survey conducted in 1997 by the FWS documented several species of migratory and shore birds in the estuary located southwest of the proposed power house site (Attachment 2). An evaluation of impacts of the project on migratory and shore birds and their habitats should be conducted. Project construction and operation should be designed to minimize impacts to these species.

Wetlands

Riparian and wetland habitats are of particular interest to the FWS because they support diverse and unique fish and wildlife species. A variety of wetland types would be inundated or otherwise affected by project construction and operation. Attachment 3 shows wetland types, as classified by the National Wetlands Inventory, in the project vicinity. These habitats are important to a wide variety of fish and wildlife. They also perform various additional watershed functions. All wetlands (as defined by US Army Corps of Engineers standards) occurring in the proposed construction areas, along the access road, and along the proposed transmission line corridor need to be mapped, including potentially affected wetlands adjacent to the project boundary. Functions and values of these wetlands should be evaluated and methods to avoid, minimize, and mitigate impacts should be incorporated into the proposed project design. Unavoidable impacts should be fully compensated by habitat conservation efforts or other means, such as in-lieu fees.
Anadromous and Resident Fish Habitat

The PAD briefly discusses anadromous and resident fish that use the Sweetheart Creek system. In addition to rainbow trout, we understand that there is also a resident Dolly Varden char population in Sweetheart Lake. Such fish populations can provide quality recreational opportunities that may be damaged or enhanced by hydropower development.

We recommend that the applicant identify all resident and anadromous species and characterize life stage timing in the project area; inventory and map stream habitats and determine how habitat would be affected by changing flows; identify and characterize existing and proposed fish passage barriers; and examine how project operations would affect instream flow conditions, including the amount of flow and water quality. Ramping of tailrace discharge associated with power house operation should be evaluated to predict the effects of project operations on habitat availability, quality, and use. Continuous stream flow gauging should be conducted in the anadromous reach for a minimum of five years to adequately characterize the stream flow in Sweetheart Creek and allow other methods of estimating long term stream flow. These data will allow for evaluation of alternatives that could reduce project impacts on fish populations. Stream flow data and habitat information in combination with detailed operation plans and ramping rates are necessary to design adequate in-stream flow requirements for the anadromous reach.

A preliminary evaluation of stream channel types, based on Forest Service GIS data, indicates that much of the best spawning habitat for resident rainbow trout and Dolly Varden char in Sweetheart Lake would likely be inundated by elevation of the lake surface to 629 feet as proposed. Attachment 4 illustrates that essentially all of the accessible flood-plain channel type and most of the alluvial-fan and moderate-mixed channel types lie below 600 feet, and would be inundated by project operations. These channel types often provide important spawning habitat, while steeper, typically rockier reaches usually offer little or none.

We recommend that the applicant conduct on-site studies to document location and extent of spawning habitat for trout and char populations in Sweetheart Lake. Project alternatives that would reduce impacts to this critical habitat should be investigated. If impacts are unavoidable, we recommend that mitigation focus on providing spawning habitat for the resident trout and char populations in Sweetheart Lake or elsewhere.

Section 10(j) of the Federal Power Act (FPA) authorizes the FWS to recommend license conditions necessary to protect, mitigate damage to, and enhance fish and wildlife habitat affected by the project. Pursuant to Section 18 of the FPA, any license is subject to mandatory conditions as prescribed by the Secretary of the Interior or of Commerce to provide fishway prescriptions within the project affected area. JHI should identify fish passage, protection, and enhancement needs in the project affected reaches. The FWS may recommend that: (1) fish protection facilities be provided at the diversions and turbines, and (2) fish passage be provided for upstream and downstream migration of fish at any project dam on the Sweetheart Lake system. Access to spawning areas upstream of Sweetheart Lake may also be required.
Climate Change

The effects of predicted climate change should be considered in project design and operation. For example, changes in seasonal hydrographs should be modeled to help understand how increased precipitation in the form of rain, and decreased storage of precipitation in snow and glacial ice will affect project operations and resources such as fish that depend on water in the Sweetheart Lake system.

We appreciate the opportunity to provide these comments on the Notice of Intent to File License Application, and Filing of Pre-Application Document (PAD) for the Sweetheart Lake Hydroelectric Project No. 13563-001. Please contact Mr. Richard Enriquez of our Juneau Fish and Wildlife Field Office at (907) 780-1162 or email at Richard.Enriquez@fws.gov if you have any questions regarding our comments.

Sincerely,

[Signature]

for Bill Hanson
Field Supervisor

Attachments (4)

cc: Vijai N. Rai, OEPC, Washington, DC
    REO, ANC
    Fran Mann, FWS, Anchorage, AK
    Sue Walker, NOAA, Juneau
    Marti Marshall, Admiralty Island National Monument
    Shawn Johnson, ADF&G, Douglas
Attachment 1. Bald Eagle nests in the vicinity of the Sweetheart Lake Hydroelectric Project.

**Legend**
- • 2003 Eagle Nest Survey
- • 1979 Eagle Nest Survey
- □ 330 Foot Recommended Buffer
- □ 660 Foot Recommended Buffer
- □ 1/2 Mile Recommended Blast Buffer

The eagle nest locations have not been surveyed since 2003 or 1979, as designated by the different colored markers in the legend. A breeding Eagle pair can have up to a 5% variance in nest location per year. Would recommend a new eagle nest survey be completed for the intended area of construction.
Attachment 2. Migratory bird species observed in the Sweetheart Creek vicinity during winter bird surveys in 1997.

**Sweetheart Flats—USFWS Winter Bird Survey; Feb 26, 1997**

![Map of Sweetheart Flats with bird species markers](image)

**Sweetheart Flats Bird Species surveyed**
- Bufflehead
- Gull
- Canada Goose
- Mallard
- Goldeneye
- Swan

Legend:
- Proposed Road and Dock Area
- Proposed Powerhouse Area

Scale: 1 Mile
Attachment 3. Wetlands in the vicinity of upper Sweetheart Lake and Sweetheart Flats below the lake.

Sweetheart Lake—Wetlands, northeast portion

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600' Elevation contour
Sweetheart Flats

Proposed Road and Dock Area
Proposed Powerhouse Area

*Sweetheart Flats Wetland types*
- E2US/AB1N—Estuarine Intertidal Unconsolidated Shore/ Aquatic Bed, Algal, Regularly flooded
- E2EM1N—Estuarine [saltwater] intertidal areas, vegetated with erect herbs, and regularly flooded by tidal waters
- E2EM1P—Estuarine Intertidal emergent persistent irregularly flooded
Attachment 4. Stream channel types in the vicinity of Sweetheart Lake