System Impact Study

Long Term Point-To-Point OASIS Request
AREF: 99723538, 99723543
On the POWELL.RIVER to BC.US.BORDER Path

January 1, 2024 to January 1, 2029

BC Hydro EGBC Permit to Practice No: 1002449

Revision 0

Report No: Transmission Planning 2023-070
September 2023

BC Hydro
Power smart

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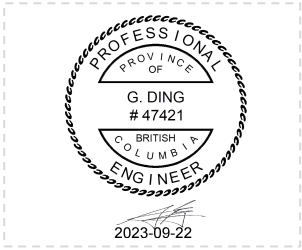
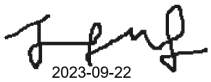
This report was prepared and reviewed by Transmission Asset Planning

Prepared by:

2023-09-22

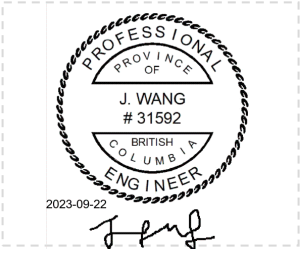
Jim Ding, P.Eng.
Engineer, Interconnection Planning,
Transmission Asset Planning, BC Hydro



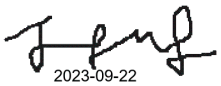


2023-09-22

Jing Wang, P.Eng.
Sr. Engineer, Interconnection Planning,
Transmission Asset Planning, BC Hydro



Reviewed by:



2023-09-22 On behalf of

Robert Pan, P.Eng.
Manager, Interconnection Planning,
Transmission Asset Planning
BC Hydro

Accepted by:

2023-09-22

Michael Guité, P.L.Eng
Manager, Transmission Asset Planning,
BC Hydro

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Prepared for:	Evolugen Trading and Marketing LP
Prepared by:	Jim Ding, P.Eng. and Jing Wang, P.Eng.
Title:	Engineer, Interconnection Planning and Sr. Engineer, Interconnection Planning
Reviewed by:	Robert Pan, P.Eng.
Title:	Manager, Interconnection Planning
Accepted by:	Michael Guité, P.L.Eng.
Title:	Manager, Transmission Asset Planning
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Executive Summary

Pursuant to BC Hydro OATT Section 19, two Long Term Firm Point-to-Point (LTFPTP) transmission service requests (TSRs) with OASIS AREF# 99723538 and # 99723543 have been studied:

OASIS #	99723538	99723543
Point of Receipt	POWELL.RIVER	POWELL.RIVER
Point of Delivery	BC.US.BORDER	BC.US.BORDER
Amount Requested	45 MW	33 MW
Start Time	2024-01-01	2024-01-01
Stop Time	2029-01-01	2029-01-01
Term	5 Years	5 Years
Submission Date	2023-05-04	2023-05-04

This SIS concludes the following with reference to the BCH transmission system:

1. The 78 MW Service with OASIS AREF# 99723538 and # 99723543 can be accommodated in whole as Long Term Firm transmission service without system upgrades,
2. There is sufficient capacity to accommodate a roll-over right for another 5 years after the initial Service period is due.

It should be noted that the requested service is subject to an interruption when a single contingency occurs on the radial connections discussed in the report.

A separate document titled Evaluation of Conditional Firm Service (CFS) determines the conditional service that can be granted to the OASIS AREF# 99723538 and # 99723543 and the associated rollover rights.

BC Hydro (Transmission Provider) will tender Service Agreements related to the outcomes of the SIS Report and the CFS Evaluation to the Transmission Customer. See the “Resulting Offers” section on the CFS Evaluation for specific details.

ACRONYMS

The following are acronyms used in this report for BC Hydro's three letter codes and the planning regions.

AMC	American Creek Series Capacitor Station
BSY	Burrard Synchronous Condenser station
CBN	Clayburn Substation
CHP	Chapmans Series Capacitor Station
CKY	Cheekye Substation
CRK	Creekside Series Capacitor Station
CUS	Custer Substation in the US
ING	Ingledow Substation
KLY	Kelly Lake Substation
MDN	Meridian Substation
MLN	Mclellan Substation
NIC	Nicola Substation
POW	Powell River Substation
STC	Site C Generating Station
WSN	Williston Substation

NI	North Interior
SI	South Interior
LM	Lower Mainland
LMVI	Lower Mainland and Vancouver Island

LTFPTP	Long Term Firm Point-to-Point Transmission Service
OATT	Open Access Transmission Tariff

1. Introduction

Pursuant to BC Hydro Open Access Transmission Tariff (OATT) Sections 17.1, 17.2, and 17.3, the Transmission Service Requests (TSRs) with OASIS AREF# 99723538 and #99723543 were submitted by the Transmission Customer, Evolugen Trading and Marketing LP (ETML), to the Transmission Provider, British Columbia Hydro and Power Authority (BC Hydro). The requests were accepted and deemed complete. An excerpt of the key information is as follows, with the full details shown in Appendix A.

