

December 21, 2018

The Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road, P.O. Box 21040
St. John's, NL A1A 5B2

Attention: Ms. Cheryl Blundon
Director Corporate Services & Board Secretary

Dear Ms. Blundon:

**Re: The Liberty Consulting Group Report – Analysis of Newfoundland Island
Interconnected System Power Supply Adequacy for the Winter of 2018-2019 –
Biweekly Update Report**

In its correspondence of September 19, 2018, the Board of Commissioners of Public Utilities (“Board”) requested that Newfoundland and Labrador Hydro (“Hydro”) provide a biweekly report on Hydro’s supply adequacy for winter 2018-2019, commencing October 1, 2018.

This biweekly report provides an update on the in-service of the Labrador-Island Link (“LIL”) and how it relates to winter 2018-2019 supply adequacy, as well as details on Hydro’s production facilities asset management.

The LIL In-Service Update

This report contains:

- an overview of the critical path tasks required for reliable operation of the LIL for winter 2018-2019;
- an overview of the highest risks being monitored and mitigated for the LIL in-service in winter 2018-2019;
- Hydro’s updated modelled assumptions for winter 2018-2019 supply adequacy planning; and
- Hydro’s proposed contingency plan to mitigate the consequences of unavailability or unreliability of the LIL for all or part of winter 2018-2019.

This report also contains meeting minutes from biweekly meetings held between Hydro, Transition to Operations (“TTO”), and Power Supply in which expectations of supply and energy

Ms. C. Blundon
Public Utilities Board

2

from the LIL in advance of winter 2018-2019 are discussed. Minutes from these meetings will be provided with each biweekly update report to the Board.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO



Shirley A. Walsh
Senior Legal Counsel – Regulatory
SW/kd

Enc.

cc: Gerard Hayes – Newfoundland Power
Paul Coxworthy – Stewart McKelvey
Denis J. Fleming – Cox & Palmer

Dennis Browne, Q.C. – Brown Fitzgerald Morgan & Avis
Dean Porter – Poole Althouse

ecc: Van Alexopoulos – Iron Ore Company
Senwung Luk – Olthuis Kler Townshend LLP

Benoît Pepin – Rio Tinto

Labrador-Island Link In-Service Update

December 21, 2018

A Report to the Board of Commissioners of Public Utilities



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Attachment 1: Meeting Minutes

1 **1. Introduction**

2 Newfoundland and Labrador Hydro (“Hydro”) closely monitors its supply-related assets and
3 issues to ensure its ability to provide reliable service to customers. The availability of power
4 over the Labrador-Island Link (“LIL”) for the upcoming winter was identified in previous reports
5 to the Board by both Hydro and Liberty as contributing to supply adequacy in advance of
6 availability of the Muskrat Falls generation supply to the Island. Hydro is working closely with
7 Nalcor’s Power Supply leadership [Transition to Operations (“TTO”), Power Supply Transmission
8 Operations, and the Lower Churchill Project (“LCP”) Transmission Project] to monitor and
9 mitigate the risks associated with the timing of the in-service of the LIL to supply off-Island
10 capacity and energy to the Island Interconnected System. In each biweekly report, Hydro will
11 also provide an update on supply adequacy for the coming winter with the most up-to-date in-
12 service assumptions of the LIL, as required. The information regarding the LIL operation status
13 is current to December 21, 2018; the remaining information in this report is current as of
14 December 18, 2018. Any developments after December 18, 2018 will be included in the next
15 biweekly report. Note that typical commissioning issues will be occurring as commissioning
16 continues. Updates regarding those issues known to materially affect the assumptions of
17 capacity and availability for the pending winter season will be provided as they become known.
18 Otherwise, any developments occurring after the preparation of the biweekly report will be
19 included in the next biweekly report.

