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Vice President and Chief Regulatory Officer
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BY COURIER

June 22, 2011

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

Dear Ms. Walli:

**EB-2011-0027– Summerhaven Wind LP Leave to Construct a New Transmission Line –
Hydro One Networks’ Submission**

Please find attached Hydro One Networks’ submission in the above-mentioned proceeding.

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

Sincerely,

ORIGINAL SIGNED BY SUSAN FRANK

Susan Frank

Summerhaven S92

EB-2011-0027

Hydro One's Submission

Hydro One's Position on the Induction Issue

While taking no position on the current application, Hydro One Networks Inc. ("*Hydro One*") is of the view that the co-location of transmission and distribution facilities, in the manner proposed in the Summerhaven Wind, LP Leave to Construct Application, may introduce unacceptable induction effects depending upon the circumstances. It is therefore Hydro One's view that the findings of the Kinectrics Report, filed by Haldimand County Hydro Inc. on May 31, 2011 (the "*Report*") should be limited in their application to the current proceeding and not have general application.

Discussion on Responses to Hydro One's Interrogatories

Interrogatory #1

The Report is limited in its assumptions and the scope of its analysis.

The "V" shape depicted in Figure 1 of the Report for the neutral-to-earth voltage ("*NEV*") profile relies on the driving point impedance for the neutral being essentially equal, as seen from the terminals of the exposed 2 km section. This is the most favourable assumption possible under the circumstances, as it allows the longitudinally induced potential to be distributed symmetrically with respect to the midpoint of the exposed neutral conductor. Yet it does not rule out the possibility of NEV levels exceeding the 10 V limit mandated by the Electrical Safety Authority since the Report acknowledges that existing NEV levels beyond 3 V "would not be unusual."

Furthermore, as acknowledged in the interrogatory response to Question #1(d), the most unfavourable outcome would result in the entire induced potential appearing at one end of the exposed neutral, contributing 13-14 V to NEV above and beyond the prevailing NEV levels due to normal feeder operations. This would increase the likelihood of NEV levels exceeding the permissible 10 V limit – if not immediately, then certainly over time, due to future supply system reconfigurations.

Interrogatory #2

Kinectrics acknowledges that it would not be unusual for the current NEV level to exceed 3V (which may or may not add algebraically to the 13-14 NEV potentially caused by induction). Hydro One notes that no mitigation measures are identified in the interrogatory response to Question #2 to moderate NEV levels should these exceed the 10

V limit. Prudent engineering practice would generally involve the limiting of any disturbance at its source, which in this case translates to altering the configuration of the proposed circuit co-location.

Interrogatory #3

The response to Question #3 states that “the TOV seen by surge arresters... is likely to be relatively modest.” This appears to contradict the 46 kV “longitudinal voltage” predicted in the original study and warrants a cautionary note concerning the risk to the distribution system due to fault-induced overvoltages. It is Hydro One’s experience that for effectively grounded systems (which is the case for the subject feeders), it is not practical to limit power frequency overvoltages to normal design levels without exceeding surge arrester capabilities. This implies that the surge arresters would be used as sacrificial devices that will require replacement after every such occurrence which, in Hydro One’s view, would not be a safe or cost-effective use of such devices.