BC Hydro
Power smart

6911 Southpoint Drive (B03)
Burnaby, BC
V3N 4X8

July 30, 2024

[redacted]

RE: CEAP IR 83 - [redacted] - Interconnection Feasibility Study Report

Enclosed is the Interconnection Feasibility study report for the proposed [redacted] submitted under Attachment M-2: Transmission Service and Interconnection Service Procedures for Competitive Electricity Acquisition Process (CEAP) of the Open Access Transmission Tariff (OATT). This letter provides a non-binding good faith estimate of the cost and time to construct the facilities required to interconnect your project to BC Hydro's Transmission System, being the Network Upgrades, based on the findings of the Interconnection Feasibility study.

Open Access Transmission Tariff

The OATT defines Network Upgrades as additions, modifications, and upgrades to BC Hydro's Transmission System required at or beyond the Point of Interconnection to accommodate the interconnection of the Generating Facility to the BC Hydro's Transmission System. Pursuant to the OATT, BC Hydro will design, procure, construct, install, and own the Network Upgrades. While BC Hydro will pay the costs for the Network Upgrades, the Interconnection Customer provides security for such costs.

Cost Estimate

Based on the Interconnection Feasibility study, the non-binding good faith estimated cost (typical accuracy range of +150%/-50%) for Network Upgrades required to interconnect your project is $94.0M.

Major Scope of Work Identified:

- Acquire adequate property for a new switching station close to the existing transmission line 2L309
- Construct a new outdoor 230kV, 3- circuit breaker ring bus switching station
- Construct a new control building and other required substation facilities and infrastructures
- Supply and install protection relays and other required protection equipment
- Supply and install microwave towers, waveguides, antennas, and other required telecommunications equipment

Exclusions:

- GST
- Right-of-way
- Permits

Key Assumptions:

- Construction will be done by contractor
- 3 years of construction
- No expansion of existing station or control building to accommodate new equipment
- Early Engineering and Procurement
- No piles or ground improvements will be required
- No contaminated soil will be encountered during construction

Key Risks:

- Additional Right of Way or acquisition of more property may be required
- Transmission routing may be different than assumed, including number of disconnect switches and structure types may change
- No defined supply chain strategy, construction costs may increase depending on delivery method
- Cost of construction may increase based on geotechnical condition of the actual project site
- Project schedule may be longer than expected, leading to increased costs
- Cost of materials and major equipment may be affected by market conditions and escalation

Please note that the Revenue Metering requirements and associated costs required to interconnect your project have not been determined at this stage and, therefore, not included in the above estimate. Revenue Metering costs that are attributable to the Interconnection Customer are to be paid in cash. For more details on Revenue Metering requirements and responsibilities, please refer to:

https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/distribution/standards/ds-rmr-complex-revenue-metering.pdf.

Schedule

Based on the Interconnection Feasibility study, the non-binding good faith estimated in-service date for your project's Network Upgrades is Quarter 3 2031 (calendar year). To achieve this timeline, we may need to expedite certain activities, including engineering design and procurement of long-lead equipment.

Timely actions required from you to minimize risks to the schedule:

- Submission of additional technical data required for the System Impact Study and Facilities Study
- Submission of any required information or document such as demonstration of Site Control
- Execution of Combined Study Agreement and Standard Generator Interconnection Agreement
- Financial commitments and securities

Please note that changes to your interconnection request, delays in data submission, or financial commitments may also impact the target in-service date.

Next Steps

In September 2024, we will issue a final invoice for the Feasibility Study costs. This invoice will reflect the total amount due, taking into account the $15,000 Feasibility Study deposit you have already paid and any remaining amount on the non-refundable $15,000 Interconnection request deposit that we did not spend in reviewing and validating your interconnection request.

If you have any questions, please contact the BC Hydro CEAP Team at ceap2024@bchydro.com.