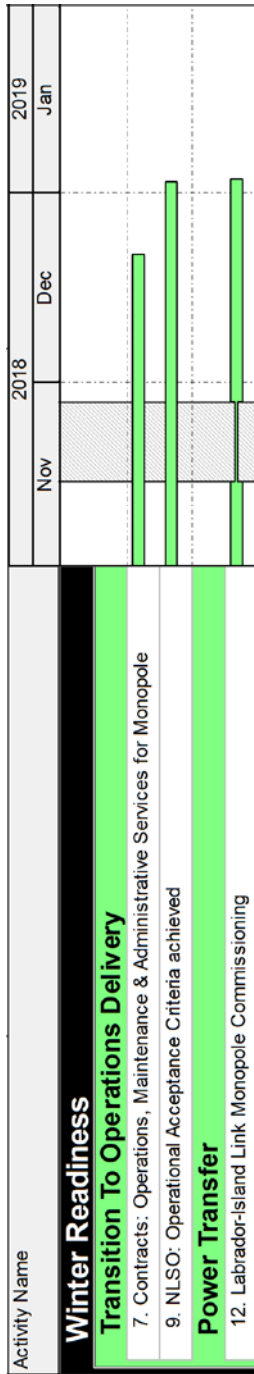
20

21 **2. In-Service Activities Update**

22 The following outlines the specific critical path activities required for operation of the LIL for
23 winter 2018-2019,¹ as well as schedule or constraint information for those tasks. As this report
24 is updated on a biweekly basis, Hydro will provide information on the key activities and the
25 associated schedule to inform the Board if any potential supply issues arise from the delivery of
26 those activities.

¹ This report discusses operational readiness for winter 2018-2019. The final in-service review of the LIL is undertaken separately with the Board’s consultant, Liberty, on a quarterly basis with TTO.

- 1 Attachment 1 contains minutes from the biweekly meeting held between Hydro and Power
- 2 Supply, which included discussions on expectations of supply and energy from the LIL for winter
- 3 2018-2019, and specific issues that may affect risks of supply over the LIL for the winter.



Please note:

- 1) The following activities are complete:
 - a. Item 1.a) Churchill Falls Terminal Station Breaker Upgrade (735kV scope)
 - b. Item 1.b) Churchill Falls Terminal Station Breaker Upgrade (315kV scope)
 - c. Item 2. Muskrat Falls Terminal Station 315kV GIS Voltage Transformer Replacement (1 unit)
 - d. Item 3.a) Churchill Falls Terminal Station 315kV GIS Voltage Transformer Replacement (1st campaign, 5 units)
 - e. Item 3.b) Churchill Falls Terminal Station 315kV GIS Voltage Transformer Replacement (2nd campaign, 2 units)
 - f. Item 4. ERP/ERR: Interim Emergency Response Plan/ERR in place for all Sites/Assets
 - g. Item 5. Contracts: Support services in place & resources onboard
 - h. Item 6. Assets: Operationalize High Freq Preventative Maintenance Program
 - i. Item 8. Inventory: Pre Winter 2018 readiness
 - j. Item 10.a & b) People: Implement 24x7 staffing model for Muskrat Falls
 - k. Item 11. Re-Energize Labrador-Island Link on 01-Nov-2018

Figure 1: The LIL In-Service Critical Path Activities

1 **Project Delivery**

2 **Activity 1 – Churchill Falls Breaker Upgrade**

3 ***Status: Completed, no further updates.***

4

5 **Activities 2 and 3 – 315 kV GIS Voltage Transformer² Replacements**

6 ***Status: Completed, no further updates.***

7

8 **Transitions to Operations Delivery**

9 **Activity 4: Emergency Response Plan (“ERP”)/Emergency Restoration and Recovery (“ERR”):**

10 **Interim ERP/ERR in place as required at all sites/assets**

11 ***Status: Completed, no further updates.***

12

13 **Activity 5 – Contracts: Support Services in Place and Resources on Board**

14 ***Status: Completed, no further updates.***

15

16 **Activity 6 – Assets: Operationalize High Frequency Preventive Maintenance Program**

17 ***Status: Completed.***

- 18 • The development of high frequency maintenance requirements for the converters have
19 been completed. All high frequency preventative maintenance requirements are now in
20 place for the LTA/LIL assets.

