

- 1 **Q.** (Reference CA-NP-045) Newfoundland Power assessed LBK-T1 and the bridge
2 together, and states the bridge is not presently required if LBK-T1 is not
3 approved.
- 4 a) Provide each capital amount, by year, included in the 6.27 ¢/kWh
5 result, distinguishing spent, previously approved, currently proposed
6 and future unapproved amounts.
- 7 b) Confirm whether both projects depend on the lifecycle result. For any
8 independent justification, provide the need, alternatives and economic
9 result.
- 10 c) Provide ¢/kWh and NPV results for: (i) proceeding as proposed; (ii)
11 deferring both projects to support a 2032 transformer date; (iii)
12 repairing LBK-T1 and deferring replacement; and (iv) operating until
13 LBK-T1 can no longer serve, then ceasing generation. State the
14 assumptions.
- 15 d) Reconcile CA-NP-045(d), Table 2, line by line with LBK-T1, the bridge,
16 the 2024-2025 refurbishment and all other Lookout Brook capital.
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- 18 **A.** a) Table 1 on the following page details future capital investments required at the
19 Lookout Brook Hydro Plant and classifies the investment as currently proposed or
20 future unapproved. No costs included in the analysis have been previously
21 approved or spent.

Table 1 Lookout Brook Plant Capital Expenditure Details (\$000s)		
Year	Expenditure	Classification
2027	685	Currently Proposed
2028	708	Currently Proposed and Future Unapproved
2029	3,763	Currently Proposed and Future Unapproved
2031	3,286	Future Unapproved
2032	8,714	Future Unapproved
2033	3,500	Future Unapproved
2035	1,500	Future Unapproved
2036	1,000	Future Unapproved
2047	2,000	Future Unapproved
2050	1,500	Future Unapproved
2054	1,000	Future Unapproved
2058	3,500	Future Unapproved
2061	4,750	Future Unapproved
2065	750	Future Unapproved
2075	1,500	Future Unapproved
Total	\$38,156	

- b) Newfoundland Power confirms that the economic analysis is applicable to both the transformer and the bridge. Replacement of LBK-T1 is necessary to address the deterioration described in Appendix B of report *2.2 Substation Power Transformer Strategy*. The bridge is required to complete the power transformer replacement. LBK-T1 and the bridge are therefore jointly justified.

Investment in Newfoundland Power's existing hydro plant infrastructure is proposed primarily on system need and existing asset condition. An economic analysis is then completed to ascertain the least cost alternative needed to meet the system need and to resolve identified deficiencies.

- c) (i) See the response to Request for Information CA-NP-072.
- (ii) See below for the results of the Lookout Brook Lifecycle Cost Analysis based on deferring the LBK-T1 in service date to 2032.

Table 2 Lifecycle Analysis Results		
	50 Year Levelized Value	Net benefit
Lifecycle Cost of the Development	6.12 ¢/kWh	
Cost of Replacement Production (Run-of-River)		
Energy Costs	5.18 ¢/kWh	
Capacity Costs	<u>7.55 ¢/kWh</u>	
Total	12.73 ¢/kWh	6.61 ¢/kWh
Cost of Replacement Production (Fully Dispatchable)		
Energy Cost	5.18 ¢/kWh	
Capacity Cost	<u>9.38 ¢/kWh</u>	
Total	14.56 ¢/kWh	8.44 ¢/kWh

- (iii) Newfoundland Power cannot complete the analysis requested because it is directly dependent on the additional life obtained by the refurbishment.¹ Generally, the NPV of future expenditures will be reduced by deferring capital expenditures. The reduced NPV must be balanced against the increased risk of catastrophic failure in service and replacement cost of energy and capacity for generation lost while the plant is out of service.
- (iv) Newfoundland Power cannot complete the analysis requested as it is dependent on the date of a failure of LBK-T1. Newfoundland Power cannot precisely predict which year LBK-T1 will no longer be able to operate. The replacement of LBK-T1 is proposed on the basis that LBK-T1 is in poor condition and that replacement is required before the transformer fails in service.

¹ See the response to Request for Information CA-NP-071 for a discussion of the repair alternative for LBK-T1 and why the alternative was rejected.

- 1 d) See Table 3 for the requested information.

Table 3 Lookout Brook Expenditures (\$000s)		
Year	Capital Investment	Classification
2015	-	-
2016	10	Other Capital (10)
2017	75	Other Capital (75)
2018	11	Other Capital (11)
2019	72	Other Capital (72)
2020	2	Other Capital (2)
2021	2	Other Capital (2)
2022	249	Other Capital (249)
2023	23	Other Capital (23)
2024	517	2024/2025 Refurbishment (508), Other Capital (9)
2025	1,436	2024/2025 Refurbishment (1,424) Other Capital (12)
2026F	-	-
2027F	685	LBK-T1 (73), Bridge (612)
2028F	708	LBK-T1 (86), Other Capital (622)
2029F	3,763	LBK-T1 (2,175), Other Capital (1,588)
2030F	-	-