BC Hydro
Power smart

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

July 30, 2024

[redacted]

[redacted]

RE: CEAP IR 53 - Taylor Wind Farm Project - Interconnection Feasibility Study Report

Enclosed is the Interconnection Feasibility study report for the proposed Taylor Wind Farm 1L377 Project 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 $73.7 M.

Major Scope of Work Identified:

- Obtain required Right of Way for the tap connection on 1L377
- Supply and install 138kV structures, conductors and disconnect switches for tap connection to 1L377
- Thermal upgrade (reconductor) 26.1km of 1L377 transmission line
- Supply and install microwave tower, waveguides, antennas, and other required telecommunications equipment
- Supply and install protection relays and other required protection equipment

Exclusions:

- GST
- Right-of-Way or Property costs
- Permits

Key Assumptions:

- Construction will be done by contractor
- 3 years of construction
- Early Engineering and Procurement
- No expansion of existing stations or control buildings to accommodate new equipment
- 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 increase costs
- Cost of materials and major equipment may be affected by market conditions and escalation
- More transmission structures may require replacement for the thermal upgrade

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,

Senior Manager, Transmission Interconnections

BC Hydro

Encl.: CEAP2024_IR_53_Taylor Wind Farm 1L377_FeS_Report_final.pdf

[redacted]

Taylor Wind Farm

Interconnection Feasibility Study

BC Hydro EGBC Permit to Practice No: 1002449

2024 CEAP IR # 53

Prepared for: [redacted]

[redacted]

Report Metadata

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[redacted]

Revisions

Revision	Date	Description
0	2024 Jul	Initial release

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Executive Summary

[redacted] the interconnection customer (IC), requests to interconnect its Taylor Wind Farm (2024 CEAP IR # 53) to the BC Hydro system. Taylor has thirty-three (33) [redacted] 4.5 MW type-4 wind turbine generators, adding a total capacity of 148.5 MW with a maximum power injection of 144.8 MW into the BC Hydro system at the POI. The proposed Point of Interconnection (POI) is on BC Hydro's 138 kV line 1L377, approx. 22.2 km from Taylor Substation (TAY), south of the normally open disconnect of 1L377 – 1D6L377. The IC's project will connect to the POI via a 12.46 km 138 kV line. The IC's proposed commercial operation date (COD) is April 30th, 2029

To interconnect the Taylor Wind Farm and its facilities to the BCH Transmission System at the proposed POI, this Feasibility Study based on 1L377 open between ET3 and PLD has identified the following conclusions and requirements:

1. The T-tap connection on the BCH's existing circuit 1L377 is acceptable for interconnecting the IC's generating project to the BCH system.

2. The study identified thermal overload of 107% continuous rating on 1L377 line section from Taylor Wind POI to Arc Parkland Tap (PLD) under system normal condition in both heavy and light summer loading scenarios. Thermal upgrade of one section of 1L377 (TAY POI to PLD) is needed to the higher ampacity of 720 amperes to accommodate Taylor Wind interconnection.

3. The line section from Arc Parkland Tap (PLD) to Arc Dawson (DSN) Tap is overloaded to 108% of its summer continuous rating under single contingency (PLD 1B1, PLD 1CB2, or PLD 1T1). Taylor Wind would be required to be incorporated into the existing Peace region generator shedding RAS by adding the contingencies as input signals to trigger Taylor Wind generation shedding. The exact requirements will be determined in subsequent studies if the project proceeds.

4. Taylor Wind Farm may be islanded with other generations and BC Hydro loads after certain contingencies, which may result in unacceptable over-voltages. Taylor Wind may be required to be tripped off through a direct transfer trip (DTT) scheme to mitigate the impact caused by the contingencies. Subsequent further study by Analytical Studies will be

performed to confirm the requirement at a later stage of the project. A list of contingencies is provided in Section 5.1.4. In addition, as a backup the IC is required to install anti-islanding protection within their facility to disconnect the wind farm when an inadvertent island with the local load forms.

