Q. Reference: NLH-NP-009 and NLH-NP-010.
In its application, Newfoundland Power has stated that it has not considered repair of GAN-T2 and PUL-T2 due to the reliability risk associated with committing a spare transformer for an extended period of time while repairs are completed.

a) Without assessing the cost of repairing GAN-T2 and PUL-T2, how has Newfoundland Power determined that repair does not constitute an appropriate balance between cost and reliability?

b) Newfoundland Power states that it has multiple spares, in the form of spare substation transformers or portable substations, for GAN-T2 and PUL-T2. How many spares or backup options would be required for Newfoundland Power to consider committing a spare to facilitate the repair of a transformer?

c) Has Newfoundland Power considered increasing the number of spares or portable substations to enable the consideration of potential lower-cost options, such as equipment repair rather than replacement? If not, why not?

A. a) Newfoundland Power is proposing the proactive replacement of PUL-T2 and GAN-T2 to reduce the immediate risks associated with the in-service failure of these units to an acceptable level. These risks exist due to the deteriorating condition of these transformers, the increasing delivery lead times of power transformers, the Company's limited emergency response capabilities, and the increased possibility of other transformer failures due to the Company's aging fleet.

Repairing these units instead of proactively replacing them would not reduce the immediate risks associated with these transformers, nor the related risks to the power transformer fleet. Repairing PUL-T2 or GAN-T2 would require them to be removed from service for 18 to 24 months requiring the long-term installation of a portable substation or spare power transformer. Due to the Company's limited number of portable substations and spare power transformers, this would put additional pressure on the Company's emergency response capabilities, creating an unacceptable risk to customers.

As outlined in the response to Request for Information CA-NP-119, part c), following the replacement of a power transformer, the units are assessed and, depending on the condition of the transformer, they may be used for a spare, considered for repair or scrapped. Once the PUL-T2 and GAN-T2 transformers are replaced and removed from service, Newfoundland Power will then consider the feasibility of repairing these transformers. If a repair is feasible and cost effective, the Company will then evaluate repairing these units, and following a successful repair, the units would be placed into spares for the transformer fleet.

b) The exact number of additional spare transformers required to facilitate the option of repair of PUL-T2 and GAN-T2 would be dependent on several factors, including: the available spares, the spares on order, the configuration of the spares, the current lead times of transformers, the condition of the transformers being considered for repair, the health of the overall transformer fleet, among many other factors. To

consider committing a spare to repair an existing unit, Newfoundland Power would need to ensure that additional spares are available to cover the potential failure of other transformers within the fleet during the repair period.

With respect to PUL-T2, Newfoundland Power does not presently have a suitable spare transformer. The spare transformer that was procured through the *Substation Spare Transformer Inventory* project approved in the Company's *2023 Capital Budget Application* will be a suitable spare. It is expected to arrive in the fourth quarter of 2024. This spare transformer will be the only unit providing backup coverage for 39 of Newfoundland Power's other power transformers. The justification for this spare transformer still exists. If this spare transformer was to be installed in response to an emergency failure of PUL-T2, then another spare transformer would still be required as a backup to the other 39 transformers.

Newfoundland Power has one suitable spare transformer for GAN-T2. The spare transformer that is capable of replacing GAN-T2 is presently installed in the Salt Pond ("SPO") Substation with the designation SPO-T5, and is currently serving as an in-service backup to SPO-T4.[1] SPO-T5 is the only unit providing backup coverage for 11 of Newfoundland Power's other power transformers. If this unit was to be used to replace GAN-T2 in response to an emergency failure, there would be no spare available for the other 11 transformers. SPO-T5 must also be reinstalled on the Burin Peninsula once it is no longer needed for emergency use.

With present power transformer delivery times estimated between 24 and 36 months, and upwards of 60 months for some manufacturers, committing spares to PUL-T2 and GAN-T2 would put additional risk on the Company's power transformer fleet while waiting for other spare transformers to arrive.

Newfoundland Power does not consider a portable substation as a spare transformer. Portable substations are typically utilized to support the Company's capital and maintenance programs for substations, as well as to respond to in-service equipment failures. Typically, portable substation installations are intended for short-term usage.

c) Newfoundland Power is continuously evaluating and improving its asset management practices for power transformers to ensure a balance in reliability and cost-effectiveness. Due to the increasing delivery lead times of power transformers, limited emergency response capabilities, and the increased possibility of failure of the aging fleet, the optimal amount of spare power transformers and portable substations that Newfoundland Power requires is being reviewed as part of its power transformer asset management practices. At this time, Newfoundland Power is proposing the proactive replacement of PUL-T2 and GAN-T2 to reduce the immediate risk to an acceptable level.

[1] SPO-T5 works in tandem with power transformer SPO-T4 serving approximately 8,313 customers on the Burin Peninsula. These two power transformers provide N-1 redundancy for supplying the 66 kV transmission system.