

1 Q. **Tab 16; Volume II: Additions for Load – Wabush Substation Upgrades**

2 Hydro states on page 5, lines 7-11, that “A complicating factor in consideration of power
3 transformer capacity at the Wabush Substation is that assessments for the station have
4 historically been performed by Distribution Planning. However, in 2017, equipment operating in
5 Labrador City and Wabush at 46 kV became the responsibility of the Newfoundland and
6 Labrador System Operator (“NLSO”) and was therefore reclassified from distribution to
7 transmission.”

8 Please outline the rationale for transferring the responsibility for the Wabush 46/12.5 kV
9 substation from Hydro to the NLSO. Please identify and provide a copy of any particular
10 standards that are relevant to the decision.

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13 A. Since its establishment in 2017,¹ the Newfoundland and Labrador System Operator (“NLSO”) has
14 been responsible for the operation of transmission facilities in Newfoundland and Labrador with
15 a rated voltage of 46 kV and above, including stations in western Labrador.² These activities are
16 still managed via Newfoundland and Labrador Hydro’s (“Hydro”) Energy Control Centre (“ECC”).

17 From an operational perspective, the 46 kV system in western Labrador has historically been
18 operated as a transmission system under the controlling authority of the ECC. However, from a
19 system planning perspective, the network assessments have been performed in accordance with
20 Hydro’s Transmission Planning Criteria³ since the NLSO became the system operator for
21 transmission facilities in Newfoundland and Labrador. Prior to that, planning assessments were
22 performed in accordance with Distribution Planning Criteria.

¹ *Electrical Power Control Act*, 1994 Citation: SNL 1994, c E-5.1, s 14.3.

² As an exception, Newfoundland Power is responsible for the operation of their 66 kV and 138 kV transmission facilities.

³ Please refer to Hydro’s responses to CA-NLH-019 and LAB-NLH-004 of this proceeding for further information.

1 The assessment of the 46 kV network using Transmission Planning Criteria is justified on the
2 basis that 46 kV networks in Labrador serve the same function as 66/69 kV networks on the
3 Island Interconnected System. Transmission systems in both voltage classes consist of
4 interconnected networks of terminal stations used for the regional delivery of electricity. 46 kV
5 and 66/69 kV terminal stations generally have similar designs and typically contain large
6 terminal station power transformers. Given this functional similarity, both voltage classes should
7 be held to the same standard.

8 In the specific case of the requirement for power transformer upgrades at the Wabush
9 Substation, the application of Transmission Planning Criteria is essential to ensure an acceptable
10 operational margin for station capacity. These power transformers should be classified in the
11 same manner as all other terminal station power transformers that are owned by Hydro. The
12 specification and multi-year procurement times associated with these transformers is
13 significantly different than those for standardized distribution transformers used in 25 kV, 12.5
14 kV and 4.16 kV applications which are frequently available as stock items. Maintaining an
15 acceptable level of operation margin is of particular importance in western Labrador, as the
16 region is characterized by sudden unforeseen load growth due to the cyclical nature of the iron
17 ore prices.