5. At the POI, BCH will design and build the tap that will include a tap structure and up to three switch structures. A 152 kV rated disconnect switch will be installed to isolate the IC's facilities from the BCH system. Two 152 kV rated disconnect switches will be installed to isolate the trunk circuit on both sides. Additional Right-of-Way (ROW) may be required to accommodate the tap.

6. Thermally upgrade the overhead circuit 1L377 (TAY POI to PLD) from existing 575 Amps to required 720 Amps (30°C ambient summer Temperature) by changing from the existing "Merlin" ACSR to new "Goose" ACSR (at 90°C conductor temperature, 30°C ambient summer Temperature), with structure replacements may be required.

7. BC Hydro will provide 1L377 and 1L348 line protection relay replacement at BC Hydro's Dawson substation (DAW) and Bear Mountain Terminal (BMT). As part of the line protection replacement, telecommunication facilities will be required between DAW and BMT; and DAW and P53. The IC shall provide entrance protection, required relays for 1L377, telecom facility, and associated equipment at its facilities to accommodate the protection requirement.

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.

BCH	BC Hydro
CEAP	Competitive Electricity Acquisition Process
COD	Commercial Operation Date
DTT	Direct Transfer Trip
EDM	Edmonds Office
ERIS	Energy Resource Interconnection Service
FeS	Feasibility Study
FVO	Fraser Valley Office
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
RAS	Remedial Action Scheme
SIO	South Interior Office
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	Taylor Wind Farm	
Name of Interconnection Customer (IC)	[redacted]	
Point of Interconnection (POI)	on 1L377 at 21 km from SGB	
IC's Proposed COD	30th April 2029	
Type of Interconnection Service	NRIS ☒	ERIS ☐
Maximum Power Injection [1] (MW)	144.8 MW (Summer)	144.8 MW (Winter)
Number of Generator Units	33 x 4.5 MW WTGs	
Plant Fuel	Wind	
Note 1: The maximum achievable power injection at the POI is approx. 144.8 MW after accounting for MW losses and service load which is the same as the IC proposed amount.		

[redacted] the interconnection customer (IC), requests to interconnect its Taylor Wind Farm (2024 CEAP IR # 53) to the BC Hydro system. Taylor has thirty-three (33) [redacted] 4.5 MW type-4 wind turbine generators, adding a total capacity of 148.5 MW with a maximum power injection of 144.8 MW into the BC Hydro system at the POI. The proposed Point of Interconnection (POI) is on BC Hydro's 138 kV line 1L377, approx. 22.2 km from Taylor Substation (TAY), south of the normally open disconnect of 1L377 – 1D6L377. The IC's project will connect to the POI via a 12.46 km 138 kV line. The IC's proposed commercial operation date (COD) is April 30th, 2029.

Figure 1-1 shows the Peace region transmission system diagram including P53 interconnection. The study area – south Peace region 230 kV/138 kV network has six existing IPPs, several transmission voltage customers, and BC Hydro distribution substations. The 230kV transmission lines 2L337, 2L313, 2L309, and 2L308 deliver surplus power from QTY, MLW, MKL, and DKW to GMS. The surplus power is also delivered to the Peace 230/138kV area loads via 2L312. 1L377 is normally open between PLD and ET3, which separates the north Peace 138 kV regional network from the south 230/138 kV regional network. P53 is interconnected on the south side of the 1L377 normally open point.

