BC Hydro
Power smart

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

November 24, 2025

[redacted]

via email: [redacted]

RE: CEAP IR #41 – [redacted] – Interconnection Feasibility Study

Dear [redacted]

Enclosed is the Interconnection Feasibility Study for the proposed Interconnection Request (IR), [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 $202.6 M.

Major Scope of Work Identified:

- Add one 230 kV line position with associated equipment at BC Hydro Kelly Lake (KLY) substation
- Replace existing 500/230 kV, 300 MVA transformer (T1) with 500/230 kV 600 MVA transformer.
- Add four new 230 kV circuit breakers and associated disconnects and one 230 kV line terminal for the [redacted] line at KLY
- Replace all the existing disconnects associated with the existing and future 230 kV circuit breakers and replace 230 kV motorized disconnects associated with the transformers.

- Reconnect 2L90 and 2L93 transmission lines terminals
- 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

Key Assumptions:

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

Key Risks:

- Expansion of the existing 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 2032 (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_IR41_[redacted]_Feasibility_Study.pdf

[redacted]

Interconnection Feasibility Study

BC Hydro EGBC Permit to Practice No: 1002449

2025 CEAP IR # 41

Prepared for: [redacted]

Prepared by: [redacted]

[redacted]

[redacted]
Specialist Engineer, Interconnection Planning

Reviewed by: [redacted]

[redacted]
Manager, Interconnection Planning

Accepted by: [redacted]

[redacted]
Manager, Transmission Planning

Report Metadata

Header:	2025 CEAP IR # 41
Subheader:	Interconnection Feasibility Study
Title:	[redacted]
Subtitle:	2025 CEAP IR # 41
Report Number:	300-APR-00040
Revision:	0
Confidentiality:	Public
Date:	2025 Nov 21
Volume:	1 of 1
Prepared for:	[redacted]
Prepared by:	[redacted]
Title:	Specialist Engineer, Interconnection Planning
Checked by:	[redacted]
Title:	Specialist Engineer, Interconnection Planning
Reviewed by:	[redacted]
Title:	Manager, Interconnection Planning
Related Facilities:	KLY
Additional Metadata:	Transmission Planning 2025-075 Filing Subcode 1350

Revisions

Revision	Date	Description
0	2025 Nov	Initial release

Disclaimer of Warranty, Limitation of Liability

This report was prepared solely for internal purposes. All parties other than BC Hydro are third parties.

BC Hydro does not represent, guarantee or warrant to any third party, either expressly or by implication:

any information, product or process disclosed, described or recommended in this report.

BC Hydro does not accept any liability of any kind arising in any way out of the use by a third party of any information, product or process disclosed, described or recommended in this report, nor does BC Hydro accept any liability arising out of reliance by a third party upon any information, statements or recommendations contained in this report. Should third parties use or rely on any information, product or process disclosed, described or recommended in this report, they do so entirely at their own risk.

This report was prepared by the British Columbia Hydro And Power Authority (“BCH”) or, as the case may be, on behalf of BCH by persons or entities including, without limitation, persons or entities who are or were employees, agents, consultants, contractors, subcontractors, professional advisers or representatives of, or to, BCH (individually and collectively, “BCH Personnel”).

This report is to be read in the context of the methodology, procedures and techniques used, BCH’s or BCH’s Personnel’s assumptions, and the circumstances and constraints under which BCH’s mandate to prepare this report was performed. This report is written solely for the purpose expressly stated in this report, and for the sole and exclusive benefit of the person or entity who directly engaged BCH to prepare this report. Accordingly, this report is suitable only for such purpose, and is subject to any changes arising after the date of this report. This report is meant to be read as a whole, and accordingly no section or part of it should be read or relied upon out of context.