Sincerely,

[redacted]

Senior Manager, Transmission Interconnections

BC Hydro

Encl.: CEAP2024_IR_83_[redacted]_FeS_report_final.pdf

[redacted]

Interconnection Feasibility Study

BC Hydro EGBC Permit to Practice No: 1002449

2024 CEAP IR # 83

Prepared for: [redacted]

[redacted]

1000-APR-00030
2024 Jul 30

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Revision	Date	Description
0	2024 Jul	Initial release

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Executive Summary

[redacted] the interconnection customer (IC), requests to interconnect its [redacted] Project (2024 CEAP IR # 83) to the BC Hydro system. [redacted] has thirty five (35) [redacted] 2.2 MW type-4 wind turbine generators, adding a total capacity of 77 MW with a maximum power injection of 74.9 MW into the BC Hydro system at the POI. The Point of Interconnection (POI) is on BC Hydro's 230 kV line 2L309, approx. 33km from Dokie Terminal substation (DKT). The IC's project (P83) will connect to the POI via a 9.2 km 230 kV interconnection line (2LXXX). The IC's proposed commercial operation date (COD) is Oct 1, 2030.

To interconnect the [redacted] Project and its facilities to the BCH Transmission System at the proposed POI, this Feasibility Study has identified the following conclusions and requirements:

1. A new 230 kV switching station (referred to as "P83T") on 2L309 is required at the proposed POI for interconnecting the IC's generating project to the BCH system. With the new switching station P83T, 2L309 will be split into two new lines, temporarily referred to as: 2L309_1(DKT to P83T), and 2L309_2(P83T to SNK). The temporary line designations will be replaced by permanent designations at a later stage of the project interconnection study.

2. The study does not find any performance violation under system normal condition, such as thermal overload, voltage performance violation or voltage stability concern, caused by the inter-connection of [redacted] Project.

3. The connection of [redacted] Project will exacerbate the pre-existing thermal overloads on 2L308 for loss of 2L312, SLS 2CB11, SLS 2CB12, or SNK 2CB12, and thermal overloads on 2L312 for loss of 2L308. These overloads are presently addressed by the Peace Region generation shedding Remedial Action Scheme (RAS). The new wind generators at [redacted] Project are required to participate in the existing Peace Region generation shedding RAS.

4. It is identified that SLS 2CB14, SGB 2CB6 and 2CB7 breaker faults which trips both 2L340 and 2L342 overloads 2L308 because of the

interconnection of [redacted] Project. This issue can be addressed by requiring the [redacted] to participate in the existing Peace Region generation shedding RAS and by adding these breaker contingencies as input signals to trigger generation shedding. The exact requirements will be determined in subsequent studies if the project proceeds.

5. For various system contingencies such N-1-1 contingency for loss of 2L312 and 2L308, [redacted] Project may be inadvertently islanded with BC Hydro loads, which is not allowed. [redacted] is required to participate in the existing Peace region anti-islanding direct transfer trip (DTT) scheme. In addition to entrance protection and 2LXXX protection, the IC is required to install anti-islanding protection within their facility to disconnect the [redacted] from the grid when an inadvertent island with the local loads forms as a back up of the anti-islanding transfer trip protection.

6. According to BC Hydro's TIR, the IC's project must have sufficient reactive power capability over the full MW operating range including at the zero MW output level. The IC's project as submitted does not meet the reactive capability requirement at both MPO and zero MW output levels, which will need to be addressed.

7. BC Hydro will provide line protections for 2L309_1, 2L309_2 and 2LXXX (BC Hydro end only) protections. As part of the line protection replacements for each of the three lines, telecommunication facilities will be required to accommodate the new protection schemes. The IC shall provide required relays, telecom facility and associated equipment at its facilities to accommodate the new protection schemes.

The above conclusions are made based on the IC's input data and study assumptions listed in Section 4, which represent the best available information on May 22, 2024.

A non-binding good faith estimated cost and time to construct the Network Upgrades required to interconnect the proposed project will be provided in a separate letter to the IC.

Contents

Appendices

Acronyms

The following are acronyms used in this report.

AIS	Air Insulated Switchgear
BCH	BC Hydro
CEAP	Competitive Electricity Acquisition Process
COD	Commercial Operation Date
DKT	Dokie Terminal Substation
DTT	Direct Transfer Trip
EDM	Edmonds Office
ERIS	Energy Resource Interconnection Service
ET3	Tower 03-07 Substation
FeS	Feasibility Study
FVO	Fraser Valley Office
GMS	Gordon M Shrum Generating Station
GWM	Gwillim Microwave Station
IBR	Inverter-Based Resources
IC	Interconnection Customer
LAPS	Local Area Protection Schemes
MPO	Maximum Power Output
NERC	North American Electric Reliability Corporation
NRIS	Network Resource Interconnection Service
OATT	Open Access Transmission Tariff
POI	Point of Interconnection
P83	IC's [redacted] project
P83T	The new switching station to interconnect IC's [redacted] project
PCN	Peace Canyon substation
PLD	Parkland Substation
RAS	Remedial Action Scheme
SIO	South Interior Office
SNK	Sunkunka Switching Station

TIR	BC Hydro “60 KV to 500 kV Technical Interconnection Requirements for Power Generators”
WECC	Western Electricity Coordinating Council
WTG	Wind Turbine Generator

1 Introduction

Table 1-1 below summarizes the project reviewed in this Feasibility Study.

