

- 1 Q. **Volume 1 (1<sup>st</sup> Revision), Chapter 3: Operations**  
 2 Please provide a detailed calculation that shows how Hydro determined its “reserve  
 3 at criteria” of 13.3% in the 2015 test year and 12.8% in the 2018 and 2019 test  
 4 years. (Volume I (1st Revision), Chapter 3: Operations,  
 5 Page 3.23, Lines 10-12)  
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 8 A. Please see Table 1 for the determination of Percent Reserve at Criteria based on  
 9 Expected Installed Capacity in 2015.

**Table 1 Gross Continuous Unit Rating<sup>1</sup> (GCR) (MW)**

<b>Newfoundland and Labrador Hydro</b>	
Total Hydro	954.4
Holyrood	465.5
Combustion Turbine	223.5
Diesel	14.7
<b>Newfoundland Power</b>	
Hydro	93.7
Combustion Turbine	36.5
Diesel	5.0
<b>CBPP</b>	
Hydro	113.1
<b>Exploits</b>	
Hydro	81.0
<b>Non-Utility Generators</b>	
Hydro	3.0
<b>Total Capacity (2015):</b>	<b>1990.4</b>
Capacity Assistance (2015)	60
<b>Total Capacity Available on Peak (2015):</b>	<b>2050.4 MW</b>

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<sup>1</sup> Gross Continuous Unit Rating reflects the generation, by source that is assumed available during peak times.

1 For the determination of Reserve at Criteria in the 2015 Test Year, Hydro  
2 determined the maximum peak demand that could be supplied while maintaining  
3 the load factor forecast for 2015 at 57.50%. For this analysis, a peak demand of  
4 1810.3 MW produces an LOLH of 2.80 hours/year.

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6 Therefore, using the information provided above, the reserve at criteria can be  
7 calculated as follows:

$$\begin{aligned}\text{Reserve at Criteria} &= \frac{\text{Total Capacity Available on Peak} - \text{Maximum Demand that can be supplied on peak}}{\text{Capacity at Peak Less Reserve Requirements}} \\ &= \frac{2050 - 1810}{1810} = 13.3\%\end{aligned}$$

8 For the 2018 and 2019 Test Years, the 240 MW reserve margin was used in Hydro's  
9 calculation of reserve at criteria. This change in methodology was deemed  
10 appropriate as, for the current system, Hydro's reserve margin criteria would be  
11 violated in advance of its LOLH criteria. As such, the total capacity available on peak  
12 while maintaining Hydro's reserve margin requirements, defines the maximum  
13 system demand that can be supported on peak for the current Island  
14 Interconnected System.

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16 For the detailed calculation of reserve at criteria for the 2018 and 2019 test years,  
17 please refer to Hydro's response to PUB-NLH-041.