

1    Q.    **Tab 17; Volume III: Insulator Replacement – TL203**

2            Please describe the strategy Hydro uses for the research and development of new  
3            techniques and equipment allowing Hydro to be proactive in its inspections as  
4            opposed to applying new techniques as a result of operational issues.

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7    A.    Hydro is a member of Transmission Line Asset Management Interest Group, Centre  
8            for Energy Advancement through Technological Innovation (CEATI) and is actively  
9            involved in the Transmission Line Asset Management Interest Group (TLAM). CEATI  
10           provides electrical utilities with a cost-effective vehicle for sharing experiences and  
11           addressing issues pertinent to their day-to-day operations, maintenance and  
12           planning and also serves as a strong technical resource tool. Through participation  
13           in CEATI, Hydro is exposed to new technologies early in their deployment to the  
14           market. Hydro took part in a CEATI conducted survey among twenty-two utilities to  
15           assess various methods used in the condition assessment of insulators. The utilities  
16           that took part were located all around the globe but mostly from North America.  
17           The results indicated that visual inspection is the most common inspection method  
18           for all kinds of line insulators.

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20           In addition to CEATI as a resource, Hydro has also independently studied numerous  
21           transmission line inspection equipment and techniques since the initiation of the  
22           Wood Pole Line Management Program (WPLM). One proven effective inspection  
23           instrument is the resistograph. The resistograph is a drill instrument that detects  
24           decay and cavities in wood structures. The instrument proved to be an effective  
25           tool in the field. It is now an essential part of wood pole structure analysis for  
26           future wood pole replacements as part of the WPLM program. Hydro is also

1           currently investigation an approach to non-destructive testing of wooden poles  
2           called Modal Impact Testing. It is being investigated as part of an ongoing research  
3           project with Memorial University. Results indicated that Modal testing can  
4           complement existing inspection methods (such as the resistograph), and  
5           measurements can be safely and easily done by field personnel. Research on Modal  
6           testing is still ongoing.