Table 1-1: OASIS AREF 99723538 and 99723543

OASIS #	99723538	99723543
Point of Receipt (POR)	POWELL.RIVER	POWELL.RIVER
Point of Delivery (POD)	BC.US.BORDER	BC.US.BORDER
Amount Requested	45 MW	33 MW
Start Time	2024-01-01	2024-01-01
Stop Time	2029-01-01	2029-01-01
Term	5 Years	5 Years
Submission Date	2023-05-04	2023-05-04

In accordance with the BC Hydro OATT Sections 19.1 and 19.2, BC Hydro (Transmission Provider) determined that a System Impact Study (SIS) was needed to accommodate the service that was requested by ETML on May 4, 2023, and subsequently a System Impact Study Agreement was executed on May 17, 2023.

This SIS is mainly to determine whether the Full Service can be offered in response to the two TSRs with OASIS AREF# 99723538 and # 99723543, and whether a roll-over right can be offered after the initial service period is due. A separate document titled Evaluation of Conditional Firm Service (CFS) determines the conditional service that can be granted to the OASIS AREF# 99723538 and # 99723543.

To determine whether the Full service can be offered, this SIS evaluates the incremental impact of the total export of 78 MW on the BC Hydro transmission grid. In this SIS, the current transmission commitments are considered as the base system scenarios, which include:

- The Network Integration Transmission Service (NITS) that serves the domestic loads
- The pre-existing Long Term Firm Point-to-Point (LTFPTP) transmission service agreements

2. Study Scope

The SIS only determines, under specified assumptions and limitations, whether 78 MW of transfer capability is available, and if not, the network upgrades which will be needed to provide the transfer capability for the duration of the transmission service request. The SIS does not determine nor guarantee the availability of generation resources should a transmission service agreement be executed . It is up to the Transmission Customer (ETML) of the executed Service Agreement to provide the generation resources.

In accordance with the System Impact Study Agreement and BC Hydro OATT Section 19.3, this SIS identifies the following to accommodate the Transmission Service Request:

- any transmission system constraints
- any necessary network upgrades to accommodate the TSRs in full
- availability of a roll-over right of the service to be offered

A separate document titled Evaluation of Conditional Firm Service (CFS) determines the conditional service that can be granted to the OASIS AREF# 99723538 and # 99723543 and the rollover rights associated. Note that the study analyzed the BCH System only. A study

of transfer limits in the neighboring systems is not within the scope of this study. **Customers requesting these services are responsible for obtaining transmission service from the neighboring Transmission Service Providers.**

3. Planning Criteria and Study Methodology

3.1. Planning Standards and Criteria

BC Hydro follows the general methodology outlined in BC Hydro's OATT Attachment D, *Methodology for Completing a System Impact Study*, as shown in Appendix B of this report.

BC Hydro performs this SIS to determine the impact of the requested transmission service on the BC Hydro transmission System in accordance with the following standards and criterion.

1. NERC Standard TPL-001-4
2. WECC Criterion TPL-001-WECC-CRT-3.2

To supplement the planning standard and criterion, BC Hydro's TPL-001-4 Study Methodology documents (Report No: T&S-Planning 2020-003 and T&S-Planning 2020-004) are also applied in this SIS.

This SIS reviews the limiting factors including branch loading, voltage performance, voltage stability and transient stability limits under both normal and contingency conditions.

This SIS considers the following categories of contingencies:

- System normal or N-0 (Planning Event P0 in TPL-001-4)
- Single contingencies or N-1 (Planning Events P1 and P2 in TPL-001-4)
- Multiple contingencies (Planning Events P3 to P7 in TPL-001-4)

It should be noted that the requested service in the two TSRs may be interrupted after a single contingency on the transfer path between the POR and the POD as some segments of the transfer path are radial connections.

3.2. Generation Dispatch Methodology

In addition to the above NERC standard and the WECC criterion, the BC Hydro's Generation Dispatch in Transmission Planning (GDTP) Guideline (Pages 1282 to 1290) was adopted for the pre-existing commitments, which requires certain generation dispatch scenarios used to establish required system performance for those pre-existing services. To determine the incremental impact of the 78 MW export, the GDTP guideline included in the base scenarios for the pre-existing conditions is introduced below.

The GDTP Guideline specifies the generation dispatch scenarios that need to be implemented for three types of cut-planes in the 500 kV system, i.e., source, network, and load cut-planes. The relevant cut-plane for this SIS is Interior to Lower Mainland cut-plane (ILM). The ILM is a network cut-plane, and the dispatch requirements are described as:

1. Under both N-0 and N-1 conditions, the ILM must be capable of serving the Lower Mainland and Vancouver Island (LMVI) peak load (including the firm export to US) with the specified coastal generation scenario[1].

2. Under N-0 condition, the ILM must have the capability to transfer either the maximum North Interior generation or South Interior generation from the source side to the load side.

