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February 29, 2024

Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road, P.O. Box 21040
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Attention: Jo-Anne Galarneau
Executive Director and Board Secretary

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

Newfoundland and Labrador Hydro (“Hydro”) filed its 2023–2024 Winter Readiness Planning Report (“Report”) with the Board of Commissioners of Public Utilities (“Board”) on December 11, 2023.¹ In its January 19, 2024 update (“January Update”) to the Board,² Hydro committed to filing a further update in February regarding the remaining outstanding winter readiness (“WR”) items. Hydro’s update is as follows.

Although Hydro has identified risks as outlined in the Report, mitigations are in place to help ensure adequacy of supply for the remainder of the 2023–2024 winter season. Peak Island demands to date for 2024 were recorded on January 24. The peak was measured to be 1,766 MW and Hydro maintained sufficient reserves for the duration of this cold weather event. Hydro expects continued reliable service for customer’s 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,³ the asset performed well in 2023 with an equivalent forced outage rate of approximately 4%.⁴

Holyrood TGS

Unit 1 and Unit 3 at the Holyrood Thermal Generating Station (“Holyrood TGS”) are online and supporting the system at near full capacity, with Unit 1 currently available at 160 MW.⁵

Unit 2 remains unavailable due to the required replacement of the low pressure blades on the Unit 2 turbine. The turbine rotor was returned to site in December 2023; however, upon evaluation, it was

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

² “*Reliability and Resource Adequacy Study Review – 2023–2024 Winter Readiness Planning Report – Update – January 2024*,” Newfoundland and Labrador Hydro, January 19, 2024.

³ “*Reliability and Resource Adequacy Study Review – Labrador-Island Link Update for the Quarter Ended December 31, 2023*,” Newfoundland and Labrador Hydro, January 11, 2024.

⁴ 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.

⁵ Boiler tuning was performed on Unit 1 in February; however, the load restriction was not resolved and will remain in place for the operating season. Further boiler tuning recommendations will be addressed during the 2024 annual unit outage.

determined that the journal bearings sustained damage during shipping and would require additional repair. As a result, the return to service date for this unit is tentatively scheduled for April 2024.

Since filing the January Update, the one outstanding critical spare stock item has been delivered. The WR scope in the Fuel Tank 1 Inspection and Refurbishment project 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 Gas Turbine (“Stephenville GT”) remains unavailable due to the current alternator cooling fan repair schedule.⁶ 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 were required in January 2024. The bearings and exciter were returned to site in mid-February 2024; however, the exciter sustained damage during shipping and requires additional repairs. The unit is expected to return to service in late April 2024.

The Hardwoods Gas Turbine is available at full capacity. Hydro is continuing to address the outstanding 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. Factory Acceptance Testing for the engine is currently planned for early March, and Hydro’s contingency plans remain in place until the estimated engine return date of late March 2024.⁷

Transmission and Terminal Stations

The WR scope in the Happy Valley – Replace Human-Machine Interface (“HMI”) capital project remained outstanding at the time of filing the January Update; installation and commissioning of the software has since been completed.⁸ The Refurbishment and Modernization of Power Transformers program for the Transformer 1 (“T1”) tap changer refurbishment at the St. Anthony Diesel Generating Station remains outstanding; the required component is expected to be delivered by mid-March and work is expected to be complete by the end of March 2024.⁹

The refurbishment of the failed Transformer 6 (“T6”) in Bay d’Espoir was completed on February 1, 2024.¹⁰ Completion of the Holyrood TGS Transformer 7 (“T7”) replacement remains outstanding; this transformer is expected to return to service in early March 2024.¹¹

Muskkrat Falls Assets

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-April 2024.¹²

⁶ Further information on the Stephenville GT Alternator Cooling Fan Failure is provided in Section 7.4.1 of the Report. *Supra*, f.n. 1 at p. 38.

⁷ 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. *Supra*, f.n. 1 at pp. 38–39.

⁸ Punchlist items remain to be completed; however, the HMI is operational and the unit has returned to service.

⁹ To minimize customer reliability risks, Hydro’s mobile substation will remain in service until the issue with the St. Anthony T1 tap changer is resolved.

¹⁰ Hydro worked with the OEM to refurbish the failed T6 in Bay d’Espoir to be used as a spare generator step-up transformer. *Supra*, f.n. 1, s. 7.3 at pp. 37–38.

¹¹ Further information on the Holyrood TGS T7 replacement is provided in Section 7.5.4 of the Report. *Supra*, f.n. 1 at p. 40.

¹² The majority of the outstanding WR items are tied to delays in the delivery of required tools and materials.

During an icing event experienced in early February 2024, line patrols of affected areas of the LIL revealed damage to the peaks of eight towers.¹³ Damage did not affect LIL operations. Repairs are ongoing with daily pole outages as required; work is expected to conclude in early March 2024. An investigation into the cause of the tower peak failures is ongoing.

The replacement of four DCCTs¹⁴ at the Muskrat Falls HVdc¹⁵ Converter Station remains ongoing with expected completion in March 2024.¹⁶

As previously reported,¹⁷ Hydro experienced a failure of control components at the LIL Transition Compound following the submarine cable switching in the Strait of Belle Isle in December 2023. Cable switching has been disabled until the failure investigations are complete; testing requiring a brief outage will be carried out by the OEM in early March 2024. To provide reliable service, Hydro has limited the LIL bipole capacity to 450 MW for normal operation; however, operation up to 700 MW is available should the system require operation at that level.¹⁸

Conclusion

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 puts an additional strain on the system. Hydro is actively working towards expeditiously returning these units to service, and to the extent possible, has put mitigations in place to help ensure reliable service for the remainder of the 2023–2024 winter season. Notwithstanding the unavailability of certain assets, Hydro has reliably served customers with its combined fleet of assets to date, and is confident in its ability to continue to do so for the remainder of the 2023–2024 winter operating season.

Hydro continues to track the remaining outstanding WR items and will provide an update to the Board in March 2024.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO



Shirley A. Walsh
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¹³ The eight towers which experienced damage included Structures 2543–2545, 2596–2599, and 2620, located in Terra Nova National Park. Snow clearing was mobilized in the area to enable greater access to the affected towers.

¹⁴ DC current transformer (“DCCT”).

¹⁵ High-voltage direct current (“HVdc”).

¹⁶ Planned outages during March 2024 will be required to complete this work; dates to be confirmed.

¹⁷ *Supra*, f.n. 3.

¹⁸ With cable switching disabled, pole overloads (individual pole operation above 450 MW) are limited to five minutes as only one cable is in service per pole.

ecc:

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