

1 Q. **2017 General Rate Application - Operations**

2 Page 3.1, lines 1-5 and page 3.2, lines 9-12 – Describe the actions Hydro is taking to
3 ensure it is ready for integration with the North American grid.

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6 A. Activities related to the interconnection of the Muskrat Falls Project to the Island
7 Interconnected System is currently before the Board in a separate proceeding, the
8 *Board's Investigation and Hearing into Supply Issues and Power Outages on the*
9 *Island Interconnected System – Phase Two*. On August 4, 2017, Hydro submitted a
10 detailed Integrated Project Schedule setting out all activities required to ensure
11 successful transition to operations. Further updates and information will be
12 provided to the Board within that proceeding.

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14 To ensure it is ready for integration with the North American Grid, Hydro created
15 the position of Manager, Interconnection & Integration.¹ As noted in Chapter 3 of
16 Hydro's 2017 General Rate Application evidence, this position is responsible for
17 ensuring alignment and awareness within Hydro of key aspects of the integration
18 and the new assets associated with interconnection.

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20 A key activity that Hydro is managing is the establishment of the Newfoundland and
21 Labrador System Operator (NLSO) as a functionally separate division of Hydro that
22 will act as the independent system operator for the Province. The final structure of
23 the NLSO was announced in May 2017 and all positions have since been filled. In
24 addition to its responsibility for operating the transmission system, the NLSO will
25 manage all commercial activities related to interchange with neighbouring utilities

¹ 2017 General Rate Application, Chapter 3, page 3.43-3.44.

1 and the provision of transmission services, which is work that has not been required
2 to date.² Hydro is currently managing project activities related to NLSO readiness,
3 including identifying and hiring appropriate positions within the NLSO,³ developing
4 and executing training plans for staff,⁴ developing transmission policies and
5 procedures, implementing new software required to enable commercial
6 transactions, performing operational studies, and updating operating procedures.

7
8 Hydro has undertaken activities to prepare its system for interconnection of the
9 Labrador-Island Link (LIL) and Maritime Link (ML). This includes the replacement of
10 a number of breakers on the Island Interconnected System.⁵ Hydro has completed
11 extensive work to its Energy Control Centre (ECC) to accommodate the large
12 number of monitoring points that will be added to the electrical system post-
13 interconnection. There have also been a number of smaller projects identified as
14 necessary in Hydro's terminal stations, such as upgrades to grounding grids and
15 replacement of current transformers. The vast majority of these projects are
16 complete, or are expected to be complete by the end of 2017. Other projects that
17 are not required until generation from the Muskrat Falls Project is commissioned
18 are being planned for execution in 2018 and 2019.

19
20 Hydro is undertaking other work, funded by Emera and LCP, that relates to the
21 physical and electrical interconnection of new HVdc assets to Hydro's system.

² Until interconnection of the ML, there will be no interchange or transmission service transactions occurring.

³ To prepare for the connection of the Provincial Transmission System to the North American Grid, the NLSO has recruited and filled five new operators for the ECC. This translates to one additional operator per shift, whose primary focus will be on managing the interchange of electricity with neighbouring utilities.

⁴ This includes training all operators in the ECC with respect to power system changes associated with asset additions, including the ML and LIL, and preparing staff for new interconnection responsibilities.

⁵ Analysis of the new system configuration indicated that new breakers were required due to an increased fault level from the interconnection of Soldier's Pond and the three synchronous condensers located there. This work was managed by Hydro but funded by the LCP.

1 Hydro has approved the energization plans for the new AC assets on the island to
2 ensure this can be completed safely with minimal impact to Hydro and its
3 customers. Hydro is participating in the execution of these energization plans, and
4 will continue to do so until all new assets, including Muskrat Falls generation, are
5 commissioned. Hydro has also managed a number of relatively small projects
6 related to these interconnections, including modifying protection settings,
7 renumbering its assets, and updating single line diagrams. This is ongoing work that
8 will continue until after the final interconnection of Hydro's 230 kV lines into
9 Soldier's Pond, currently scheduled to occur in November 2017. Finally, as the
10 interconnection of any assets to Hydro's system necessarily involves some planned
11 outages to Hydro's assets, Hydro has leveraged its existing communications
12 processes, including its Equipment Notification Protocol, to ensure customer
13 awareness of these activities.

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15 As part of the interconnection of the LIL and the ML, significant new AC
16 infrastructure is being added to the Newfoundland and Labrador transmission
17 system. Hydro is working with the owners of these new assets to develop
18 arrangements whereby Hydro will perform maintenance on the assets in order to
19 achieve cost efficiencies and to permit Hydro to ensure reliable operation. Upon
20 finalizing the terms of these arrangements, Hydro will assess the additional
21 workload associated with maintaining these assets and secure additional resources
22 if required.⁶

⁶ While these arrangements are not yet finalized, the parties have agreed that any costs associated with this work will be funded by the asset owner.