

1 Q. **Re: Page 29, Section 6.1**

2 Water availability for hydro generation was an issue in planning for last winter.
3 Please detail the degree that, thermal unit operation this winter is expected to be
4 affected by water availability. If thermal unit operation is expected to increase due
5 to water availability, describe the nature and likely extent of any resulting reliability
6 impacts on the thermal units, and operating and other steps planned to minimize
7 reliability issues from increased operation of the units.

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10 A. Hydro reports on its energy production to the Board monthly in its Energy Supply
11 Report. This report includes details regarding Hydro's system hydrology, including
12 Hydro's access to water or energy in storage.

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14 Hydro's last Energy Supply Report was filed with the Board on June 11, 2018. In that
15 report, Hydro noted energy in storage was 87% above the minimum storage level
16 for May. The minimum storage target is designed to show the minimum level of
17 aggregate storage required such that if there was a repeat of Hydro's critical dry
18 sequence, or other less severe sequence, Hydro's load could still be met through
19 the use of the available hydraulic storage, maximum generation at Holyrood
20 Thermal Generating Station and, now, firm imports. Hydro's long-term critical dry
21 sequence is defined as January 1959 to March 1962 (39 months). Other dry periods
22 are also examined to ensure that no other shorter term historic dry sequence could
23 result in insufficient storage. Vista simulations estimate the energy storage through
24 the dry period and the coincident Holyrood usage.

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26 At this time, Hydro has not identified a requirement to run the Holyrood units
27 above minimum levels to meet customer requirements for the upcoming winter.

1 In developing its 2018 minimum storage targets and recognizing that Holyrood is
2 operating at the end of the plant life, Hydro included a more conservative view of
3 Holyrood availability. The maximum net Holyrood capacity was assumed to be an
4 average of 117 MW per unit, for a total net Holyrood plant output of 350 MW,
5 based on experience of 2017-2018 winter operating season. Therefore, Hydro has
6 considered general reduced availability, as opposed to specific issues. Note that this
7 view of Holyrood production was used to develop Hydro's minimum storage targets
8 only. By taking a more conservative view on Holyrood capacity in this analysis (i.e.
9 including an assumed lower availability), the minimum water storage targets are
10 higher than would be if Holyrood availability was better. This provides for additional
11 water in storage and better positions Hydro to supply customers in the event of a
12 dry sequence and decreased Holyrood availability. Therefore, Hydro does not
13 currently expect thermal unit operation to be such that it would cause reliability
14 issues at Holyrood.

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16 Note that the 350 MW assumption for Holyrood plant output in developing Hydro's
17 minimum storage targets is conservative. Hydro has applied for a project to
18 Improve Boiler Load Capacity - Units 1, 2, and 3 at Holyrood. This project will
19 restore capacity at Holyrood. While completion of this project will help mitigate
20 reliability issues associated with capacity limitations at Holyrood, it will also
21 increase the likelihood that the units can safely generate at the normal operating
22 limits of 150 MW for Units 1 and 2, and 135 MW for Unit 3. This will result in a plant
23 net output of approximately 410 MW, 60 MW higher than the assumption of 350
24 MW built into the minimum storage target. This would result in the capability to
25 produce approximately 45 GWh of additional energy per month at Holyrood.
26 Hydro has weekly water management meetings in which guidelines for operations
27 of Hydro's generating resources are prepared for the Energy Control Centre (ECC).

1 Factors such as recent and forecast weather, reservoir levels relative to minimum
2 and maximum targets, and system conditions, such as unit outages, and watershed
3 conditions (e.g. snow pack), are taken into account in recommending the setting for
4 each generating unit on the Island Interconnected System. The requirement for
5 Holyrood production to supply energy required by the system, in addition to the
6 system capacity Holyrood is providing, is closely monitored as part of this process.

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8 Finally, while the Near-Term Generation Adequacy Report is conservative in nature
9 and has not reflected imports over the Maritime Link, Hydro imported energy last
10 winter season and expects to be able to import this coming winter. This is another
11 method that Hydro can employ to reduce operation at Holyrood should a dry
12 sequence start to develop, and Hydro determines imports are prudent.