Unless otherwise expressly agreed by BCH:

(a) any assumption, data or information (whether embodied in tangible or electronic form) supplied by, or gathered from, any source (including, without limitation, any consultant, contractor or subcontractor, testing laboratory and equipment suppliers, etc.) upon which BCH’s opinion or conclusion as set out in this report is based (individually and collectively, “Information”) has not been verified by BCH or BCH’s Personnel; BCH makes no representation as to its accuracy or completeness and disclaims all liability with respect to the Information;

(b) except as expressly set out in this report, all terms, conditions, warranties, representations and statements (whether express, implied, written, oral, collateral, statutory or otherwise) are excluded to the maximum extent permitted by law and, to the extent they cannot be excluded, BCH disclaims all liability in relation to them to the maximum extent permitted by law;

(c) BCH does not represent or warrant the accuracy, completeness, merchantability, fitness for purpose or usefulness of this report, or any information contained in this report, for use or consideration by any person or entity. In addition, BCH does not accept any liability arising out of reliance by a person or entity on this report, or any information contained in this report, or for any errors or omissions in this report. Any use, reliance or publication by any person or entity of this report or any part of it is at their own risk; and

(d) In no event will BCH or BCH’s Personnel be liable to any recipient of this report for any damage, loss, cost, expense, injury or other liability that arises out of or in connection with this report including, without limitation, any indirect, special, incidental, punitive or consequential loss, liability or damage of any kind.

Copyright Notice

Contributors

The following accept responsibility for the content in the specified sections. Professionals apply their signature and/or seal as appropriate.

Section: **Discipline:**

Entire report except listed below — Transmission Planning

Contributed by:

[redacted]

[redacted]

Specialist Engineer, Interconnection Planning

[redacted]

Section: **Discipline:**

5.2, 5.3 — Stations Planning

Contributed by:

[redacted]

[redacted]

Engineer, Station Planning

[redacted]

Executive Summary

[redacted], the Interconnection Customer (IC), requests to interconnect its [redacted] (2025 CEAP IR # 41) to the BC Hydro (BCH) system. [redacted] has one hundred thirty-eighty (138) [redacted] solar PV inverters, with a total installed capacity of 516.1 MW. The proposed Point of Interconnection (POI) is on BC Hydro's Kelly Lake substation (KLY) 230 kV bus. The IC will construct a 230 kV transmission line, about 13.5 km in length, connecting to the proposed POI. The proposed commercial operation date (COD) is September 30th, 2031.

To interconnect the [redacted] and its facilities to the BCH Transmission System at the proposed POI, this Feasibility Study has made the recommendations and conclusions as follow:

1. A new 230 kV line position is required at KLY substation to facilitate the interconnection of IC's generating project.
2. The interconnection of IC's generation project will result in thermal overloads under system normal (N-0) conditions on the existing transformers KLY T1 and KLY T4. The loading levels are observed to be 323 MVA for KLY T1 and 306 MVA for KLY T4 in 2032 light summer, exceeding their thermal limits of 300 MVA. To mitigate this issue, KLY T1 will need to be replaced with the new set rated at 600 MVA.
3. Under certain single contingency (N-1) conditions, the interconnection of IC's generating project contributes to thermal overloads on KLY T1/T4 (with either T4 or T1 OOS) and 1L204 (SVA - DUG). The IC's generating project will need to participate in the generation runback or shedding remedial action scheme (RAS) to secure the system. The RAS function scope will be specified in the System Impact Study (SIS) if the need for RAS is determined.
4. The IC is required to install anti-islanding protection within its facility to disconnect the IC's generating plant from the grid when an inadvertent island with the local load forms. The anti-islanding protection shall be configured in the manner that does not compromise the required fault ride-through performance.

