

Kenai Hydro, LLC
2525 C Street, Suite 500
Anchorage, AK 99503

June 30, 2008

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

**Revised Preliminary Permit Application for Kenai Hydro, LLC - Ptarmigan Lake /
Creek Project (FERC No. 13210-000)**

Dear Secretary Bose:

Kenai Hydro, LLC is submitting a revised application for a preliminary permit for the Ptarmigan Lake / Creek Project, which would be located on Ptarmigan Creek, which drains Ptarmigan Lake, in south-central Alaska near the town of Crown Point. As stated in its May 21, 2008 memorandum, FERC found Kenai Hydro's initial preliminary permit application for the proposed project, filed on April 23, 2008, to be deficient.

The application has been revised to include the information identified by FERC in its notice of deficiency. This includes additional information regarding the proposed dam and penstock; the estimated area, capacity, and elevation of the proposed reservoir; the estimated average annual energy output and expected number of generating units; and list of all cities, towns, or subdivisions (with 5,000 people or more) within 15 miles of the proposed project.

Sincerely:

Steve Gilbert
Manager
6921 Howard Avenue
Anchorage, AK 99504
(907) 333-0810

cc:

Regional Director
Portland Regional Office
Federal Energy Regulatory Commission
101 S. W. Main Street
Suite 905
Portland, OR 97204

Kenai Hydro, LLC
2525 C Street, Suite 500
Anchorage, AK 99503

Alaska State Director
Bureau of Land Management
Division of Lands and Renewable Resources (AK932)
Attn: FERC Withdrawal Recordation
222 West 7th Avenue
Number 13
Anchorage, AK 99513-7599

Kenai Hydro, LLC
2525 C Street, Suite 500
Anchorage, AK 99503

LIST OF POTENTIALLY AFFECTED ENTITIES AND INTERESTED PARTIES

Alaska Center for the Environment
807 G Street, Suite 100
Anchorage, AK 99501

Alaska Conservation Foundation
441 W. 5th Ave, #402
Anchorage, AK 99501-2340

Alaska Department of Environmental
Conservation
555 Cordova Street
Anchorage, AK 99501

Alaska Department of Fish and Game
Director, Sport Fish Division
P.O. Box 25526
Juneau, AK 99802-5526

Alaska Department of Natural Resources
Director, Division of Mining, Land, and
Water
550 W. 13th Ave., Suite 1070
Anchorage, Alaska 99501

Alaska Department of Natural Resources
State Historic Preservation Office
550 w. 7th Avenue, Suite 1310
Anchorage, Alaska 99507-3565

Alaska Fly Fishers
200 W. 34th Avenue #1233
Anchorage, AK 99503

American Rivers
1025 Vermont Ave NW, #720
Washington, DC 20005

Anchorage Fish & Game Advisory
Committee
P.O. Box 90386
Anchorage, AK 99509

Anchorage Fish and Wildlife Field
Office
605 W. 4th Ave., Room G-61
Anchorage, AK 99501

CIRI (Cook Inlet Region, Inc.)
P.O. Box 93330
Anchorage, AK 99509-3330

Cooper Landing
PO Box 809
Cooper Landing, AK 99572

Friends of Cooper Landing
P.O. Box 815
Cooper Landing, AK 99572

Robert Grimm
President and CEO & COO Operations
Alaska Power & Telephone Company
P.O. Box 3222
193 Otto Street
Port Townsend, WA 98368

Kenai Natives Association
215 Fidalgo Ave., Suite 101
Kenai, AK 99611-7776

Kenai Peninsula Borough
514 Funny River Road
Soldotna, AK 99669

Kenai River Center
514 Funny River Rd
Soldotna, AK 99669

Kenai River Special Management Area
Advisory Board
P.O. Box 1247
Soldotna, AK 99669

