Q. **Newfoundland and Labrador Hydro – Near-Term Reliability Report, May 15, 2020**

Measures of Load Loss

Please explain why or why not near-term reliability should be evaluated against the LOLE≤0.1 days/year criterion.

A. There are a number of probabilistic resource adequacy methods and metrics used by utilities and system operators to assess the occurrence, frequency, and duration of system risk present throughout the planning year. Newfoundland and Labrador Hydro ("Hydro") has proposed to use three metrics across its assessments of resource adequacy: Loss of Load Expectation ("LOLE"); Loss of Load Hours ("LOLH"); and Expected Unserved Energy ("EUE").

LOLE is defined as the expected number of days per year for which the available generation capacity is insufficient to serve the daily peak demand. This metric is calculated using only the peak load for each day. LOLH is defined as the expected number of hours per year when a system's hourly demand is projected to exceed the available generating capacity and is calculated using the full hourly load shape instead of using only the daily peak in the LOLE calculation.

Because LOLH considers the entire load shape as opposed to LOLE, which only considers the peak hour in each day, it provides a more comprehensive measure of system reliability. The primary benefit to establishing an LOLE-based approach for long-term planning is its prevalence in North America, where the majority of utilities are using 0.1 LOLE as their reliability criteria. By using LOLE to develop its planning reserve margin, Hydro is able to benchmark its system reliability against other utilities. Unlike the LOLE metric, there is currently no generally acceptable LOLH criterion. In addition to this, LOLE is typically measured on an annual basis, whereas LOLH can be expressed on any timeframe.

Currently, Hydro evaluates reliability in two ways:

1. Through the establishment of the LOLE-based Planning Reserve Margin and the development of the associated resource plan; and

2. Through its semi-annual Near-Term Reliability reports.

In order to determine the appropriate measure of reliability for each purpose it is important to understand the purpose of each type of assessment.

The purpose of Hydro's long-term planning exercises is to identify when incremental resources are required to ensure continued reliable service for current and future customers, typically over a 10- to 20-year planning horizon. To complete this analysis, a planning reserve margin is determined based on benchmarking a reserve margin against the 0.1 LOLE in a test year. Using the LOLE in this analysis allows Hydro to benchmark its system reliability against other utilities.

The near-term reliability analysis looks at system reliability in the near-term, or one- to five-year horizon. The purpose of this analysis is to assess system reliability trends and the impacts that changes in the system are forecast to have on system reliability. Hydro currently conducts a scenario-based assessment that considers variations in unit in-service dates, load forecasts, forced outage rates and other variable system conditions. This allows Hydro to test the reliability impact of a number of potentially varying parameters. Using LOLH in this analysis allows Hydro to better identify the seasonal impacts and changes in reliability for these cases, as it is easily expressed and relatable on a monthly basis. This approach is consistent with the North American Electric Reliability Corporation ("NERC") Probabilistic Assessment Technical Guideline and the NERC seasonal reliability assessments, neither of which include calculations of monthly or annual LOLE. As such, Hydro recommends that its long term planning assessments continue to use an LOLE based approach, while the near-term reliability assessments continue to use an LOLH and EUE based approach, consistent with NERC reporting practices.