5. Upon the IC's submitted information, the [redacted] is capable of meeting the required dynamic reactive power capability over the full MW operating range per BC Hydro's TIR, which is subjected to further verification in the next 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 cost estimate for required network upgrades and estimated schedule for construction are included 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
BRT	Bridge River Terminal
CEAP	Competitive Electricity Acquisition Process
COD	Commercial Operation Date
DTT	Direct Transfer Trip
ERIS	Energy Resource Interconnection Service
FeS	Feasibility Study
IBR	Inverter-Based Resources
IC	Interconnection Customer
IR	Interconnection Request
KLY	Kelly Lake Substation
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
P41	[redacted]
POI	Point of Interconnection
RAS	Remedial Action Scheme
TIR	BC Hydro “60 KV to 500 kV Technical Interconnection Requirements for Power Generators”
WECC	Western Electricity Coordinating Council

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)	KLY 230 kV	
IC's Proposed COD	30th September 2031	
Type of Interconnection Service	NRIS ☒	ERIS ☐
Maximum Power Injection (MW)	497 MW (Summer)	497 MW (Winter)
Number of Solar Inverters	138 x 3.74 MW	
Plant Fuel	Solar	

[redacted] the Interconnection Customer (IC), requests to interconnect its [redacted] (2025 CEAP IR # 41) to the BC Hydro system. [redacted] has one hundred thirty-eighty (138) [redacted] solar PV inverters with a total installed capacity of 516.1 MW. The IC's proposed Point of Interconnection (POI) is on BC Hydro's Kelly Lake substation (KLY) 230 kV bus. The IC will construct a 230 kV transmission line, about 13.5 km in length, connecting to the proposed POI. The proposed commercial operation date (COD) is September 30th, 2031.

Figure 1-1 shows the Kelly Lake area transmission system diagram. Kelly Lake substation (KLY) is a major substation in this area with two existing 500/230 kV transformers (KLY T1 & T4) rated at 300 MVA each. KLY presently supplies local area loads through two 230 kV transmission lines 2L86 and 2L94. KLY is also connected to Bridge River Terminal station (BRT) via 2L90 and South Interior west via 2L92 and 2L93. Generation in Northern Interior is transmitted via three 500 kV transmission lines 5L11, 5L12 and 5L13 to KLY and further from KLY to BC provincial loads center in Lower Mainland and Vancouver Island via 5L41 and 5L42.

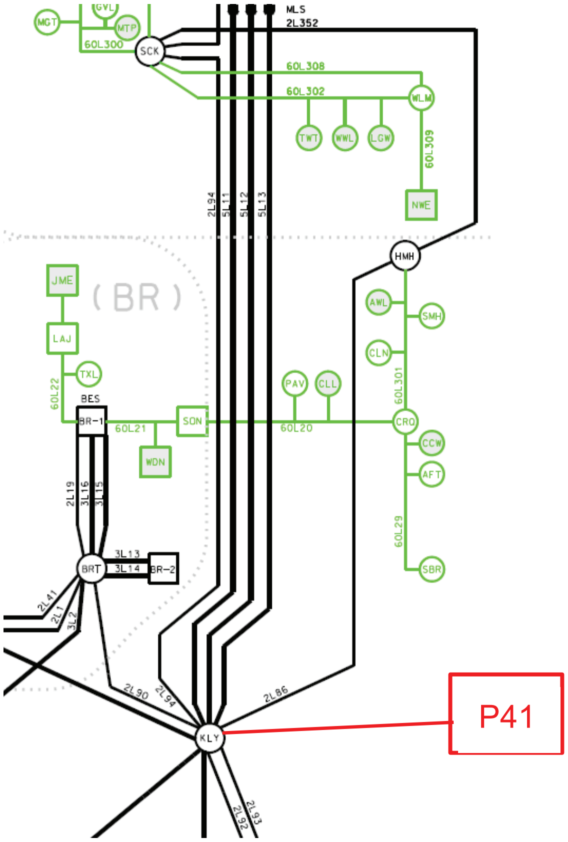

Figure 1-1: Kelly Lake Area 230 / 500 kV Transmission System Diagram

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 generating 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 planning horizon are also incorporated. Additional assumptions are listed as follows.

1) The generation in the study area are dispatched to the patterns that stress the transmission system in the study area. In these patterns, the associated generators are typically set to their Maximum Power Outputs (MPO) unless otherwise specified.
2) Bridge River Transmission Reinforcement Project (BRTP), which is to thermally uprate the existing line 2L90 between BRT and KLY, will be in-service in summer 2029.
3) Earlier queued IRs in the study area are included in the study cases.