Kenai Hydro, LLC

2525 C Street, Suite 500
Anchorage, AK 99503

Kenai River Sportfishing Association
P.O. Box
Soldotna, AK 99669

US Fish and Wildlife Service
Kenai River Special Management Area
P.O. Box 104
Soldotna, AK 99669

Kenai Watershed Forum
P.O. Box 2937
Soldotna, AK 99669

Kenaitze Indian Tribe
P.O. Box 988
Kenai, AK 996 1

National Marine Fisheries Service
700 W. 9th Street, P.O. Box 21668
Juneau, AK 99802-1 668

National Park Service, Rivers and Trails
Program
240 W. 5th Ave.
Anchorage, AK 99501

Salamatof Native Association, Inc.
P.O. Box 2682
Kenai, AK 99611-2682

Natural Heritage Institute
7511 Labrador Circle, Suite 100
Anchorage, AK 99502

Moose Pass Chamber of Commerce
P.O. Box 558
Moose Pass, AK 99631

Trout Unlimited, Alaska Council
P.O. Box 876675
Wasilla, AK 99687-6675

US Bureau of Land Management
6881 Abbott Loop Road
Anchorage, AK 99507

US Department of Interior
Office Environmental Policy
1689 C Street, Room 119
Anchorage, AK 99501-5126

US Environmental Protection Agency
514 Funny River Road
Soldotna, AK 99669

USDA Forest Service
Chugach National Forest
3301 C. Street, Suite 300
Anchorage, AK 99503

US Geological Survey
1209 Orca Street
Anchorage, AK 99501-4898

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2525 C Street, Suite 500
Anchorage, AK 99503

**BEFORE THE FEDERAL ENERGY REGULATORY COMMISSION
APPLICATION FOR PRELIMINARY PERMIT**

(1) Kenai Hydro, LLC applies to the Federal Energy Regulatory Commission (Commission) for a preliminary permit for the proposed Ptarmigan Lake / Creek Project, as described in the attached exhibits. This application is submitted so that the Applicant may acquire and maintain priority of application for a project license under Part I of the Federal Power Act, while obtaining data and performing tasks needed to determine the project's feasibility and to support an application for a license.

(2) The location of the proposed project is:

State or Territory: Alaska

County: Kenai Peninsula Borough

Township or nearby town: Crown Point

Stream or other body of water: Ptarmigan Lake, Ptarmigan Creek (see Exhibit 4 for location map)

(3) The exact name, business address, and telephone number of the applicant are:

Kenai Hydro, LLC
2525 C Street, Suite 500
Anchorage, AK 99503
(907) 333-0810

The exact name and business address of each person authorized to act as agent for the applicant in this application are:

Steve Gilbert
Manager
6921 Howard Avenue
Anchorage, AK 99504
(907) 333-0810

Brad Zubeck
Project Engineer
280 Airport Way
Kenai, AK 99611
(907) 335-6210

(4) Kenai Hydro, LLC is a limited liability company and is not claiming preference under section 7(a) of the Federal Power Act.

(5) The proposed term of the requested permit is 36 months.

(6) There is no existing dam or other project facility at the proposed project location.

EXHIBIT 1: PROJECT DESCRIPTION

Ptarmigan Lake, which is located at an elevation of approximately 800 ft MSL, flows into Ptarmigan Creek approximately 2.25 mi upstream of the Seward Highway, about 2.5 mi southeast of the town of Crown Point in Kenai Peninsula Borough, Alaska. The nearest major town is Seward, which is located approximately 26 miles south of Crown Point. There are no cities, towns, or subdivisions with population sizes of 5,000 or more within 15 miles of the proposed project.

The Ptarmigan Lake watershed is about 33 mi², and the lake has an approximate surface area of 815 ac. Ptarmigan Creek, which discharges into Kenai Lake, has an average annual flow of 111 cubic feet per second (cfs) (USGS Gage Number 15244000).

