

September 14, 2020

Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road, P.O. Box 21040
St. John's, NL A1A 5B2

Attention: Ms. Cheryl Blundon
Director of Corporate Services & Board Secretary

Dear Ms. Blundon:

**Re: Port Hope Simpson Engine Failure
Allowance for Unforeseen Items Notification**

Newfoundland and Labrador Hydro ("Hydro") has 23 diesel generating stations, 18 of which are prime power stations¹ serving a total of approximately 4,400 customers. Isolated diesel generating stations are designed to ensure that firm power² can be delivered in the event of failure of the largest generation unit. One of these diesel generating stations is located in Port Hope Simpson. The Port Hope Simpson Generating Station presently has three diesel generating units ("gensets") serving the community: Unit 2073 (455 kW), Unit 2099 (545 kW), and Unit 2100 (725 kW). On September 8, 2020, Unit 2099 was online serving the full town load when it tripped offline. Power was restored using Unit 2100.

Port Hope Simpson Unit 2099

Hydro installed Unit 2099 in 2018 as part of a capital project which installed two new units, 2099 and 2100. Unit 2099 has accumulated approximately 8,100 operating hours since installation.

The initial trouble code on Unit 2099 identified an under frequency event which was suspected to be the result of a failed fuel pump. Following the replacement of the fuel pump, an attempted restart was not successful. Further investigation was completed and it was determined that an engine valve cracked and fell into the cylinder, making contact with the piston, thus resulting in engine failure. It has been determined that the engine is not salvageable.

As a result of this failure, Hydro currently is in violation of its firm capacity criteria. The remaining two gensets have a combined capacity of 1,180 kW. Peak load for Port Hope Simpson during the winter 2020–2021 season is forecast to be 794 kW and is not expected to exceed available generation capacity.

Unit 2099 Engine Replacement

To ensure reliability standards are met, a replacement engine is required. Hydro is in the process of procuring a new engine from the manufacturer CAT. This expenditure, estimated to be \$120,000

¹ Prime power stations are not interconnected to the grid and rely on the power supplied by the diesel generation units for capacity and energy.

² Firm power is calculated as the summation of the capacity of all units minus the capacity of the largest unit.

including shipping and installation, will be completed under the Allowance for Unforeseen Items Account pursuant to the guidelines for the use of that account.

Of the two remaining gensets in Port Hope Simpson, Unit 2073 has 5,000 hours since its last overhaul and 65,500 hours in its lifetime. Unit 2100 has 7,300 hours in its lifetime and is forecast for its first overhaul in 2023. With Unit 2099 out of service, failure of a second genset would result in outages for the community. Hydro has identified an interim solution (i.e. relocation of a mobile diesel generating unit from Makkovik) should delivery of a new unit have a longer lead time.

Hydro is currently working with the manufacturer to confirm the anticipated delivery date of the new engine.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO



Shirley A. Walsh
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SAW/kd

ecc: **Board of Commissioners of Public Utilities**
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