3. Under N-1 condition, the ILM must be capable of serving the LMVI peak loads (including the firm export to US) with the following conditions:

[1] In accordance with the GDTP, 12% of the total generating capacity in the LMVI area is set out of service which includes the largest load-side generator (a 150 MW unit) to create the base generation dispatch scenario. With the turn-off of the largest load-side generator, the Planning Event P3 as defined in NERC TPL-001-4 is inherently satisfied when assessing the first single contingency.

- for a single line outage on KLY-LM, 12% of the total generating capacity in the South Interior region is set to be out of service.
- for a single line outage on NIC-LM, 12% of the total generating capacity in the North Interior region is set to be out of service.

4. System Study Conditions

In this SIS, a range of system conditions and factors were considered when assessing the impact of the requested LTFPTP transmission service on BC Hydro's transmission system, which include, but are not limited to, relevant load forecasts, system interchanges, resource plans, generation dispatch scenarios, and in-plan transmission capital projects.

The study period mirrors the Start Time and Stop Time of the two TSRs, from January 2024 to January 2029, plus additional years as necessary. Study cases for both winter and summer are considered. The winter cases represent system conditions from November to April, and the summer cases represent system conditions from May to October.

4.1. Resource Plan

The study is performed based on the BC Hydro NITS Base Resource Plan (BRP) released on March 31, 2023 (referred to March 2023 NITS BRP). The available resources in March 2023 NITS BRP inform the generation dispatch scenarios in this SIS.

Site C is the major capital project that will add a total of 1100 MW of generating capacity in the Northern Interior, and it will enter service by the end of 2024.

4.2. Load Forecasts

The BC Hydro January 2023 System Reference Load Forecast and August 2022 Distribution Substation Load Forecast were used in this SIS.

4.3. System Interchanges

The pre-existing system interchanges (Committed Long Term Firm Point-to-Point transmission service) between the BC Hydro system and the neighboring utilities are modelled as follows:

1. BC Hydro to US (ING-CUS)[2]: 600 MW (Oct.1, 2023 – Oct.1, 2028); 230 MW (Oct.1, 2028 onwards)
2. Alberta to BC Hydro: 0 MW
3. BC Hydro to Fortis BC[3]: 200 MW

4.4. Transmission Capital Projects

The study cases used in this SIS include all the existing transmission facilities and the in-plan transmission capital projects. Four of the in-plan transmission capital projects that are most relevant are listed below.

1. **Burrard Synchronous Condensers Ceasing Operation**
   Burrard synchronous condenser station (BSY) currently has three operable units. These units are near their end-of-life and are scheduled to cease operation by winter 2025.

2. **Lower Mainland Capacitive and Reactive Power Reinforcement (LMCRPR)**
   The LMCRPR project will provide reactive power supports to the Lower Mainland system after Burrard synchronous condensers cease operation. The addition of several 230 kV shunt capacitors and reactors was included in the SIS with the following scheduled in-service date (ISD):

[2] 50 MW is used as the Transmission Reliability Margin that has not been released for sale (TRM_u) on the BC Hydro to US transfer path, i.e., WECC Path 3.
[3] The 200 MW net transfer from BC Hydro to Fortis BC (FBC) represents the existing firm power sale to FBC.

- Installation of 2 x 125 MVAr of mechanically switched shunt capacitor banks at ING 230 kV Bus in Oct 2025
- Installation of 1 x 125 MVAr of mechanically switched shunt capacitor banks at CBN 230 kV Bus in Feb 2026
- Installation of 2 x 132 MVAr of mechanically switched shunt reactors at MDN 230 kV Bus in Feb 2026
- Installation of 1 x 125 MVAr of mechanically switched shunt capacitor banks at MLN 230 kV Bus in Oct 2026

3. **Kelly Lake Substation (KLY) New Reactor Addition**
   KLY Synchronous Condenser (SC2) is near the end-of-life and the recommended option to replace the KLY SC2 is to install a new 75 MVA, 12 kV switchable shunt reactor at the same station. The scheduled in-service date (ISD) for the KLY new reactor is before winter 2025.

4. **Auto-Var Control Scheme Addition to Shunt Reactors**
   The shunt reactors at the Kelly Lake (KLY) and six other substations are currently manually controlled by grid operators. A capital project is initiated to place all these reactors under automatic controls to locally regulate bus voltages. The purpose of this capital project is to increase operational efficiency and ILM path transfer capability. The scheduled in-service date (ISD) for this project is July 2024.

5. Transfer Capability and Demand Analysis

Along the path from the POR at Powell River to the POD at BC.US.BORDER, there are Powell River area transmission system and two cut-planes across the 500 kV network as shown in Figure 5-1 below. The area system and the cut-planes are the crossings between the following system nodes or stations:

- The area system from Powell River (POW) substation to Malaspina (MSA) substation
- Interior (NIC and KLY) to Lower Mainland cut-plane (ILM cut-plane)
- Western intertie of WECC Path 3: BC's Ingledow (ING) substation to the US border (Lower Mainland to US)

For a firm transmission service request with the POR at Powell River and the POD at BC-US border near Custer substation, the Powell River area transmission system and the two cut-planes must have adequate transfer capabilities to accommodate the 78 MW Long-term Firm Point-to-Point transmission service request before a full Transmission Service can be granted.