21

22 **Activity 7 – Contracts: Operations, Maintenance, and Administrative Services for Monopole**

23 ***Status: On track for completion in December 2018.***

- 24 • Two contracts remain outstanding. A second extension to the HVAC services contract
25 closing date was accommodated, moving the closing date to December 17, 2018 (from
26 December 14, 2018). Bids are currently under evaluation with selection and award of
27 the contract expected by the end of December 2018. A Cranes and Hoists service

² 315 kV instrument transformers.

1 provider has been selected. Contract terms and conditions are being negotiated with an
2 expectation this will also be completed in December 2018.

3
4 **Activity 8 – Inventory: Pre-Winter 2018 Readiness**

5 ***Status: Identification, inspection and verification of winter readiness spares completed,***
6 ***ongoing procurement.***

- 7 • Completed the winter readiness spares inventory requirement for the overhead
8 transmission lines and submarine cables.
- 9
10 • All critical spares for the overhead transmission lines and submarine cables are in place.
11 Deficiencies have been identified and procurement activities will continue until all items
12 received. Spares for HVdc assets will remain in contractors care, custody and control
13 until they are transferred to the project/operations upon completion of bi-pole low
14 power trial operation.

15
16 **Activity 9 – Newfoundland and Labrador System Operator (“NLSO”): Operational Acceptance**
17 **Criteria Received**

18 ***Status: On track with remaining item to be delivered at conclusion of Activity 12.***

- 19 • Four of the five NLSO requirements have been met. Final testing of redundant telecom
20 paths was completed during the week of December 11, 2018. The operational readiness
21 document has been delivered in draft and will be updated as final along with the release
22 for service form at the conclusion of the monopole commissioning activities.

23
24 A description of the five NLSO requirements and status is as follows:

- 25 ○ Item 1: Ability to monitor the AC equipment associated with the converter stations
26 (including filter banks) remotely from the ECC for system reliability considerations.

27 **Status: Completed/Accepted.**

- 28 ○ Item 2: Asset owner contact details (to be responsive 24/7). **Status:**

29 **Completed/Accepted.**

- 1 ○ Item 3: Redundant communications paths (voice, tele-protection and SCADA)
2 between the ECC and all stations. **Status: Completed/Accepted.**
- 3 ○ Item 4: Provide a technical resource in the NLSO control room to support the
4 Energy Control Centre during the initial start-up period. **Status:**
5 **Completed/Accepted.**
- 6 ○ Item 5: Documentation including an Operational Readiness document (outlining
7 commissioning / testing activities, operating limits / restrictions, and identified
8 risks / plans for mitigation), and a completed/updated release for service form
9 outlining remaining deficiencies and expected timelines for completion. **Status: In**
10 **Progress.** The operational readiness document has been delivered in draft and will
11 be updated as final along with the release for service form at the conclusion of the
12 monopole commissioning activities.

13

14 **Activity 10 – People: Implement Interim 24/7 Staffing Model for Muskrat Falls**

15 ***Status: Completed, no further updates.***

16

17 **Power Transfer**

18 **Activity 11 – Re-Energize Labrador Island Link**

19 ***Status: Completed as planned on November 1, 2018.***

- 20 • The LIL was re-energized on November 1, 2018 at 45 MW using the existing version
21 (version 15) of GE software. Version 16a of GE software has also been delivered (to site)
22 and factory acceptance testing (“FAT”) of the next release is ongoing in Stafford.
23 Although version 16a of the GE software is available to install, a decision has been made
24 to remain on the current version (i.e., version 15). The decision was based on the limited
25 benefit of the additional features of Version 16a and the risk to the schedule of
26 implementing a new version which would have to undergo additional testing.