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 system reinforcement requirement based on steady state performance analysis.

The study focuses on the base scenario — 31HW/32LS/32HS system conditions that include all the higher-queued generating projects ([redacted]) in the region. These base cases were prepared based on factors such as seasonal variation in load conditions and generation patterns that stress the transmission system.

Various generation dispatch scenarios are considered in the base scenario studies, including:

- High Lower Mainland (LM) and Bridge River (BR) generation
- High Columbia generation and low Peace generation
- High Peace generation and a low Columbia generation

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

5.1.1 Thermal Overload Analysis

Appendix B shows the details of thermal overload analysis results. The study finds that the addition of IC's generating project would cause thermal overloads on the existing KLY T1 and T4 under system normal (N-0) condition in summer cases. The loading levels were observed to be 323 MVA for KLY T1 and 306 MVA for KLY T4, exceeding their thermal limits of 300 MVA. The existing KLY T1 will be replaced with the new set rated at 600 MVA per section 5.3. The replacement transformer rated at 600 MVA of KLY T1 would have adequate performance with no overloading under system normal conditions.

For critical single contingency (N-1) conditions, the study observed overloads on the new KLY T1 and existing T4 (with either T4 or T1 OOS), and several preexisting overloads on 138 kV circuits such as 1L203 (SVA–HLD) and 1L204 (SVA–DUG) under light summer conditions (32ls). While the [redacted] does not exacerbate the overload on 1L203, it does contribute to increased loading on 1L204 under contingencies.

To mitigate the overload concerns under a contingency on the new transformer of KLY T1, existing T4 and 1L204, the [redacted] will be required to participate in a generation shedding or runback Remedial Action Scheme (RAS), which will be determined during the System Impact Study (SIS) stage in future if needed.

5.1.2 Steady-State Voltage Analysis

With the connection of the IC's project, the stead-state voltage performance under system normal and single contingency conditions is acceptable for the studied load conditions. Appendix B shows the details in the steady-state voltage study results.

5.1.3 Reactive Power Capability Evaluation

The BC Hydro TIR requires an 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 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 interconnection process.

In addition, according to the IC-provided reactive capability data, the proposed inverter would provide a reactive capability between +2.32 Mvar to -2.32 Mvar at the zero MW output if the inverter's "Reactive Power at Night" function is enabled. This function needs to be re-confirmed if the IC's project proceeds to next stage of the interconnection process.

5.1.4 Anti-Islanding Requirements

The IC's generating project is not arranged for islanded operation. The IC is required to install anti-islanding protection within its facility to disconnect the IC's generating facility from the grid when an inadvertent island with the local loads 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

Kelly Lake substation (KLY) will be upgraded to provide a 230 kV line termination for interconnecting the IC's generating project.

The scope of substation work at KLY is as follows:

- Replace existing 500/230 kV, 300 MVA transformer (T1) with 500/230 kV 600 MVA transformer.
- Add the following station equipment. Appendix C shows the one-line sketch for Kelly Lake substation (KLY) upgrade.
    - Four new 230 kV circuit breakers and associated disconnects
    - One 230 kV line terminal for the [redacted] 2LXXX transmission line
- Replace all the existing disconnects associated with the existing and future 230 kV circuit breakers and replace 230 kV motorized disconnects associated with the transformers.
- Upgrade the required substation facilities, infrastructures, and bus work to support new station equipment.
- Reconnect 2L90 and 2L93 transmission lines terminals.

Refer to one-line sketches in Appendix C for further details.