As described in Section 3 Planning Criteria and Study Methodology, the transfer capability is determined as per the NERC Transmission Planning Standard (TPL-001-4) and WECC Criterion (TPL-001-WECC-CRT-3.2). Transmission constraints are identified based on branch ratings, voltage performance, voltage stability and transient stability. The system study conditions outlined in Section 4 are applied.

The analysis of the transfer capability in the Powell River area transmission system are discussed in sections 5.1. The analysis of the transfer capability and the committed use (or transfer demand) of Interior to Lower Mainland (ILM) cut-plane are discussed in section 5.2. Other cut-planes are discussed in section 5.3.

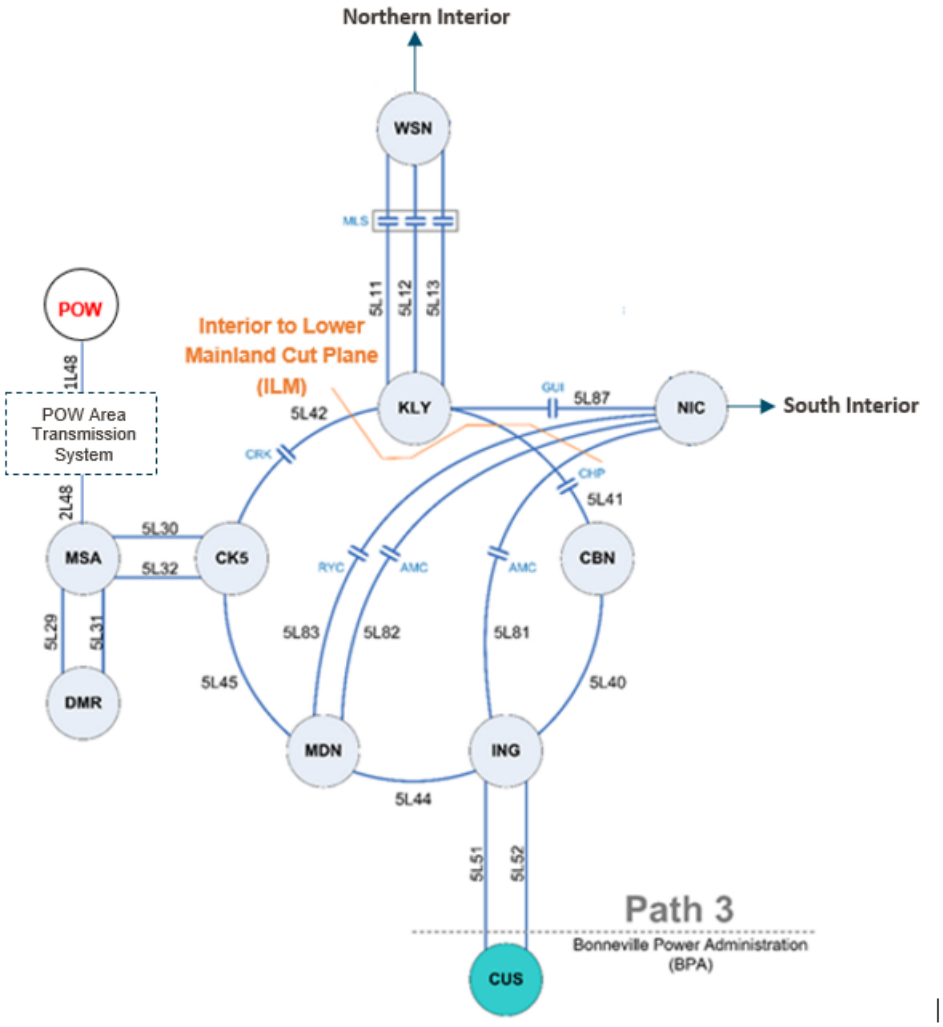


Figure 5-1: BC Hydro Lower Mainland and ILM Cut-Plane Schematic Diagram

5.1. Powell River Area Transmission System

The Powell River substation (POW) is connected to BC Hydro's Saltery Bay (SAY) station via 1L48 with 1L33 as standby. A single 230 kV line 2L48 connects SAY to Malaspina (MSA) station. The 138 kV line 1L137 from MSA to SAY is operated open at the SAY end. The two segments from POW to SAY and from SAY to MSA are radial connections.

The power from the nearby generating stations including East Toba (ETR), Montrose (MTC) and Jimmie Creek (JMC) are delivered to SAY by a 157.4 km 230 kV line 2L29. There are two distribution stations in the POW area: Grief Point station (GPT) and Forestview station (FVW). In normal operations, GPT is supplied off 1L33 tap with 1L48 as backup; FVW is supplied off 1L48 tap with 1L33 as backup.

Figure 5-2 is the Powell River area transmission system diagram.