1 **Activity 12 – Transmission Link Monopole Commissioning**

2 **Status: Initiated November 1, 2018 and ongoing.**

3 • Following a planned outage to address several items, the LIL was returned to service on
4 December 7, 2018 at 60 MW. Over the course of the following six days, the LIL was
5 operated at various levels and taken offline for various durations to work through
6 identified items, as is typical for assets going in service. The LIL was placed online
7 December 13, 2018 and has been operating at increasing levels since that time up to
8 110 MW (approximately 103 MW delivered to Soldier’s Pond).

9
10 • Monitoring of the valve leak issue is ongoing since identified on November 7, 2018. The
11 leak has not occurred since.

12
13 • Punch list items are continually being addressed and closed by the project team. While
14 punch list resolution shall continue in an effort to improve system reliability, this effort
15 is not considered critical for power transfer.

16
17 **3. Key Risks**

18 There has been no change in the key risks since the October 1, 2018 report. In addition to the
19 activities described in Section 2, Hydro acknowledges that the reliability of the current GE
20 software implementation is currently being witnessed as the LIL is now online 24 hours a day
21 and will inform the reliability assumptions of the LIL. Power Supply continues to work with GE
22 toward alternative software solutions for future consideration.

23
24 Dynamic commissioning with power transfer activities recommenced as scheduled on
25 November 1, 2018 with existing software. Testing continued on the upgraded version on the
26 system simulator in Stafford for future installation which is expected to occur after the winter
27 period.

1 An additional risk being monitored is the Maritime Link (“ML”) frequency response to the LIL
2 initiated disturbances when the LIL is in service. The frequency controller has remained in
3 operation using the settings that were investigated in operational studies. These settings help
4 to avoid underfrequency load shedding (and provide support to the Nova Scotia system).

5
6 To avoid frequent operation of the frequency controller, it has been equipped with a deadband
7 of +/- 0.5 Hz. As such, there will be a frequency controller activation if frequency drops below
8 59.5 Hz or goes above 60.5 Hz. When the LIL is switched on, the instant injection of 45 MW to
9 the Island triggers overfrequency controller responses. Blocking (i.e. shutting off) the LIL results
10 in an underfrequency response. To reduce the number of responses, the current operating
11 philosophy is to disable the frequency converter just prior to LIL startups (for a period of
12 approximately five minutes) to minimize the overall number of frequency controller activations.
13 This is completed to satisfy Nova Scotia Power and New Brunswick Power Service Operators
14 regarding the number of activations. When the ML frequency response is turned off, the LIL
15 contribution to the Island’s power supply is similar to a generator, and the reliability of the LIL
16 will be the major factor in the decision on loading level. The NLSO continues to work with Nova
17 Scotia Power and New Brunswick Power Service Operators to keep them informed of testing
18 plans so as to understand and mitigate the risk from their perspective.

19

20 **4. Modelled Assumptions**

21 The results presented in Table 1 are from Volume II of the Reliability and Resource Adequacy
22 Study filed with the Board on November 16, 2018. There has been no significant change in the
23 modelled assumptions since this report.³

³ Hydro has now confirmed there is 105 MW available as compared to the 110 MW reported in the previous Biweekly Report. Given the relatively small change in magnitude of the available assistance, Hydro has not run the model for this 5 MW difference. Hydro presented the full analysis of its supply adequacy for winter 2018-2019 in its November 16, 2018 filing to the Board regarding supply adequacy.

1 The reliability metrics in Table 1 are higher than in previous reports. This does not represent a
 2 change in system conditions, but rather a change in the modelling approach. There are two
 3 main drivers of the increase:

- 4 1. Dynamic modelling of losses - The previous model used a fixed value for losses. The
 5 current model calculates losses based on system conditions, which has the effect of
 6 increasing losses when there are units out of service on the Avalon, thus increasing
 7 the frequency and severity of outages.
- 8 2. Load forecast uncertainty - The previous model used a fixed load shape with a 60
 9 MW adjustment on peak to represent the P90 condition. In the current model, a
 10 random variation is applied to the load shape in each hour in the model to reflect
 11 the variation in load due to weather. On average, this increases the frequency and
 12 severity of outages.

