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August 20, 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: Newfoundland Power Inc.'s 2025 Capital Budget Application – Requests for Information

Please find enclosed Newfoundland and Labrador Hydro's requests for information NLH-NP-001 to NLH-NP-028 in relation to Newfoundland Power Inc.'s 2025 Capital Budget Application.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

Shirley A. Walsh

Senior Legal Counsel, Regulatory

SAW/rr

Encl.

ecc:

Board of Commissioners of Public Utilities

Jacqui H. Glynn Katie R. Philpott Board General **Consumer Advocate**

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Lindsay S.A. Hollett Regulatory Email **IN THE MATTER OF** the *Public Utilities Act*, (the "Act"), and

IN THE MATTER OF an application by Newfoundland Power Inc. for an Order pursuant to sections 41 and 78 of the *Act:* (a) approving its 2025 Capital Budget; and (b) fixing and determining its 2023 rate base.

Newfoundland and Labrador Hydro Requests for Information NLH-NP-001 to NLH-NP-028

August 20, 2024

1	<u>GENERAL</u>	
2	NLH-NP-001	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024,
3		2025 Capital Budget Overview, sec. 2.3.3, p. 11, Table 2.
4		a) Please confirm that Newfoundland Power has utilized the GDP deflator to escalate
5		all costs, including labour costs. If so, why did Newfoundland Power apply the GDP
6		deflator to labour costs?
7		b) Please restate Table 2 utilizing the 2025 Test Year revenue requirement filed within
8		Newfoundland Power's 2025–2026 General Rate Application.
9	NLH-NP-002	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024,
10		2025 Capital Budget Overview, sec. 2.3.4, p. 12, Table 3.
11		Please provide Newfoundland Power's 2025 planned capital expenditures as a percentage
12		of the Net Book Value of its Property, Plant, and Equipment, in comparison to the other
13		Atlantic Canadian utilities used for comparison in Table 3.
14	DISTRIBUTION	<u>!</u>
15	NLH-NP-003	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024,
16		sch. B, Feeder Additions for Load Growth, pp. 6–9.
17		a) When did Newfoundland Power first determine that APT-02 and GOU-03 were
18		overloaded?
19		b) Please provide the capacity and peak demand on APT-02 and GOU-03 for each year
20		from 2019 to 2023.
21		c) Please provide the forecasted load growth on APT-02 and GOU-03 for each year
22		from 2025 to 2029.
23	NLH-NP-004	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024,
24		sch. B, Distribution Feeder Automation, p. 12.
25		Scenario 2 – Deployment of multiple downline reclosers on a feeder
25 26		such that approximately one third of the feeder load is upstream of the
27		first downline recloser, one third of the load is between the first and
28		second downline recloser, and the remaining one third of the load is
29		downstream of the second downline recloser. This is typically used for
30		larger feeders with the highest number of customers.

1		a) Please describe the procedure used to measure the load distribution across a feeder
2		for Scenario 2.
3		b) For feeders PUL-02, PUL-03 and LOK-01, please provide the single line drawings with
4		the proposed recloser locations and upstream/downstream load values.
5		c) When does Newfoundland Power anticipate that its Distribution Feeder Automation
6		project will conclude?
7		d) Please provide the System Average Interruption Duration Index ("SAIDI") and
8		System Average Interruption Frequency Index ("SAIFI") values for each year from
9		2019 to 2023 for each of the proposed feeders, along with the company average
10		and the Electricity Canada Region 2 average.
11		e) What is the anticipated lead time for reclosers?
12	NLH-NP-005	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024
13		sch. B, Rebuild Distribution Lines, p. 26.
14 15 16		A wood pole that has rotted and failed a core test or has severe woodpecker holes would be addressed within a year under the <i>Rebuild Distribution Lines</i> program.
17		a) Please provide details of the core test for a wood pole, including testing procedures,
18		average frequency, selection criteria, and analysis of results.
19		b) Please provide SAIDI and SAIFI statistics for each year from 2019 to 2023 for each
20		line planned under the 2025 program scope in comparison to the company average
21		and the Electricity Canada Region 2 average.
22	NLH-NP-006	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024
23		sch. B, Replacement Transformers, p. 33, f.n. 33 and f.n. 34.
24 25		Distribution transformer costs increased 37% from 2020 to 2024 and is expected to increase approximately 11% more in 2025. [f.n. 33]
26		and;
27 28 29		The average quantity of distribution transformers purchased from 2014 to 2018 was approximately 1,980 annually, the average purchased from 2019 to 2023 was approximately 1,500. [f.n. 34]
30		a) How many distribution transformers did Newfoundland Power place in service each
31		year from 2019 to 2023?

