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

November 24, 2025

[redacted]

via email: [redacted]

RE: CEAP IR #98 – [redacted] – Interconnection Feasibility Study

Dear [redacted]

Enclosed is the Interconnection Feasibility Study for the proposed Interconnection Request (IR), [redacted] [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.

Interconnection Study Costs

The Interconnection Customer is responsible for paying the full cost of all Interconnection Studies in cash. Interconnection Study costs vary depending on the scope, complexity, and other factors such as whether any scope is shared with another Interconnection Customer (not applicable to this Interconnection Feasibility Study). The deposit amounts specified in the OATT are not proxy Interconnection Study costs. If actual Interconnection Study costs exceed the deposit amount, the Interconnection Customer must pay the remaining balance in cash. Please refer to the answer for question no. 53 in the posted Questions & Answers for 2025 Call for Power for typical study cost ranges.

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 $33.0 M.

Major Scope of Work Identified:

- Add one 138 kV line position with associated equipment at BC Hydro's Nicola substation (NIC)
- Add one 138 kV line terminal with the associated substation equipment to terminate customer's line at NIC
- Remove 138 kV circuit breaker and associated two disconnect switches
- Upgrade required substation facilities, infrastructures, and bus work to support new station equipment
- Supply and install required Protection, Control and Telecommunications equipment

Exclusions:

- GST
- Permits
- Right-of-Way & property costs
- Undercrossing of existing transmission lines 5L081, 5L082, 5L083, and 1L251

Key Assumptions:

- Construction by contractor
- 24 months of construction is considered
- No construction during winter season
- Execution of early Engineering and Procurement Agreement
- No expansion of existing stations or control buildings to accommodate new equipment
- Impact Benefit Agreements with First Nations are not considered

Key Risks:

- Expansion of the existing station and/or control building may be required leading to increased costs and/or a longer project schedule
- Major equipment delivery presents potential project cost and schedule risks, based on variance in equipment lead times
- No defined supply chain strategy; construction costs may increase depending on delivery method
- Project schedule may be longer than expected, leading to increased overhead costs
- Ground improvements may be required leading to increased construction costs
- Contaminated soil may be encountered leading to increased construction costs
- Cost of materials and major equipment may be affected by market conditions and escalation

Study Limitations and Exclusions

Protection, Control, and Telecommunications

The Interconnection Feasibility Study does not include a detailed review of the protection, control, and telecommunications system requirements specific to your Interconnection Request. Based on a high-level review, we have identified proxy costs for protection, control, and telecom Network Upgrades drawn from comparable interconnection projects with similar scope and complexity; these proxy costs have been included solely for indicative budgeting purposes. The relative interconnection cost determined by the Interconnection Feasibility Study includes a telecommunications component based on an assumed solution to deliver teleprotection and telecontrol circuit requirements necessary for the Interconnection Request.

Protection, control, and telecommunications system requirements will be reviewed in detail in the System Impact Study if you are a successful participant of the CEAP and meet applicable requirements.

For Interconnection Feasibility Study purposes, it is assumed that any applicant-proposed works that could obstruct or impair the performance of existing BC Hydro microwave systems or new links from the proposed Interconnection Customer Interconnection Facilities (ICIF) to the BC Hydro microwave system would be identified and either relocated or repositioned as determined in a System Impact Study if you are a successful participant of the CEAP and meet applicable requirements. Such works may include, but are not limited to, towers, turbines, dams, support structures, panels, surface materials deposited or redistributed, water surface changes, or vegetation.

Generation Shedding/Curtailment Scheme and Electromagnetic Transient (EMT) Studies

The generation shedding/curtailment scheme reviews (e.g., Remedial Action Scheme (RAS), and a direct transfer trip for anti-islanding scheme) and EMT studies are completed in a System Impact Study. The outcomes of these studies may result in additional requirements, which could include Network Upgrades or ICIF. Any costs associated with completion of these studies, and resulting requirements, are not included in the Interconnection Feasibility Study cost estimate.