13
 14 A detailed description of the modelling assumptions and process for the current system model
 15 can be found in Volumes I and II of the Reliability and Resource Adequacy Study. All results
 16 reflect the implementation of the contingency plan as described in Section 5.

Table 1: Supply Adequacy Modelling Results for Updated Assumptions

Reliability Metric	LOLH	EUE	Normalized EUE
Base Load Forecast, HRD DAFOR = 15%	2.21	118	11.0
Base Load Forecast, HRD DAFOR = 18%	3.31	184	17.0
Base Load Forecast, HRD DAFOR = 20%	4.13	230	21.2

17 **5. Contingency Plan**

18 In light of the current LIL winter 2018-2019 transfer assumptions, Hydro developed and
 19 implemented a two-phased contingency plan for the coming winter that includes incremental
 20 internal and external system support. Phase I of Hydro’s contingency plan contains items that
 21 can be secured and incorporated into Hydro’s base planning assumptions for the upcoming
 22 winter operating season. Details and the status of items in Phase I of Hydro’s contingency plan
 23 are contained in Table 2.

Table 2: Phase I of Hydro’s Contingency Plan

Item	Description	Incremental System Benefit	Parties Involved	Status	Notes
1	Increase of Capacity Assistance from 90 MW to 105 MW ⁴	+15 MW	Hydro, Corner Brook Pulp and Paper (“CBPP”)	Ongoing	CBPP has indicated that up to 105 MW is available. The proposed agreement was approved by the Board on November 22, 2018.
2	Re-instatement of Capacity Assistance Program	+7.6 MW	Hydro, Vale	Ongoing	Vale has indicated they are in agreement with Hydro’s proposed Capacity Assistance Agreements; one for diesel generation (8 MW) and one for load curtailment (6 MW).
3	Re-instatement of Load Curtailment Program	+6 MW	Hydro, Vale	Ongoing	The proposed agreement was approved by the Board on November 30, 2018.
4	Voltage Reduction	+20 MW	Hydro, Newfoundland Power	Complete	Hydro has confirmed that it is reasonable to assume availability of 20 MW of Peak Voltage Reduction for the coming winter season. Voltage reduction is forecast on a week-ahead basis by the NLSO.
Potential Incremental System Benefit on peak		48.6 MW			

1 Hydro notes that voltage reduction is not what is publically known as "brown out". Voltage
 2 reduction is a measured and controlled process whereby there is minimal reduction in the
 3 delivery point voltages to customers. This process, utilized by utilities across North America as a
 4 typical system management tool, has been used for peak demand management in almost every
 5 year on the Island system. Customers see no impact to their service during a period of voltage
 6 reduction (typically up to four hours) and equipment is not harmed.

⁴ Hydro has now confirmed there is 105 MW available as compared to the 110 MW reported in the previous Biweekly Report. Given the relatively small change in magnitude of the available assistance, Hydro has not run the model for this 5 MW difference. Hydro presented the full analysis of its supply adequacy for winter 2018-2019 in its November 16, 2018 filing to the Board regarding supply adequacy.

1 In addition to the items listed in Phase I of Hydro’s contingency plan, Hydro has also identified
 2 elements that can provide additional system benefit, but will only be enacted if absolutely
 3 required. These items form Phase II of Hydro’s contingency plan and are detailed in Table 3.

Table 3: Phase II of Hydro’s Contingency Plan

Item	Description	Incremental System Benefit	Parties Involved	Status	Notes
5	Increased output of Holyrood Gas Turbine (“GT”) beyond current base assumption	+10 MW	Hydro	Complete	The ability to increase the capability of the unit is available on a temporary basis subject to atmospheric and system conditions. The GT has been previously safely demonstrated to operate to 134 MW.
6	Temporary increased output of Holyrood Diesels	+1.5 MW	Hydro, Department of Environment	Complete	Hydro met with the Department of Municipal Affairs and Environment and provided an overview of the potential upgrading requirements.
Potential Incremental System Benefit on peak		+11.5 MW			

4 **6. Conclusion**

5 Hydro is actively monitoring the availability of supply as it relates to the LIL and associated
 6 impact on reliability of the Island Interconnected System for this winter. Hydro’s existing and
 7 newly developed contingency plans described above are in place in the event that the LIL does
 8 not meet the current assumed capacity and reliability parameters.