Table 1-1 Summary of Project Information

Project Name	[redacted] Project	
Name of Interconnection Customer (IC)	[redacted]	
Point of Interconnection (POI)	on 2L309 at 33 km from DKT	
IC's Proposed COD	1st October 2030	
Type of Interconnection Service	NRIS ☒	ERIS ☐
Maximum Power Injection [1] (MW)	74.9 MW (Summer)	74.9 MW (Winter)
Number of Generator Units	35 x 2.2 MW WTGs	
Plant Fuel	Wind	
Note 1: The maximum achievable power injection at the POI is approx. 74.6 MW after accounting for MW losses which is lower than the IC proposed 74.9 MW.		

[redacted] the interconnection customer (IC), requests to interconnect its [redacted] Project (2024 CEAP IR # 83) to the BC Hydro system. [redacted] has thirty five (35) [redacted] 2.2 MW type-4 wind turbine generators, adding a total capacity of 77 MW with a maximum power injection of 74.9 MW into the BC Hydro system at the POI. The Point of Interconnection (POI) is on BC Hydro's 230 kV line 2L309, approx. 33km from Dokie Terminal substation (DKT). A new 230 kV switching station (referred to as "P83T") on 2L309 is required at the proposed POI for interconnecting the IC's generating project to the BCH system. With the new switching station P83T, 2L309 will be split into two new lines, temporarily referred to as: 2L309_1(DKT to P83T), and 2L309_2(P83T to SNK). The IC's project (P83) will connect to the POI via a 9.2 km 230 kV interconnection line (2LXXX). The IC's proposed commercial operation date (COD) is Oct 1, 2030.

Figure 1-1 shows the Peace region 138/230/500 kV transmission system diagram with the [redacted] Project interconnection. 1L377 is normally open between ET3 and PLD. In Figure 1-1, the existing transmission system and major customers are shown in black and green colors. The Site C project and associated 500kV lines are shown in red. The IC's project (P83), the new switching station (P83T),

and the related new transmission lines are highlighted in red. The Peace regional transmission system is developed with generation shedding capabilities to mitigate the impact of various contingencies. Loss of certain transmission element(s) under certain generation, loading and network conditions, will trigger the selected generations to be shed to prevent various performance violations. The same principle will be considered in the feasibility study of the proposed project.

In the Peace region, Site C generating project is the major capital project under construction, which will add six hydroelectric generators with a total installed capacity of 1200 MW. The transmission component of this project, which includes two parallel 500 kV lines (5L5 and 5L6) to Peace Canyon substation (PCN), was in service in 2023. Based on the updated schedule available, the Site C project will be completed by the end of 2025.

