



Newfoundland and Labrador Hydro
Hydro Place, 500 Columbus Drive
P.O. Box 12400, St. John's, NL
Canada A1B 4K7
t. 709.737.1400 | f. 709.737.1800
nlhydro.com

January 19, 2024

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

Attention: Jo-Anne Galarneau
Executive Director and Board Secretary

Re: *Reliability and Resource Adequacy Study Review – 2023–2024 Winter Readiness Planning Report – Update – January 2024*

On December 11, 2023, Newfoundland and Labrador Hydro (“Hydro”) filed its final 2023–2024 Winter Readiness Planning Report (“Report”).¹ At the time of the Report filing, all of Hydro’s regulated generating sources were fully available, with the exception of the Upper Salmon Hydroelectric Generating Station (“Upper Salmon”), Unit 1 (derated to 140 MW) and Unit 2 at the Holyrood Thermal Generating Station (“Holyrood TGS”), and the Stephenville Gas Turbine (“Stephenville GT”). Hydro committed to filing an update, contained herein, regarding these and other outstanding winter readiness (“WR”) items with the Board of Commissioners of Public Utilities (“Board”) in January 2024.

Although Hydro has identified risks as outlined in the Report, mitigations are in place to help ensure adequacy of supply for the 2023–2024 winter season. Peak Island demands to date for 2024 were recorded on January 6. The peak was measured to be 1,677 MW and Hydro maintained sufficient reserves for the duration of this cold weather event. Hydro expects continued reliable service for customers for the remainder of the winter with supply provided by regulated generation sources and by Muskrat Falls generation via the Labrador-Island Link (“LIL”). As noted in Hydro’s most recent quarterly update on the LIL,² the asset performed well in 2023 with an equivalent forced outage rate of approximately 4%.³

Holyrood TGS

Unit 1 and Unit 3 at the Holyrood TGS are online and supporting the system at near full capacity.⁴ Since the filing of the Report, a short outage was taken on Unit 1 to address the turbine control valve stem failure, as discussed in Section 4.1 of the Report. All start-up checks have been completed for Unit 1 and

¹ “2023–2024 Winter Readiness Planning Report,” Newfoundland and Labrador Hydro, December 11, 2023.

² “*Reliability and Resource Adequacy Study Review – Labrador-Island Link Update for the Quarter Ended December 31, 2023*,” Newfoundland and Labrador Hydro, January 11, 2024.

³ This equivalent forced outage rate is calculated on a base LIL capacity of 700 MW. On a base capacity of 900 MW, the equivalent forced outage rate is calculated to be approximately 6%. Following the completion of the 900 MW test, all calculations will be adjusted to reflect the change in assumptions.

⁴ Unit 1 is currently available at 160 MW. This limitation is due to boiler tuning; Hydro has engaged contract expertise to perform tuning on the unit later this month.

Unit 3, aside from activities related to the condensate drains pumps which will be completed during the annual outage period.⁵ Additionally, all WR activities related to Unit 3 are now complete.

Unit 2 remains unavailable due to the required replacement of the low pressure blades on the Unit 2 turbine. The return to service date for this unit is tentatively scheduled for March 2024; all related WR activities are scheduled to be completed prior to the unit being returned to service.⁶

At the time of the Report filing, seven critical spare stock items remained outstanding; all but one have since been delivered. A purchase order has been issued for the remaining item, with expected delivery February 20, 2024.

The WR scope in the Fuel Tank 1 Inspection and Refurbishment Program remains ongoing. Hydro is actively working to execute the repairs, and expects that the tank will be returned to service in March 2024.

Gas Turbine Generation

The Stephenville GT remains unavailable due to the current alternator cooling fan repair schedule.⁷ The rotor underwent inspection and testing at the original equipment manufacturer's ("OEM") facility in the United States throughout December 2023; due to the results of the tests and inspections, additional repairs are required in January 2024. The rotor is now expected to be returned to site in early February 2024, and the unit returned to service in March 2024. All remaining WR items are scheduled to be completed prior to the unit being returned to service.⁸

The Hardwoods Gas Turbine is available at full capacity. Hydro is continuing to address the spare engine for End B of this unit; due to an issue during its performance test in late December 2023, the engine was returned to the overhaul facility for further work. Hydro's contingency plans remain in place until the estimated engine return date of late February 2024.⁹

Hydraulic Generation

WR work for all hydraulic generation was completed at the time of the Report filing, with the exception of Bay d'Espoir Hydroelectric Generating Facility ("Bay d'Espoir") and Upper Salmon.¹⁰ All remaining WR activities have since been completed.¹¹

⁵ These pumps are not required for safe and reliable operation of the unit at full capability.

⁶ A portion of the WR scope within three capital projects will be completed during the start up and return to service of Unit 2. Additionally, most of the plant and equipment start-up checks have not been completed on this unit due to the extended outage; these will commence in preparation to return the unit to service.

⁷ Further information on the Stephenville GT Alternator Cooling Fan Failure is provided in Section 7.4.1 of the Report.

⁸ Black start testing of the Stephenville GT has not been completed due to the extended unit outage; this will commence in preparation to return the unit to service.

⁹ Further information on Hydro's contingency plans should an operational issue occur in Hardwoods which requires an engine replacement are provided in Section 7.4.2 of the Report.

¹⁰ At the time of the Report filing, maintenance activities were also ongoing on the Star Lake Unit; this unit returned to service on December 17, 2023.