9

10 Through its biweekly report, Hydro will keep the Board informed on developments related to
 11 the operation of the LIL should its performance impose material changes impacting supply
 12 adequacy for the Island Interconnected System.

Attachment 1
Meeting Minutes

Meeting Minutes

Purpose	Discuss the LIL In-Service	Date	December 14, 2018
Chair	Jennifer Williams	Time	9:30-10:00 am
Location	Hydro Place	Minutes Taker	Jennifer Williams
Attendees	Jennifer Williams (Hydro), Jan-Peter DeSouza (TTO), Rob Henderson (TTO), Rosanne Williams (Power Supply), Chad Wiseman (Power Supply)		

Schedule of key activities included in the biweekly report as well as minutes from previous meeting were reviewed and discussed for any changes. At the time of the meeting, there were no known material risks to schedule that would change in service assumptions.

For the October 5, 2018 Meeting and future, any changes to action items will be captured in action item register below, and any new items will have new actions/items added.

If new information arises post biweekly meeting, and in time for the report to the Board, it will be captured in the subsequent biweekly report to the Board and before the next biweekly joint meeting.

Action Plan			
No.	Action Item(s)	Owner	Target Date (DD-MMM-YYYY)
1.	21-Sep/24-Sep Meeting, item 1 S. Follett and S. Hurley (Project Execution) and P. DeSouza and R. Henderson (TTO) to draft key critical path activities required to reach reliable operation for winter for inclusion in Board reporting. Format to be confirmed.	S. Follett S. Hurley P. DeSouza R. Henderson	Complete
2.	21-Sep/24-Sep Meeting, item 2 Compile minimum required Newfoundland and Labrador System Operator (“NLSO”) operational needs for inclusion in critical path activities.	J. DeCoste K. Goulding NLSO	Complete
3.	21-Sep/24-Sep Meeting, item 3 Discussion regarding software and associated reliable operation efforts. Currently commencing power transfer on November 1, 2018, with existing software, and continuing testing. If existing software is proven to be reliable through November 2018, Hydro and Power Supply will evaluate proceeding with software upgrade or maintaining existing software version. Upgraded software would be considered only after demonstrated reliable results from the system simulator work (RTDS). Power Supply leadership continues to work with GE leadership for continued path forward and	Hydro Power Supply	Ongoing

Please note: If there are any comments or amendments to be made to these meeting minutes, they must be brought to the notice of the Meeting Chair within 24 hours of issue and confirmed in writing.

Meeting Minutes

Action Plan			
No.	Action Item(s)	Owner	Target Date (DD-MMM-YYYY)
	<p>Power Supply still has full-time representation in Stafford.</p> <p>2-Nov Meeting Update Stakeholders discussed the successful re-energization of the Labrador-Island Link (“LIL”) which had occurred as planned on November 1, 2018 at a power order of 45MW using the current release of GE software (version 15). The project team indicated that GE had also completed testing of the next iteration of the software (version 16A) and this had been received at site. In addition the project team indicated that the factory acceptance testing for version 1.0 was also in progress in Stafford, with current activities focused on regression testing.</p> <p>A discussion was held regarding release 16A and that it may be possible to implement the new version during the planned ten-day outage in Nov 2018. Continued review of the associated benefits, potential risks and available implementation timelines is ongoing and recommendations are to be developed if software should be upgraded over the next two to three weeks.</p> <p>16-Nov Meeting Update Recommendation by external HVDC consultant has been documented, findings include that there is a minimal benefit associated with version 16a, with no assurance that installation can be achieved in the ongoing planned outage without a negative impact. Based upon these findings it is not recommended to install the software in the current outage or take an additional outage to upgrade to 16a.</p> <p>14-Dec meeting Update A further software version has been completed and is completing factory acceptance testing with expected completion late next week. This software version is referred to as Version 17c and would improve functionality in two key areas as opposed to the numerous improvements that are coming with the verion 1.0</p>		

