

Review of Application
for
**LIHI Certification of the
Boulder Creek Hydroelectric Project
Lake County, Montana**

**Prepared by
Fred Ayer, Executive Director**

Introduction and Overview

This report reviews the application submitted by S&K Holding Company Inc., (SKHC) to the Low Impact Hydropower Institute (LIHI) for Certification of the Boulder Hydroelectric Project in northwest Montana. The Project is within Lake County, and its entire drainage is within the Flathead Indian Reservation. The Project is located on Boulder Creek, which drains into Flathead Lake from the Mission Range of the Rocky Mountains. This facility is owned by the Confederated Salish and Kootenai Tribes, and is managed and operated by the SKHC, which is a for profit business development corporation, wholly owned by the Confederated Salish and Kootenai Tribes.

The Confederated Salish and Kootenai Tribes are comprised of the Bitterroot Salish, the Pend d'Oreille, and the Kootenai Tribes. In 1855, the Hellgate Treaty formed the Flathead Reservation and the Tribes were relocated to their current home. The Flathead Reservation contains 1.3 million acres but over 500 thousand acres passed out of Tribal or Tribal Member ownership with the advent of homesteading in the early 1900s. The Tribes are now located on the Flathead Reservation in Northwestern Montana and they are a federally recognized Tribe that is governed by Tribal Council.

In 1982, the Tribes built Boulder Hydro as a means of promoting economic development. SKHC was created in May 1992 under the laws and constitution of the Confederated Salish and Kootenai Tribes. The Tribal Council serves as the Shareholder for SKHC. A five member Board of Directors appointed biannually by the Shareholder provides direction. The mission statement of the company is:

Promote economic independence by maximizing economic opportunities for the Tribes and the Tribal Membership in a culturally appropriate manner.

SKHC was assigned management authority for Boulder Hydro in 1996 in order to provide operating revenues to support economic development initiatives. SKHC also operates a storage facility, a botanical business that sells products over the Internet. SKHC also provides technical assistance to Tribal Member entrepreneurs and Tribal Enterprises for business startups and support. SKHC owns several Tribal Enterprises that function as affiliate companies to SKHC. These are Sovereign Leasing and Finance, S & K Environmental Restoration, S & K Marina, and Flathead Lath and Dowel. The businesses help fulfill economic niches that help promote the economic development of the Tribes.

Project Description

The project operates under a Federal Energy Regulatory Commission (FERC) exemption (FERC # 7086) issued in 1984. The facility has an installed capacity of 350 KW. The facility was designed and developed for the Tribes between 1982 and 1984 and went online in December of 1984. The Bureau of Indian Affairs (BIA) on behalf of the Tribes provided oversight for the project.

Boulder Hydro Project is a run of river facility with a maximum flow of eight (8) cubic feet per second diverted to the powerhouse from the stream. The diversion creates an impoundment with a maximum of 0.15 acres surface area with a gross storage capacity of 0.30 acre-feet and a net storage capacity of 0.025 acre-feet. The diversion and intake area occupy 203.36 square feet. The entire penstock is buried under ground, while the powerhouse and tailrace occupy an area of 800 square feet. The number of acres contained in a 200-foot zone extending around the entire impoundment is approximately 5 acres.

Boulder Creek flows much of its journey to Flathead Lake underground. A portion of Boulder surfaces approximately 100 yards upstream from the impoundment. The diversion utilizes all of the flow in all but the highest-level periods occurring during the spring runoff or during a significant runoff event. Even with full dewatering of the stream, water flow reappears less than 10 yards below the diversion structure even in the lowest flow periods of the year.

Boulder Creek has an A-1 water quality certification and has maintained that certification through construction and all the years of operation of the Boulder Hydro facility. The facility has never had an incident that has endangered its compliance with the Clean Water Act. Both the facility area and the downstream reach continue to meet all A-1 classification standards.

In addition, as part of the original agreement for an easement to the powerhouse location, the Tribes installed a collection pipe and built a pump house to serve local residents as their primary source of drinking water for their homes. This location is approximately 40 yards downstream from the powerhouse and pumps Boulder Creek water to approximately 10 homes in the vicinity. Boulder Creek, to this day, maintains extremely high water quality and has been proposed as a potential water supply for bottled water.

