

1 **Q. (Reference Application, Schedule A, page 4)**
2

3 **It is stated "These conditions could persist for up to three days while**
4 **Newfoundland Power installs and energizes a portable substation to restore**
5 **service to the University."**
6

7 **a) Given the criticality of supply, is NP taking steps to install and energize a**
8 **portable substation to increase supply redundancy?**

9 **b) Are the following redundancies built into the supply to the University: 1)**
10 **supplying the entire substation demand via MUN-T1, 2) load transfer to**
11 **Long Pond Substation, 3) boiler fuel switching, 4) university-owned back-**
12 **up generation, and 5) installation of a portable substation? Are there any**
13 **additional redundancies built into the supply?**

14 **c) Please provide details of the alternate plan NP has in place should the**
15 **remaining working transformer become disabled.**
16

17 **A. a) See the response to Request for Information PUB-NP-005.**
18

19 **b) Newfoundland Power considers redundancy of supply to include available capacity**
20 **from an alternate supply point that is online and ready to serve its customers when**
21 **needed. In the case of Memorial University, full redundancy requires two**
22 **distribution supply points that can each serve a maximum load of approximately**
23 **19 MVA.¹**
24

25 Based on this definition, only examples one and two cited in this question would be
26 considered options to provide redundant supply points. The other examples cited in
27 this question would be considered contingencies that could be exercised in certain
28 circumstances following a loss of supply.
29

30 Regarding example one, MUN-T1 can carry the approximately 10 MVA of load
31 currently on MUN Substation. However, due to its 14.83 MVA capacity restriction, it
32 is not capable of carrying the total load of the university. As a result, the loss of
33 20 MVA power transformer MUN-T2 means some portions of the university's
34 distribution system are currently without a redundant supply point. These portions
35 of the university would be without service in the event of a failure of
36 MUN-T1 or a failure at LPD Substation.
37

38 Regarding example two, LPD Substation has the capacity to serve the entire campus
39 load. However, the ability to transfer load to LPD Substation is constrained due to
40 limitations with customer-owned distribution tie points. See the response to Request
41 for Information PUB-NP-001.
42

43 There are no additional redundant distribution supply points built into Memorial
44 University's system.

¹ The combined load of Memorial ("MUN") and Long Pond ("LPD") substations is approximately 19 MVA. See the response to Request for Information CA-NP-008.

- 1 With respect to the remaining examples that are considered contingencies in the
2 event of a loss of supply:
3
4 (i) The university’s electrification project is expected to add two new electric
5 boilers in 2024. Upon completion of the *LPD Substation Capacity Expansion*
6 *Project* in 2023, LPD Substation will have the capacity to feed the new
7 electric boilers.² In some circumstances, the university will have the option
8 to deenergize the electric boilers and start the backup fuel-fired boilers if
9 required. This could provide additional capacity at LPD Substation as a
10 contingency for the loss of power transformer LPD-T1. Due to limitations
11 associated with customer-owned distribution tie points, this contingency
12 would provide limited benefit following the loss of power transformers at
13 MUN Substation.
14
15 (ii) The university has back-up generation located in 12 buildings across campus.
16 The customer-owned back-up generation is designed only for the operation
17 of life safety systems.³ In a circumstance involving the loss of either power
18 transformer, there would continue to be outages to the university even with
19 the operation of back-up generation.
20
21 (iii) Portable substations provide only a temporary source of supply in the event
22 of an equipment failure and are not considered sources of redundancies. See
23 the response to Request for Information PUB-NP-005.
24
25 c) See the response to Request for Information PUB-NP-005.

² For more information, see the *2023 Capital Budget Application, Schedule B, Long Pond Substation Capacity Expansion*.

³ See the *Application, Schedule B*, page 6 for more information.