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] 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 line position is required at KLY substation to facilitate the interconnection of IC's generating project.
2. The interconnection of IC's generation project will result in thermal overloads under system normal (N-0) conditions on the existing transformers KLY T1 and KLY T4. The loading levels are observed to be 323 MVA for KLY T1 and 306 MVA for KLY T4 in 2032 light summer, exceeding their thermal limits of 300 MVA. To mitigate this issue, KLY T1 will need to be replaced with the new set rated at 600 MVA.
3. Under certain single contingency (N-1) conditions, the interconnection of IC's generating project contributes to thermal overloads on KLY T1/T4 (with either T4 or T1 OOS) and 1L204 (SVA - DUG). The IC's generating project will need to participate in the generation runback or shedding remedial action scheme (RAS) to secure the system. The RAS function scope will be specified in the System Impact Study (SIS) if the need for RAS is determined.
4. The IC is required to install anti-islanding protection within its facility to disconnect the IC's generating plant from the grid when an inadvertent island with the local load forms. The anti-islanding protection shall be configured in the manner that does not compromise the required ride-through performance.
5. Upon the IC's submitted information, the [redacted] is capable of meeting the required dynamic reactive power capability over the full MW operating range per BC Hydro's TIR, which is subjected to further verification in the next stage of the interconnection process.

Appendix A

Schematic Diagram of the IC’s Project

Figure A-1 shows the schematic diagram for the IC’s project.

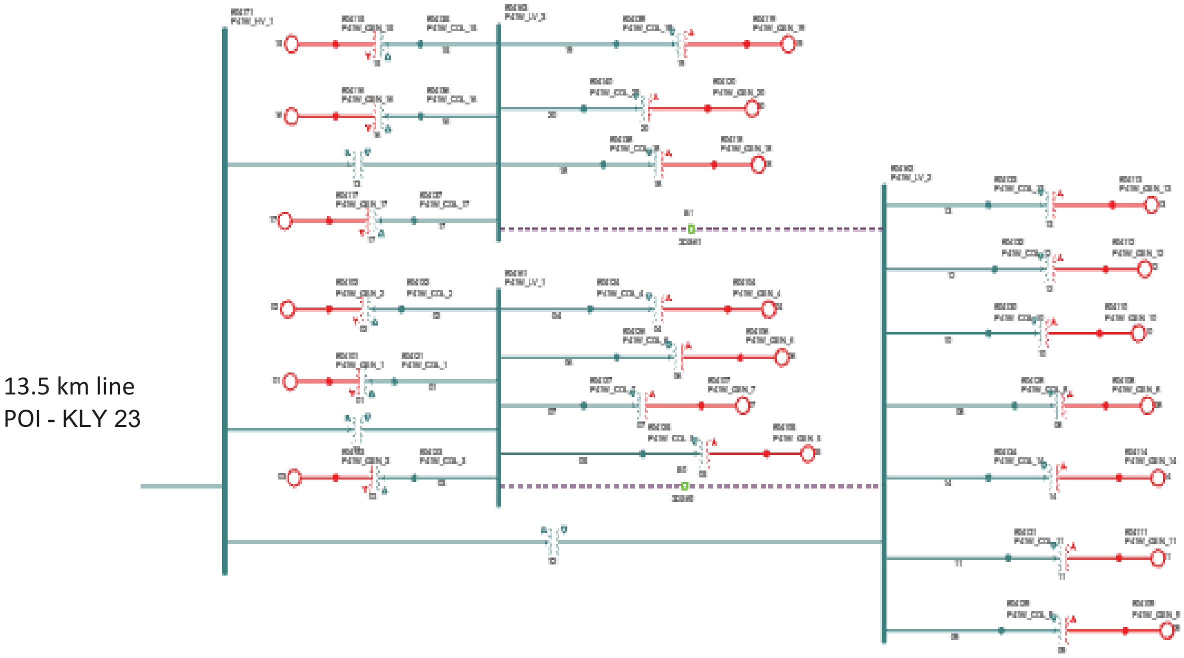

Figure A-1: [redacted] Plant Schematic Diagram.

