Q. **Reference: Schedule 5 2024 Capital Expenditures Overview, page 2, Table 1.**

For each line item in Table 1 with a forecast variance identified, please provide a detailed breakdown of all major expenditures anticipated. Also, identify any attempt by Hydro to mitigate the amount of the forecast variance.

A. Tables are provided below for each of the three 2024 In-Service Failures Programs that were forecast to exceed budget, as indicated in Schedule 5, 2024 Capital Expenditures Overview, page 2, Table 1. For the purposes of this response, major expenditures were defined as those above the legislative threshold of $750,000. Details are provided for scopes of work within those programs that were forecast to exceed $750,000.

The forecasted variances for Newfoundland and Labrador Hydro's ("Hydro") Gas Turbine, Hydraulic, and Terminal Station In-Service Failures Programs are primarily attributed to more scopes of work required in 2024 than anticipated at the time of the original budget estimates and the nature of failures requiring more material expenditure to address. The variance between budget and actual expenditures for the In-Service failures Programs is mitigated to the extent practical as follows:

- Preventive maintenance and many planned renewal capital expenditures are undertaken with the primary goal of mitigating the risk of in-service failures;[1]
- Hydro continually improves its Asset Management Program, which aims to anticipate future failures so that refurbishment or replacement can be incorporated into the proposed capital plan at an appropriate time. Further discussion of Hydro's continuous improvement efforts for its Asset Management Program is provided in Hydro's Asset Management Needs and Readiness Assessment, included as an attachment in response to RFI PUB-NLH-065 of the 2024 Capital Budget proceeding;

[1] Hydro continually seeks to find the appropriate balance between the amount of planned work to maintain the delivery of safe, reliable electricity and the cost impact of such work to the rate payers.

- Each scope of work considered for the In-Service Failures programs is evaluated on its own merits, to confirm it is required to restore system functionality; and
- Budget estimate amounts for these programs are established using historical averages, along with Hydro's experience and engineering judgement.[2]

Table 1: Gas Turbine In-Service Failures (2024)

Total Budget:	$ 358,000
Total Expenditures and Forecast:	$7,000,710
Total Forecasted Variance:	$6,642,710

Table 2: Gas Turbine Generation In-Service Failures

Program Work Scope	2024 Expenditure and Forecast ($000)	Failure Identified	Scope Description
Generator Refurbishment – Stephenville Gas Turbine	5,938.9[3]	In August 2023, generator rotor blades were damaged, which also caused secondary damage to the stator end windings.	As part of the 2023 Gas Turbine In-Service Failures Program, the generator stator and rotor were removed for refurbishment; the stator was refurbished on site; and the rotor was shipped to Hydro's service provider for refurbishment, which commenced in November 2023. The work continues in 2024 and the refurbished unit is expected to be reassembled and commissioned in the third quarter of 2024.
Work Scopes Under $750,000	853.0		
Allowance for Additional Failures in 2024[4]	208.8		

[2] As many of these programs are new or have been introduced in recent years, they have limited historical data; Hydro expects that it may take several years of implementation to determine an appropriate baseline estimate for annual in-service failure expenditures.
[3] The final 2023 expenditures for this work scope were $3,436.1.
[4] As part of its forecasting exercise for In-Service Failures programs, Hydro retains a portion of the original budget in its forecast as an allowance for failures yet to occur. The portion of original budget retained in the forecast is based upon the remaining months in the year at the time of the forecast.

Table 3: Terminal Station In-Service Failures

Total Budget:	$1,300,000
Total Expenditures and Forecast:	$3,614,490
Total Forecasted Variance:	$2,314,490

Table 4: Terminal Station In-Service Failures

Program Work Scope	2024 Expenditure and Forecast ($000)	Failure Identified	Scope Description
Restore Power Transformer Capital Spare for Hydraulic Generating Unit Transformers – Bay d'Espoir Terminal Station 1	1,632.5[5]	The spare transformer used to replace Bay d'Espoir Transformer T6 in 2023 was serving as a spare for nine power transformers—Bay d'Espoir T1 to T7, Granite Canal T1, and Upper Salmon T1. Two alternatives were considered to restore availability of a spare: procurement of a new transformer; and refurbishment of the failed Bay d'Espoir T6. The alternative to procure a new transformer was rejected as the risk of being without a spare while waiting for fabrication and delivery of a new transformer (24 to 30 months) was deemed unacceptable. Refurbishment of the failed Transformer T6 was established as the best solution to restore the availability of a spare.	The failed Bay d'Espoir Transformer T6 was refurbished, to restore the availability of a capital spare generation transformer. This work commenced in 2023 as part of the 2023 Terminals In-Service Failure program and was completed in the First Quarter of 2024.
Work Scopes Under $750,000	898.7		
Allowance for Additional Failures in 2024[6]	1,083.3		

[5] The final 2023 expenditures for this work scope were $613.7.

[6] As part of its forecasting exercise for In-Service Failures programs, Hydro retains a portion of the original budget in its forecast as an allowance for failures yet to occur. The portion of original budget retained in the forecast is based upon the remaining months in the year at the time of the forecast.

Table 5: Hydraulic In-Service Failures

Total Budget:	$1,500,000
Total Expenditures and Forecast:	$2,500,000
Total Forecasted Variance:	$1,000,000

Table 6: Hydraulic In-Service Failures

Program Work Scope	2024 Expenditure and Forecast ($000)	Failure Identified	Scope Description
Work Scopes Under $750,000	1,625.0		
Allowance for Additional Failures in 2024[7]	875.0		

[7] As part of its forecasting exercise for In-Service Failures programs, Hydro retains a portion of the original budget in its forecast as an allowance for failures yet to occur. The portion of original budget retained in the forecast is based upon the remaining months in the year at the time of the forecast.