Q. Reference: Schedule 1, Attachment 1, Appendix A

Why does the probability of load interruptions increase as the load increases?

A. Electricity demand/load should always match electricity supply to ensure the reliability of the electricity grid.

Electricity supply to Labrador East is limited during the summer months by the thermal rating of the 138 kV transmission line L1301 from Muskrat Falls to Happy Valley-Goose Bay. During the remainder of the year the electrical supply to Labrador East is based on firm transformer capacity at the Happy Valley Terminal Station. The available transmission capacity is shown in Figure 1 (red plot) of Schedule 1, Attachment 1, Appendix A.[1]

The electricity supply to Labrador West is limited by the thermal rating of 230 kV transmission lines L23 and L24 as shown in Figure 2 (red plot) of Schedule 1, Attachment 1, Appendix A.[2]

If the sum of the firm load and non-firm load is greater than electricity supply, non-firm loads need to be interrupted/shed to maintain the reliability of the electricity grid. Non-firm loads are the first to be shed as part of the terms and conditions in the proposed Labrador Interconnected System Non-Firm Rate; therefore, as firm load increases and the available capacity remains unchanged, the probability of shedding non-firm loads increases.

[1] "Application for a Non-Firm Rate for Labrador," Newfoundland and Labrador Hydro, September 15, 2022, sch. 1, att. 1, app. A, fig. 1, p. 17 of 24.
[2] "Application for a Non-Firm Rate for Labrador," Newfoundland and Labrador Hydro, September 15, 2022, sch. 1, att. 1, app. A, fig. 2, p. 20 of 24.