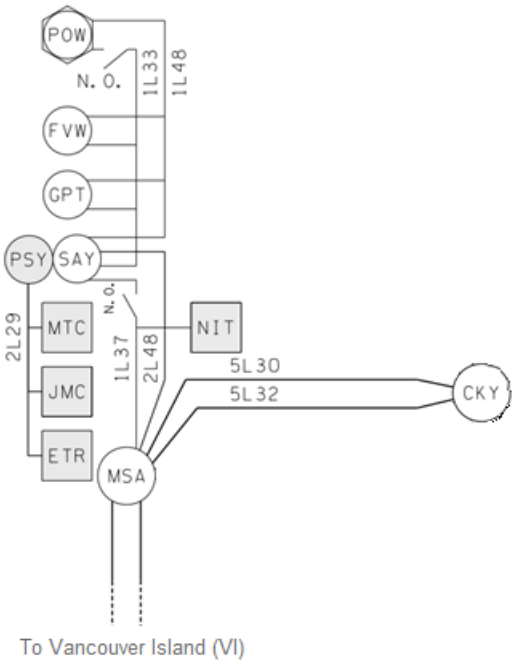


Figure 5-2: Powell River Area Transmission System Diagram

The most stressed system condition for the Powell River area transmission system is under summer light load. The POW-SAY-MSA 138 kV and 230 kV transmission system (1L48 and 2L48) would be most stressed with high power transfers when power export 78 MW to BC-US border, the nearby generator cluster including MTC, JMC, and ETR is at full output, and at the same time the local BC Hydro stations' loads are at a minimum level.

No system constraint was observed with full 78 MW LTFPTP transmission service for the entire requested period of 2024-01-01 to 2029-01-01. Under system normal, the 230 kV circuit 2L48 between SAY and MSA would operate at nearly 92% of its summer rating (948 A @ 30°C) when 78 MW LTFPTP transmission service is in place combined with the maximum output from other nearby generators. The loss of GPT load during the period of high generation outputs would push the 2L48 flow to 94% of its summer rating.

The requested power export from POW will affect the flow pattern on the 500 kV circuits, such as 5L30 and 5L32, and the study has concluded the 500 kV circuits have no performance concerns with the changes due to the 78 MW export. It is also observed that the flow pattern changes on 5L30 and 5L32 have some positive impact on the ILM cut-plane flow, which is discussed in the section below.

5.2. Interior to Lower Mainland Cut-plane (ILM)

This cut-plane is generally referred to as the ILM cut-plane, which crosses lines 5L41, 5L42, 5L81, 5L82, 5L83 and 2L90. Through this cut-plane, electricity is transmitted from the generation in both Northern Interior and South Interior to the BC provincial load centers in the Lower Mainland and Vancouver Island (LMVI) region, which is approximately 70% of provincial demand.

The flow through the ILM cut-plane is driven by the net load in the LMVI region including the export to the US border near Custer substation. Decreasing the load or increasing the Coastal Generation will reduce the committed use on the ILM cut-plane.

The ILM system is fed by two sources at KLY from the generation in the Northern Interior and NIC from the generation in South Interior, respectively. The ILM system connected to these two generation sources is asymmetrical: there are three lines (5L81, 5L82 and 5L83) connecting NIC to Lower Mainland while two lines (5L41 and 5L42) connect KLY to Lower Mainland. With this configuration, the

connection from Kelly Lake to Lower Mainland is prone to be congested under a contingency and the ILM system generally has higher transfer capability when transmitting more generation from South Interior.

In accordance with the GDTP Guideline, under system normal for the network cut-plane, the Lower Mainland and Vancouver Island loads plus the export to US may be served by either maximum Northern Interior generation or maximum South Interior generation with specified coastal generation outputs. No system constraint was observed to serve the system winter peak in the normal operating condition.

When the Northern Interior generation operates at the maximum in the heavy winter load condition, if a single contingency occurs on one of the 500 kV lines between KLY and Lower Mainland (5L41 and 5L42), overloading on the series capacitor of the remaining circuit (5L41 or 5L42) was observed. As per the GDTP, generation re-dispatch from the Northern Interior region to the South Interior region is used to address the overloading as long as adequate reserve can be maintained in South Interior.

With the new BC Hydro NITS Base Resource Plan released on March 31, 2023, and BC Hydro January 2023 System Reference Load Forecast, the ILM cut-plane could be slightly overloaded in 2024 heavy winter and 2025 heavy winter scenarios under a single contingency. This slight overload would occur on the series capacitors on 5L41 when an outage occurs on one of the other 500 kV lines. This system constraint is a pre-existing issue, and it will be addressed with the request from another transmission customer.

With 78 MW LTFPTP transmission service, the pre-existing slight overload on the ILM cut-plane is marginally improved. This is because the 78 MW export results in a positive change to the ILM flow pattern.

Given the summer rating and winter rating of series capacitors on 5L41 are identical, the most stressed system condition for the ILM cut-plane is the winter peak load cases. The summer load in LMVI region is much lower than winter peak load, which would result in a lower transfer amount of ILM cut-plane. Thus, only winter peak load cases are discussed in the report.

It is concluded the 78 MW LTFPTP transmission service can be accommodated on ILM cut-plane in full without system upgrade.

