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January 10, 2025

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: Request for Change or Modification to Board Order No. P.U. 28(2023) – Approval of Capital Expenditures for the Purchase of a Spare Generator Step-Up Transformer

On September 21, 2023, Newfoundland and Labrador Hydro (“Hydro”) filed an application with the Board of Commissioners of Public Utilities (“Board”) for approval of a supplemental capital expenditure for the purchase of a spare generator step-up (“GSU”) transformer.

This project was approved in Board Order No. P.U. 28(2023). Subsequent to receiving the Board’s approval, Hydro issued a tender in the spring of 2024 which resulted in no compliant bidders. In accordance with public procurement legislation, Hydro proceeded to re-tender the GSU transformer specification. On evaluation of tender bids received, Hydro has determined that there was one compliant bid. Due to increased commodity pricing, current original equipment manufacturer shop loading, and the specific arrangement required for the spare GSU transformer to be able to be utilized in various locations, the revised budget to proceed with the spare GSU transformer purchase is \$12,324,025. Scheduling has also been updated and the overall timeline has increased from approximately four years to approximately six years.

The provisional Capital Budget Application Guidelines¹ indicate that for multi-year projects, a material change in forecast expenditures will result in further review. The purchase of a spare GSU transformer remains the only viable alternative to ensure redundancy in the event of a GSU transformer failure and is necessary and prudent to ensure the reliable operation of the electrical system. Hydro requests approval to proceed with the project, at the higher estimated cost. Hydro will utilize any lessons learned from the bidding process for future procurement of transformers for capital projects.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

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

¹ “Capital Budget Application Guidelines (Provisional),” Board of Commissioners of Public Utilities, January 2022.

Encl.

ecc:

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Attachment 1

Purchase of a Spare Generator Step-Up Transformer

Cost and Schedule Update



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1.0 Background

Newfoundland and Labrador Hydro’s (“Hydro”) complement of spare generator step-up (“GSU”) transformers was depleted following the failures of GSU transformers BDE T5 and BDE T6 at the Bay d’Espoir Hydroelectric Generating Facility (“Bay d’Espoir Facility” or “BDE”) in 2022 and 2023, respectively, and the failure of HRD T2 at the Holyrood Thermal Generating Station (“Holyrood TGS” or “HRD”) in 2021.

Traditionally, Hydro has maintained two spare complements for its GSU transformer fleet; however, the failures of BDE T5 and HRD T2 depleted this complement. Hydro worked with the original equipment manufacturer (“OEM”) to complete the refurbishment of the failed original BDE T5 for utilization as a spare; Hydro then replaced the failed BDE T6 with the repaired BDE T5 (now referenced as BDE T5S). This enabled BDE Unit 6 to return to service in October 2023 but left Hydro without a spare GSU transformer. The failed BDE T6 was repaired and is now a spare for BDE T1 to T6 (now referenced as BDE T6S), Granite Canal Hydroelectric Generating Station (“Granite Canal Station” or “GCL”) T1, and a reduced spare for BDE T7 and Upper Salmon Hydroelectric Generating Station (“Upper Salmon Station” or “USL”) T1.¹ There is no available spare for HRD T1 to HRD T3. On September 21, 2023, Hydro filed an application with the Board of Commissioners of Public Utilities (“Board”) for approval of a supplemental capital expenditure for the purchase of a spare GSU transformer rated at 172 MVA, to serve as a spare closer to the full-load ratings of the Holyrood TGS units and BDE Unit 7. To ensure full spare capability, Hydro sought to purchase a spare transformer that could be installed at Holyrood TGS, Bay d’Espoir Facility, Upper Salmon Station, or Granite Canal Station.² This new spare, in addition to the repaired BDE T6, will return Hydro to the status quo—having two spare GSU transformers—as was the case before the aforementioned failures in 2021, 2022, and 2023.

Hydro’s supplemental capital budget application for the purchase of a spare GSU transformer, with an anticipated capital expenditure of \$7,466,900, was approved by the Board on October 18, 2023.³

¹ For BDE T4, GCL T1, USL T1, and BDE T7 modifications will be required to the isolated-phase bus duct connections.

² The location for the installation of transformer and pad are to be determined.

³ Board Order No. P.U. 28(2023).

2.0 Project Update

Hydro’s initial project estimate was developed from preliminary information provided by the OEM assisting in the BDE T6S repairs and was based on a generic arrangement transformer which would meet the requirement for dual voltage on the low voltage side. From the information received from the OEM, Hydro developed the initial budget of \$7,466,900 with a schedule beginning in late 2023 and concluding in the third quarter of 2026. The initial tender was prepared and issued in the spring of 2024 and, resulted in no compliant bidders. In accordance with the public procurement legislation, Hydro proceeded to re-tender the GSU transformer specification. On evaluation of tenders received, Hydro has determined there is one compliant bid. Due to increased commodity pricing, current OEM shop loading, and the specific arrangement required for the spare GSU transformer to be utilized in locations outside of Holyrood TGS, the revised budget and schedule to proceed with the spare GSU transformer purchase is \$12,324,025 with the overall schedule for project completion extended to December 2028. The scope of the project remains as originally proposed.

While Hydro’s updated estimate is based on tender pricing, the inclusion of contingency remains necessary due to contract escalation clauses related to commodity pricing, and potential changes in shipping costs that will not be known until the transformer is ready to leave the vendor’s facility.

Hydro has confirmed there are no viable alternatives for the purchase of a spare GSU transformer, and the project at the revised budget remains necessary and prudent to maintain the reliability of the electrical system.

The revised estimate for this project is shown in Table 1.

Table 1: Budget Update – Purchase of a Spare GSU Transformer (\$000)⁴

Project Cost	Approved		2025	2026	2027	2028	Total
	2023	2024					
Approved Budget Estimate ⁵	39.6	1,298.9	3,966.7	2,161.7	-	-	7,466.9
Revised Budget Estimate January 2025 ⁶	39.6	1,298.9	1,822.1	3,140.0	687.0	5,336.4	12,324.0
Actual Expenditure and Forecast	17.5	51.0	3,092.1	3,140.0	687.0	5,336.4	12,324.0

⁴ Numbers may not add due to rounding.

⁵ *Supra*, f.n. 3.

⁶ The revised budget estimates for 2024 and 2025 are the estimated expenditures plus the forecasted overspend of budget previously approved.

1 **3.0 Schedule**

2 The revised anticipated project schedule is shown in Table 2.

Table 2: Project Schedule

Activity	Start Date	End Date
Planning: Open work order and plan and develop schedule.	November 2023	December 2024
Design: Design and specification development for tender and procurement.	January 2024	June 2024
Tender Period: Tender procurement specification.	June 2024	December 2024
Procurement: Order transformer and oil containment.	January 2025	October 2028
Construction: Install power transformer and pad and oil containment.	May 2027	October 2028
Commissioning: Test new spare transformer.	October 2028	November 2028
Closeout: Close work order and complete closeout documentation.	November 2028	December 2028

3 **4.0 Summary and Recommendation**

4 The purchase of a spare GSU transformer remains necessary and prudent to ensure the reliable
5 operation of the electrical system. Hydro recommends that the project proceed at the revised budget of
6 \$12,324,025.