Revenue Metering

Please note that revenue metering requirements have not been determined with the Interconnection Feasibility Study. As such, any costs associated with revenue metering and other interconnection components are not included in the cost estimate provided above. Once these requirements are defined, 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 Interconnection Request’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 or delays in data submission or financial commitments may also impact the target in-service date.

If you have any questions, please contact the BC Hydro CEAP team at ceap2025@bchydro.com.

Sincerely,

[redacted]

[redacted]

Manager, Customer Interconnections

BC Hydro

Encl.: CEAP_2025_IR98_[redacted]_Feasibility_Study.pdf

[redacted]

Interconnection Feasibility Study

BC Hydro EGBC Permit to Practice No: 1002449

2025 CEAP IR # 98

Prepared for: [redacted]

Prepared by: [redacted] [redacted]

[redacted]
Engineer in Training, Transmission Planning

Reviewed by: [redacted]

[redacted]
Principal Engineer, Transmission Planning

Accepted by: [redacted]

[redacted]
Manager, Growth Capital Planning

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Title:	Engineer in Training, Transmission Planning
Checked by:	[redacted]
Title:	Consultant, Transmission Planning
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Title:	Principal Engineer, Transmission Planning
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Revisions

Revision	Date	Description
0	2025 Nov	Initial release

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Section:	**Discipline:**
The entire report except those listed below	Transmission Planning

Contributed by:

[redacted] [redacted]

[redacted]

Principal Engineer, Transmission Planning

Section:	**Discipline:**
5.2, 5.3	Substations Growth and Sustainment

Contributed by:

[redacted] [redacted]

[redacted]

Engineer, Substations Growth and Sustainment

Section:	**Discipline:**
5.4	Transmission Lines Engineering

Contributed by:

[redacted] [redacted]

[redacted]

Sr. Engineer, Transmission Lines Engineering

Executive Summary

[redacted] the Interconnection Customer (IC), requests to interconnect its [redacted] - 2025 CEAP IR # 98 - to the BC Hydro (BCH) system. [redacted] includes thirty-five (35) [redacted] type 4 HWO (high wind operation) turbine generators, adding a maximum power injection of 139.7 MW into the BCH system at the proposed Point of Interconnection (POI). The IC's proposed POI is in the Nicola Substation (NIC) 138 kV bus. The IC's station is connected to the POI by its own 54 km, 138 kV transmission line. The total rated capacity of the independent power producer is 147 MW and its proposed commercial operation date is July 7, 2030.

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

1. One new 138 kV line terminal is required at BC Hydro Nicola Substation to interconnect [redacted].
2. The connection of [redacted] does not cause any performance violation (i.e. thermal overload, voltage performance violation or voltage stability concern) under system normal conditions and various system contingencies.
3. The [redacted] is required to have the dynamic reactive power capability at a minimum of +/- 33% of its maximum power output at the high voltage side of the IC's switchyard over the full MW operating range, per BC Hydro's TIR Section 6.4.2.
4. The "Reactive Power at Standstill option" for the proposed type 4 WTGs is required so that each turbine can provide reactive power capability at zero MW output including during turbine standstill.
5. Fast Frequency Response (FFR), as per BCH TIR Section 4.6.5, is required at the [redacted] [redacted] [redacted]. The proposed wind turbine generators, when the FFR function is enabled, are expected to temporarily boost the MW output to limit the system frequency drop during a major frequency event. The FFR settings should be determined in coordination with BC Hydro in the later stage of the interconnection process.

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 October 14, 2025.

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.

Please note that, this Feasibility Study report does not include the descriptions of Protection, Control, and Telecommunications requirements and the associated upgrade scopes; however, as discussed in Section 2 “Purpose and Scopes of Study”, the associated cost implications are captured and delivered in the cover letter to the IC.

Contents

Appendices

Acronyms

The following are acronyms used in this report.