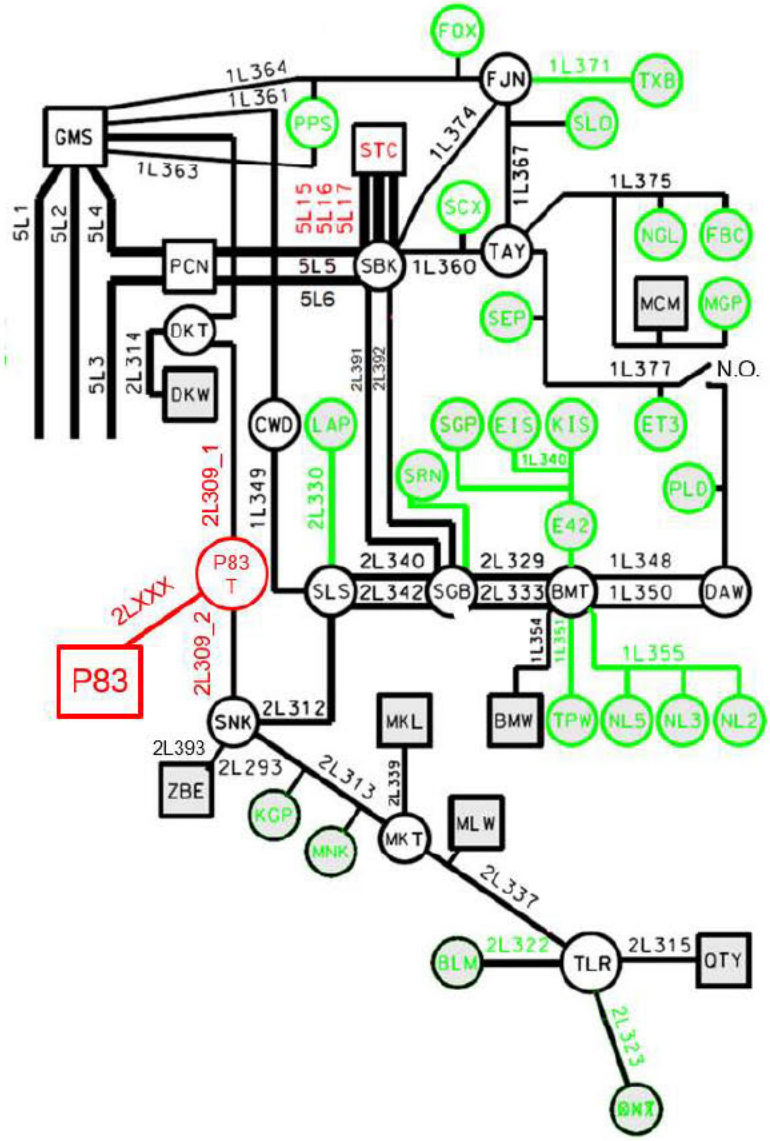

Figure 1-1: Peace Region 138/230/500 kV Transmission System Diagram

Figure A-1 shows the more detailed connection of the [redacted] Project to the BC Hydro Transmission System.

2 Purpose and Scopes of Study

This Feasibility Study is a preliminary evaluation of the system impact of interconnecting the proposed project to the BC Hydro system based on power flow and short circuit analysis in accordance with BCH's Open Access Transmission Tariff (OATT). A non-binding good faith estimated cost of required Network Upgrades and estimated time to construct will be provided.

Per OATT, the feasibility study is performed individually for each of the participating projects in the CEAP process and focuses specifically on the BC Hydro regional transmission system where the proposed generating project is proposed to be constructed. An assessment of the incremental effect on the 500kV bulk transmission system is beyond this study scope.

This is a "limited scope" study which is restricted to power flow studies of P0, P1 and P2 planning events as defined in TPL-001-4 and short circuit analysis. The study does not address other technical aspects such as transient stability and switching transients and impact of multiple contingencies. These subjects would be addressed in subsequent System Impact Study if the project is a Successful Participant of the CEAP.

In case impact to the adjacent external systems to BC Hydro is observed, such impact would be addressed in subsequent detailed and coordinated studies with the relevant adjacent entities if the proposed interconnection proceeds further.

3 Standard and Criteria

The Feasibility Study is performed in compliance with the North American Electric Reliability Corporation (NERC) and Western Electricity Coordinating Council (WECC) reliability standards, and the BCH interconnection requirements in the TIR, and upon the ratings of the existing BCH transmission facilities described in Operating Orders, specifically:

- NERC standards: TPL-001-4 and FAC-002-3 relevant to the scope of this Feasibility Study.
- WECC criteria TPL-001-WECC-CRT-4 Transmission System Planning Performance, July 1, 2023.
- BC Hydro's 60 kV to 500 kV Technical Interconnection Requirements for Power Generators.
- BC Hydro Operating Order 5T-10, Ratings for All Transmission Circuits 60 kV or Higher, April 16, 2024.
- BC Hydro Operating Order 5T-14, Ratings for All Transmission and Distribution Transformer, November 8, 2022.
- BC Hydro System Operating Order 7T-22 System Voltage Control, September 19, 2023.

4 Assumptions and Conditions

This Feasibility Study is performed based on the IC's submitted data and information available to BC Hydro on May 22, 2024 for the study purpose. Appendix A shows the plant single line diagram for the IC's project used in the study model. Certain assumptions were, as set out below, made to the extent required.

