Q. (Reference Application Schedule B, Tools and Equipment, page 61 of 98) It is stated "*This project is justified on the obligation to provide reliable service to customers at least cost and cannot be deferred.*"

a) Please provide evidence based on reliability criteria that Newfoundland Power will be unable to provide reliable service at least cost if it were to delay this project.

b) Please quantify the impact on the following if the project were delayed by two years: 1) reliability, 2) cost, and 3) the risk and consequences of failure.

c) Please indicate when the Tools and Equipment project began. What efficiency improvements have been made in the administration of the program and how much have these improvements decreased the costs of the program?

A. a) Newfoundland Power manages its capital expenditures in a manner that balances both the cost and reliability of the service provided to its customers.[1] The Company is focused on maintaining current levels of overall service reliability for its customers at the lowest possible cost.[2] The 2022 *Tools and Equipment* project is consistent with this objective.

Tools and equipment are used by Powerline Technicians ("PLT"), technologists, engineers and other tradespersons when responding to customer outages and maintaining, repairing and commissioning electrical system assets. Examples of tools include phasing, grounding and hot sticks.[3] Examples of equipment include relay test sets, cable testers, underground cable locaters and arc flash protective suits, all of which are used in testing, commissioning and calibrating protective devices.[4]

Though maintained on a regular basis, tools and equipment require replacement on an ongoing basis due to wear and safety degradation. New tools and equipment can also be required over time as technology evolves, such as new testing devices for protective devices. The 2022 *Tools and Equipment* project is based on historical expenditures required to replace and add tools and equipment, adjusted to include the purchase of a universal relay test set to replace an obsolete, 16-year-old unit.

Maintaining adequate tools and equipment is essential to the safety of Newfoundland Power's employees. For example, inadequate arc flash protective suits would put PLTs at risk of serious injury. Work to maintain, repair or commission electrical system assets could not proceed if employee safety is put at risk due to inadequate tools or equipment.

[1] See response to Request for Information NLH-NP-042.
[2] See response to Request for Information CA-NP-014.
[3] Phasing, grounding and hot sticks are utilized to safely check and maintain high voltage, energized equipment and power lines.
[4] Protective devices include relays, breakers and instrument transformers used to ensure the electrical system operates in a safe and reliable manner.

Ensuring an adequate supply of tools and equipment through the 2022 *Tools and Equipment* project is consistent with maintaining current levels of service reliability for customers at the lowest possible cost, as further described in part b).

b) Delaying the 2022 *Tools and Equipment* project by 2 years would increase the risk that the tools and equipment necessary to respond to customer outages and maintain the electrical system will not be available. The primary consequences of this would be reduced service reliability for customers and increased costs.[5]

When an asset fails in service, tools and equipment are necessary for employees to complete repairs and return an asset to service. An inadequate supply of tools and equipment would create delays in returning an asset to service. Additionally, the unavailability of hotline tools and equipment would increase requirements for customer outages to undertake repairs.[6]

For example, repairs were required on transmission line 59L in 2019. Transmission line 59L is a 66 kV radial line that provides service to approximately 6,500 customers. The use of hotline work methods avoided approximately 1.6 million customer outage minutes.

An inadequate supply of tools and equipment would also result in reduced productivity for employees due to stoppages in work as worn tools repeatedly fail. Reduced employee productivity would increase costs to customers. Additionally, the cost to replace tools and equipment on an emergency basis is higher than planned replacement as "off the shelf" equipment may not be readily available and would require expedited delivery.

Delaying the 2022 *Tools and Equipment* project would therefore be inconsistent with maintaining reliable service for customers at the lowest possible cost.

c) The *Tools and Equipment* project began as an annual capital program in 2000. Expenditures under this project have been reasonably stable since that time. On an inflation-adjusted basis, expenditures for this project were approximately $688,000 in 2000, compared to a 2022 budget of approximately $598,000.

Efficiency improvements in the administration of this project have generally focused on the types of tools and equipment procured. As technology evolves, some tools are replaced with alternatives that are safer and provide for more efficient work practices. For example, gas-powered and hydraulic-actuated equipment (e.g. drills) are now

[5] For information on Newfoundland Power's approach to quantifying risks and benefits, see response to Request for Information CA-NP-014.

[6] For example, hot sticks are used to conduct work on energized equipment. The safe use of hot sticks by employees is dependent upon the tool's insulation properties. Insulation breaks down over time, requiring the tools to be tested and replaced before they become unsafe for use on energized equipment.

replaced with battery-operated units. Battery-operated units are more reliable as they have fewer moving parts, thereby requiring less maintenance.