¹¹ The Upper Salmon Unit was released for service on December 12, 2023; all outstanding capital project work, WR activities and plant and equipment testing for the unit were completed at that time.

One capital spare for hydraulic generation, the Upper Salmon T2 spare transformer, remains outstanding but does not present a risk to WR.¹² Hydro continues to work with the supplier to expedite testing and delivery, and expects the transformer to be returned to Upper Salmon in the second quarter of 2024.

Transmission and Terminal Stations

Eleven WR activities remained outstanding within Transmission and Rural Operations Island (“TROI”) Terminal Stations at the time of the Report filing, five of which have since been completed. The completion of the remaining six WR activities requires an outage that will affect some Newfoundland Power Inc. customers, which will occur during the summer of 2024.¹³ The Annual Work Plan (“AWP”) completion status for TROI for 2023 is 93%; of the remaining AWP items, some are scheduled for completion in the first quarter of 2024, while others will be included in the 2024 AWP, as required.¹⁴

The WR scope in the Happy Valley – Replace Human-Machine Interface capital project remains outstanding; installation and commissioning of the software is now expected to be completed in February 2024.¹⁵ The WR scope in the Refurbishment and Modernization of Power Transformers program for the St. Anthony Diesel Plant Transformer T1 tap changer refurbishment also remains outstanding. The tap changer component which requires replacement is now expected to be delivered by early March 2024; Hydro is working with the OEM to schedule their resources to assist with this work near the time of the component delivery.¹⁶

Hydro continues to work with the OEM to refurbish the failed Transformer T6 in Bay d’Espoir to be used as a spare generator step-up transformer.¹⁷ It is expected that the refurbishment of Transformer T6 will be completed in early February 2024 due to a delay in the OEM’s completion of the high-voltage testing. Completion of Holyrood TGS Transformer T7 replacement also remains outstanding; this transformer is expected to return to service in early February 2024.¹⁸

Muskrat Falls Assets

Muskrat Falls Unit 3 returned to service on December 11, 2023, at which time all remaining WR activities were complete. Approximately 4% of WR items remain outstanding for the LIL and the Labrador Transmission Assets, all of which are expected to be completed by mid-February 2024, with the exception of one item which is estimated to be completed by April 2024.¹⁹

¹² The existing transformer is in good condition. A failure of Transformer T2 would not impact available generation from Upper Salmon; it provides power to some upcountry structures for which there are other contingencies.

¹³ These activities are associated with three current transformers (“CT”) in Oxen Pond, which were installed in 2017 and have no outstanding corrective maintenance issues. Hydro does not anticipate any issue with the CTs.

¹⁴ AWP items, which will now be completed as part of the 2024 plan, are those which better align with upcoming outages in 2024, or require technical/OEM assistance that was not available in 2023.

¹⁵ Hydro has mitigated risks to the reliability of the Happy Valley Gas Turbine through the installation of an interim solution, which will remain in place until the full upgrade is placed in service.

¹⁶ Hydro’s mobile substation will remain in service until the issue with the St. Anthony T1 tap changer is resolved to minimize customer reliability risks this winter.

¹⁷ “2023–2024 Winter Readiness Planning Report,” Newfoundland and Labrador Hydro, December 11, 2023, s. 7.3.

¹⁸ “2023–2024 Winter Readiness Planning Report,” Newfoundland and Labrador Hydro, December 11, 2023, s. 7.5.4.

¹⁹ The majority of the outstanding WR items are tied to delays in the delivery of required tools and materials.

The replacement of four DCCTs²⁰ at the Muskrat Falls HVdc²¹ Converter Station remains ongoing, with expected completion during the first quarter of 2024.²²

Hydro continues to monitor the performance of its assets, and recognizes that the forced unavailability of Unit 2 at the Holyrood TGS and the Stephenville GT into this winter puts an additional strain on the system; however, Hydro is actively working towards returning these units to service as early as possible. Notwithstanding the unavailability of these assets for a period during the 2023–2024 winter operating season, Hydro is confident in its ability to reliably serve customers with its combined fleet of assets, and to the extent possible, has put mitigations in place to prevent significant issues during the 2023–2024 winter season.

Hydro continues to track the remaining work activities and will provide an update to the Board in February 2024.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO



Shirley A. Walsh
Senior Legal Counsel, Regulatory
SAW/nk.kd

ecc:

Board of Commissioners of Public Utilities

Jacqui H. Glynn
Cheryl Blundon
Maureen Greene, KC
PUB Official Email

Island Industrial Customer Group

Paul L. Coxworthy, Stewart McKelvey
Denis J. Fleming, Cox & Palmer
Dean A. Porter, Poole Althouse

Labrador Interconnected Group

Senwung F. Luk, Olthuis Kleer Townshend LLP
Nicholas E. Kennedy, Olthuis Kleer Townshend LLP

Consumer Advocate

Dennis M. Browne, KC, Browne Fitzgerald Morgan & Avis
Stephen F. Fitzgerald, Browne Fitzgerald Morgan & Avis
Sarah G. Fitzgerald, Browne Fitzgerald Morgan & Avis
Bernice Bailey, Browne Fitzgerald Morgan & Avis

Newfoundland Power Inc.

Dominic J. Foley
Lindsay S.A. Hollett
Regulatory Email

²⁰ DC current transformer (“DCCT”).

²¹ High-voltage direct current (“HVdc”).

²² Planned outages during the first quarter of 2024 will be required to complete this work, with dates to be confirmed.