b) What is the basis for the projected decrease in program costs beyond 2025, as 1 2 depicted in Figure 1 of the program proposal? 3 **SUBSTATIONS** NLH-NP-007 Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024, 4 5 sch. B, Northwest Brook Substation Refurbishment and Modernization, p. 55. 6 Newfoundland Power states "...Install two new 138 kV breakers..." 7 a) What is the justification for the use of breakers in this case? 8 b) Please provide a single-line diagram showing before the upgrades and a single-line 9 diagram after the upgrades. 10 NLH-NP-008 Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024, 11 sch. B, Northwest Brook Substation Refurbishment and Modernization, p. 55. 12 Engineering design and procurement of long lead time equipment will 13 be completed in the first quarter of 2025. Construction will begin in the 14 second quarter and will be completed early in the fourth quarter of 2025. Commissioning of the substation will be completed by the end of 15 16 2025. 17 How will Newfoundland Power ensure that it can secure long lead equipment in time for the start of construction in the second guarter of 2025? 18 NLH-NP-009 Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024, 19 20 sch. B, Gander Substation Power Transformer Replacement, p. 63, and Supporting Materials, Substations: 2.2, app. B, sec. 1.3, pp. 3-4. 21 22 a) Please provide a detailed breakdown of the scope of maintenance completed on 23 GAN-T2 in September 2022. 24 b) Please provide Dissolved Gas Analysis test results for each year from 2021 to 2023 25 for GAN-T2. 26 c) In its report titled "Substation Spare Transformer Inventory" filed with its 2023 Capital Budget Application, Newfoundland Power indicated that it had opted to 27 28 repair a total of nine power transformers over the period 2011–2022, seven of which required the use of a portable substation. Why does Newfoundland Power 29 30 not consider this a viable option in the case of GAN-T2?

1		d) It is stated that "it is reasonable to expect multiple power transformer failures could
2		occur over the same period." Please confirm that Newfoundland Power has a
3		suitable spare transformer for GAN-T2, and if so, how many?
4		e) Please confirm how many of Newfoundland Power's three portable substations are
5		suitable for deployment in place of GAN-T2 if GAN-T2 were to be removed for
6		repair.
7		f) Did Newfoundland Power receive quotes for the repair of GAN-T2? If so, please
8		provide the estimated cost to repair GAN-T2. If not, why not?
9		g) Please provide the quoted lead time for the repair of GAN-T2.
10	NLH-NP-010	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024
11		sch. B, Pulpit Rock Substation Power Transformer Replacement, p. 68, and Supporting
12		Materials, Substations: 2.2, app. A, sec. 4.2, p. 7.
13		it is reasonable to expect multiple power transformer failures could
14		occur over the same period. [sch B, p. 68]
15		and;
16		There are numerous additional disadvantages to repair. There are
17 18		limited facilities that can repair power transformers, resulting in high costs and long lead times. [Substations: 2.2, app. A, sec. 4.2, p. 7]
19		a) In its report titled "Substation Spare Transformer Inventory" filed with its 2023
20		Capital Budget Application, Newfoundland Power indicated that it had opted to
21		repair a total of nine power transformers over the period 2011–2022, seven of
22		which required the use of a portable substation. Why does Newfoundland Power
23		not consider this a viable option in the case of PUL-T2?
24		b) Please confirm that Newfoundland Power has a suitable spare transformer for PUL-
25		T2, and if so, how many?
26		c) Please confirm how many of Newfoundland Power's three portable substations are
27		suitable for deployment in place of PUL-T2 if PUL-T2 were to be removed for repair.
28		d) Did Newfoundland Power receive quotes for the repair of PUL-T2? If so, please
29		provide the estimated cost to repair PUL-T2. If not, why not?
30		e) Please provide the quoted lead time for the repair of PUL-T2.