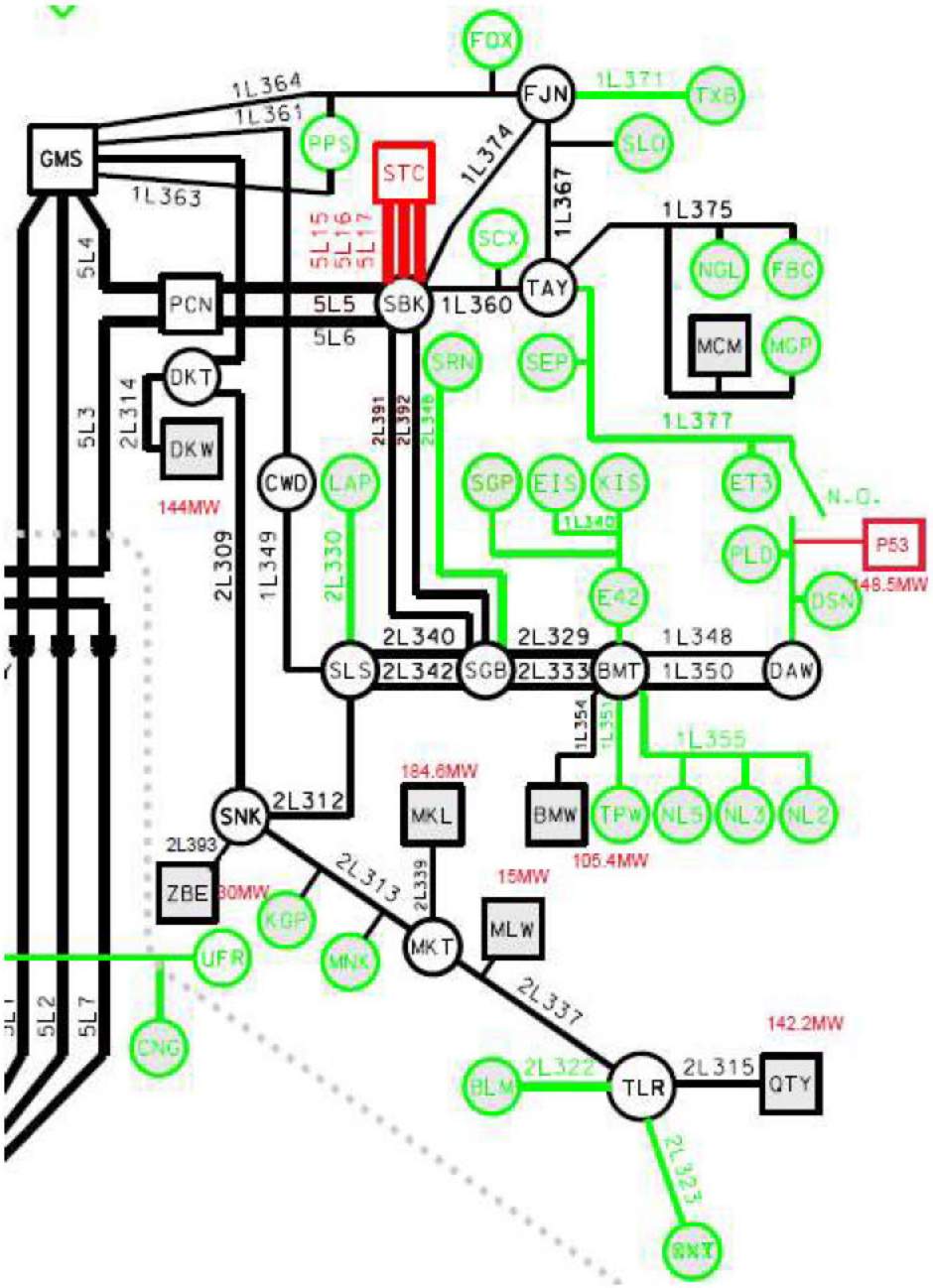

Figure 1-1: Peace region 138/230 kV Transmission System Diagram

The existing wind farms are as follows:

- Moose Lake Wind Farm (MLW) has a total capacity of 15 MW and is tap connected on 2L337.

- Zonnebeke Wind Farm (ZBE) has a total capacity of 30 MW and is connected to SNK via 2L393.
- Meikle Wind Farm (MKL) has a total capacity of 184.6 MW and is connected to MKT via 2L339.
- Quality Wind Farm (QTY) has a total capacity of 142.2 MW and is connected to TLR via 2L315.
- Dokie Wind Farm (DKW) has a total capacity of 144 MW and is connected to DKT via 2L314.
- Bear Mountain Wind Farm (BMW) has a total capacity of 105.4 MW and is connected to BMT via 1L354.

There are major network upgrades being planned in the Peace region as follows.

