Q. (Regulated Activities Evidence page 2.42, Table 2.17)
According to this table, Hydro will fall short of its capacity reliability target in 2015 and its energy reliability target in 2019. Please file a copy of Hydro's least cost integrated resource plan for alleviating these shortfalls, and show Table 2.17 with the plan incorporated.

A. Please note, Regulated Activities Evidence page 2.42, Table 2.17 in Hydro's original GRA evidence is now page 2.68, Table 2.18 in the Evidence to Hydro's Amended Application.

The addition of the 123.5 MW combustion turbine planned for completion in December 2014 has resulted in the capacity reliability target shortfall, previously identified for 2015, being removed. Table 2.18 in the Evidence to Hydro's Amended Application indicated that Hydro may fall short of its energy reliability target in 2018 using current energy reliability criterion, assuming no generation expansion.

[ ]

In December 2012, sanction was given to the 824 MW, 4.9 TWh Muskrat Falls Generating Station, the Labrador Island HVdc transmission line with a 900 MW capacity between Labrador and the Island Interconnected System, and the Maritime Link HVdc transmission line with a 500 MW export capacity and a 300 MW import capability between the Island Interconnected System and Nova Scotia. [ ] These facilities are scheduled to come into operation between December 2017 and June 2018 and at that time and for some time into the future there will be sufficient capacity to meet projected customer demand and energy requirements. These

facilities will enable the decommissioning of the 467 MW, 3.0 TWh Holyrood Thermal Generating Station, which is currently anticipated to occur in the 2020/2021 timeframe. The interconnection of the Island Interconnected System with the Labrador Interconnected System and the bulk power systems in Québec and in Nova Scotia will fundamentally change the provincial power system by introducing additional options for planning a reliable electricity supply. [ ] In particular, firm energy requirements will be able to be met through a broader spectrum of options external to the Island. Similarly, reserve and capacity sharing with neighbouring systems will change the appropriateness of applying the LOLH criteria beyond 2017. [ ]

Table 1 modifies and extends Table 2.18 to 2031 and also provides a view of the LOLH and capacity balances through to 2031. The Planning Load forecast used was prepared in June 2012.

Table 1 provides the Firm Energy Capability[1] and Energy Balance for the Island Interconnected System, including available firm energy from Muskrat Falls and the surplus energy from the 2,362 GWh recall block available from Churchill Falls.[2] With these sources, there is no deficit in the firm Energy Balance until post-2031. Prior to Muskrat Falls coming in service, Hydro will determine an appropriate firm energy criterion, taking into consideration generation from a province-wide view and also taking into consideration the interconnections to the North American grid.

[1] Hydro currently applies a firm energy criterion, which states that there shall be sufficient water stored in its reservoirs to meet customer energy requirements with a repeat of historical low reservoir inflows.
[2] For the table, 1,000 GWh is assumed as the available surplus from the Churchill Falls recall power because current Labrador load forecasts indicate this amount will be available out to 2031.

Table 1

Island Connected System
Load Forecast and Capacity and Energy Balances
With Proposed Additions

	Load Forecast		Existing and Proposed System				
			Net[1,2,3,4]	Firm[1,5,6]		Energy[5]	Interruptible
Year	Peak MW	Energy GWh	Capacity MW	Capability GWh	LOLH hrs/yr	Balance GWh	Contracts MW
2015	1,721	8,745	1978	8,940	0.73	195	75.8
2016	1,736	8,902	1978	8,940	0.99	38	75.8
2017	1,755	8,921	1978	8,940	1.02	19	75.8
2018	1,757	8,914	2953	12,791	0.15	3,877	75.8
2019	1,760	8,949	2953	13,024	0.16	4,075	N/A
2020	1,766	9,016	2953	13,024	0.16	4,008	N/A
2021	1,781	9,113	2953	10,028	0.18	915	N/A
2022	1,801	9,243	2487	10,028	0.19	785	N/A
2023	1,824	9,325	2479	10,067	0.20	742	N/A
2024	1,841	9,429	2479	10,202	0.21	773	N/A
2025	1,861	9,522	2479	10,202	0.22	680	N/A
2026	1,879	9,595	2429	10,202	0.23	607	N/A
2027	1,894	9,692	2429	10,202	0.24	510	N/A
2028	1,912	9,783	2429	10,035	0.25	252	N/A
2029	1,929	9,848	2379	10,035	0.27	187	N/A
2030	1,942	9,930	2379	10,035	0.29	105	N/A
2031	1,958	10,012	2379	10,035	0.30	23	N/A

1. Assumes Muskrat Falls, Labrador-Island Link and Maritime Island Link in-service in 2018.
   Assumes that Holyrood shuts down in 2021.
   Assumes that CBPP Co-Generation NUG contract is not renewed in 2023.
   Assumes that Hardwoods combustion turbine (CT) shuts down in 2025.
   Assumes that Stephenville CT shuts down in 2028.
2. Assumes capacity is available through market or other contractual means to enable full use of the available transmission capacity.
3. Assumes capacity at winter peak of 121 MW for NP and 113 MW for Deer Lake Power.

4. Assumes capacity at winter peak of 18 MW for Star Lake, 8 MW for Corner Brook Co-gen and 63 MW for Nalcor Grand Falls and Bishop's Falls. Rattle Brook, Nalcor Buchans, St. Lawrence Wind and Fermeuse Wind are assumed to have 0 MW capacity at winter peak.
5. Firm Energy Capability does not include energy capability of installed combustion turbines. It does include firm off-island energy sources, including Muskrat Falls and 1,000 GWh from the Churchill Falls recall block surplus to Labrador requirements.
6. Firm capability for the hydroelectric resources is the energy capability of those resources under the most adverse sequence of reservoir inflows occurring within the historical record. Firm capability for the thermal resources (HTGS) is based on energy capability adjusted for maintenance and forced outages.