

1 **Q. (Reference CA-NP-045, Footnote 3) It is stated “Investigate the installation of**  
 2 **downstream feeder reclosers for the purpose of improving distribution SAIFI**  
 3 **and SAIDI indices, in addition for reducing cold load pick up difficulties, with**  
 4 **priorities given to feeders based on installation costs versus anticipated**  
 5 **avoided customer interruptions.”**

6 **a) Has Newfoundland Power proposed the addition of reclosers on the**  
 7 **basis of SAIDI and SAIFI improvements as recommended by Liberty?**

8 **b) In the response to NLH-NP-014 is Newfoundland Power stating that it is**  
 9 ***not* justifying installation of reclosers on the basis of improved reliability**  
 10 **performance or cost reduction?**

11  
 12 A. a) No, Newfoundland Power has not proposed the addition of downline reclosers in  
 13 2023 on the basis of SAIDI and SAIFI improvements as recommended by  
 14 Liberty. The Company has proposed the addition of downline reclosers to  
 15 improve the resiliency of its electrical system to severe weather and as an  
 16 efficient means through which to maintain overall levels of service reliability for  
 17 customers.

18  
 19 Prior to 2014, there were a limited number of automated downline reclosers on  
 20 the Company’s distribution system. Following widespread electrical system  
 21 outages in 2014, the Company began to increase the number of downline  
 22 reclosers on its distribution system.<sup>1</sup> These devices operate automatically to  
 23 restore service to customers and can be controlled remotely by the System  
 24 Control Centre. The devices essentially sectionalize distribution feeders such that  
 25 an equipment failure will only affect a portion of customers supplied by a feeder,  
 26 rather than all customers.

27  
 28 The installation of automated downline reclosers is a key means through which  
 29 Newfoundland Power is improving the resiliency of its distribution system to  
 30 severe weather.

31  
 32 Significant customer outages due to severe weather have become more frequent  
 33 in the Company’s service territory, causing customer outages in nine of the last  
 34 10 years compared to just three years in the prior decade.<sup>2</sup> These events can  
 35 have a significant impact on the service reliability experienced by customers and  
 36 require a complex and costly response to restore service in a timely manner. A  
 37 timely response to customer outages under such conditions, particularly during  
 38 the winter, is essential as nearly three quarters of the Company’s customers rely  
 39 on electricity as their primary heating source.<sup>3</sup>

40  
 41 Automation of the distribution system through the installation of downline  
 42 reclosers provides a reliability benefit to customers and greater flexibility in  
 43 managing field crews during severe weather events. The automatic operation of

<sup>1</sup> There are 121 automated downline reclosers in the Company’s service territory as of September 2022.

<sup>2</sup> See the *2023 Capital Budget Application, 2023-2027 Capital Plan, Section 2.3 Operations Outlook*.

<sup>3</sup> For example, as of 2020, approximately 171,000 of Newfoundland Power’s 235,000 domestic customers relied on electricity as their primary source of household heating. See *2022/2023 General Rate Application, Volume 1, Section 3, page 3-38*.

1 these devices can restore service to a portion of customers quickly prior to  
 2 dispatching field crews. By restoring service to a portion of the feeder, field  
 3 crews no longer need to patrol sections of line to identify the cause and location  
 4 of an outage. This permits a timely identification of the cause and location of  
 5 outages, expediting the restoration of service to customers.  
 6

7 In Newfoundland Power's experience, the benefits of these devices during severe  
 8 weather have been significant. For example, a severe blizzard in January 2020  
 9 resulted in over 90 centimeters of snow, primarily on the Avalon Peninsula, wind  
 10 gusts in excess of 170 kilometres/hour and outages to approximately 120,000  
 11 customers.<sup>4</sup> The operation of five downline reclosers during this event avoided  
 12 approximately 3.5 million customer outage minutes without the assistance of  
 13 field crews.  
 14

15 While most pronounced during severe weather, the benefits of downline  
 16 reclosers also materialize during normal, day-to-day operations. Reliability  
 17 benefits are realized on a regular basis as these devices operate in response to  
 18 equipment failures to restore service to customers.<sup>5</sup> Efficiency benefits are also  
 19 routinely realized through a reduction in patrol times for feeders.<sup>6</sup>  
 20

21 The reliability and efficiency benefits provided by downline reclosers support  
 22 Newfoundland Power's objective of maintaining current levels of overall service  
 23 reliability for customers at the lowest possible cost. The benefits of these  
 24 devices are of increasing importance given the age and condition of the  
 25 Company's distribution system<sup>7</sup> and recent upward trends in equipment failures.<sup>8</sup>  
 26

27 Newfoundland Power continues to propose the installation of automated  
 28 downline reclosers to provide efficiency and reliability benefits for customers in  
 29 response to equipment failures and severe weather. Downline reclosers are  
 30 installed in locations that are intended to optimize their benefits for customers.  
 31 Optimal locations for downline reclosers are selected based on the Company's

<sup>4</sup> See Newfoundland Power's *2022/2023 General Rate Application, Volume 1, Section 3: Finance*, page 3-39, footnote 97.

<sup>5</sup> As examples, the operation of a downline recloser in May 2019 quickly restored service to 665 customers served by Chamberlains Substation distribution feeder CHA-01 following an equipment failure. The operation of a downline recloser on Hardwoods Substation distribution feeder HWD-08 avoided over 96,000 customer outage minutes in April 2020. In both cases, customer outages were reduced or avoided without dispatching field crews.

<sup>6</sup> For example, the approximate overtime cost of a two-person line crew is \$240/hour; the approximate overtime cost of a technologist is \$105/hour. Reducing the response time required to locate an outage and manually operate a device at night using a line crew and a technologist by just two hours would yield savings of approximately \$690 for a single routine outage call. See response to Request for Information NLH-NP-015.

<sup>7</sup> Approximately 15% of distribution wooden support structures and 23% of distribution overhead conductor currently exceed the average useful service lives typically experienced in the industry. The age profile of the Company's distribution system is not expected to improve over the next decade. See the *2023 Capital Budget Application, 2023-2027 Capital Plan, Section 2.4.2 Distribution*.

<sup>8</sup> Equipment failures on the distribution system are trending upward. An average of approximately 1,155 equipment failures per year were experienced on the distribution system from 2017 to 2021, which represents a 29% increase compared to the previous five-year period. This is primarily attributed to the failure of aging overhead conductor. See the *2023 Capital Budget Application, 2023-2027 Capital Plan, Section 2.4.1 General*.

1 established deployment scenarios, a distribution feeder's geographic location,  
2 customer demographics, and other factors.<sup>9</sup>  
3

4 A total of 17 automated downline reclosers are proposed for installation under  
5 the 2023 *Distribution Feeder Automation* project.<sup>10</sup> These devices would provide  
6 a reliability and efficiency benefit to approximately 10,000 customers served by  
7 Newfoundland Power's distribution system. For example, the operation of these  
8 devices in response to outages of even one hour would avoid approximately  
9 600,000 customer outage minutes while also reducing costs associated with  
10 deploying field crews.  
11

12 b) See part a).

---

<sup>9</sup> See the *2023 Capital Budget Application, Schedule B*, page 12.

<sup>10</sup> See the *2023 Capital Budget Application, Schedule B*, page 13.