

- 1 **Q. (Reference Application, Feeder Additions for Load Growth, pages 5 and 6)**
2 **Please provide the detailed lifetime analysis showing that the \$375,000**
3 **upgrade alternative for feeder APT-02 is lowest cost relative to the \$397,000**
4 **battery storage alternative. Please identify all assumptions including the**
5 **value of capacity provided by the battery storage alternative and the**
6 **replacement cost of the battery storage facility following its initial 15-year**
7 **life.**
8
- 9 A. Newfoundland Power did not conduct a detailed life-cycle analysis comparing the APT-02
10 feeder upgrade alternative to the battery storage alternative. Since (i) the capital cost of
11 the feeder upgrade alternative was less than the capital cost of the battery storage
12 alternative; and (ii) the battery storage facility would have to be replaced every 15
13 years, a detailed life-cycle analysis was not required.
14
- 15 With respect to the value of capacity provided by the battery storage facility during its
16 initial 15-year life, the latest marginal costs provided by Newfoundland and Labrador
17 Hydro indicate maximum on-peak capacity costs of approximately \$198 per MWh in
18 2040. As a result, the capacity provided by the 691 kWh battery storage system that
19 could effectively offload APT-02 would have a maximum value of approximately \$137
20 per peak-shedding event. Including this cost in a life cycle analysis would not impact the
21 results of the study and, therefore, upgrading the overloaded two-phase section to
22 three-phase remains least cost.