The power flow study cases used in this Feasibility Study are established based upon the BC Hydro's base resource plan and load forecasts available at the time of performing the study, which includes existing and future generations, transmission facilities, and loads in addition to the subject interconnection project in this study. Applicable seasonal conditions and the appropriate study years for the study planning horizon are also incorporated.

Additional assumptions are listed as follows.

1) The regional generation are dispatched to the patterns that stress the transmission system in the study area. In these patterns, the regional generations are typically set to their Maximum Power Outputs (MPO) unless otherwise specified.

2) Based on the latest information at the time of this study, the projected in-service date for BMT T4 project is June 2026, which is before the projected in-service date of this IPP.

3) Based on the schedule available at the time of this study, the Site C project will be completed by the end of 2025.

4) 1L377 is normally open between ET3 and PLD.

5 System Studies and Results

5.1 Power Flow Study Results

Power flow studies were performed to evaluate whether the IC's generating project would cause any unacceptable system performance (e.g. equipment overloads, steady-state voltage violation and voltage instability) and to determine the reinforcement requirement based on steady state performance analysis.

The study focuses on the 2031 light summer (31LS) system load condition which is typically a stressed condition for a generation interconnection project, taking into considerations of factors such as load conditions, seasons and generation patterns. The 2031 heavy summer (31HS) and 2030 heavy winter (30HW) cases are also checked at a high level to capture any possibility of performance violations under high load conditions.

5.1.1 Branch Loading Analysis

For all the studied load conditions (31LS, 31HS, 30HW), there is no branch overload identified under system normal condition (P0).

In the light summer load condition (31LS) and heavy summer load condition (31HS), the study finds pre-existing branch overloads on 2L308 under single contingencies (i.e., 2L312, SLS 2CB11, SLS 2CB12, SNK 2CB12). 2L312 could be thermally overloaded for loss of 2L308. The connection of [redacted] project will aggravate these pre-existing overloads, which is currently addressed by Peace Region generator shedding RAS. [redacted] project must participate in the existing Peace Region generation shedding RAS.

It is identified that SLS 2CB14, SGB 2CB6 and 2CB7 breaker faults which trips both 2L340 and 2L342 overloads 2L308 because of the interconnection of [redacted] Project. This issue can be addressed by requiring the [redacted] to participate in the existing Peace Region generation shedding RAS and by adding these breaker contingencies as input signals to trigger generation shedding. The exact requirements will be determined in subsequent studies if the project proceeds.

Study results are summarized in the Table 5-1 below.

Table 5-1: Summary of Branch Loading Analysis Results

Case	IPP's Generator Output	Contingency Identified		Branch Loading		
				2L308	2L309_1	2L312
		Cate-gory	Description	GMS-DKT	DKT-P83T	SNK-SLS
Summer Rating				427.5 MVA	427.5 MVA	424.7 MVA
31LS	77 MW	P0	System Normal	61.5 %	29.2 %	68.4 %
		P1	Loss of 2L308	n/a	n/a	129 %
		P1	Loss of 2L312	129 %	97 %	n/a
		P2	Loss of SNK 2CB12	126 %	91 %	n/a
		P2	Loss of SLS 2CB11	129.4 %	97.4 %	n/a
		P2	Loss of SGB 2CB6 or SGB 2CB7 or SLS 2CB14	108.7 %	76.7 %	n/a
31HS	77 MW	P0	System Normal	59.2 %	27 %	70 %
		P1	Loss of 2L308	n/a	n/a	129 %
		P1	Loss of 2L312	129 %	97 %	n/a
		P2	Loss of SNK 2CB12	122 %	90 %	n/a
		P2	Loss of SLS 2CB11	129 %	97.3 %	n/a
		P2	Loss of SGB 2CB6 or SGB 2CB7 or SLS 2CB14	108 %	76 %	n/a

5.1.2 Steady-State Voltage Analysis

It is specified in WECC criteria TPL-001-WECC-CRT-4 that voltages at all applicable Bulk-Electric System (BES) buses shall stay within 95% to 105% of nominal for system normal, and 90% to 110% of nominal for P1 and P2 events. It is also mentioned that voltage deviation at each applicable BES bus serving load shall not exceed 8% for P1 events.

For all the studied load conditions (31LS, 31HS, 30HW), the voltage performance under system normal condition (P0) is acceptable.