- Site C generating project under construction will add six hydroelectric generators with a total installed capacity of 1200 MW. Two parallel 500 kV lines (5L5 and 5L6) to Peace Canyon substation (PCN) came to service in 2023. Based on the current schedule the Site C project will be completed by end of 2025.
- A new 230 kV/138 kV transformer at BMT (i.e. BMT T4) is planned to be installed in June 2026 to accommodate load addition.

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 21, 2024 for the study purpose. Assumptions are made wherever the IC's input is unavailable. Appendix A shows the plant single line diagram for 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 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 IC.

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

4) This study is based on 1D6L377 normally open between PLD and ET3 for 1L377. Change of this configuration would affect the study results.

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 2029 light summer (29LS) 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 2029 heavy summer (29HS) 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

Table 5-1 shows a summary of branch loading analysis under system normal and single contingencies (P1, P2) for various load conditions.

The study has identified thermal overload on 1L377 line section from Taylor Wind POI to Arc Parkland Tap (PLD) under system normal summer loading conditions. Thermal upgrade of this section of 1L377 (TAY POI to PLD) to the higher ampacity of 720 amperes is needed to accommodate Taylor Wind interconnection.

The study also finds that under summer conditions the line section from Arc Parkland Tap (PLD) to Arc Dawson Tap (DSN) would overload after a single contingency (PLD 1B1, PLD 1CB2, or PLD 1T1). The overload could be mitigated by shedding the IC's project in response to the contingencies. The Taylor Wind could be incorporated into the existing Peace region generator shedding RAS[1] by adding the contingencies as input signals to trigger Taylor Wind generation shedding. The exact requirements will be determined in subsequent studies if the project proceeds.

[1] The Peace regional transmission system is developed with generation shedding capability 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 performance violations.

Table 5-1: Summary of Branch Loading Analysis Results

Case	IC's Plant Output	Contingency Identified		Branch Loading 1L377 From POI to PLD	Branch Loading 1L377 from PLD to DSN	Branch Loading 1L377 from DSN to DAW
		Cate-gory	Description	POI-PLD	PLD-DSN	DSN to DAW
Summer Continuous Rating				137.4 MVA	137.4 MVA	137.4 MVA
29LS	148.5 MW	P0	System Normal	107%	95%	74%
		P1	PLD 1T1	108%	108%	87%
		P2	PLD 1B1, 1CB2	108%	108%	87%
		P2	DSN 1CB1, 1CB2, 1B1	108%	95%	95%
29HS	148.5 MW	P0	System Normal	107%	94%	70%
		P1	PLD 1T1	108%	108%	84%
		P2	PLD 1B1, 1CB2	108%	108%	84%
		P2	DSN 1CB1, 1CB2, 1B1	108%	94%	94%

5.1.2 Steady-State Voltage Analysis

For all the studied load conditions (29ls, 29hs, 30hw), the voltage performance under system normal condition (P0) is acceptable.

There are no voltage deviation violations for P1 or P2 contingencies. The summary below demonstrates the voltages in the surrounding 138 kV buses are within acceptable ranges with very limited deviations for representative contingencies.

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

Case	IC's Plant Output	Contingency		Bus Voltage (PU)	
		Cate-gory	Description	BMT 138	DAW 138
30HW	148.5 MW	P0	System Normal	1.01	1.01
		P1	1L348	1.01	1.01
		P2	BMT 1CB10	1.01	1.01

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 and the power flow study, 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 subject to further verification in the next stage of interconnection study.

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. According to the IC-provided reactive capability curve, the proposed WTG has + 2.55 /- 2.22 Mvar reactive capability at zero MW output, which needs to be re-confirmed adequate in subsequent detailed studies if the IC's project proceeds further.

5.1.4 Anti-Islanding Requirements

Taylor Wind Farm may be islanded with other generations and BC Hydro loads in the area for the following contingencies, resulting in potential over-voltages and possible equipment damage which is not allowed.

- 1L377 open ended at DAW.
- Loss of 1L348 with 1L350 OOS.
- Loss of 1L350 with 1L348 OOS.
- Loss of both 1L348 and 1L350.
- Loss of 2L329 with 2L333 OOS.
- Loss of 2L333 with 2L329 OOS.
- Loss of both 2L329 and 2L333.

