

1 Q. Further to the response to IC-NLH-102, how is Hydro’s use of expected unserved
2 energy related to the criteria outlined in the response to this RFI?

3
4

5 A. Loss of Load Hours (LOLH) and Expected Unserved Energy (EUE) are both
6 probabilistic measures of system reliability. EUE is the summation of the expected
7 amount of load, measured in MWh, that will not be served in a given year as a
8 result of demand exceeding available capacity. LOLH is the number of hours in a
9 given year in which the demand exceeds the available capacity. In general, LOLH
10 and EUE are strongly correlated, with the equivalence point depending on the
11 system characteristics. A graph of the correlation for the Island Interconnected
12 System can be seen in Figure 1.

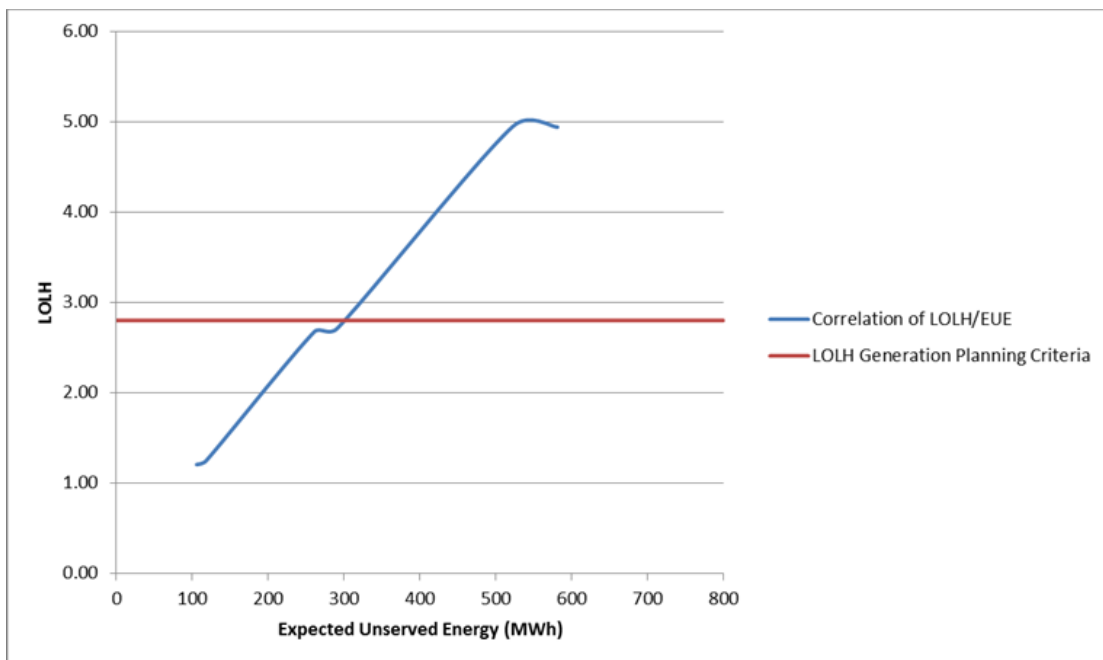


Figure 1 Correlation of LOLH/EUE for the Island Interconnected System

1 Through correlation of LOLH and EUE, it was determined that 300 MWh of EUE is
2 approximately equivalent to an LOLH of 2.8. The correlation was performed by
3 combining Generation and Transmission Planning analysis techniques. Generation
4 adequacy analysis allowed for the quantification of the LOLH for each year of the
5 study period. A Transmission Planning study was then performed where load flow
6 analysis was used to determine system capacities for key contingencies. These
7 capacities were then used in combination with event probabilities and load
8 duration curves to quantify EUE.

9

10 It is therefore Hydro's position that in its current analysis, EUE is used as another
11 probabilistic metric used in Hydro's assessment of system adequacy, with its
12 threshold of 300 MWh set based on its relationship to an LOLH of 2.8, rather than a
13 separate criterion.