No voltage performance violations are identified for P1 and P2 contingencies. Voltage study results for the most limiting contingency for loss of 2L312 under 30HW load conditions are presented in the following Table 5-2.

Table 5-2: Summary of Steady-State Voltage Study Results

Case	IPP's Generator Output	Contingency		Bus Voltage (PU)		
		Cate-gory	Description	SNK 230	DKT 230	GMS 230
30HW	77 MW	P0	System Normal	1.031	1.020	1.011
		P1	Loss of 2L312	1.023	1.003	0.994

5.1.3 Reactive Power Capability Evaluation

The BC Hydro TIR requires IBR power plant to have the dynamic reactive power capability at a minimum of +/- 33% of its MPO at the high voltage side of the IC's switchyard over the full MW operating range.

Based on the PSS/E power flow data submitted by the IC, the proposed generating project does not meet the BC Hydro's reactive capability requirement at the plant's maximum MW output, which will need to be addressed by the IC.

Furthermore, the BCH TIR requires the IC's project to provide sufficient reactive power capability over full MW operating range including at zero MW output level. The proposed wind farm does not meet this requirement at zero MW output, which will need to be addressed.

5.1.4 Anti-Islanding Requirements

Islanded operation in the 230 kV Peace regional system is not permitted, as it may cause overvoltage and equipment damage. For example, if 2L308 is open end at GMS with 2L312 out of service, [redacted] Project may be inadvertently islanded with BC Hydro loads, which is not allowed. The IC's project is required to participate in the existing Peace region anti-islanding Direct Transfer Trip (DTT) scheme. In addition, the IC is required to install anti-islanding protection within their facility to disconnect the [redacted] from the grid when an inadvertent island with the local loads forms as a back up of the anti-islanding DTT scheme.

5.2 Fault Analysis

The short circuit analysis in the FeS is based upon the latest BC Hydro system model, which includes the generating facility information and associated impedance data provided by the IC. A more detailed study will be performed at the system impact study stage if needed.

5.3 Stations Requirements

A new outdoor 230kV, 3-circuit breaker ring bus Air Insulated Switchgear (AIS) switching station (named as P83T temporarily) will be built at POI, close to the existing 230kV transmission line 2L309. The existing transmission line 2L309 will

be cut and looped in/out, and 230kV line of [redacted] Project will be terminated at the new switching station.

Scope of switching station work:

- Acquire adequate property for a new switching station close to the existing transmission line 2L309.
- Construct a new outdoor 230kV, 3- circuit breaker ring bus AIS switching station. Refer to the one-line sketch in Appendix B for details.
- Construct a new control building and other required substation facilities and infrastructures.
- Cut the existing 2L309 transmission line and loop in/out the switching station.
- Terminate 230kV transmission line of [redacted] Project at the station.

5.4 Protection & Control Requirements

BC Hydro will provide line protections for 2L309_1, 2L309_2 and 2LXXX (BC Hydro end only) protections. Existing 2L309 is a single transmission line but will be segregated into three as a part of this project: DKT to P83T is 2L309_1, P83T to SNK is 2L309_2, and P83T to P83 is 2LXXX. BCH to build a new 230kV three-breaker-ring terminal switching station (tentatively designated as P83T) for interconnecting to the new proponent [redacted] (tentatively designated as P83).

The IC is to provide the following for the interconnection of [redacted] (P83):

- Entrance protection that complies with the latest version of the “60 kV to 500 kV BC Hydro Technical Interconnection Requirements for Power Generators.”
- Provide two SEL-411L-1 relays (firmware and options specified by BC Hydro) at the entrance of P83 to provide protection coverage for 2LXXX. BC Hydro P&C Planning will provide core protection settings for these relays to protect transmission line 2LXXX during a transmission line fault. Non-core protection such as local breaker failure, auto-reclosing, backup protection for station elements will not be provided by BC Hydro P&C Planning.

- The IC is responsible for NERC PRC-related tasks, settings to compliance standards within their facilities.
- The IC is responsible for providing a communications link for remote interrogation of the PPIS equipment by BCH servers.
- Provide anti-islanding protection as stated in Section 5.1.