5.3. Other Cut-planes

The transfer capability of cut-plane from BC's ING to US border is also investigated in the study. This cut-plane have adequate transfer capability to accommodate the 78 MW LTFPTP transmission service in full for the entire requested period. Therefore, no further details are discussed in the report.

5.4. Transfer Analysis Results

The transfer capabilities established in sections 5.1 to 5.3 are associated with transmission constraints identified under either system normal or single contingency conditions. To supplement these results, this SIS includes a high-level assessment of multiple contingencies and extreme events under selected scenarios. The assessment indicates that BC Hydro's transmission system performance under those contingencies meets the requirements under the NERC Planning Standard[4]. As such, the transfer capabilities established in sections 5.1 to 5.3 remain valid under all contingencies and scenarios studied.

The key results are summarized below:

- It has been observed that the ILM cut-plane would experience slight overloading under a single contingency before the transmission service requested in the two TSRs. This system constraint is a pre-existing issue, and it will be addressed with the request from another transmission customer.
- The 78 MW LTFPTP transmission service can be accommodated in full for the entire requested period without system upgrades. This is because the pre-existing overload on the ILM cut-plane can be marginally improved with the transmission service requested in the two TSRs.
- There is sufficient capacity to accommodate the roll-over right for another 5 years after the initial service due date for OASIS AREF# 99723538 and # 99723543.

[4] In accordance with NERC TPL-001-4 Table 1, non-consequential load loss and interruption of firm transmission services are allowed to meet the system performance requirement for certain categories of planning events.

6. Conclusions

This SIS concludes the following with reference to the BCH transmission system:

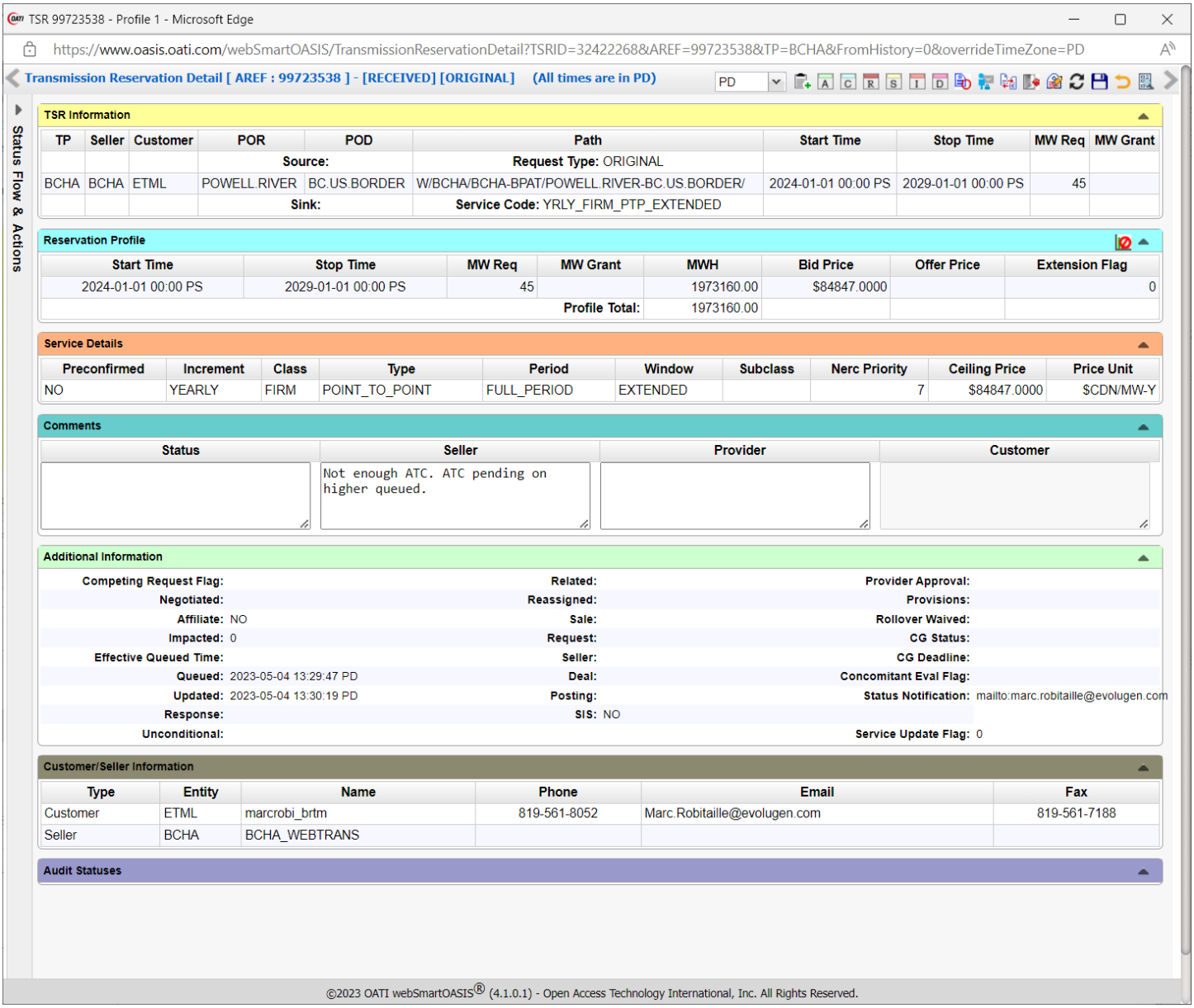
1. The 78 MW Service with OASIS AREF# 99723538 and # 99723543 can be accommodated in whole as Long Term Firm Point-to-Point transmission service without system upgrades,
2. There is sufficient capacity to accommodate a roll-over right for another 5 years after the initial Service period is due.