1	NLH-NP-011	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024,
2		Supporting Materials, Substations: 2.1, sec. 2.1, p. 3.
3 4 5 6 7 8		Newfoundland Power's current plan includes the refurbishment and modernization of 20 substations over the next five years. The refurbishment and modernization plan reflects the age and condition of the Company's substation assets, as described below. Refurbishment and modernization projects will continue to focus on addressing obsolete and deteriorated equipment in individual substations.
9		Please provide the decision-making criteria, including specific parameters, that
10		Newfoundland Power used to prioritize the substations identified for refurbishment.
11	NLH-NP-012	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024,
12		Supporting Materials, Substations: 2.1, sec. 2.2, p. 5.
13 14 15 16 17		As part of the substation asset management practices, Newfoundland Power conducts regular inspections and oil sample analysis to gauge the internal health of power transformers to determine when corrective maintenance is required. All power transformers undergo annual oil sampling. Additionally, power transformers are scheduled for a major overhaul every 12 years.
19		a) Please provide the specific parameters checked, and their purpose, during the
20		annual oil sampling.
21		b) Please provide a detailed breakdown of what is included in the 12-year overhaul.
22		What specific tests are performed and what parts are typically replaced? Please
23		provide a copy of any check sheets that are used.
24	NLH-NP-013	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024,
25		Supporting Materials, Substations: 2.1, p. 6, f.n. 14.
26 27 28		The average age of failure for the Company's fleet of SF6 breakers is 27 years. The average age of failure for the Company's fleet of vacuum breakers is 20 years.
29		a) What is the sample size of breakers used to derive 27 years and 20 years as the
30		average age of failure for SF6 and vacuum breakers respectively?
31		b) Has Newfoundland Power completed any root cause analysis to determine the
32		mode of failure for breakers? If so, what were the findings? If not, why not?

1	NLH-NP-014	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024,
2		Supporting Materials, Substations: 2.1, app. C, att. A.
3		Newfoundland Power's five-year plan provided in its 2024 Capital Budget Application
4		indicated refurbishment of the Lockston Substation was scheduled to commence in 2026.
5		Why has Newfoundland Power decided to advance the Lockston Substation project to
6		begin in 2025?
7	NLH-NP-015	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024,
8		Supporting Materials, Substations: 2.2, p. 2 and p. 4.
9 10 11 12 13		According to industry experience, the expected life of a power transformer is between 30 and 50 years, with a sharp decline for inservice power transformers past 70 years of age. The load profile in Newfoundland and Labrador is favourable for transformer life expectancy, as the highest loads are experienced in the winter when ambient temperatures are the lowest. [p. 2]
L5		and;
L6 L7		PUL-T2 is a 39-year-old, 15/20/25 MVA, 66-12.5 kV power transformer manufactured by Ferranti Packard. [p. 4]
L8		a) Please explain the deterioration of PUL-T2 at 39 years when "the load profile in
L9		Newfoundland and Labrador is favourable for transformer life expectancy?"
20		b) Please provide the results of the electrical testing, the internal inspection report,
21		and the Dissolved Gas Analysis test results for each year from 2021 to 2023 for
22		PUL-T2.
23		c) This project is being proposed as a two-year project. In its report, Newfoundland
24		Power states that lead times on Power Transformers have increased from an
25		average of 34 weeks in 2019 to an average of 117 weeks in 2024. Given these
26		extended lead times, does Newfoundland Power feel the proposed two-year
27		schedule will be attainable?
28	NLH-NP-016	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024,
29		Supporting Materials, Substations: 2.2, p. 3.
30 31 32		Newfoundland Power utilizes EPRI's Power Transformer Expert System ("PTX") to diagnose and assess the condition of its power transformer fleet. This assessment tool yields a set of indices for each transformer,

1 2			providing insight into the condition of the cellulose insulation system and the potential for any abnormal incipient fault.
3		a)	Please provide a list of all available inputs for the PTX and indicate which ones are
4		۵,	used by Newfoundland Power for assessing its power transformer fleet.
5		b)	Further to footnote 9, is Newfoundland Power aware of any other Canadian utilities
		IJ,	
6			using the PTX? If so, please provide further detail on how other Canadian Utilities
7			use PTX.
8	TRANSMISSIO	<u>N</u>	
9	NLH-NP-017	Ref	ference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024,
10		Su	pporting Materials, Transmission: 3.1, sec. 3.0, pp. 12–20.
11		a)	Did Newfoundland Power consider an alternative that would enable Wesleyville
12			generation to be used or modified to provide additional voltage support to defer the
13			voltage violations? If not, why not?
14		b)	Can Newfoundland Power confirm that the adjustment of Newfoundland Power or
15			Hydro transformer tap settings would not mitigate the reported voltage violations?
16		c)	Newfoundland Power had indicated contractor prices have been higher than
17			anticipated in relation to the proposed rebuild of 94L. Have the costs put forth in
18			this project accounted for any potential increases? If not, how would this impact the
19			cost-benefit analysis? Please explain.
20		d)	Given that there is a secondary supply via 142L that could potentially facilitate a
21			scheduled outage and that 108L appears to be a shorter length than the new route
22			from Lewisporte to Boyd's Cove, did Newfoundland Power consider refurbishing
23			108L? If not, why not?
24		e)	Has Newfoundland Power considered installing voltage regulators on the 66 kV or
25			distribution level feeders downstream on the Gander/Twillingate System to mitigate
26			the low voltage issue? If not, why not?
27		f)	How many of the 515 TD4 deficiencies are outstanding? Have they been monitored