BCH	BC Hydro
CEAP	Competitive Electricity Acquisition Process
COD	Commercial Operation Date
ERIS	Energy Resource Interconnection Service
FFR	Fast Frequency Response
HS	Heavy Summer
HW	Heavy Winter
IC	Interconnection Customer
IPP	Independent Power Producer
IR	Interconnection Request
LS	Light Summer
NERC	North American Electric Reliability Corporation
NIC	Nicola Substation
NRIS	Network Resource Interconnection Service
OATT	Open Access Transmission Tariff
OOS	Out of Service
POI	Point of Interconnection
PU	Per Unit
RAS	Remedial Action Scheme
TIR	BC Hydro “60 KV to 500 kV Technical Interconnection Requirements for Power Generators”
TVC	Transmission Voltage Customer
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]	
Name of Interconnection Customer (IC)	[redacted]	
Point of Interconnection (POI)	Nicola Substation 138 kV bus	
IC's Proposed COD	7th July 2030	
Type of Interconnection Service	NRIS ☒	ERIS ☐
Maximum Power Injection (MW)	139.7 (Summer)	139.7 (Winter)
Number of Turbines	35 x 4.2 MW WTGs	
Plant Fuel	Wind	

[redacted] the Interconnection Customer (IC), requests to interconnect its [redacted] - 2025 CEAP IR # 98 - to the BC Hydro (BCH) system. [redacted] includes thirty-five wind turbine generators, adding a maximum power injection of 139.7 MW into the BCH system at the proposed Point of Interconnection (POI). The proposed POI is on Nicola Substation (NIC) 138 kV bus. The IC owned station is connected through an IC owned 54 km 138kV transmission line to the POI. The IC's proposed commercial operation date (COD) is July 7, 2030.

In the [redacted], there are 35 [redacted] HWO (high wind operation) type 4 wind turbines, each rated at 5.1 MVA / 4.2 MW. Each wind turbine is connected to a 750 V/34.5 kV Y-gnd/delta 6 MVA transformer. The total power from all turbines is collected via seven 34.5 kV feeders, and then stepped up to 138 kV through two 150 MVA, 138/34.5 Y-gnd/delta transformers. Refer to Appendix A for single line diagram of the project.

Figure 1-1 shows the local system where the [redacted] is connected. NIC is one of BCH major transmission substations, and presently has two 500/230 kV transformers, and two 230/138/12 kV transformers. An additional 230/138 kV transformer is planned to be added in March 2026. NIC supplies the local area through one 230 kV transmission line 2L265 and three 138 kV transmission lines 1L243, 1L244, and 1L251.

There are several high-queued load interconnections and their associated network upgrades in the study area. The relevant network upgrades being planned in the study region are included in Section 4 “Assumptions and Conditions”.

