



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

March 25, 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 – March 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. In its February 29, 2024 update (“February Update”) to the Board, Hydro committed to filing a further update in March regarding the remaining outstanding winter readiness (“WR”) items. Hydro’s update is as follows.

Although Hydro identified risks as outlined in the Report, mitigations put in place by Hydro ensured adequacy of supply for the 2023–2024 winter season. Peak Island demands to date for the 2023–2024 winter season 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 has reliably served customers with its combined fleet of assets to date, and is confident in its ability to continue to do so 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,<sup>1</sup> the asset performed well in 2023 with an equivalent forced outage rate of approximately 4%.<sup>2</sup>

### **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.<sup>3</sup>

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 determined the journal bearings sustained damage during shipping and would require additional repair.

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<sup>1</sup> “*Reliability and Resource Adequacy Study Review – Labrador-Island Link Update for the Quarter Ended December 31, 2023,*” Newfoundland and Labrador Hydro, January 11, 2024.

<sup>2</sup> 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.

<sup>3</sup> As discussed in the February Update, boiler tuning was performed on Unit 1; 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.

Damage was also found on the Stage 12, 13, and 18 diaphragms that required repair.<sup>4</sup> As work continues to address turbine rotor clearances amid weather delays, the return to service date for this unit is tentatively scheduled for late April 2024.

The WR scope in the Fuel Tank 1 Inspection and Refurbishment project remains ongoing; however, additional damage was discovered which required plate replacement. As a result, Hydro expects that the tank will be returned to service in April 2024.

### **Gas Turbine Generation**

The Stephenville Gas Turbine (“Stephenville GT”) remains unavailable due to the current alternator cooling fan repair schedule.<sup>5</sup> The rotor, bearings, and exciter were returned to site in February 2024; however, the exciter sustained damage during shipping and requires additional repairs. It is expected that the exciter will be returned to site in early April 2024; the unit is estimated to return to service later that month.

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 took place again in early March 2024; however, due to additional issues which arose during the test, the engine was returned to the overhaul facility. Hydro’s contingency plans remain in place until the engine returns to site.<sup>6</sup>

### **Transmission and Terminal Stations**

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. Work is on schedule to be completed by the end of March 2024.<sup>7</sup>

Since filing the February Update, the Holyrood TGS Transformer 7 (“T7”) replacement has been completed, with T7 returning to service in late March 2024.<sup>8</sup>

### **Muskrat Falls Assets**

At the time of filing the February report, approximately 4% of WR items were outstanding for the LIL and the Labrador Transmission Assets;<sup>9</sup> remaining activities have since been included for completion as part of the 2024 annual work plan.

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<sup>4</sup> Required repair work for the journal and diaphragms is now complete.

<sup>5</sup> Further information on the Stephenville GT Alternator Cooling Fan Failure is provided in Section 7.4.1 of the Report at p. 38.

<sup>6</sup> 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 at pp. 38–39.

<sup>7</sup> 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.

<sup>8</sup> Further information on the Holyrood TGS T7 replacement is provided in Section 7.5.4 of the Report at p. 40.

<sup>9</sup> The majority of the outstanding items were 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 and the Optical Ground Wire (“OPGW”).<sup>10</sup> Damage did not affect LIL operations; communications are currently functional through a bypass cable. Repairs to the tower peaks were completed in mid-March 2024 with daily pole outages as required. A brief bipole outage is required to restring the OPGW; this work is planned for the end of March 2024.

DCCT<sup>11</sup> replacement remains ongoing at the Muskrat Falls HVdc<sup>12</sup> Converter Station; one DCCT was replaced in early March 2024, and the remainder are scheduled for replacement in April 2024.<sup>13</sup>

As previously reported,<sup>14</sup> 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.<sup>15</sup> Testing requiring a brief outage was successfully carried out by the original equipment manufacturer in early March 2024; the resultant mitigations are planned for implementation in late April. 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.<sup>16</sup>

### Conclusion

Hydro continues to monitor the performance of its assets, and is actively working towards the return to service of Unit 2 at the Holyrood TGS and the Stephenville GT. Notwithstanding the unavailability of these assets, Hydro has reliably served customers with its combined fleet of assets throughout the 2023–2024 winter operating season.

Should you have any questions, please contact the undersigned.

Yours truly,

### NEWFOUNDLAND AND LABRADOR HYDRO



Shirley A. Walsh  
Senior Legal Counsel, Regulatory  
SAW/rr

ecc:

**Board of Commissioners of Public Utilities**  
Jacqui H. Glynn  
Maureen Greene, KC  
Board General

**Labrador Interconnected Group**  
Senwung F. Luk, Olthuis Kleer Townshend LLP  
Nicholas E. Kennedy, Olthuis Kleer Townshend LLP

**Newfoundland Power Inc.**  
Dominic J. Foley  
Lindsay S.A. Hollett  
Regulatory Email

<sup>10</sup> The eight towers which experienced damage included Structures 2543–2545, 2596–2599, and 2620, located in Terra Nova National Park. An investigation into the cause of the tower peak failures is ongoing.

<sup>11</sup> DC current transformer (“DCCT”).

<sup>12</sup> High-voltage direct current (“HVdc”).

<sup>13</sup> Planned outages during April 2024 will be required to complete this work; dates to be confirmed.

<sup>14</sup> *Supra*, f.n. 1.

<sup>15</sup> Cable switching has been disabled until the failure investigations are complete.

<sup>16</sup> 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.

**Island Industrial Customer Group**  
Paul L. Coxworthy, Stewart McKelvey  
Denis J. Fleming, Cox & Palmer  
Dean A. Porter, Poole Althouse

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