DTT Taylor Wind Farm may be required to mitigate possible OV caused by the contingencies listed above, which is subject to subsequent further study and confirmation by Analytical Studies.

In addition, as a back up the IC is required to install anti-islanding protection within their facility to disconnect the wind farm when an inadvertent island with the local load forms.

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

The POI of the Taylor Wind Farm is a tap connection on 138 kV 1L377 line. No station work is required.

5.4 Transmission Line Requirements

At the POI, BCH will design and build the tap that will include a tap structure and up to three switch structures. A 152 kV rated disconnect switch will be installed to isolate the IC's facilities from the BCH system. Two 152 kV rated disconnect switches will be installed to isolate the trunk circuit on both sides. Additional Right-of-Way (ROW) may be required to accommodate the tap.

Thermally upgrade the overhead circuit 1L377 (TAY POI to PLD) from existing 575 Amps to required 720 Amps (30°C ambient summer Temperature) by changing from the existing "Merlin" ACSR to new "Goose" ACSR (at 90°C conductor temperature, 30°C ambient summer Temperature), with structure replacements may be required.

5.5 Protection & Control Requirements

For successful integration of the new IC, the line protection relays at BC Hydro's Dawson (DAW) and Bear Mountain (BMT) substations for 1L377 and 1L348 will be replaced. As part of the line protection replacement, telecommunication facilities will be required between DAW and BMT; and DAW and new Taylor Wind Farm (P53).

The IC needs to provide the following for the interconnection of Taylor Wind:

- 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) relays at the entrance of Taylor Wind to provide protection coverage for 1L377. BC Hydro P&C Planning will provide settings for these relays.
- 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 line protection relays and PPIS equipment by BCH servers.
- Provide anti-islanding protection as stated in section 5.1

The 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.

5.6 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 DAW and BMT for “DAW – BMT 1L348 PY DIGITAL TELEPROT” and “DAW – BMT 1L348 SY DIGITAL TELEPROT” with C37.94 interfaces.
- Provide WECC Level 3 64 kbps synchronous circuits between DAW and P53 for “DAW – P53 1L377 PY DIGITAL TELEPROT” and “DAW – P53 1L377 SY DIGITAL TELEPROT” with C37.94 interfaces.

Telecontrol Requirements for Telecom

- Provide P53 SCADA circuit off FVO & SIO.

Other Requirements for Telecom

- Provide PY & SY aggregate T1’s between P53-PLM.
- Provide MPLS links and LSPs for new BMT and DAW 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

A non-binding good faith cost for required network upgrades and estimated schedule for construction are included in a separate letter to the IC.

7 Conclusions

To interconnect the Taylor Wind Farm and its facilities to the BCH Transmission System at the POI, this Feasibility Study based on 1L377 open between ET3 and PLD has identified the following conclusions and requirements:

1. The T-tap connection on the BCH's existing circuit 1L377 is acceptable for interconnecting the IC's generating project to the BCH system.

2. The study identified thermal overload of 107% continuous rating on 1L377 line section from Taylor Wind POI to Arc Parkland Tap (PLD) under system normal condition in both heavy and light summer loading scenarios. Thermal upgrade of one section of 1L377 (TAY POI to PLD) is needed to the higher ampacity of 720 amperes to accommodate Taylor Wind interconnection.

3. The line section from Arc Parkland Tap (PLD) to Arc Dawson (DSN) Tap is overloaded to 108% of its summer continuous rating under single contingency (PLD 1B1, PLD 1CB2, or PLD 1T1). Taylor Wind would be required to be incorporated into the existing Peace region generator shedding RAS by adding the contingencies as input signals to trigger Taylor Wind generation shedding. The exact requirements will be determined in subsequent studies if the project proceeds.

4. Taylor Wind Farm may be islanded with other generations and BC Hydro loads after certain contingencies, which may result in unacceptable over-voltages. DTT Taylor Wind may be required to be tripped off through a direct transfer trip (DTT) scheme to mitigate the impact caused by the contingencies. Subsequent further study by Analytical Studies will be performed to confirm the requirement at a later stage of the project. A list of contingencies is provided in Section 5.1.4. In addition, as a backup the IC is also required to install anti-islanding protection within their facility to disconnect the wind farm when an inadvertent island with the local load forms.