As part of an initial assessment, information gathering will be undertaken to evaluate the feasibility of constructing a dam at Ptarmigan Lake. The estimated specifications for the proposed project, as outlined in the following paragraphs, are based on the sources listed below and are biased toward a conservative appraisal of the resource capacity. All specifications identified herein should be considered provisional, and based on research in the field, Kenai Hydro, LLC reserves the right to modify any and all design parameters as appropriate or desired in the future.

- U.S. Army Corps of Engineers. 1981. *National Hydroelectric Power Resources Study: Regional Assessment: Alaska and Hawaii*, Volume XXIII.
- Idaho National Laboratory, Virtual Hydropower Prospector, Region 19, <http://hydropower.id.doe.gov/index.shtml>
- USGS Water Resources, <http://waterdata.usgs.gov/nwis>

The dam at Ptarmigan Lake, if constructed, would be built at the lake's outlet for the purpose of controlling outflow from the lake, and possibly to create or maintain storage capacity. The proposed project would have a siphon (or gravity feed) intake in Ptarmigan Lake, near the point at which it flows into Ptarmigan Creek. Water would be conveyed from the intake through a pipeline or penstock that would lead to a powerhouse. The powerhouse would be located near the bank of Ptarmigan Creek and would discharge into Ptarmigan Creek or Kenai Lake. The proposed project boundary for the Ptarmigan Lake / Creek Project is shown in Exhibit 4.

As noted above, Ptarmigan Lake has an estimated area of 815 ac and an approximate surface elevation of 755 ft. Storage capacity would vary with dam height, and whether or not a dam is constructed. If no dam is built, and assuming a drawdown capability of 10 ft, the storage capacity is estimated to be approximately 8,150 ac-ft.

If the proposed project involves construction of a dam, the dam would likely be about 10 ft high and 100 ft wide. The dam would likely be an earth-filled, concrete faced gravity-type structure, although it could possibly be a structural dam. The penstock, estimated to

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be 5 ft in diameter and extend approximately 3 miles to the powerhouse, would likely be constructed of high density polyethylene and/or steel.

The proposed project powerhouse would have a single turbine that would generate power with approximately 235 ft of head and have an anticipated generation capacity of about 4.0 MW. With an assumed nominal rating of 4.0 MW and a capacity factor of 0.40, the estimated average annual energy output for the proposed project would be 14,016 MWh/year. The powerhouse tailrace would be designed to carry the project flow to Ptarmigan Creek or Kenai Lake. The dimensions of the tailrace would be developed based on terrain and other pertinent information to be obtained during the study phase (see below).

The project would include 2 – 4 mi of new overhead transmission line employing one of two potential transmission options: 1) power generated at the powerhouse at low voltage would be transmitted to a remote transformer, where it would be converted to 115 kV and connected to the existing transmission grid or 2) power generated at the project would be transmitted directly to the grid from a step-up transformer near the powerhouse. The existing transmission line north of Lawing (Crown Point) is a 115 kV line. The conductor is a 556 “Dove.” The thermal rating for the line is 145 MVA, and the operating limit is 75MVA. South of Lawing, the transmission line is a 69kV 4/0 “Penguin” line with a 40MVA thermal limit.

The legal description and ownership of lands (ADNR 2006) within the proposed project boundary are provided in the table below. All land is referenced to the Seward Meridian. Unshaded rows pertain to the lake outlet and creek. Shaded rows include sections for the entire lakeshore.

Township	Range	Section	Ownership
4N	1E	South ½ of 19	State
4N	1E	South ½ of 20	USDA Forest Service
4N	1E	27	USDA Forest Service
4N	1E	28	USDA Forest Service
4N	1E	29	USDA Forest Service
4N	1E	30	State
4N	1E	31	USDA Forest Service
4N	1E	33	USDA Forest Service
4N	1E	34	USDA Forest Service
4N	1E	35	USDA Forest Service
4N	1W	25	Municipal
4N	1W	36	USDA Forest Service

The project in its final form will likely consist of a dam, pipeline/penstock, powerhouse, access road, and transmission lines. All improvements could potentially affect a combination of federal, state, and municipal lands. No portion of the potential project area has been designated as a Wilderness Area, recommended for designation as a

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Wilderness Area, or designated as Wilderness Study Area. No portion of the project area has been included in the Wild and Scenic River System.