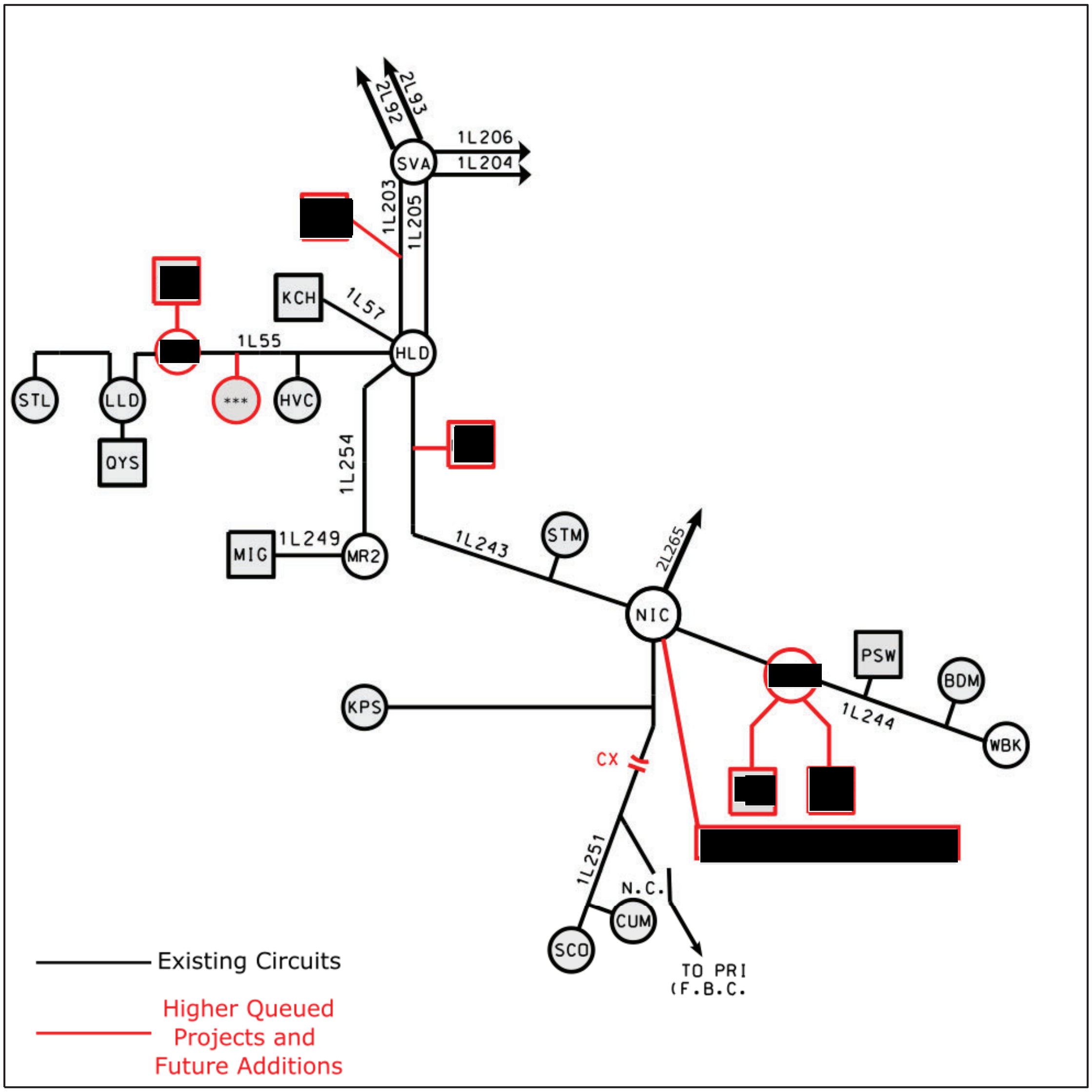

Figure 1-1: 2030/31 Nicola-Highland Region 138kV Transmission System Diagram

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) and produces the estimated cost of required Network Upgrades and the implementation schedule.

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 connected and affects.

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 will be addressed in subsequent System Impact Study if the project proceeds further. In addition, any potential impacts to the adjacent external systems to BC Hydro would be addressed in subsequent detailed and coordinated studies with the relevant adjacent entities if the proposed generator project proceeds further.

Please note that, due to the compressed study timeline for CEAP 2025 Feasibility Study, this report does not include the descriptions of the Protection, Control, and Telecommunication requirements and the associated upgrade scopes. Instead, the network upgrades associated with Protections, Controls and Telecommunications are incorporated with cost estimates in a separate cover letter to the IC.

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, Rev 2.1.1, Effective: Sept 22, 2025.
- BC Hydro Operating Order 5T-10, Ratings for All Transmission Circuits 60 kV or Higher, Sept 17, 2025.
- BC Hydro Operating Order 5T-14, Ratings for All Transmission and Distribution Transformer, Sept 22, 2025.
- BC Hydro System Operating Order 7T-22 System Voltage Control, Sept 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 Oct 14, 2025 for the study purpose. Assumptions are made wherever the IC's input is unavailable. Appendix A shows the schematic diagram of the IC's project used in the study model.

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 generators, 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.

