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**Susan Frank**

Vice President and Chief Regulatory Officer  
Regulatory Affairs

BY COURIER

June 8, 2011

Ms. Kirsten Walli  
Secretary  
Ontario Energy Board  
Suite 2700, 2300 Yonge Street  
P.O. Box 2319  
Toronto, ON.  
M4P 1E4

Dear Ms. Walli:

**EB-2011-0027 – Summerhaven Wind LP Leave to Construct a New Transmission Line –  
Hydro One Networks Inc. Interrogatory Questions**

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I attach two (2) copies of Hydro One Networks Inc.'s interrogatories on the Kinectrics Induction Study submitted by Haldimand County Hydro Inc.

A copy of this cover letter and the attached interrogatories have been filed in text-searchable electronic form through the Ontario Energy Board's Regulatory Electronic Submission System and the confirmation slip is also enclosed.

Please do not hesitate to contact me or Philip Poon at (416) 345-5064 if you have any questions.

Sincerely,

ORIGINAL SIGNED BY SUSAN FRANK

Susan Frank

- c. Lloyd Payne, Haldimand County Hydro Inc.  
Scott Stoll, Aird & Berlis LLP  
Ben Greenhouse, NextEra Energy Canada ULC  
Kristyn Annis, McCarthy Tetrault LLP

**Summerhaven Wind, LP  
Application EB-2011-0027**

**Hydro One Networks Inc. Interrogatories**

**Reference: Kinectrics Inc.'s Induction Study (Report # 015949-RC-0001-R00)**

Interrogatory # 1

Preamble: The report concludes that the contribution to neutral potential with respect to remote earth (NEV) will remain below 7 V at respective exposure terminals for planned loading levels on the 230-kV circuit and assuming ten (10) ground-rods per kilometre, each exhibiting no more than 75 ohm resistance.

- a) Is it true that this finding relies on the NEV profile depicted in Figure 1 maintaining a characteristic “V” shape over the exposure?
- b) Please explicitly identify the precise assumptions giving rise to the particular shape in each of Figures 1 and 2.
- c) The LV feeder extends an additional 2 km or so west of the paralleled section (shared use section with the 230 kV circuit) terminating on a dead end, while east of the paralleled section, the feeder continues to an extensive multi-grounded system (substantially more grounding points than west of the paralleling section). Does this affect the assumed V-shape – i.e., the NEV east and west of the paralleled section?
- d) Is it conceivable that these assumptions could be violated in time due to possible changes to the existing feeder configuration, including the possible interconnection of this feeder's neutral to those for adjacent (future) supply circuits? In this context, how might the predicted NEV profile and values change under less favourable circumstances?

Interrogatory # 2

The report concludes that neutral potential could exceed the 10 V Ontario Electrical Safety Code limit depending on existing potentials that may be present. Is there an expectation, based on prevailing experience and practices, as to how likely this might be the case? What specific practical mitigation measures are contemplated in the event that it does turn out to be the case?

Interrogatory # 3

Preamble: The report identifies a risk of subjecting distribution apparatus to undue temporary overvoltages (TOV) due to induction from line-to-ground fault currents on the 230-kV circuit and suggests installation of “properly rated” surge arresters to limit this duty without offering an

opinion on the practicality of this option in terms of available arrester ratings or the likely associated costs.

Do surge arresters offer a practical means of limiting TOV (power frequency overvoltages caused by phase-to-ground faults) to levels capable of maintaining normal coordination margins for utility and customer apparatus? Would such arresters be expected to be “sacrificial”? If that is the case, would there be a cause for concern for potential wood pole fires?