Q. **Reference: Upgrade Power Transformers – Various Sites, Volume II, Report 16**

It is indicated that Hydro's methodology to determine transformer refurbishment or replacement is "…aligned with procedures of other North American utilities with similar transformer assets." (p. i)

Please provide details of this alignment including a listing of the other North American utilities to which Hydro is comparing its methodology.

A. The alignment of Hydro's methodology to other North American utilities include the following:

i) Oil Quality and Dissolved Gas Analysis – Utilities take regular oil samples from their transformers to determine the condition of the oil to determine whether refurbishment work (oil reclamation or oil replacement is required). As well utilities also test for Furans to help determine the strength remaining in the paper (insulation system) to help determine end of life and plan for its replacement. This approach is consistent with Hydro One, BC Hydro and Manitoba Hydro.

ii) Transformer Leak Repair (Gasket Replacement) – Due to the age of power transformers in service, many utilities have put plans in place to help eliminate oil leaks from power transformers to minimize the impact to the environment. Replacing gaskets on power transformers has been done by other utilities including Hydro One, BC Hydro and Newfoundland Power.

iii) Bushing Replacement – Due to the possibility of transformer bushings containing PCBs in concentrations greater than 500 ppm, there is a requirement to have them replaced and disposed of appropriately. This requirement is legislated and is currently required to be followed by all Canadian Utilities.