- 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 unless otherwise specified.
- The third NIC 230/138 kV transformer (T7), required to interconnect a higher priority queued load project, is scheduled to enter service in March 2026 as planned and has been included in the base cases of this study.
- 1L251 series capacitor (SC) project is included in the study base cases, which is required by a higher queued load increase project. The proposed SC is to be installed between Kingsvale substation (KPS) and Princeton (-PRI) substation on 1L251, with 50% compensation of 1L251.
- Earlier queued Transmission Generation IRs surrounding the study area are included in this study.

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 studies have been conducted with the focus on the 2035 light summer (LS) system condition, taking into considerations factors such as load conditions, seasonal variation in ambient temperatures, and generation patterns that stress the transmission system. The 2031 heavy winter (HW) and 2030 heavy summer (HS) cases are also checked to capture any performance violations under high load conditions.

The studies are performed for system normal conditions and under critical system contingencies specified in the P1 and P2 events by NERC TPL-001-4. Study results are summarized below.

5.1.1 Branch Loading Analysis

Appendix B shows a summary of branch loading analysis under system normal and single contingencies (P1) for various load conditions.

For all the studied load conditions (35LS, 30HS, 31HW), there is no branch overload identified under system normal condition (P0) and selected single contingency conditions (P1).

5.1.2 Steady-State Voltage Analysis

With the connection of the IC's project, the steady-state voltage performance under system normal and single contingency conditions is acceptable for all the three load conditions (35LS, 30HS, 31HW). Appendix B shows the details in the steady-state voltage study results.

5.1.3 Reactive Power Capability Evaluation

The BCH TIR requires inverter-based resource generators have the dynamic reactive power capability at a minimum of +/- 33% of its maximum power output at the high voltage side of the IC's switchyard over the full MW operating range.

Based on the power flow model data submitted by the IC, the proposed generating project would be capable of meeting the BC Hydro's reactive capability requirement at the plant's maximum MW output, which is subjected to further verification in the next stage of the call process.

In addition, according to the IC-provided reactive capability data, the proposed WTG would provide +2.8 MVAR to -2.8 MVAR reactive capability at the zero MW output if the turbine's "STATCOM" function is enabled. This function needs to be re-confirmed if the IC's project proceeds to next stage of the call process.

5.1.4 Other Performance Requirements

Fast Frequency Response (FFR), as per BCH TIR Section 4.6.5, is required at the [redacted] The proposed wind turbine generators, when the FFR function is enabled, are expected to temporarily boost the MW output to limit the system frequency drop during a major frequency event. The FFR settings should be determined in coordination with BC Hydro in the later stage of the call process.

5.2 Fault Analysis

The short circuit analysis in the Feasibility study 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

The POI of the [redacted] will be the 138 kV switchyard of the existing Nicola Substation (NIC). The station upgrade scope at the existing Nicola Substation (NIC) is as follows.

- Add one 138 kV line terminal with the associated substation equipment. Refer to attached one-line diagram in Appendix C for details.

- Remove 138 kV circuit breaker 1CB18 and associated disconnect switches D1, D2 per the one-line diagram in Appendix C. Station Asset management to determine requirements for removed equipment at a later stage.
- Upgrade required substation facilities, infrastructures, and bus work to support new station equipment.

5.4 Transmission Line Requirements

The Transmission Lines Engineering upgrade scope is as follows.

- No transmission line engineering scope of work is identified for this project.
- The proposed alignment of the new customer-owned transmission line may potentially need to undercross BC Hydro's existing transmission lines, including 500kV 5L081, 5L082, 5L083 and 1L251(138 kV).