Power from the project would be available to customers of Homer Electric Association and other areas served by the existing transmission grid. Power from the proposed project would be important to the citizens of the Kenai Peninsula and would be environmentally beneficial and cost effective as an alternative source of energy to offset fossil fuel generation. The power from the proposed project would reduce consumption of non-renewable carbon-based energy sources, thereby helping to improve air quality in Kenai Peninsula Borough.

Kenai Hydro, LLC will be the sole owners of property rights as the "Applicant."

EXHIBIT 2: PROPOSED STUDY PROGRAM

The study program, which would culminate in the filing of a License Application with the Commission, would be conducted according to the Commission's licensing regulations.

Potential Study Program Elements

Engineering and feasibility

- Hydrology
- Bathymetry
- Stream gauging
- Dam stability and soils tests and analysis
- Preliminary design, i.e., unit type and size
- Tunnel/pipeline alignment
- Evaluation of transmission line route
- Financial analysis

Environmental Studies

- Fish species composition
- Fish habitat assessment
- Rare, Threatened and Endangered (RTE) species inventory
- Vegetation
- Wildlife
- Recreation
- Cultural
- Aesthetics
- Project effects analysis

Stakeholder Consultation

The following entities are potential stakeholders (i.e., agencies, NGOs, Native Corporations, and communities) in the licensing process for the Ptarmigan Lake / Creek Project:

Alaska Center for the Environment

Alaska Conservation Foundation

Alaska Department of Environmental Conservation

Alaska Department of Fish and Game, Director, Sport Fish Division

Alaska Department of Natural Resources, Director, Division of Mining, Land, and Water

Alaska Department of Natural Resources, State Historic Preservation Office

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Alaska Fly Fishers
American Rivers
Anchorage Fish & Game Advisory Committee
Anchorage Fish and Wildlife Field Office
CIRI (Cook Inlet Region, Inc.)
Cooper Landing
Crown Point
Friends of Cooper Landing
Kenai Natives Association
Kenai Peninsula Borough
Kenai River Center
Kenai River Special Management Area Advisory Board
Kenai River Sportfishing Association
Kenai River Special Management Area
Kenai Watershed Forum
Kenaitze Indian Tribe
Lawing
Moose Pass
National Marine Fisheries Service
National Park Service, Rivers and Trails Program
Natural Heritage Institute
Salamatof Native Association, Inc.
Trout Unlimited, Alaska Council
US Bureau of Land Management
US Department of Interior
US Environmental Protection Agency
USDA Forest Service, Chugach National Forest
US Geological Survey