LIHI HYDROPOWER CERTIFICATION CRITERIA

Goals, Standards and Applicant's Responses

The Low Impact Hydropower Institute certifies those hydropower facilities that meet its eight criteria:

A. River Flows:

Goal: *The facility (dam and powerhouse) should provide river flows that are healthy for fish, wildlife, and water quality, including seasonal flow fluctuations where appropriate.*

Standard: *For instream flows, a certified facility must comply with recent resource agency recommendations¹ for flows. If there were no qualifying resource agency recommendations, the applicant can meet one of two alternative standards: (1) meet the flow levels required using the Aquatic Base Flow methodology or the “good” habitat flow level under the Montana-Tennant methodology; or (2) present a letter from a resource agency prepared for the application confirming the flows at the facility are adequately protective of fish, wildlife, and water quality.*

Boulder Creek flows much of its journey to Flathead Lake underground. A portion of Boulder surfaces approximately 100 yards upstream from the impoundment. The diversion utilizes all of the flow in all but the highest-level periods occurring during the spring runoff or during a significant runoff event. Even with full dewatering of the stream, water flow reappears less than 10 yards below the diversion structure even in the lowest flow periods of the year. The flow continues to grow and recharges itself to a minimum of approximately 0.5 CFS within 200 feet below the diversion.

With no fish present within Boulder Creek, Tribal resource agencies agree that flow conditions are appropriate for the facility. The Tribes' Division of Water Department agrees that the flow levels and conditions within the stream are adequate for wildlife and known aquatic resources.

In a July 31, 2007 letter from Division of Water Management, Natural Resources Department of the Confederated Salish and Kootenai Tribe responded to flows:

“Your Question was in relation to flows required for fish and wildlife below the diversion dam to the power plant where the water is returned to the stream. Analysis was done by

¹ “recent resource agency recommendations” are defined as final recommendations made by state, federal, or tribal resource agencies in a proceeding, such as a Federal Energy Regulatory Commission (FERC) licensing proceeding. Qualifying agencies are those whose mission includes protecting fish and wildlife, water quality and/or administering reservations held in the public trust. Agencies such as a state or tribal department of fish and game, or the U.S. Fish and Wildlife Service are considered a “resource agency” but the FERC, with its balancing responsibilities, is not. The agency recommendations must be recent, which means they were issued after 1986 (after enactment of the Electric Consumers Protection Act, which amended the Federal Power Act to increase the profile of recommendations from fish and wildlife agencies in the FERC licensing process). If there are a number of resource agency recommendations, then the most stringent (most environmentally protective) is used. In the case of settlement agreements, the final settlement terms will be considered the agency’s “recommendation.”

the Tribal Fisheries Program in the year prior to the building of the plant. It was determined that no fisheries resources existed in the reach of stream. The stream recharges to approximately 0.5 cfs approximately 200 feet below the diversion dam keeping the reach of the stream alive, therefore providing adequate flows for the wildlife resources as well aquatic resources...”

A. Flows - While the Facility did not meet the flow standards in A.2., the Applicant demonstrated, and obtained a letter from the relevant Resource Agency confirming that the flow conditions at the Facility are appropriately protective of fish, wildlife, and water quality. FACILITY PASSES.

B. Water Quality:

Goal: Water quality in the river is protected.

Standard: The water quality criterion has two parts. First, a facility must demonstrate that it is in compliance with state water quality standards, either through producing a recent (after 1986) Clean Water Act Section 401 certification, or demonstrating compliance with state water quality standards (typically by presenting a letter prepared for the application from the state confirming the facility is meeting water quality standards). Second, a facility must demonstrate that it has not contributed to a state finding that the river has impaired water quality under Clean Water Act Section 303(d) (relating to water quality limited streams).

Boulder Creek has an A-1 water quality certification and has maintained that certification through construction and all the years of operation of the Boulder Hydro facility since the Clean Water Act went into effect. All requirements were carefully monitored during construction of the facility and during any maintenance activities that may disrupt water quality. The facility has never had an incident that has endangered its compliance with the Clean Water Act. Both the facility area and the downstream reach continue to meet all A-1 classification standards.

In a September 21, 2007 letter from the Natural Resources Department of the Confederated Salish and Kootenai Tribe responded to water quality:

“...staff has reviewed the Technical Specifications and Drawings for the Boulder Creek Hydroelectric Project and has determined it in compliance with the CSKT Water Quality Standards that support designated uses pursuant to the Federal Clean Water Act in the facility area and in the downstream reach.”

In addition, as part of the original agreement for an easement to the powerhouse location, the Tribes installed a collection pipe and built a pump house to serve local residents as their primary source of drinking water for their homes. This location is approximately 40 yards downstream from the powerhouse and pumps Boulder Creek water to approximately 10 homes in the vicinity. Boulder Creek, to this day, maintains extremely high water quality and has been proposed as a potential water supply for bottled water.