Appendix B

Power Flow Study Results

Base Scenario (31HW/32HS/32LS)

Table B-1: Power Flow Study Results

High LM & BR generation:

Case	IC's Plant Output (MW)	Contingency		Branch Loading (%)						
		Category	Description	KLY	2L92	2L90	2L94	2L86	1L203	1L204
				T4 / T1	KLY-SVA	KLY-BRT	KLY-SCK	KLY-HMH	HLD-SVA	SVA-AFN
Summer Rating				300 MVA	230 MVA	404 MVA	218 MVA	319 MVA	173 MVA	143 MVA
32LS	MAX	P0	System Normal	**102 / 108**	29	70	26	15	9	37
		P1	Loss of [redacted]	46 / 48	19	86	21	12	5	26
		P1	KLY T1	**170 / -**	39	60	31	18	14	48
		P1	2L90	64 / 67	25	-	23	12	6	34
		P1	2L93	**108 / 112**	50	71	26	15	6	34
		P1	5L87	**100 / 105**	31	71	26	15	9	40
		P2	KLY 2CB2 internal Fault	**174 / -**	-	59	31	18	9	36
		P1	1L205	**103 / 108**	31	72	26	15	15	41
		P1	1L206	**104 / 110**	28	71	26	15	12	58

High Columbia generation:

Case	IC's Plant Output (MW)	Contingency		Branch Loading (%)						
		Category	Description	KLY	2L92	2L90	2L94	2L86	1L203	1L204
				T4 / T1	KLY-SVA	KLY-BRT	KLY-SCK	KLY-HMH	HLD-SVA	SVA-AFN
Summer Rating				300 MVA	230 MVA	404 MVA	218 MVA	319 MVA	173 MVA	143 MVA
32LS	MAX	P0	System Normal	83 / 87	23	26	27	17	82	45
		P1	Loss of [redacted] Project	37 / 38	33	14	19	13	87	37
		P1	KLY T1	**130 / -**	18	33	30	19	79	52
		P1	2L90	96 / **100**	22	-	28	18	81	48
		P1	2L93	80 / 83	33	25	27	17	78	53
		P1	5L87	92 / 97	39	16	28	18	89	30
		P2	KLY 2CB2 internal Fault	125 / -	-	32	30	19	75	58
		P1	1L205	81 / 84	20	25	27	17	**115**	39
		P1	1L206	85 / 89	27	26	27	17	79	63

High Peace generation:

Case	IC's Plant Output (MW)	Contingency		Branch Loading (%)						
		Category	Description	KLY	2L92	2L90	2L94	2L86	1L203	1L204
				T4 / T1	KLY-SVA	KLY-BRT	KLY-SCK	KLY-HMH	HLD-SVA	SVA-AFN
Summer Rating				300 MVA	230 MVA	404 MVA	218 MVA	319 MVA	173 MVA	143 MVA
32LS	MAX	P0	System Normal	58 / 61	7	47	8	6	72	82
		P1	Loss of [redacted] Project	30 / 32	11	32	5	3	79	71
		P1	KLY T1	85 / -	12	50	8	7	70	89
		P1	2L90	80 / 84	12	-	9	8	70	90
		P1	2L93	60 / 64	11	46	7	6	72	83
		P1	5L87	26 / 27	30	62	8	5	60	**110**
		P2	KLY 2CB2 internal Fault	89 / -	-	51	8	7	71	86
		P1	1L205	57 / 60	11	45	7	6	99	81
		P1	1L206	62 / 65	5	46	7	6	67	**120**

Table B-2: Steady-State Voltage Study Results

High LM&BR generation:

Case	IC's Plant Output (MW)	Contingency		Bus Voltage (PU)			
		Category	Description	KLY 500	KLY 230	SVA 230	HMH 230
32LS	MAX	P0	System Normal	1.07	1.05	1.06	1.05
		P1	Loss of [redacted]	1.07	1.07	1.07	1.07
		P1	KLY T1	1.07	1.04	1.04	1.05
		P1	2L90	1.07	1.06	1.06	1.06
		P1	2L93	1.07	1.05	1.05	1.05
		P1	5L87	1.06	1.05	1.05	1.05
		P2	KLY 2CB2 internal Fault	1.08	1.05	1.05	1.05
		P1	1L205	1.07	1.05	1.06	1.05
		P1	1L206	1.07	1.05	1.06	1.05