The runback schemes or RAS requirements stated in Section 5.1 are mainly to address the overloading concerns under contingencies, which are preliminary. These RAS requirements may utilize the communication channels required for protection purposes included in the cost estimate. If the proposed project proceeds through the CEAP process, subsequent System Impact Studies may identify additional RAS requirements for this interconnection. These RAS functional requirements will include initiating events, control actions, and latency times. Depending on these supplementary requirements, additional telecommunication facilities may be needed to facilitate signal transmission between the BC Hydro substations and customer facilities.

5.5 Telecommunications Requirements

BC Hydro performed a high-level feasibility assessment of a telecom solution to meet the following requirements.

Teleprotection Requirements for Telecom

- Provide WECC Level 3 64 kbps synchronous circuits between DKT and P83T for “DKT–P83T 2L309_1 PY DIGITAL TELEPROT” and “DKT–P83T 2L309_1 SY DIGITAL TELEPROT” with C37.94 interfaces.
- Provide WECC Level 3 64 kbps synchronous circuits between SNK and P83T for “SNK–P83T 2L309_2 PY DIGITAL TELEPROT” and “SNK–P83T 2L309_2 SY DIGITAL TELEPROT” with C37.94 interfaces.
- Provide WECC Level 3 64 kbps synchronous circuits between P83T and P83 for “P83T–P83 2LXXX PY DIGITAL TELEPROT” and “P83T–P83 2LXXX SY DIGITAL TELEPROT” with C37.94 interfaces.
- Provide WECC Level 3 transfer trip facilities from GMS to P83T for “GMS ANTI-ISLANDING PY TT to P83T” and “GMS ANTI-ISLANDING SY TT to P83T”.

Telecontrol Requirements for Telecom

- Provide two P83T SCADA circuits off FVO & SIO.
- Provide P83 SCADA circuit off FVO & SIO.

- Provide P83T REMACC circuit off EDM.

Other Requirements for Telecom

- Provide PY & SY T1s over separate OC3s between P83T-P83.
- Provide TMS circuit for P83T (end point TBD)
- Provide MPLS links and LSPs for new DKT, P83T, and SNK MPLS nodes.

Certain assumptions were made for determining a potential telecom solution. Details of the telecom solution (e.g. assumptions made, alternatives investigated and work required for BCH and the IC) would be provided at the next study stage.

6 Cost Estimate and Schedule

The non-binding good faith estimated cost and time to construct the Network Upgrades required to interconnect the proposed project will be provided in a separate letter to the IC.

7 Conclusions

To interconnect the [redacted] Project and its facilities to the BCH Transmission System at the POI, this Feasibility Study has identified the following conclusions and requirements:

1. A new 230 kV switching station (referred to as “P83T”) on 2L309 is required at the proposed POI for interconnecting the IC’s generating project to the BCH system. With the new switching station P83T, 2L309 will be split into two new lines, temporarily referred to as: 2L309_1(DKT to P83T), and 2L309_2(P83T to SNK). The temporary line designations will be replaced by permanent designations at a later stage of project interconnection study.

2. The study does not find any performance violation under system normal condition, such as thermal overload, voltage performance violation or voltage stability concern, caused by connection of [redacted] Project.

3. The connection of [redacted] Project will exacerbate the pre-existing thermal overloads on 2L308 for loss of 2L312, SLS 2CB11, SLS 2CB12, or SNK 2CB12, and thermal overloads on 2L312 for loss of 2L308. These overloads are presently addressed by the Peace Region generation shedding remedial action scheme (RAS). The new wind generators at [redacted] Project are required to participate in the existing Peace Region generation shedding RAS.

4. It is identified that SLS 2CB14, SGB 2CB6 and 2CB7 breaker faults which trips both 2L340 and 2L342 overloads 2L308 because of the interconnection of [redacted] Project. This issue can be addressed by requiring the [redacted] to participate in the existing Peace Region generation shedding RAS and by adding these breaker contingencies as input signals to trigger generation shedding. The exact requirements will be determined in subsequent studies if the project proceeds.

5. For various system contingencies such N-1-1 contingency for loss of 2L312 and 2L308, [redacted] Project may be inadvertently islanded with BC Hydro loads, which is not allowed. [redacted] is required to participate in the existing Peace region anti-islanding direct transfer trip (DTT) scheme. In addition to entrance protection and 2LXXX protection, the IC is required to install anti-islanding protection within their facility to disconnect

the [redacted] from the grid when an inadvertent island with the local loads forms as a back up of the anti-islanding transfer trip protection.

