BC hydro
FOR GENERATIONS

XXXXX

Kokish River Hydroelectric Project

Interconnection Facilities Study
and
Project Plan

Report No. TGI-2010-A147-FS-R1

March 16, 2011

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PROJECT INFORMATION

Interconnection Customer (IC)	XXXXX
Project Name	Kokish River Hydroelectric Project
Point of Interconnection (POI)	New Kokish substation (KKS)
BCH Proposed ISD	January 2014
IC Proposed COD	April 2014
Maximum Power Injection (MW)	44.8
Number of Generator Units	5
Plant Fuel	Hydro

EXECUTIVE SUMMARY

The XXXXX, (IC), proposes to develop the Kokish River Hydroelectric Project on North Vancouver Island, British Columbia. This project consists of 5 generating units (9 MW each). The POI is a new substation designated as KKS established on the existing 138 kV line between 1L125 Gold River and Keogh, approximately 0.5 km south of the tap to the customer owned Beaver Cove substation (BVC). The IC will connect via a 0.5 km customer owned 138 kV transmission line.

The transmission loop will be connected to 1L125 somewhere between structure # 109-03 and 109-04. The transmission loop will consist of approximately four spans each and connect to the 138 kV line terminal in the substation.

This report identifies the required system modifications for interconnecting the proposed Kokish River project. These modifications are as follows:

- The Kokish River project would require a new substation to be built approximately 0.5 km south of the tap to Beaver Cove Substation (BVC). The proposed point of interconnection will be the new 230 kV switching station called Kokish Substation (KKS) to be constructed on 1L125 (GLD-KGH) which is operated at 138 kV. The approximate footprint size will be 200 m x 200 m.

- The switching station will divide the existing 1L125 (GLD-KGH) into two sections with the following designations: 1L125 (GLD-KKS) and 1L141 (KKS-KGH).

- Electrical insulation requirements dictate that a class 2 telecommunication channel must be installed between Gold River Substation (GLD) and KKS to carry a Direct Transfer Trip (DTT) signal from GLD in the event of a line fault on 1L125. These standards also require that wave

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traps be installed at the Beaver Cove Substation (BVC) and Woss Landing Substation (WOS) tap points as well as PLC coverage include Port McNeill (PML), Keogh (KGH) and Jeune Landing (JUL);

- The scope at KKS, KGH, JUL, PML, BVC, WOS substations include:
  - 3 breaker ring 138 kV substation with associated disconnects and communications;
  - Add two 138 kV wave traps and coupling capacitor at PML;
  - Add two 138 kV wave traps at KGH;
  - One 138 kV wave trap and coupling capacitor at JUL;
  - One 138 kV wave trap at each tap point at Beaver Cove and Woss Landing tap points.

- Install continuous 2400bps SCADA channel at KKS to VIT DCP and add new dial-up line at KKS for remote data access

- 1L125, 1L130 and 1L137 – a schedule of outages will be required to install new equipment. Sufficient advance notice will be provided to all customers supplied by these lines. Every effort will be made to minimize the outages. The Nanaimo Regional Office and the Fraser Valley Office will be consulted and engaged in the scheduling of the outages.

- Acquisition of land for the substation is required. The size is assumed to be 200 m x 200 m with frontage of one section onto the Beaver Cove Road. Minor oil spoils have been reported at KGH. An allowance has been made for soils testing.

- Control center will have to update the SCADA database to reflect new alarms, controls, indication and metering.

- BC Hydro's Aboriginal Relations Department will lead all consultation activities with First Nations. First Nations whose asserted rights or title are potentially impacted by the project will be consulted to ensure that the Crown's duties in this regard have been met.

- The maximum power injection into BCH system is 44.8 MW. The proposed Commercial Operation Date (COD) is April 2014.

The cost estimate, +/- 20%, for the interconnection Network Upgrades required to interconnect the proposed project to the BCH Transmission System is $19.3 M.

The estimated time to construct the Network Upgrades required to interconnect the project to the BCH Transmission System is 23 months. The attached project schedule provides greater details of the construction timelines.

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Date	Description
November 7, 2011	Project approval
February 6, 2012	Project authorization to proceed
May 7, 2012	Start detailed design
November 19, 2012	First construction contract out to tender
March 4, 2013	Start civil construction
May 20, 2013	Start major electrical installations
November 25, 2013	Start testing and commissioning
January 6, 2014	BCH In-service Date
April 1, 2014	IC COD

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DRAFT VERSION

This Facilities Study Report is in draft format and is being released in accordance with tariff timelines. During the BC Hydro technical review of this project some minor issues were discovered that could not be corrected prior to the Christmas break. Given the nature of the changes it was determined these would have little impact on cost or schedule and the report should be released. Once the changes are made in January BC Hydro will re-issue the report.

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(REDACTED)

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SECTION 2

INTERCONNECTION FACILITIES STUDY

PROJECT PLAN

(REDACTED)

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