

1 **Q. Reference: "2027 Capital Budget Application," Newfoundland Power Inc.,**
2 **May 29, 2026, Supporting Materials, Substations: 2.2, Substation Power**
3 **Transformer Strategy, pp. 6 and Appendices A-D; and Supporting Materials,**
4 **Substations: 2.3, Appendix A.**

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6 **Newfoundland Power's 2027 CBA proposes replacement of LAU-T1, LBK-T1,**
7 **HAR-T1, and RRD-T3. The application indicates that suitable medium-term**
8 **spare transformers are available for LAU-T1, HAR-T1, and RRD-T3, but not for**
9 **LBK-T1.**

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11 **a) For each of LAU-T1, LBK-T1, HAR-T1, and RRD-T3, please confirm**
12 **whether Newfoundland Power currently has a suitable spare**
13 **transformer available for temporary or medium-term service. Please**
14 **identify the spare transformer by equipment ID and describe any**
15 **limitations, including voltage, capacity, tap changer, physical**
16 **configuration, site work, or competing uses.**
17 **b) Has Newfoundland Power considered using spare transformers in a**
18 **temporary configuration as an alternative to portable substations to**
19 **facilitate planned transformer replacements? If so, please provide the**
20 **analysis completed. If not, please explain why this alternative was not**
21 **assessed, including any civil, electrical, protection and control, cost,**
22 **schedule, or reliability constraints.**

23
24 **A. a)** Spare transformers 200219, 200220, or 200385 are suitable temporary or
25 medium-term replacements for LAU-T1. 200219 is a 10 MVA, 56-year-old
26 transformer and 200220 is a 13.3 MVA, 56-year-old transformer. Neither
27 transformer is equipped with an on-load tap changer. As a result, site work
28 would be required to install temporary voltage regulators in LAU Substation.
29 200220 is presently installed at Stamps Lane ("SLA") Substation in a 66-4.16 kV
30 voltage configuration. The series/parallel terminal board connections inside the
31 transformer would require reconfiguration for 66-12.5kV operation at LAU
32 Substation. 200220 is backup for 4.16 kV distribution systems and, as such, is
33 not a suitable long-term replacement for LAU-T1. 200385 is a 2-year-old, 25 MVA
34 transformer with an on-load tap changer. Power transformer 200385 has a larger
35 capacity than LAU-T1 and is intended to support emergency response
36 requirements elsewhere on the system if possible. By utilizing the only spare
37 transformer available for this voltage rating and capacity there would be limited
38 resources to respond to any additional power transformer failures in the short to
39 medium term for larger capacity transformers. In addition, the physical footprint
40 of 200385 would require some site work to enable the transformer to fit in the
41 area between the high voltage and low voltage bus structures. Each suitable
42 spare transformer would require the installation of a portable substation for
43 several weeks to prepare the site.

LBK-T1 does not have any type of suitable temporary or medium-term replacement within Newfoundland Power's spare transformer inventory. In the event of an in-service failure, Newfoundland Power's portable substation P1 could be deployed as an emergency response measure until a replacement transformer solution is implemented.

Spare transformers 200220 or 200385 are suitable temporary or medium-term replacements for HAR-T1. 200220 is presently installed at SLA Substation in a 66-4.16 kV voltage configuration. The series/parallel terminal board connections inside the transformer would require reconfiguration for 66-12.5 kV operation. 200220 is backup for 4.16 kV distribution systems and, as such, is not a suitable long-term replacement for HAR-T1. 200385 is a 2-year-old, 25 MVA transformer with an on-load tap changer. HAR Substation does not require voltage regulation on its distribution bus, meaning the on-load tap changer, a high value component of the transformer, would not be utilized. In Newfoundland Power's view, using transformer 200385 as a long-term solution would not be prudent or cost effective due to the transformer's enhanced capabilities. Additionally, due to the on-load tap changer on 200385, the unit is much larger than the physical footprint of HAR-T1 and would require site work to enable the transformer to fit in the area between the high voltage and low voltage bus structures. Each of 200220 and 200385 would require the installation of a portable substation for several weeks to prepare the site before it could be put into service as a temporary or medium-term replacement.

Spare transformer 200385 is a suitable temporary or medium-term replacement for RRD-T3. RRD Substation does not require voltage regulation on its distribution bus meaning the on-load tap changer on 200385, which is a high value component of the transformer, would not be utilized. In Newfoundland Power's view, using transformer 200385 as a long-term solution would not be prudent or cost effective due to the transformer's enhanced capabilities. If it were permanently installed at RRD Substation, a new spare transformer matching 200385 would need to be procured to maintain an adequate spare transformer inventory.

- b) Newfoundland Power has previously used temporary power transformer installations to facilitate substation capital projects. This is only considered if their deployment can be accommodated while maintaining adequate emergency response capability. The Company also does not consider it prudent to frequently move newly purchased power transformers, such as 200385, in such a manner as every time a power transformer is moved there is a risk of causing internal damage during lifts or transport. Therefore, typically only older spare units near the end of their usable life are used in such a manner.

The Company will assess the feasibility of a temporary transformer arrangement on a case-by-case basis during project planning. This assessment considers a range of factors, including available site space, electrical clearances, grounding

1 requirements, protection and control requirements, constructability, cost,
2 schedule, system reliability, and the ability to maintain safe working conditions
3 throughout construction. Temporary transformer installations are generally most
4 suitable where adequate space exists within or adjacent to the substation to
5 accommodate the transformer and associated temporary infrastructure such as
6 grounding systems, fencing, protection and control equipment, and
7 communication devices.

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9 Recent examples of projects where temporary transformer arrangements were
10 determined to be feasible include the *Gambo Substation Refurbishment and*
11 *Modernization* project filed as part of Newfoundland Power's *2024 Capital Budget*
12 *Application* and the *Lockston Substation Refurbishment and Modernization*
13 project filed as part of Newfoundland Power's *2025 Capital Budget Application*.
14 In both cases, sufficient space was available within or around the substation to
15 accommodate a temporary transformer installation together with the associated
16 required equipment.

17
18 Accordingly, Newfoundland Power does consider temporary transformer
19 installations as an alternative to portable substations during project planning.
20 The suitability of this approach depends on the specific site conditions, project
21 requirements of the substation under consideration, and availability of a suitable
22 power transformer.