**Q. Schedule B, page 6, states that "Under normal operating conditions, the load on LPD Substation consists of the new Core Science Facility, as well as the Health Sciences Centre and surrounding buildings such as the Janeway Children's Hospital. The load of LPD Substation could normally be transferred to MUN Substation. However, with MUN-T2 out of service, the capacity of MUN Substation has been reduced and it is no longer possible to transfer the load from LPD Substation to MUN Substation in the event of a failure at LPD Substation. This leaves critical loads associated with the University without their typical source of redundant supply." What measures has Newfoundland Power undertaken, or plan to undertake, to mitigate this risk?**

A. Newfoundland Power has taken several measures to mitigate the increased risks of prolonged outages to Memorial University's St. John's campus.

The Company has accelerated its condition monitoring of power transformer MUN-T1. Based on its age, MUN-T1 would typically undergo oil sampling twice per year to gauge changes in its condition.[1] Effective February 2023, the Company shifted to monthly oil sampling for MUN-T1 to ensure the earliest possible detection of any issues.[2] Accelerated oil sampling will continue until MUN-T2 is replaced. Newfoundland Power is also continuing to monitor the condition of Long Pond Substation through its standard practices.

The results of monthly oil samples will allow the earliest possible indication of changes in the condition of MUN-T1. Should the condition of MUN-T1 deteriorate, Newfoundland Power intends to assess whether the extended deployment of a portable substation at the university is necessary to mitigate the increased risk. Newfoundland Power aims to ensure a portable substation is available at all times for emergency backup purposes.[3] The Company has a fleet of four portable substations. All four portable substations have a capacity of at least 10 MVA and could be capable of carrying the load currently served by MUN-T1 in the event of a failure of that unit.[4] Three portable substations would also be capable of carrying the load of Long Pond Substation in the event of an equipment failure at that substation.

Newfoundland Power has also coordinated with Memorial University since the failure of MUN-T2 to minimize impacts on the university's operations. For example, the university

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1 Oil sampling includes standard oil tests and dissolved gas in oil analysis. Standard oil tests check for contaminants and moisture, which at unacceptable levels can lower the dielectric strength of oil and cause a fault. Dissolved gas analysis is used to monitor and diagnose internal transformer electrical problems, such as the presence of arcing or poor electrical connections. Certain gases naturally increase as a transformer ages, but can be a sign of excessive temperatures and overloading in newer transformers. Oil sampling and analysis is completed annually to gauge the internal health of transformers.

2 See the response to Request for Information CA-NP-006.

3 Newfoundland Power manages the availability of its portable substations through a number of measures, including by coordinating work at substations and maintaining an inventory of spare power transformers. The Company's aging fleet of power transformers is exposed to increasing risks of failure going forward, which may increase pressure on the availability of portable substations. See Newfoundland Power's *2023 Capital Budget Application, report 2.2 Substation Spare Power Transformer Inventory.*

4 The options available to deploy a portable substation would depend on the failure scenario and which portable units are available at the time of failure.

recently required that load be transferred from Long Pond Substation to Memorial Substation to facilitate work on the university's distribution system. As MUN-T1 did not have the capacity to accommodate the load transfer, Newfoundland Power installed a portable substation to avoid an outage to the university for the duration of the work.[5]

[5] The portable substation will be removed from service following completion of the work.