

1 **Q. In Mr. Brockman’s experience and opinion, is under frequency load shedding on a**
2 **bipole trip, expected more than once every three years, an acceptable design**
3 **feature?**
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5 A. The Island Interconnected System (“IIS”) is currently isolated from the North American
6 grid and has never had the benefit of reserve sharing from neighboring utilities. As a
7 result, under frequency load shedding (“UFLS”) has been relied upon to maintain
8 electrical system stability following the loss of generation and/or bulk transmission lines.
9 Typically, an UFLS event on the IIS involves a relatively small amount of load and
10 power is restored to customers within 30 minutes or so.¹
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12 In the coming years, the IIS will include Muskrat Falls, the Labrador Island Link (“LIL”),
13 and the Maritime Link (“ML”). It is expected that UFLS events will continue to occur on
14 the IIS, albeit less frequently.² These UFLS events can be expected following a LIL
15 bipole trip, particularly during the winter season. This is due to the size of Muskrat Falls
16 and the LIL in relation to the IIS. To eliminate such UFLS events, the IIS would need to
17 maintain or arrange for sufficient spinning reserves to accommodate the loss of the LIL.
18 Considering that up to 673 MW of IIS load can be served by the LIL during winter
19 months, and lost during a LIL bipole outage, substantial spinning reserve would be
20 required to eliminate UFLS events.
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22 While eliminating the need for UFLS should be considered a goal for the IIS, it does not
23 appear immediately practical or economical. This view is shared by the Liberty
24 Consulting Group (“Liberty”). In its Phase Two Report Liberty states:
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26 *“It is fair to question the appropriateness of a reliability criterion that permits*
27 *UFLS at this level. The question is moot, however, since there is no realistic*
28 *alternative at this time. The size of the IIS in comparison to the LIL deliveries is*
29 *the key feature making UFLS inevitable. The economics of avoiding this are not*
30 *practical.”³*
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32 In Mr. Brockman’s opinion, infrequent and short UFLS events can be considered
33 acceptable. However, frequent or prolonged UFLS events involving significant load
34 shedding, events that require rotating power outages, and events that lead to system
35 collapse are not acceptable.

¹ See Footnote 1 to the response to Request for Information PUB-NLH-148.

² See the response to Request for Information PUB-NLH-217. Hydro is currently studying the post-Muskrat Falls load shedding scheme.

³ See Page 84 of the Liberty Phase Two Report.