Q. Page 7, "*As a result of the impedance mismatch, the total installed transformer capacity with the largest unit out of service is reduced by 31.8 MVA to 484.6 MVA.*"

Please confirm that this reduction as well as that noted in footnote 5 on page 7 can, if needed in an extreme event, be used by switching on the Newfoundland Power Inc. system and is not in fact "lost".

A. Please refer to the response to IC-NLH-3 for an explanation of the origins of the transformer impedance mismatch issue and resultant unavailability of 31.8 MVA of transformer capacity during the loss of a 125 MVA transformer in the Hardwoods – Oxen Pond Loop.

For the purposes of calculating transformer loadings and violation of the transformer back up criteria, the analysis assumes that Newfoundland Power can transfer sufficient load between the two stations under a single transformer loss such that one transformer in each station will be loaded to 100% of its nameplate rating.

Based upon the latest load forecast and distribution of loads across the St. John's Region, using load flow analysis techniques Hydro calculates that the impedance mismatch amongst the transformers in the loop will result in the unavailability of approximately 22.1 MVA if Hardwoods T4 were removed from service. This value can be reduced to approximately 17.5 MVA if NP's 66 kV line 35L (Oxen Pond to Kenmount Substation) is taken out of service. However, if T3 at Oxen Pond is removed from service, load flow analysis indicates that the unavailable transformer capacity due to impedance mismatch would equal approximately 97.8 MVA if all NP

lines remain in service. Removing 66 kV lines 31L (Oxen Pond to Stamps Lane), 35L (Oxen Pond to Kenmount), and 70L (Oxen Pond to Stamps Lane) can reduce the unavailability to 58.8 MVA. Further reduction would require additional switching on the NP 66 kV and distribution systems.

Switching on the underlying 66 kV transmission system cannot entirely eliminate the loss of transformer capacity because the loss is directly attributed to the differences in impedance between the parallel transformers in each station.