

Q. The response to Request for Information CA-NLH-030 indicates that in 2019 there will be 30.6 MW of reserve available to supply load during system peak in the event of a bipole failure. Please provide a capacity outage probability table assuming Maritime Link is a three state generator recognizing the probability of bipole operation, monopole operation and a complete bipole failure. Also, please assume that no generation is out of service for planned maintenance. The information should be provided in the following format.

Capacity out of service	Capacity in Service	Probability
0 MW		
20 MW		
40 MW		
60 MW		
.		
.		
.		
300 MW		

If this information is not available in this format please provide comparable information that should be available from the Hydro's Strategist[®] software.

A. The forecast and capacity numbers in Table 3 in CA-NLH-030 were completed on a Hydro System basis, i.e. not including some customer generation. Hydro's current forecasts are completed on an Island Interconnected basis, including customer generation from NP and Deer Lake Power. The net result on reserve margin is the same, as the customer generation is accounted for in both the forecast and capacity numbers. The requested table has been completed with current capacity numbers and forecast for 2019. The forecast is the same used in the Energy Supply Risk

1 Assessment (ESRA) Report filed on May 27, 2016. As seen in “Table 7 – Reserve
2 Margin Analysis”, the current forecast for 2019, assuming P90 is 1819 MW and for
3 P50 is 1752 MW.

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5 The original response to CA-NLH-030 assumed that the LIL, MIL and Muskrat Falls
6 would be in service by 2019 and that Holyrood would be out of service. For
7 consistency, the same assumptions were used. The current interruptible contracts
8 with CBPP and Vale were also excluded.

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10 In 2019, the system capacity will be 1834 MW excluding the LIL, Holyrood Plant and
11 Interruptible Contracts. This results in an 73 MW reserve margin at the P50 Peak
12 and a 6 MW reserve margin at the P90 Peak (see Table 1). Table 1 also indicates the
13 reserve margin with the LIL both in-service and out-of-service.

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Table 1

Generation (MW)	LIL Out of Service		LIL In Service	
	P50	P90	P50	P90
NLH Hydro	954		954	
NLH Thermal	248		248	
NUGS	100		100	
NP Hydro	76		76	
NP Thermal	42		42	
Deer Lake	89		89	
MIL	316		316	
LIL	0		667	
Total Generation	1825		2492	
System Peak	1752	1819	1752	1819
Reserve Margin	73	6	740	673
Probability of Outage Greater Than or Equal to Reserve Margin (%)	28%	54%	0.0024%	0.0059%

The capacity outage probability table is provided in Table 2.

Table 2: Capacity Outage Probability

Capacity (or more) Out of Service	Capacity In Service	Cumulative Probability
0	1834	100%
6	1828	53.7%
20	1814	48.6%
40	1794	48.4%
60	1774	31.0%
73	1761	27.7%
80	1754	23.2%
100	1734	18.9%
120	1714	16.7%
140	1694	8.87%
160	1674	6.40%
180	1654	3.83%
200	1634	2.81%
220	1614	1.51%
240	1594	1.07%
260	1574	0.66%
280	1554	0.35%
300	1534	0.23%

Care should be taken in comparing the results of these tables with results from Hydro's typical generation planning, as these results do not include either pole of the LIL or either unit from Holyrood. These results portray at least an N-2 criteria (both poles of LIL out of service) during the peak hour for the year.