B. Water Quality – The Facility is in Compliance with the quantitative water quality standards established by the state that support designated uses pursuant to the federal Clean Water Act in the Facility area and in the downstream reach. The downstream reach is not identified by the state as not meeting water quality standards (including narrative and numeric criteria and designated uses) pursuant to Section 303(d) of the Clean Water Act. FACILITY PASSES.

C. Fish Passage and Protection:

Goal: The facility provides effective fish passage for riverine, anadromous and catadromous fish, and also protects fish from entrainment.

Standard: For riverine, anadromous, and catadromous fish, a facility must be in compliance with recent (after 1986) mandatory prescriptions regarding fish passage (such as a Fish and Wildlife Service prescription for a fish ladder) as well as any recent resource agency recommendations regarding fish protection (e.g., a tailrace barrier). If anadromous or catadromous fish historically passed through the facility area but are no longer present, the applicant must show that the fish are not extirpated or extinct in the area because of the facility and that the facility has made a legally binding commitment to provide any future fish passage recommended by a resource agency.

When no recent fish passage prescription exists for anadromous or catadromous fish, and the fish are still present in the area, the facility must demonstrate either that there was a recent decision that fish passage is not necessary for a valid environmental reason, that existing fish passage survival rates at the facility are greater than 95% over 80% of the run, or provide a letter prepared for the application from the U.S. Fish and Wildlife Service or the National Marine Fisheries Service confirming the existing passage is appropriately protective.

Boulder Creek has no fish present within the stream due to extreme elevation barriers located in the lowest reaches of the stream within the first 100 yards above its mouth on the east shore of Flathead Lake. The Applicant has provided a photograph (Attached, as “Exhibit J,” of their application) of an eight-foot drop that presents a significant barrier to fish migration. CSKT Fisheries Department conducted fish studies prior to the construction of the Boulder Hydro facility (May and October 1982). In the years since, Tribal staff have walked the stream proper from the diversion to the powerhouse to observe flow and to look for fish species. No fish have ever been observed during any of these observation periods.

A July 31, 2007 letter from Division of Water Management, Natural Resources Department of the Confederated Salish and Kootenai Tribe responded to flows:

“Your Question was in relation to flows required for fish and wildlife below the diversion dam to the power plant where the water is returned to the stream.

Analysis was done by the Tribal Fisheries Program in the year prior to the building of the plant. It was determined that no fisheries resources existed in the reach of stream. The stream recharges to approximately 0.5 cfs approximately 200 feet below the diversion dam keeping the reach of the stream alive, therefore providing adequate flows for the wildlife resources as well aquatic resources...”

C. Fish Passage and Protection – The Applicant obtained a letter confirming that there are no fish in the project area as a result of natural barriers and that the upstream and downstream fish passage measures at the Facility are appropriately protective of the fishery resources. FACILITY PASSES.

D. Watershed Protection:

Goal: Sufficient action has been taken to protect, mitigate and enhance environmental conditions in the watershed.

Standard: A certified facility must be in compliance with resource agency recommendations and FERC license terms regarding watershed protection, mitigation or enhancement. These may cover issues such as shoreline buffer zones, wildlife habitat protection, wetlands protection, erosion control, etc. The Watershed Protection Criterion was substantially revised in 2004. The revised criterion is designed to reward projects with an extra three years of certification that have: a buffer zone extending 200 feet from the high water mark; or, an approved watershed enhancement fund that could achieve within the project’s watershed the ecological and recreational equivalent of land protection in D.1. and has the agreement of appropriate stakeholders and state and federal resource agencies. A Facility can pass this criterion, but not receive extra years of certification, if it is in compliance with both state and federal resource agencies recommendations in a license approved shoreland management plan regarding protection, mitigation or enhancement of shorelands surrounding the project.

Over the years, Tribal Ordinances have provided a 25-foot buffer zone for shoreline protection, and a 50-foot buffer zone that prohibited woodcutting near streams. This protection is now considered inadequate for the impoundment. In the summer of 2007, SKHC has applied for a Watershed Lease that will provide a 250-foot conservation buffer zone around the impoundment. The watershed lease will prevent: development of new facilities, logging activity, construction of new transportation corridors, off-road vehicle use, dumping of waste materials, use of blasting material, limiting heavy equipment movement to existing road, or any other activity that would facilitate the release of material, contamination, or erosion into the impoundment. The watershed lease provides that SKHC will not fence the watershed lease area, and that roads as well as all terrain within the lease area shall remain open for public access, cultural pursuits, hunting and gathering activities, and low-impact recreation.

