

1 Q. Reference: Teshmont Report - Section 4.3.3 – 230 KV Transmission Lines (pg 16):
2 *“The average failure rates and average outage duration for the 230 kV*
3 *transmission lines were calculated based on the data shown in Table 4. However,*
4 *Nalcor advised that the outages for TL201 and TL208 should be excluded from the*
5 *calculations. It was explained that TL201 had insulator issues that were recently*
6 *discovered and that have affected its reliability in the past five years, and that*
7 *TL208 had no customers for a prolonged period of time and failures were repaired*
8 *at a lower priority.”* (emphasis added)

9 Please provide details about the TL201 insulator issues that were recently
10 discovered.

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13 A. During the 2013-2014 winter, insulator pin failures occurred on Transmission Line TL201
14 under high winds and adverse weather conditions. An insulator inspection was completed
15 which determined that many of the insulator pins were significantly corroded and at risk of
16 failure. The insulator pins showed the complete loss of protective zinc galvanizing and as a
17 result there was advanced corrosion and loss of steel material. In addition, the insulators
18 exhibited visible cracks in the surface of the grouting for the pin on the underside of the
19 insulators.

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21 A random selection of 32 insulators was sent to an independent laboratory, Kinectrics Inc.,
22 to perform a Mechanical Strength Test following the procedures in the most recent version
23 of CSA 411.1. Only one met the rated strength. The failure was due to the loss of steel
24 material because of corrosion of the insulator pins. The recommendation of the Kinectrics
25 report was that the insulators, of which the tested units are representative, be removed
26 from service as soon as possible.

1 Based on this conclusion, on June 19, 2014 Hydro submitted an application to the Board for
2 the replacement of insulators on Transmission Lines TL-201 and TL-203. The insulator
3 replacements were completed in 2014 under Order No. P.U. 33(2014) issued on August 1,
4 2014.