Q. **Tab 12; Volume II: Diesel Genset Replacements (2021-2022)**

Table 1 on page 1 shows that Nain currently has an installed capacity of 3865 kW (3550 kW with Unit 574 derated from 865 kW to 550 kW). If the largest genset (i.e., Unit 2085 with a capacity of 1275 kW) is out of service then the overall capacity of the remaining three gensets, with Unit 574 derated to 550 kW, is 2275 kW. Hydro states on page 4 that the forecasted peak load for Nain is 2343 kW and 2423 kW for 2021 and 2023 respectively resulting in capacity shortfalls of 68 kW and 148 kW in those respective years.

Please describe Hydro's view of the balance between cost and reliability in this particular circumstance given that any capacity shortfall would require (i) that a genset would have to fail at a time of peak demand, (ii) that the genset that failed would have to be the largest unit of the four units located at Nain, and (iii) that no load reduction activities could be facilitated for the 68-148 kW overload experienced during the peak load time period.

A. When determining the amount of capacity needed to supply an isolated system's peak load, Newfoundland and Labrador Hydro ("Hydro") applies firm capacity criteria as follows "Hydro shall maintain firm generation capacity to meet the system peak load. Firm generation capacity is defined as the total installed capacity not including non-firm energy sources minus the largest single unit."[1]

The firm capacity planning criteria cover a first contingency situation and are considered to provide a reasonable level of reliability to customers in Hydro's Rural Isolated Systems in consideration of cost of service and reliability. A survey conducted by Hydro in 2007 confirmed that such criteria are similarly practiced in other utilities and can be reasonably considered to be industry standard practice. If Hydro did not maintain sufficient firm generation capacity to meet

[1] Rural Planning Standard "Rural Isolated Systems Generation Planning Criteria Doc # RP-S-002," Newfoundland and Labrador Hydro, August 21, 2020, p. 1, sec 4.1.1, filed as Attachment 1 to Hydro's response to CA-NLH-019 of this proceeding.

the system peak load, in effect planning for the failure of the largest of the four Nain units at a time of peak demand, it would be in contravention of its firm capacity criteria and would be subjecting Nain customers to a risk of extended curtailment.