D. Watershed Protection – There a buffer zone dedicated for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low-impact recreation) extending 200 feet from the high water mark in an average water year around 50 - 100% of the impoundment, and for all of the undeveloped shoreline - FACILITY PASSES (and receives an extra 3 years of certification).

E. Threatened and Endangered Species Protection:

Goal: The facility does not negatively impact state or federal threatened or endangered species.

Standard: For threatened and endangered species present in the facility area, the facility owner/operator must either demonstrate that the facility does not negatively affect the species, or demonstrate compliance with the species recovery plan and any requirements for authority to “take” (damage) the species under federal or state laws.

When Boulder Hydro was in the planning stages, surveys were conducted and historical records analyzed to determine the presence of endangered or threatened species. A summary of these findings was submitted to FERC when the Tribes submitted their original application for a FERC exemption. Attached, as “Exhibit K,” of the Boulder Creek Application is the excerpt from their original submission to FERC. The following summarizes these findings and updates for the current situation today.

Plants - No threatened or endangered plant species have been found within the project site. In addition, there are no records of any plant species that would fall into these categories that have been found.

Fisheries - No fish exist in the waters of Boulder Creek. Migration barriers exist between the powerhouse and Flathead Lake that prevent upstream movement of fish. These natural barriers were present prior to the construction of Boulder Hydro. Subsequent electro shocking in all likely pools or riffles has confirmed that there are no species of fish within Boulder Creek at or above the project site. Bull Trout, considered a threatened species exist in Flathead Lake. The Tribes have actively followed a Bull Trout Recovery Plan that is driving activities to improve migration, redd site protection, and reduction of non-native predatory species that threaten Bull Trout.

Wildlife - At the time of submittal for a FERC exemption, there were no threatened or endangered species present or migrating through the project area. Since that time, Grizzly Bears have been spotted in the area infrequently, but no known den area exists within the project area or within a range of ten miles from the project site. The tribes are actively following a Grizzly Bear Recovery Plan that has resulted in an increase of Grizzly Bears within the reservation boundary. The project location is not within either the Zone 1 (highest concentration) or Zone 2 (significantly lower populations) of the plan. Gray Wolves also are present on the Reservation, however none have been observed within a 10-mile zone of the project site. The Tribes are actively following a Gray Wolf Recovery

Plan that has also increased the population of Gray Wolves within the reservation boundary.

Birds - Bald Eagles, an endangered species are known to occur along the east shore of Flathead Lake. The presence of Bald Eagles has stayed consistent from the period of time prior to the development of Boulder Hydro to present day. Bald Eagles nests are not located within a five-mile radius of the project site, but are present between 8 – 10 miles from the project site on several islands of Flathead Lake. Nocturnal roosting areas are typically utilized during the winter and occur adjacent to open lake areas in forested cover. Two potential roosting areas were examined throughout the winter of 1982 – 1983 by wildlife biologists and did not reveal use by this species. The presence of Bald Eagles is increasing in the Flathead lake region, but no new Bald Eagle roosting or nesting areas have been identified within the project area or within a five-mile radius.

E. Threatened and Endangered Species Protection – There are threatened or endangered species listed under state or federal Endangered Species Acts present in the Facility area recovery plans have been adopted for the threatened or endangered species pursuant to Section 4(f) of the Endangered Species Act. The Facility is in Compliance with all recommendations in the plan relevant to the Facility. The Applicant demonstrated that the Facility and Facility operations do not negatively affect listed species. FACILITY PASSES.

F. Cultural Resource Protection:

Goal: The facility does not inappropriately impact cultural resources.

Standard: Cultural resources must be protected either through compliance with FERC license provisions, or, if the project is not FERC regulated, through development of a plan approved by the relevant state, federal, or tribal agency.

The facility is in compliance with all requirements regarding cultural resource protection. Prior to the construction of the facility, the Flathead Culture Committee, Kootenai Culture Committee, and Montana Historical Society were consulted to help identify culturally significant resources or locations within the project area. None of the organizations were able to identify any location or item of cultural importance within the project area. Typical of their response is this excerpt from a November 22, 1982 letter from the Flathead Culture Committee which responds to the Tribe’s plans to construct a hydro facility at Boulder Creek:

“We are familiar with the Confederated Salish and Kootenai Tribes’ plans for the construction of a small scale hydroelectric facility on Boulder Creek. In our opinion, this project will have no impact on any cultural, archeological or

historical resources on the project site. We therefore, give our clearances for the project.”

F. Cultural Resources – The Facility is in Compliance with all requirements regarding Cultural Resource protection, mitigation or enhancement included in the FERC exemption - FACILITY PASSES.

Recreation:

Goal: The facility provides free access to the water and accommodates recreational activities on the public’s river.