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

1. One new 138 kV line terminal is required at BC Hydro Nicola Substation to interconnect [redacted].
2. The connection of [redacted] does not cause any performance violation (i.e. thermal overload, voltage performance violation or voltage stability concern) under system normal conditions and various system contingencies.
3. The [redacted] is required to have the dynamic reactive power capability at a minimum of +/- 33% of its maximum power output at the high voltage side of the IC's switchyard over the full MW operating range, per BC Hydro's TIR Section 6.4.2.
4. The "Reactive Power at Standstill option" for the proposed type 4 WTGs is required so that each turbine can provide reactive power capability at zero MW output including during turbine standstill.
5. Fast Frequency Response (FFR), as per BCH TIR Section 4.6.5, is required at the [redacted] [redacted] [redacted]. The proposed wind turbine generators, when the FFR function is enabled, are expected to temporarily boost the MW output to limit the system frequency drop during a major frequency event. The FFR settings should be determined in coordination with BC Hydro in the later stage of the call process.

Appendix A

Plant Single Line Diagram Used for Power Flow Study

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

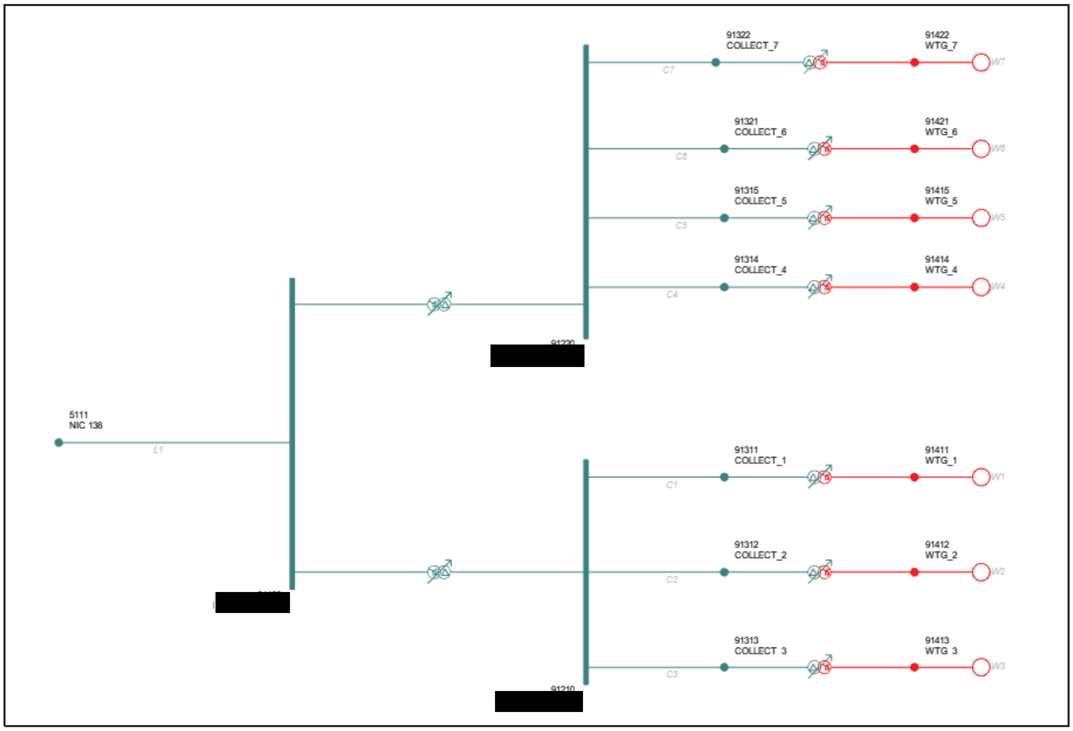

Figure A-1: [redacted] Single Line Diagram for Power Flow Study.

As seen in the diagram, [redacted] has two main power transformers dividing the plant into two parts.

- Part 1 has three (3) feeders.
- Part 2 has four (4) feeders.