High Columbia generation:

Case	IC's Plant Output (MW)	Contingency		Bus Voltage (PU)			
		Category	Description	KLY 500	KLY 230	SVA 230	HMH 230
32LS	MAX	P0	System Normal	1.06	1.04	1.04	1.05
		P1	Loss of [redacted]	1.07	1.06	1.05	1.06
		P1	KLY T1	1.07	1.04	1.04	1.05
		P1	2L90	1.06	1.04	1.04	1.05
		P1	2L93	1.06	1.04	1.04	1.05
		P1	5L87	1.06	1.04	1.04	1.05
		P2	KLY 2CB2 internal Fault	1.07	1.04	1.04	1.05
		P1	1L205	1.06	1.05	1.05	1.05
		P1	1L206	1.06	1.04	1.04	1.05

High Peace generation:

Case	IC's Plant Output (MW)	Contingency		Bus Voltage (PU)			
		Category	Description	KLY 500	KLY 230	SVA 230	HMH 230
32LS	MAX	P0	System Normal	1.05	1.05	1.04	1.05
		P1	Loss of [redacted]	1.06	1.07	1.06	1.07
		P1	KLY T1	1.06	1.05	1.05	1.05
		P1	2L90	1.05	1.05	1.04	1.06
		P1	2L93	1.06	1.05	1.04	1.05
		P1	5L87	1.05	1.06	1.05	1.06
		P2	KLY 2CB2 internal Fault	1.06	1.05	1.04	1.05
		P1	1L205	1.06	1.05	1.05	1.05
		P1	1L206	1.06	1.05	1.05	1.05

Appendix C

One-Line Sketch for Kelly Lake Substation Upgrade

Figure C-1 and Figure C-2 show the stations planning one-line sketch for Kelly Lake substation 500 kV and 230 kV upgrade respectively.

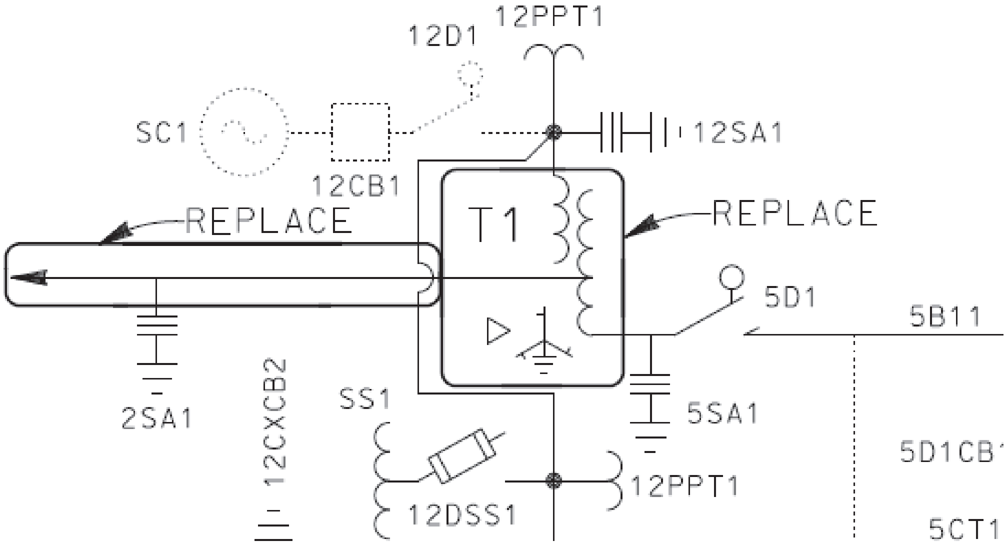

Figure C-1: Stations Planning One-Line Sketch for Kelly Lake Substation 500 kV Upgrade

