

1 Q. Further to the responses to PUB-NLH-481 and PUB-NLH-482, please confirm that  
2 Hydro will introduce operating restrictions, such that, when the Island  
3 Interconnected System has stabilized after a single pole outage, under-frequency  
4 load shedding will not occur as a consequence of the failure of the remaining pole.  
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7 A. Hydro cannot confirm, nor guarantee, that the Island Interconnected System will  
8 not experience under frequency load shedding following the loss of the remaining  
9 pole when operating in monopolar mode under all system loading conditions. As  
10 stated in Hydro's response to PUB-NLH-482, under lighter load conditions, the  
11 Labrador-Island HVdc Link (LIL) will be operated in monopolar mode at a load level  
12 such that there is sufficient generation on the Island Interconnected System to  
13 avoid under frequency load shedding for loss of the remaining pole. The response  
14 in PUB-NLH-482 puts the load level on the LIL at 183 MW in monopolar mode for  
15 maintenance with 158 MW being delivered to Nova Scotia. Trip of the Maritime  
16 Link for loss of the remaining LIL pole in this scenario will not result in under  
17 frequency load shedding.  
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19 During LIL operation in monopolar mode, one must keep in mind that loss of the  
20 remaining pole results in the Island Interconnected System becoming isolated from  
21 the North American grid. As such, the mode of operation on the Island  
22 Interconnected System must revert to the existing isolated mode of operation used  
23 today. Therefore, frequency response on the Island Interconnected System must  
24 consider under frequency load shedding as a means to restore system frequency for  
25 loss of the LIL in monopolar mode, particularly as the net deliveries over the LIL  
26 increase as system load increases. Operating experience indicates that during light  
27 load conditions on the Island, loss of up to 25 MW of generation does not result in

1 under frequency load shedding today. Similarly, during peak load conditions the  
2 limit for loss of generation without under frequency load shedding is near 40 MW.  
3 Single unit loads above these values result in under frequency load shedding due to  
4 the governor response times and limited system inertia on the existing isolated  
5 system. Hydro employs a maximum unit loading guideline based upon system load  
6 conditions and the under frequency load shedding schedule to ensure that the  
7 system does not collapse following loss of large generation.

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9 With the LIL operating in monopolar mode, its sudden loss of delivered power from  
10 Labrador must be made up by the available generation on the Island. If the loss of  
11 supply from Labrador exceeds the capabilities of the on Island generation, under  
12 frequency load shedding must be employed to avoid system collapse. During peak  
13 load conditions there will be insufficient generation to supply the entire load on the  
14 Island. With the LIL operating in monopolar mode during peak load periods, loss of  
15 the LIL must result in under frequency load shedding to restore system frequency.