Standard: A certified facility must be in compliance with terms of its FERC license or exemption related to recreational access, accommodation and facilities. If not FERC-regulated, a facility must be in compliance with similar requirements as recommended by resource agencies. A certified facility must also provide the public access to water without fee or charge.

The facility is in compliance with all recreation access requirements associated with our FERC exemption. There are no recreation restrictions associated with the facility, however a Tribal Recreation Permit is required for non-tribal members to access the facility as it sits in Tribal forestlands. The application for a Watershed Lease around the impoundment also calls for continued public access for, cultural pursuits, hunting and gathering activities, and low-impact recreation. SKHC has no plans to prevent access to any of the project areas.

G. Recreation – The Facility is in Compliance with all requirements regarding Recreation protection, mitigation or enhancement included in the FERC exemption and allow access to the reservoir and downstream reaches without fees or charges - FACILITY PASSES.

Facilities Recommended for Removal:

Goal: To avoid encouraging the retention of facilities that have been considered for removal due to their environmental impacts.

Standard: If a resource agency has recommended removal of a dam associated with the facility, certification is not allowed.

Boulder Hydro has never received a recommendation for removal from any resource agency. The facility continues to operate with the support of all resource agencies as well as the local community, Tribal community, and the energy community. In fact, the

Council of Energy Resource Tribes (CERT) featured Boulder Hydro during a Low-Impact Hydro Conference held in Polson Montana in March 2007.

H. Facilities Recommended for Removal – There are no Resource Agency Recommendation for removal of the dam associated with the Facility - FACILITY PASSES.

Reviewer Recommendations

The Boulder Creek facility meets the requirements of all eight of the criteria, and I recommend that the facility be certified by the Low Impact Hydropower Institute as a LIHI Certified facility.

Should the Board certify this project it would be for eight years with an effective date of October 24, 2007 and an expiration date of October 24, 2015.

Prepared by Fred Ayer and submitted on January 17, 2008 for LIHI Governing Board action at the January 24, 2008 LIHI Board Meeting.

RECORD OF CONTACTS WITH RESOURCE AGENCY STAFF

Date of Conversation: January 15, 2008
Application Reviewer: Fred Ayer, Executive Director
Person Contacted: Larry Lockard, USFWS
Telephone/email: 406-758-6883

I finally got through to Larry and had a brief conversation with him about this project. I had the opportunity to work with him on the Avista relicensing form Noxon and Cabinet Gorge, so I know him well and know that he wouldn't hesitate to call a spade a spade. He remembered the project and the more we talked the more he remembered. He has been to the site and fishes it so he knows it well. I gave him my read on the project and he agreed particularly that because of the steepness of the streambed (nearly a cliff in his words) there were no serious fishery issues. He was also aware that the stream went underground for some distance. He said there were no ESA issues. He had no negative comments.

Date of Conversation: January 15, 2008
Application Reviewer: Fred Ayer, Executive Director
Person Contacted: George McLeod, Chief of Field Operations
Water Management and Natural Resources
Telephone/email: 406-675-2700 (x-6251)
Areas of Expertise:

I had a very brief discussion with George who is in charge of making sure the project is properly maintained and protected. He has not had major problems since the project was built. He is a great historic resource since he was there when the project was built. He had no negative comments.

Date of Conversation: January 16, 2008
Application Reviewer: Fred Ayer, Executive Director
Person Contacted: Michael Durglo, Water Quality Specialist
Confederated Salish and Kootenai Tribes
Telephone/email: 406-675-2700 (x-7227)

Mike and I chatted briefly about the project. He explained how the tribes had worked with the EPA and administered the Tribal water quality standards. Mike said that the Boulder Creek project was in compliance with Tribal Water Quality standards and there were no areas where the creek did not meet standards. He also pointed out that the stream went underground downstream of the project leaving a few hundred feet dewatered and reemerged. Mike did not have any negative comments and made sure I

was aware that he and other tribal resource professionals kept tabs on the project and its operation.

Date of Conversation: January 16, 2008
Application Reviewer: Fred Ayer, Executive Director
Person Contacted: Les Evarts, Program Manager
Tribal Fish and Wildlife Department
Confederated Salish and Kootenai Tribes
Telephone/email: 406-675-2700 (x-7240)

I spoke briefly with Les, who confirmed much of what I had heard from others. He said since the Tribe had reached the decision that the Creek was essentially fishless, before the creation of the modern tribal fishery program, he wanted to talk with some other resource folks to verify that fact. He said he believed it was the case, but wanted to make sure. He will call back if there is an issue or problem.. Les had no negative comments.