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Meeting Minutes

Action Plan			
No.	Action Item(s)	Owner	Target Date (DD-MMM-YYYY)
	software. The group reiterated that it is not intended to replace the current version 15 prior to end of winter, but agreed that should it prove unreliable, version 17c could be considered for installation.		
4.	<p>21-Sep/24-Sep Meeting, item 4</p> <p>Power Supply and Hydro working together to operationalize TransGrid (“TGS”) studies on the LIL loading. These efforts will take modelled findings and test findings during commissioning for determining actual operational parameters for winter. Operational limits for the LIL from the TGS reports have been provided to the Project Delivery team.</p> <p>2-Nov Meeting Update</p> <p>Stakeholders noted that the work with TGS was continuing.</p>	Power Supply and Hydro (combined group)	First meeting 25-Sep-2018 and continuing
5.	<p>21-Sep/24-Sep Meeting, item 5</p> <p>Compile assessment of risks of changing to upgraded software package in advance of decision whether to implement new software or not as described above. Will be used in evaluation discussion.</p>	S. Hurley	Complete
6.	<p>21-Sep/24-Sep Meeting, item 6</p> <p>Additional risk item for winter was noted. Hydro is currently planning to utilize the LIL at 110 MW and with frequency response in service. Should the LIL trip at a rate that causes frequent disturbances on neighbouring utilities, the request may be made by neighboring utilities to take frequency response out of service. If that were to occur, Hydro would likely then decide to limit the LIL to 50 MW deliveries to avoid Under-Frequency Load Shedding (“UFLS”). No action required at this time.</p> <p>2-Nov Meeting Update</p> <p>No further discussion held on this decision.</p> <p>16-Nov Meeting Update</p> <p>NLSO has restricted LIL transfers to 45 MW, given recent requirements for the ML frequency controller, until the LIL</p>	N/A	

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Meeting Minutes

Action Plan			
No.	Action Item(s)	Owner	Target Date (DD-MMM-YYYY)
	<p>can operate continuously for 48 hours without a trip. The frequency controller is now being deactivated temporarily prior to LIL start-ups, which previously caused it to react.</p> <p>30-Nov Meeting Update The NLSO lifted the 45 MW restriction to facilitate troubleshooting of the glycol leak.</p> <p>14-Dec Meeting Update The glycol leak has not reappeared. Monitoring plan includes close observation at various loading levels.</p>		
7.	<p>21-Sep/24-Sep Meeting, item 7 NLSO will work with Nova Scotia Power Inc. System Operator (“NSPI SO”) and New Brunswick System Operator (“NBSO”) to keep them informed of testing plans so as to mitigate and understand the risk from their perspective.</p> <p>2-Nov Meeting Update No further discussion held.</p> <p>16-Nov Meeting Update NLSO has been in contact with NSPI SO and discussed the plan to impose restrictions on the LIL.</p> <p>30-Nov Meeting Update No further update (other than the restriction is lifted per above).</p>	K. Goulding	Ongoing
8.	<p>21-Sep/24-Sep Meeting, item 8 No additional high-level risks other than software implementation and frequency response item were noted. Critical path activities compiled per Item 1 will be documented and considered for discussion at next meeting if required.</p> <p>12-Oct Meeting Update Group confirmed that there are no additional high-level risks other than software implementation and frequency</p>	N/A	