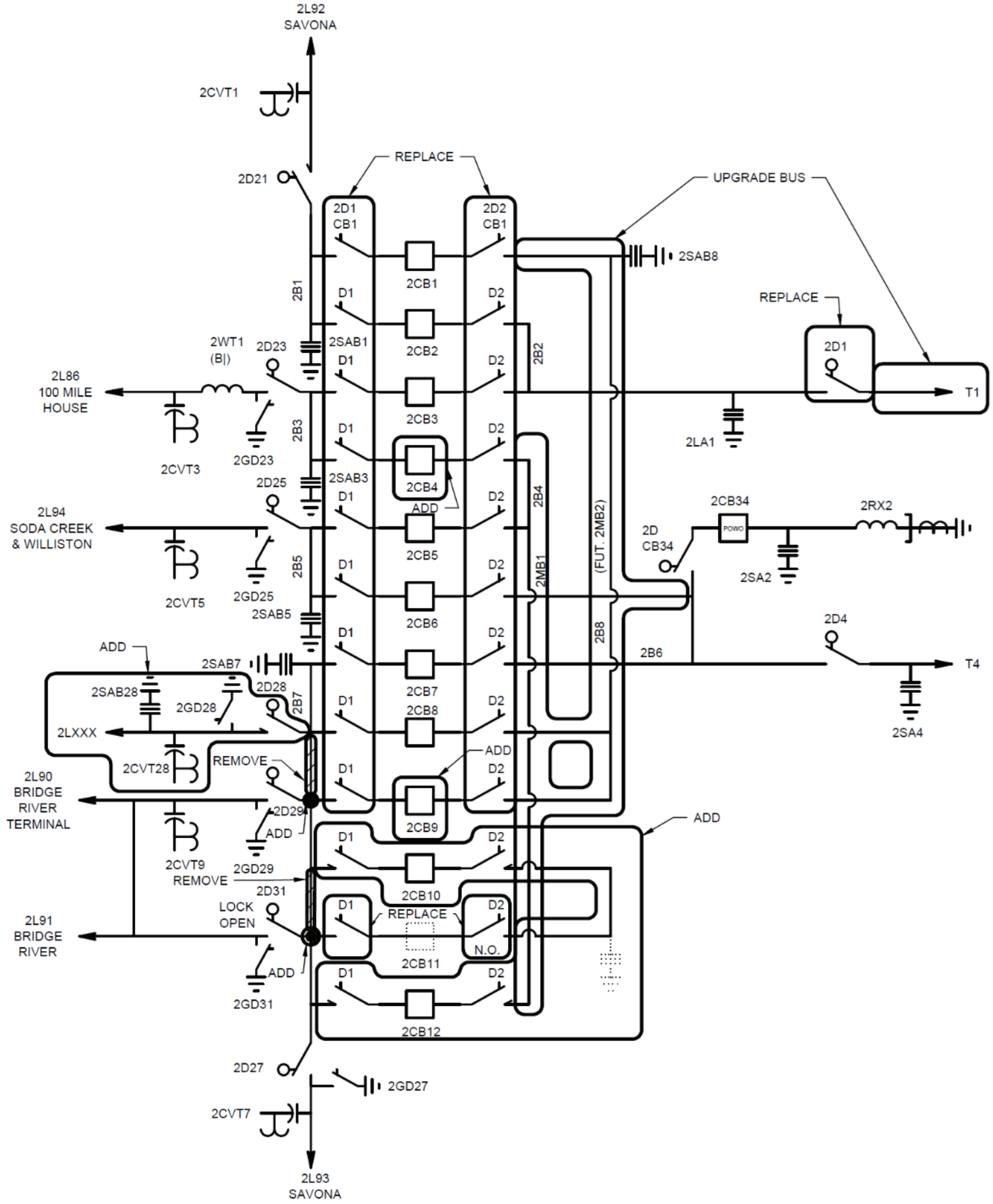

Figure C-2: Stations Planning One-Line Sketch for Kelly Lake Substation 230 kV Upgrade