Appendix B

Power Flow Study Results

Table B-1: Summary of Branch Loading Study Results

Case	IPP's Generator Output	Contingency Identified		Branch Loading		
		Category	Description	NIC_T3	NIC_T5	NIC_T7
Winter Rating				1200 MVA	286.8 MVA	300 MVA
31HW	147 MW	P0	System Normal	10%	36%	42%
		P1	Loss of [redacted]	5%	22%	26%
		P1	NIC T2 & NIC T6 OOS[1]	17%	50%	58%
Summer Rating				1200 MVA	286.8 MVA	300.0 MVA
30HS	147 MW	P0	System Normal	13%	14%	17%
		P1	Loss of [redacted]	18%	28%	33%
		P1	NIC T2 & NIC T6 OOS[1]	24%	19%	22%
35LS	147 MW	P0	System Normal	14%	46%	53%
		P1	Loss of [redacted]	9%	32%	37%
		P1	NIC T2 & NIC T6 OOS[1]	26%	63%	73%
Note 1: NIC T2 and NIC T6 are in the same protection zone.						

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

Case	IPP's Generator Output	Contingency		Bus Voltage (PU)		
		Category	Description	NIC_138	PRI_251P	Copper Mountain (CUM)_138
31HW	147 MW	P0	System Normal	1.02	1.02	1.02
		P1	Loss of [redacted]	1.03	1.02	1.02
		P1	NIC T2 & NIC T6 OOS[1]	1.02	1.02	1.02
30HS	147 MW	P0	System Normal	1.02	1.02	1.02
		P1	Loss of [redacted]	1.03	1.02	1.02
		P1	NIC T2 & NIC T6 OOS[1]	1.02	1.02	1.02
35LS	147 MW	P0	System Normal	1.02	1.02	1.02
		P1	Loss of [redacted]	1.03	1.02	1.02
		P1	NIC T2 & NIC T6 OOS[1]	1.01	1.02	1.02
Note 1: NIC T2 and NIC T6 are in the same protection zone.						

Appendix C

One-Line Sketch for Connecting [redacted] at Nicola Substation

Figure B-1 shows the one-line diagram for connecting [redacted] to NIC.

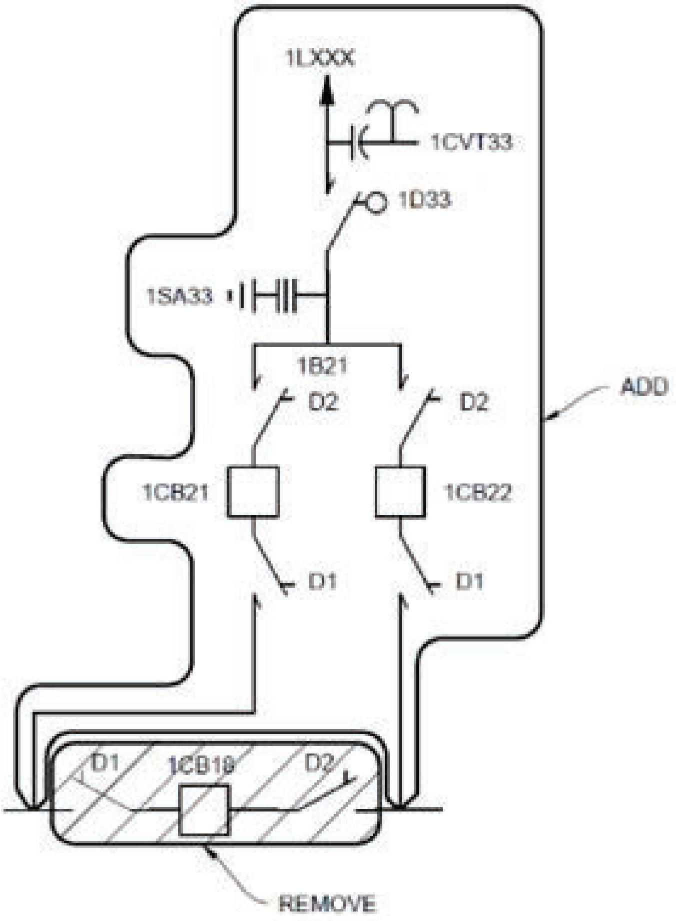

Figure B-1: One-line diagram for connecting [redacted] to NIC