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Meeting Minutes

Action Plan			
No.	Action Item(s)	Owner	Target Date (DD-MMM-YYYY)
	<p>response.</p> <p>2-Nov Meeting Update No further risks identified.</p> <p>30-Nov Meeting Update No new risks discussed.</p> <p>14-Dec Meeting Update No new risks for this winter (Some mechanical deficiencies at Soldier's Pond Synchronous Condensers were noted but are not a risk for winter operation. Resolution and status of this issue will be communicated to Hydro through ramping up discussions on Muskrat Falls generation in-service.)</p>		
9.	<p>21-Sep/24-Sep Meeting, item 9 Current conservative supply assumptions of the LIL delivery for winter 110 MW at a 30% forced outage rate. Impact of this set of assumptions to be communicated to the Board in first biweekly report. No change in assumptions required based on this risk discussion.</p> <p>19-Oct Meeting Update Group confirmed that there is no information at this time to indicate a change in modelled availability.</p> <p>2-Nov Meeting Update Group re-confirmed that the current expectation is to deliver 110 MW at forced outage rate of 30%.</p> <p>16-Nov Meeting Update No changes required to date, nor expected going forward.</p> <p>30-Nov Meeting Update No changes required to date, nor expected going forward.</p> <p>14-Dec Meeting Update No changes required to date, nor expected going forward.</p>	R. Smith	Ongoing

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Meeting Minutes

Action Plan			
No.	Action Item(s)	Owner	Target Date (DD-MMM-YYYY)
10.	<p>21-Sep/24-Sep Meeting Undergo a risk assessment workshop with key stakeholders from Hydro, TTO, and Project Execution to evaluate software risks and subsequent required mitigation strategies.</p> <p>19-Oct Meeting Update Group discussed that to change to upgraded software would be a minimum of a two-week outage. Further discussion to be had at risk workshop being held on the afternoon of October 19, 2018.</p> <p>2-Nov Meeting Update Further discussion to be held prior to the November 2018 outage to evaluate viability of implementing version 16A of the GE software.</p> <p>16-Nov Meeting Update Risk assessment complete, and recommendation on timing of software upgrades has been made. Refer to action item 3.</p>	S. Hurley	Complete
11.	<p>19-Oct Meeting Update Group confirmed that issues regarding Astaldi have no impact on this winter's planned deliveries of the LIL.</p> <p>2-Nov Meeting Update No further discussion held.</p> <p>16-Nov Meeting Update No change.</p>	N/A	
12.	<p>16-Nov Meeting Update Group discussed ongoing planned outage to facilitate breaker fail upgrades and voltage transformer replacements. Completion of all planned work is tracking on target, scheduled to end on November 25, 2018. In the event that not all planned work can be completed within the timeframe, it is possible to delay until Q2/Q3 2019 with</p>	B. Smith	25-Nov-2018 (breaker work is complete)

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Meeting Minutes

Action Plan			
No.	Action Item(s)	Owner	Target Date (DD-MMM-YYYY)
	<p>no risk to LIL operation during the coming winter, other than reduced flexibility due to being required to maintain the operating restrictions in CHFTS2.</p> <p>The glycol leak source location remains unknown. If the ongoing efforts to identify and repair the leak do not resolve the issue by re-energization on November 25, 2018 another outage may be required to complete repairs.</p> <p>30-Nov Meeting Update</p> <p>This meeting mostly centered around the first few days of start up of the LIL and plan for the coming days. In the first two days the link was online up to the date of the meeting, the glycol leak did not reappear. The team plans to continue loading the link and troubleshooting to find the leak. Of the other items that were to be addressed during the outage, no items were de-scoped. The plan for the coming days is to finalize loading plan and continue troubleshooting the leak. The team aims for sustained 24 hour operation mid-December. Final plan pending in the next few days.</p> <p>14-Dec Meeting Update</p> <p>The link went back in service December 1, 2018 and for the first two weeks, had typical periods of online service followed by offline commissioning to address items that were noted. (As of December 21, 2018 the link has been online since December 13, 2018 ramping up in loading, with no trips or issues. Hydro and Power Supply continue to work together to ramp loading to test the link performance appropriately. Loading to 110 MW is expected before Christmas.)</p>		

Please note: If there are any comments or amendments to be made to these meeting minutes, they must be brought to the notice of the Meeting Chair within 24 hours of issue and confirmed in writing.