6. According to BC Hydro's TIR, the IC's project must have sufficient reactive power capability over full MW operating range including at the zero MW output level. The IC's project as submitted does not meet the reactive capability requirement at both MPO and zero MW output levels, which will need to be addressed.

7. BC Hydro will provide line protections for 2L309_1, 2L309_2 and 2LXXX (BC Hydro end only) protections. As part of the line protection replacements for each of the three lines, telecommunication facilities will be required to accommodate the new protection schemes. The IC shall provide required relays, telecom facility and associated equipment at its facilities to accommodate the new protection schemes.

Appendix A
Plant Single Line Diagram Used for Power Flow Study

Figure A-1 shows [redacted] Project single line diagram used for power flow study.

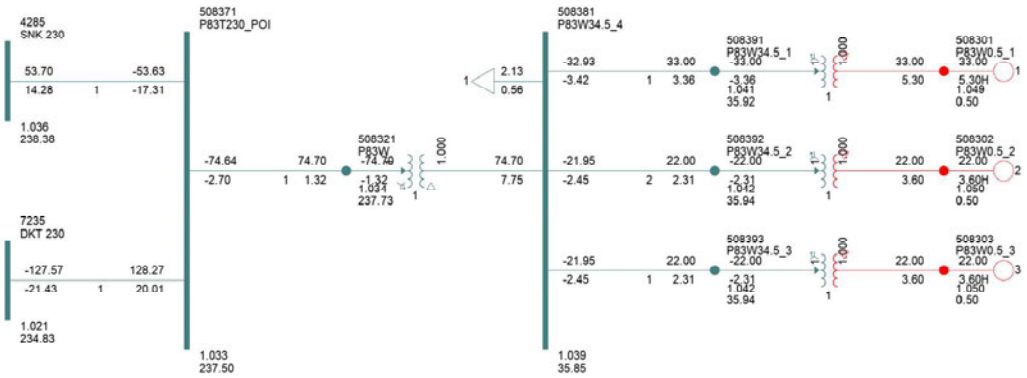

Figure A-1: [redacted] Project Single Line Diagram for Power Flow Study.

Appendix B
One-Line Sketch for New Switching Station

Figure B-1 shows the Stations Planning One-Line Sketch for the New Switching Station P83T.

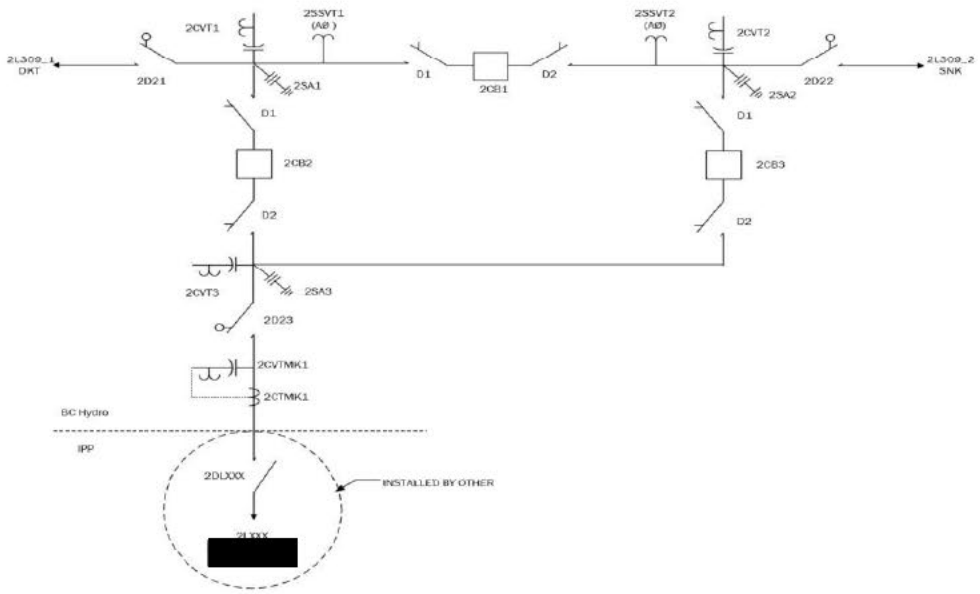

Figure B-1: Stations Planning One-Line Sketch for the New Switching Station P83T.