

1 Q. LAB-NLH-54 Re: Re: LAB-NLH-003

2

3 **Preamble:**

4 Tables 3-3(i) and 3-3(ii) indicate T-SAIFI and T-SAIDI for the Island Interconnection
5 System (“IIS”) and the Labrador Interconnected System (“LIS”), respectively.

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7 The data can be reorganized as follows:

T-SAIFI	2012	2013	2014	2015	2016
IIS	1.76	3.3	3.64	2.89	2.91
LIS	5.00	7.50	10.50	6.00	2.25

T-SAIDI	2012	2013	2014	2015	2016
IIS	173.57	438.04	462.48	425.84	323.84
LIS	95.50	1320.00	466.50	1187.75	337.25

8 For T-SAIFI, the LIS figures are about three times as high as the IIS figures, except for
9 2016.

10 For T-SAIDI, the LIS figures were dramatically higher than the IIS data in 2013 and
11 2015.

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13 Please:

14 a) Confirm that the tables presented in the Preamble accurately represent the
15 data in Tables 3-3(i) and (ii);

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17 b) Confirm the affirmations in the preamble comparing the T-SAIFI and T-SAIDI
18 values for the IIS and the LIS;

1 c) Explain why the T-SAIFI and T-SAIDI values are so much higher, in some years,
2 for the LIS than they are for the IIS.

3 A. a) It is confirmed.

4

5 b) The arithmetic calculation used in the affirmations in the Preamble is correct.

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7 c) The calculation for T-SAIFI¹ is as follows:

$$\text{T-SAIFI} = \frac{\text{Total Number of Sustained Interruption}}{\text{Total Number of delivery point}^2 \text{ monitored}}$$

8 The calculation for T-SAIDI³ is as follows:

$$\text{T-SAIDI} = \frac{\text{Total Duration of all Interruptions (in minutes)}}{\text{Total Number of delivery point monitored}}$$

9 The low number of delivery points in the Labrador Interconnected System (LIS) is
10 part of the reason for the higher values. For the Island Interconnected System (IIS)
11 system, there were 54 delivery points monitored in 2012 and 56 delivery points
12 monitored since 2013. This compares to two delivery points monitored for the LIS
13 from 2012 to 2014 and four delivery points monitored since 2015. Due to the
14 smaller number of delivery points for the LIS, a higher impact on T-SAIFI and T-SAIDI

¹ Transmission System Average Interruption Frequency Index (T-SAIFI) is a reliability KPI for bulk transmission assets that measure the average number of sustained outages per delivery point.

² Delivery point is the point of supply where the energy from the Bulk Electric System transferred to its customers, either distribution systems or customers directly connected to the transmission system.

³ Transmission System Average Interruption Duration Index (T-SAIDI) is a reliability KPI for bulk transmission assets that measures the average duration of outages in minutes per delivery point.

1 values will result for each Sustained Interruption and each minute of Duration of all
2 Interruptions as compared to the IIS.

3

4 Table 1 shows the five interruptions that had a major impact on the values, which
5 were all scheduled:

Table 1 Summary of Interruptions

Date	Number of Customers (Location)	Duration
March 24, 2013	804 (Happy Valley-Goose Bay and Mud Lake)	9 hours
April 14, 2013	763 (Happy Valley-Goose Bay)	9 hours 30 minutes
February 22, 2015	1,438 (Happy Valley-Goose Bay)	Ranging from 4 hours 30 minutes to six hours 20 minutes
June 7, 2015	5870 customers (all of Labrador, including industrial customers IOCC and Wabush Mines, in Labrador City and Wabush)	Wabush: 1,468 customers 13 hours 34 minutes Labrador City: 4,400 customers 13 hour 10 minutes
June 14, 2016	5870 customers (all of Labrador, including industrial customers IOCC and Wabush Mines, in Labrador City and Wabush)	10 hours and 20 minutes