to identify if progressed to TD1 or TD2?

1	NLH-NP-018	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024,
2		Supporting Materials, Transmission: 3.1, sec. 3.0, pp. 12–20.
3		a) Please provide a breakdown of operating and maintenance costs and/or other costs
4		utilized as inputs for the cost-benefit analysis for each alternative.
5		b) Please provide a listing, including costs, for each of the "Future Rebuilds" referenced
6		in the capital costs table for each alternative.
7		c) Please confirm that there are no additional capital costs that are necessitated by
8		each alternative, other than those listed in the capital cost tables.
9	NLH-NP-019	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024,
LO		Supporting Materials, Transmission: 3.1, p. 12.
l1 l2 l3		an unexpected loss of COB-T2 would result in substantially more customer outages than any other system power transformer within the Company's service territory.
L4		a) Please confirm whether any of Newfoundland Power's portable substations could
L5		be deployed in the event of a loss of COB-T2.
L6		b) Please provide the number of suitable spare transformers for COB-T2 available in
L7		Newfoundland Power's spare transformer fleet.
L8	NLH-NP-020	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024,
L9		Supporting Materials, Transmission: 3.2, p. 5.
20		As a result of increased contracting costs along the new corridor due to terrain conditions,
21		did Newfoundland Power consider performing refurbishment work on the existing line
22		using energized methods? If not, why not?
23	GENERATION	
24	NLH-NP-021	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024,
25		sch. B, Mobile Hydro Plant Penstock Refurbishment, p. 98.
26 27 28		The Mobile penstock is original to the plant's construction and will be 74 years old in 2025. If protective coatings are not replaced the penstock life expectancy will be reduced.
29		a) The presence of hazardous materials (i.e., lead, coal, tars) in coating systems of this
30		vintage may require additional efforts for safe removal, containment, and disposal

1		to protect workers and the environment. Has the existing coating system on the
2		Mobile penstock been tested to determine whether hazardous materials are
3		present? If not, why not?
4		b) Upon its removal, has containment and disposal of the existing coating system been
5		considered in the project budget?
6	NLH-NP-022	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024
7		sch. B, Mount Carmel Pond Dam Refurbishment, p. 102.
8 9 10 11		Newfoundland Power identified and assessed two alternatives for the <i>Mount Carmel Pond Dam Refurbishment</i> project. The alternatives included: (i) refurbishing the dam in 2025 and 2026; and (ii) reducing the full supply level of Mount Carmel Pond by 1.2 metres.
12		Does the proposed scope of work for this project include a complete replacement of the
13		Mount Carmel Pond Spillway structure? If so, was replacing the vertical steel stoplog
14		supports and refurbishing the existing concrete foundation considered? If not, why not?
15	NLH-NP-023	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024
16		Supporting Materials, Generation: 4.1, app. A, p. 3.
17 18 19 20 21 22		An updated marginal cost study (the "Marginal Cost Update") completed by Hydro in 2023 provides estimates of the marginal energy cost as the opportunity cost of selling energy to other jurisdictions. The marginal energy cost estimates vary by time of day and by season. To recognize these time-varying characteristics, the costs are summarized by winter on-peak, winter off-peak and non-winter peak periods.
23		a) Given that Hydro will have excess energy available for export in the non-winter
24		period, it is likely that any energy provided as part of this project would increase the
25		energy available for export during off-peak periods. Please provide the results of the
26		lifecycle cost analysis and the corresponding net economic benefit, assuming an
27		electricity price calculated using off-peak pricing only.
28		b) Please describe how a 5% forced outage rate and a 14% reserve margin were
29		determined for the discount to the Effective Capacity. Please provide the results of
30		the lifecycle cost analysis and the corresponding net economic benefit assuming a
31		20% reserve margin discount.