5. At the POI, BCH will design and build the tap that will include a tap structure and up to three switch structures. A 152 kV rated disconnect switch will be installed to isolate the IC's facilities from the BCH system. Two 152 kV rated disconnect switches will be installed to isolate the trunk circuit on both

sides. Additional Right-of-Way (ROW) may be required to accommodate the tap.

6. Thermally upgrade the overhead circuit 1L377 (TAY POI to PLD) from existing 575 Amps to required 720 Amps (30°C ambient summer Temperature) by changing from the existing “Merlin” ACSR to new “Goose” ACSR (at 90°C conductor temperature, 30°C ambient summer Temperature), with structure replacements may be required.

7. BC Hydro will provide 1L377 and 1L348 line protection relay replacement at BC Hydro’s Dawson substation (DAW) and Bear Mountain Terminal (BMT). As part of the line protection replacement, telecommunication facilities will be required between DAW and BMT; and DAW and P53. The IC shall provide entrance protection, required relays for 1L377, telecom facility, and associated equipment at its facilities to accommodate the protection requirement.

A non-binding good faith cost for required network upgrades and estimated schedule for construction are included in a separate letter to the IC.

Appendix A
Plant Single Line Diagram Used for Power Flow Study

Figure A-1 shows Taylor Wind Farm single line diagram used for power flow study.

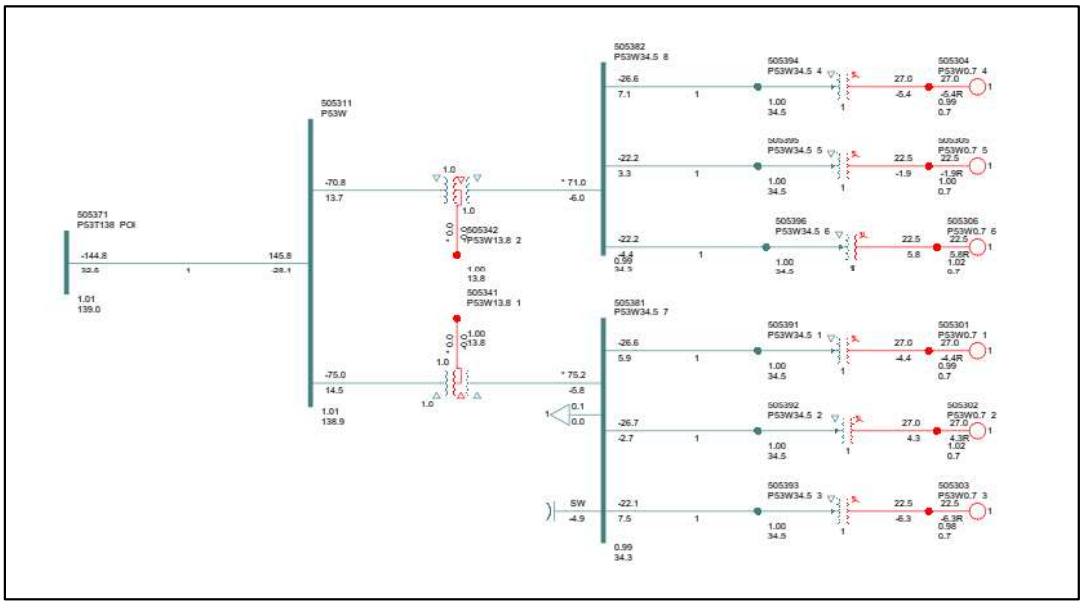

Figure A-1: Taylor Wind Farm Single Line Diagram for Power Flow Study.

As seen in the diagram, Taylor Wind Farm has two main power transformers dividing the plant into two parts.

- Part 1 has two (3) feeders connecting 17 wind turbines to the collector station.
- Part 2 has three (3) feeders connecting 16 wind turbines to the collector station.