It should be noted that the requested transmission service is subject to an interruption when a single contingency occurs on the radial connections discussed in Section 5.1.

A separate document titled Evaluation of Conditional Firm Service (CFS) determines the conditional service that can be granted to the OASIS AREF# 99723538 and # 99723543 and the associated rollover rights.

BC Hydro (Transmission Provider) will tender Service Agreements related to the outcomes of the SIS Report and the CFS Evaluation to the Transmission Customer. See the “Resulting Offers” section on the CFS Evaluation for specific details.

Appendix A: TSR 99723538, 99723543



TSR 99723538 - Profile 1 - Microsoft Edge

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Transmission Reservation Detail [AREF : 99723538] - [RECEIVED] [ORIGINAL] (All times are in PD)

PD

Status Flow & Actions

TSR Information

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Reservation Profile

Start Time	Stop Time	MW Req	MW Grant	MWH	Bid Price	Offer Price	Extension Flag
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			Profile Total:	1973160.00			

Service Details

Preconfirmed	Increment	Class	Type	Period	Window	Subclass	Nerc Priority	Ceiling Price	Price Unit
NO	YEARLY	FIRM	POINT_TO_POINT	FULL_PERIOD	EXTENDED		7	$84847.0000	$CDN/MW-Y

Comments

Status	Seller	Provider	Customer
	Not enough ATC. ATC pending on higher queued.		