1		c)	As an additional sensitivity analysis, please provide the results of the lifecycle cost
2			analysis and the corresponding net economic benefit, assuming a reduction in
3			marginal energy cost by 50%.
4	NLH-NP-024	Ref	ference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024,
5		Sup	pporting Materials, Generation: 4.1, app. A, p. 3.
6 7 8			The CBHC Development can provide 14.5 MW of capacity during the winter. The cost of replacement capacity is dependent on the extent to which this capacity is available to meet peak load conditions.
9		a)	Please provide the output in MW of the Cape Broyle hydroelectric generating plant
10			and the Horse Chops hydroelectric generating plant during the hour of system peak
11			for each year from 2014 to 2023. Please provide the results of the lifecycle cost
12			analysis and the corresponding net economic benefit using the ten-year historical
13			average of this data.
14		b)	Please provide a listing of mid-winter rainfall events from 2014 to 2023 that have
15			provided Newfoundland Power with the ability to recharge Mount Carmel Pond,
16			increasing the available capacity assistance by an additional 3.49 GWh during the
17			winter period.
18	INFORMATIO	N SYS	STEMS
19	NLH-NP-025	Ref	ference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024,
20		Sup	pporting Materials, Information Systems: 6.1.
21		a)	What was the total cost of the original implementation of the Outage Management
22			System ("OMS")?
23		b)	Were the additional required upgrades identified in the original project application
24			in 2019?
25		c)	Without returning to the market to obtain estimates, how did Newfoundland Power
26			determine the replacement of the OMS with a new product was not a viable option?
27		d)	How were the costs of the minor and major upgrades determined? Was a third-
28			party vendor engaged in the process?
29		e)	Provide the list of the assumptions utilized in the Net Present Value Analysis. Please
30			provide any detailed calculations to support the numbers presented in Tables A1
31			and A2.

1		f) In the Net Present Value analysis, Alternative 2 shows software costs of \$250,000 in
2		2028. Please provide a detailed breakdown of what these costs include.
3		g) What new functionality will be delivered as part of this upgrade, and have all
4		associated costs been included in the estimate provided?
5	NLH-NP-026	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024,
6		Supporting Materials, Information Systems: 6.2.
7		a) Has the project budget been based on a cloud or on-premise solution?
8		b) Please provide a copy of the Request for Information.
9		c) Please confirm that the proposed Request for Proposals ("RFP") is intended to be for
10		the selection of a solution and contractor. If not, identify the purpose of the RFP.
11		d) What are the related operating costs associated with the implementation of this
12		system? Please provide an estimate and details of any associated post-go-live
13		support costs and the related time period covered.
14		e) What software is Newfoundland Power currently using, and what reasoning did the
15		developer give for not being able to provide support post-January 1, 2027? Did
16		Newfoundland Power engage with other companies in similar situations in its
17		exploration of all potential alternatives? If not, why not?
18	NLH-NP-027	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024,
19		Supporting Materials, Information Systems: 6.2.
20		a) In the project cost breakdown, there is no allocation for contract labour support.
21		Are all costs proposed inclusive of system setup, data migration, and testing?
22		b) It is understood that an external consultant (AMCL) has been retained for general
23		asset management support. What are the costs to date for all AMCL support
24		services, and what future costs are anticipated for AMCL and other similar
25		consultants engaging in the asset management improvement process?
26		c) The current project schedule shows final deployment in Q4 2026. Based on the
27		various risks highlighted by Newfoundland Power, will a mitigation plan be
28		established should the project not achieve full implementation prior to the current
29		software becoming unsupported?

1	NLH-NP-028	Reference: "2025 Capital Budget Application," Newfoundland Power Inc., June 28, 2024
2		Supporting Materials, Information Systems: 6.2.
3		a) Given the criticality that a Computerized Maintenance Management System
4		("CMMS") has within the Asset Management System, does Newfoundland Power
5		currently have an established schedule of software updates to ensure the CMMS
6		remains current and up-to-date? Will a similar strategy exist for any new software
7		obtained?
8		b) Throughout the design, development, and implementation process, will there be a
9		detailed review of Newfoundland Power's equipment and asset records by
10		maintenance, operations, and engineering departments prior to the data migration
11		into the new software?
12		c) Has Newfoundland Power considered reviewing and validating its current
13		equipment data maturity prior to implementing a new CMMS?

DATED at St. John's, in the Province of Newfoundland and Labrador this 20th day of August 2024.

Shirley A. Walsh

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