

1 Q. **Re: CBA, Rev. 1, vol. II, Wabush Terminal Station Upgrades, Attachment 3, Lab West System**  
2 **Expansion Study, Wabush Terminal Station Recommended Upgrades, page 6 (p. 452 pdf)**

3 Citation:

4 The transfer capability of the Hydro-owned assets in winter is 350 MW under  
5 normal operating conditions with all equipment in service. This is due to voltage  
6 limitations at the Wabush Terminal Station. With SC3 in service, the transfer  
7 capability is increased to 385 MW in winter. The additional 35 MW of non-firm  
8 capacity is available for IOC's exclusive use and is currently not available as a  
9 source of capacity for other customers. Excluding SC3, the loss of a synchronous  
10 condenser reduces capacity to 285 MW.

11 a. Please explain the voltage limitations at the Wabush Terminal Station and how they limit  
12 transfer capability of the Hydro-owned assets in winter to 350 MW under normal operating  
13 conditions with all equipment in service.

14 b. Please confirm or correct our understanding from the Citation that SC3 is currently in  
15 service, but only available for IOC's exclusive use.

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18 A.

19 a. In winter, the transfer capability of the Newfoundland and Labrador Hydro-Owned assets is  
20 restricted to a maximum of 350 MW due to the synchronous condenser generating reactive  
21 power to the extent that terminal voltage are elevated to the maximum acceptable value of  
22 14.5 kV. As defined in the NLSO<sup>1</sup> Standard "Transmission Planning Criteria Doc # TP-S-007,"  
23 in accordance with ANSI/IEEE standards, "Generator terminal voltages shall be maintained  
24 between 95% and 105% for both normal and contingency situations."<sup>2</sup> Therefore, the  
25 synchronous condenser bus voltages must be maintained between 13.1 kV (0.95 per unit)  
26 and 14.5 kV (1.05 per unit).

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<sup>1</sup> Newfoundland and Labrador System Operator ("NLSO").

<sup>2</sup> "NLSO Standard - Transmission Planning Criteria – Doc # TP-S-007," Newfoundland and Labrador Hydro, October 2, 2020, sec 4.4.1, at p. 6, bullet 1, included as Attachment 3 to Newfoundland and Labrador Hydro's response to CA-NLH-019.

- 1           **b.** Newfoundland and Labrador Hydro can confirm that Iron Ore Company of Canada’s (“IOC”)  
2           SC3 asset is available for service. The unit was fully commissioned and placed in service in  
3           the fall of 2019 under a temporary operating agreement. Since that time SC3 has been  
4           operated, when necessary, to support voltage control at the Wabush Terminal Station. The  
5           incremental transfer capability provided by the operation of SC3 has been exclusively  
6           available to IOC.