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Study Program Schedule

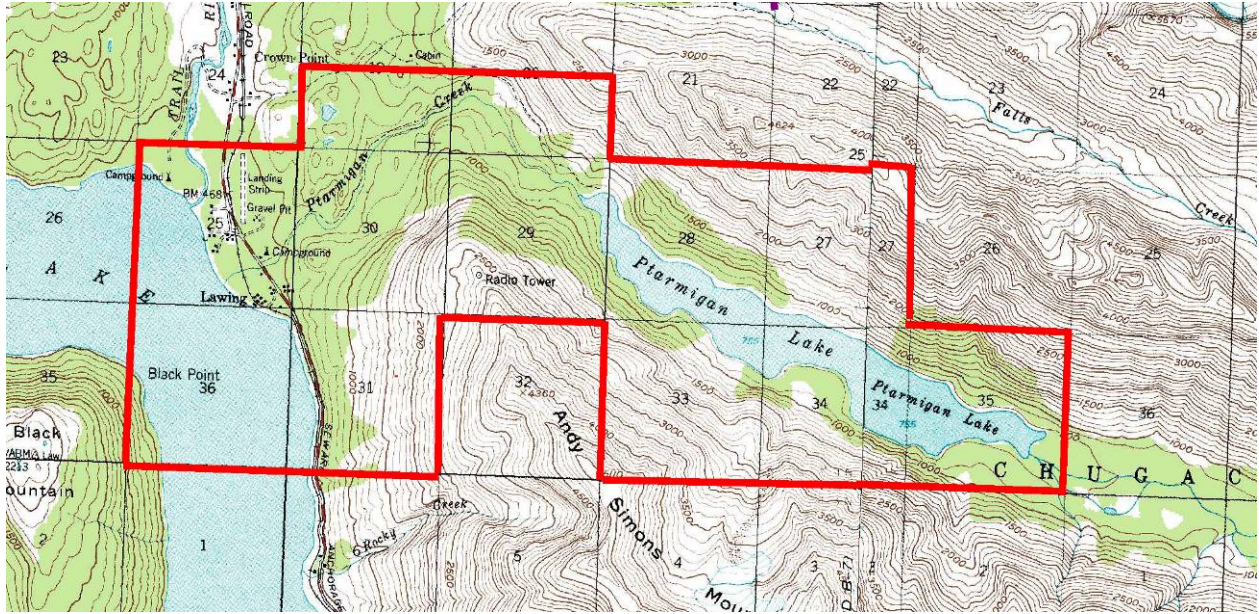
Study program element	2008			2009				2010				2011	
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Feasibility evaluation	X	X	X	X	X								
Initiate stakeholder consultation		X											
Prepare and file Pre-Application Document (PAD)			X										
FERC Scoping			X										
Proposed Study Plan (PSP)				X									
Revised Study Plan (RSP)					X								
Initiate field studies					X								
Complete field studies						X							
Additional data collection to augment Year 1 studies ¹									X	X			
Draft License Application											X		
File License Application													X
Preliminary Permit expires													X

¹ It is anticipated that the vast majority of fieldwork would be completed in 2009, with only small-scale supplementary data collection occurring in 2010 prior to filing of the PLP.

EXHIBIT 3: COSTS, FINANCING, AND MARKETING

- The estimated cost of conducting studies, investigations, tests, surveys, and mapping and developing plans and specifications for the proposed Ptarmigan Lake / Creek Project is \$500,000.
- Funds will be drawn from a combination of grant funding and internal financing.
- The power will be sold to Homer Electric Association.

EXHIBIT 4: MAP OF PROPOSED PROJECT AREA



Proposed Ptarmigan Lake / Creek Project boundary.

Kenai Hydro, LLC
2525 C Street, Suite 500
Anchorage, AK 99503

LITERATURE CITED

Alaska Department of Natural Resources, Land Records Information Section. 2006.
General Land Status, vector digital data. ADNR, LRIS: Anchorage, AK.

U.S. Army Corps of Engineers. 1981. *National Hydroelectric Power Resources Study:
Regional Assessment: Alaska and Hawaii*, Volume XXIII.

Idaho National Laboratory, Virtual Hydropower Prospector, Region 19,
<http://hydropower.id.doe.gov/index.shtml>

USGS Water Resources, <http://waterdata.usgs.gov/nwis>

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**THIS APPLICATION FOR A PRELIMINARY PERMIT FOR
PTARMIGAN LAKE / CREEK PROJECT
IS EXECUTED IN THE**

State of: Alaska

Borough of: Kenai Peninsula

by: Kenai Hydro, LLC, 2525 C Street, Suite 500, Anchorage, AK 99503

being duly sworn, deposes and says that the contents of this application are true to the best of his knowledge or belief

The undersigned applicant has signed the application this _____ day of _____ 2008.

Kenai Hydro, LLC

By: _____

Steve Gilbert (Manager)

Subscribed and sworn before me, a Notary Public of the State of Alaska, this _____ day of _____ 2008.

/SEAL/

(Notary Public in and of Alaska)

My Commission expires: _____