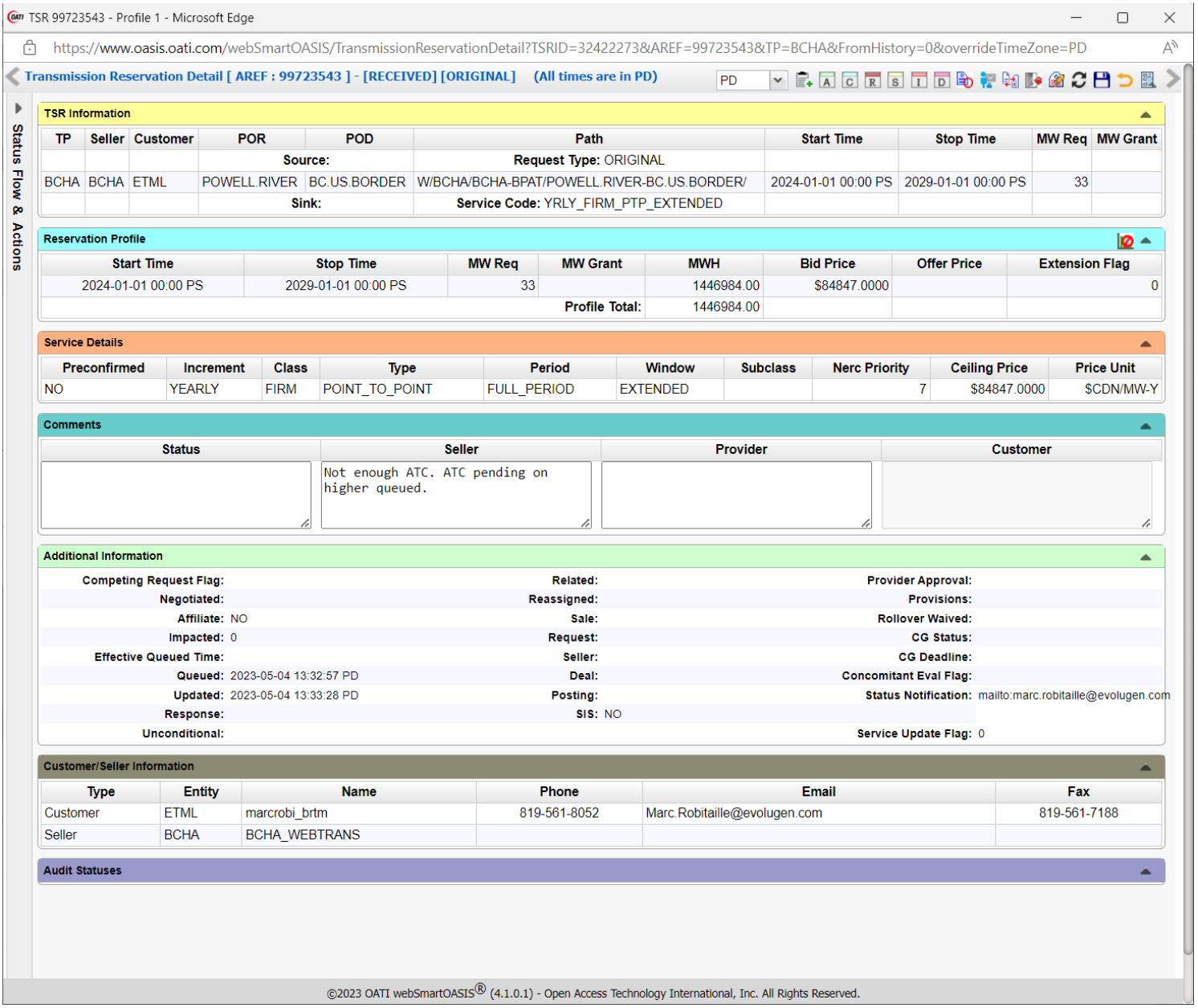
Additional Information

Competing Request Flag:		Related:		Provider Approval:	
Negotiated:		Reassigned:		Provisions:	
Affiliate:	NO	Sale:		Rollover Waived:	
Impacted:	0	Request:		CG Status:	
Effective Queued Time:		Seller:		CG Deadline:	
Queued:	2023-05-04 13:29:47 PD	Deal:		Concomitant Eval Flag:	
Updated:	2023-05-04 13:30:19 PD	Posting:		Status Notification:	mailto:marc.robitaille@evolugen.com
Response:		SIS:	NO		
Unconditional:				Service Update Flag:	0

Customer/Seller Information

Type	Entity	Name	Phone	Email	Fax
Customer	ETML	marcrobi_brtm	819-561-8052	Marc.Robitaille@evolugen.com	819-561-7188
Seller	BCHA	BCHA_WEBTRANS			

Audit Statuses


TSR 99723543 - Profile 1 - Microsoft Edge
https://www.oasis.oati.com/webSmartOASIS/TransmissionReservationDetail?TSRID=32422273&AREF=99723543&TP=BCHA&FromHistory=0&overrideTimeZone=PD
Transmission Reservation Detail [AREF : 99723543] - [RECEIVED] [ORIGINAL] (All times are in PD)
PD
Status Flow & Actions
TSR Information
TP Seller Customer POR POD Path Start Time Stop Time MW Req MW Grant
Source: Request Type: ORIGINAL
BCHA BCHA ETML POWELL.RIVER BC.US.BORDER W/BCHA/BCHA-BPAT/POWELL.RIVER-BC.US.BORDER/ 2024-01-01 00:00 PS 2029-01-01 00:00 PS 33
Sink: Service Code: YRLY_FIRM_PTP_EXTENDED
Reservation Profile
Start Time Stop Time MW Req MW Grant MWH Bid Price Offer Price Extension Flag
2024-01-01 00:00 PS 2029-01-01 00:00 PS 33 1446984.00 $84847.0000 0
Profile Total: 1446984.00
Service Details
Preconfirmed Increment Class Type Period Window Subclass Nerc Priority Ceiling Price Price Unit
NO YEARLY FIRM POINT_TO_POINT FULL_PERIOD EXTENDED 7 $84847.0000 $CDN/MW-Y
Comments
Status Seller Provider Customer
Not enough ATC. ATC pending on higher queued.
Additional Information
Competing Request Flag: Related: Provider Approval:
Negotiated: Reassigned: Provisions:
Affiliate: NO Sale: Rollover Waived:
Impacted: 0 Request: CG Status:
Effective Queued Time: Seller: CG Deadline:
Queued: 2023-05-04 13:32:57 PD Deal: Concomitant Eval Flag:
Updated: 2023-05-04 13:33:28 PD Posting: Status Notification: mailto:marc.robitaille@evolugen.com
Response: SIS: NO
Unconditional: Service Update Flag: 0
Customer/Seller Information
Type Entity Name Phone Email Fax
Customer ETML marcrobi_brtm 819-561-8052 Marc.Robitaille@evolugen.com 819-561-7188
Seller BCHA BCHA_WEBTRANS
Audit Statuses
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Appendix B: BC Hydro OATT Attachment D

ATTACHMENT D

Methodology for Completing a System Impact Study

BC Hydro will perform system planning studies and apply its published planning criteria, standards and procedures to determine the impacts of the requested Transmission Service. The transfer capability of the system will be assessed for the period of the requested service to determine if the requested service can be accommodated. Thermal loading, transient stability, and voltage stability limits will be investigated for normal and outage conditions. If this analysis indicates that the requested Transmission Service cannot be accommodated, then alternative reinforcements will be investigated. A least cost transmission expansion plan will be developed for consideration by BC Hydro and the Transmission Customer and will include but not be limited to the following considerations: technical, economic, reliability, losses, environmental and social. The Transmission Customer can decide whether to proceed, modify, or cancel its request. More details can be found in the BC Hydro System Planning document entitled "Planning Process".