

IN THE MATTER OF the *Ontario Energy Board Act, 1998*,
S.O. 1998, c. 15, Schedule B;

AND IN THE MATTER OF an application by Hydro One
Networks Inc. for an Order granting leave to construct the Toronto
Midtown Transmission Reinforcement Project.

Toronto District School Board's Submission of Evidence

Toronto District School Board
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The Parties

1. The Applicant, Hydro One Networks Inc. (“Hydro One”) has filed an application dated December 23, 2009 with the Ontario Energy Board (the “Board”) under section 92 (1) of the *Ontario Energy Board Act, 1998*, S.O. 1998, c. 15, Schedule B. Hydro One has applied for an Order of the Board granting leave to construct transmission reinforcement facilities in the Toronto Midtown area to reinforce and enhance its existing 115 kilovolt (“kV”) transmission system.
2. The Intervenor, the Toronto District School Board (the “TDSB”) is a public school board operating in the City of Toronto, in the Province of Ontario. It is the largest school board in Canada and the sixth largest in North America. In the 2006-2007 academic year, the TDSB operated approximately 561 schools, provided educational services to more than 280,000 students, and employed approximately 30,000 individuals.
3. W. & W. Radiological and Environmental Consultant Services have been obtained as consultants for the TDSB. W. & W. Radiological and Environmental Consultant Services were incorporated on November 30, 1977; its primary business area is the assessment and the mitigation of ionizing and non-ionizing radiation hazards. The company’s staff and associates have advanced degrees in radiation physics and collectively have more than 80 years experience with the measurement and assessment of 60 hertz (Hz) Electro Magnetic Fields (“EMFs”). This expertise was obtained during many years of service at Ontario Hydro and subsequent to retirement from Ontario Hydro in private practice. While with Ontario Hydro, Dr. David Agnew was responsible for the characterization of EMF exposures of participants in EMF Occupational and Childhood epidemiology studies. Mr. Walsh was responsible for the formulation and execution of corporate EMF risk assessment programs.

Background

4. Hydro One filed an application dated December 23, 2009 with the Board under section 92 (1) of the *Ontario Energy Board Act, 1998*, S.O. 1998, c. 15, Schedule B. On February 4, 2010, the TDSB received a Notice of Application and Hearing regarding Hydro One's Application for leave to construct transmission reinforcement facilities in the Toronto Midtown area to reinforce and enhance its existing 115 kilovolt ("kV") transmission system. In response to the Notice of Application and Hearing, the TDSB made a request to the Board to obtain intervenor status.
5. On February 23, 2010 the TDSB received Procedural Order Number One (1) from the Board; granting the TDSB intervenor status and outlining a series of directives. Procedural Order Number One (1) directed intervenors requiring more information from Hydro One to submit interrogatories by March 10, 2010. In accordance with Procedural Order Number One (1), the TDSB advised the Board on March 4, 2010 of its intention to submit written evidence.
6. On March 10, 2010 the TDSB submitted interrogatories to Hydro One. The TDSB indicated its concern with the location of the proposed above ground transmission line between Leaside Transformer Station and Bridgman Transformer Station due to its close proximity to Bennington Heights Elementary School. Specifically, the TDSB expressed concerns over the effect of high voltage transmission lines and the possibility of increased magnetic field levels on student health and safety.
7. On March 19, 2010 Hydro One informed the TDSB that any issues/concerns regarding EMF levels surrounding proposed transmission lines would be more fully dealt with in section 7.2.9 of its draft Environmental Study Report ("ESR"). Hydro One further advised the TDSB of its ability to review and comment on the draft ESR during the 30-day public review period. Hydro One also indicated in its interrogatory response that EMF levels along proposed transmission lines would be lower than current levels. A copy of Hydro One's response to the TDSB's interrogatories is attached hereto as **Appendix 'A'**.

8. The TDSB reviewed Hydro One's draft ESR; comments/concerns with Hydro One's draft ESR were submitted by the TDSB on April 21, 2010. Upon review of Hydro One's draft ESR, the TDSB found insufficient statistical evidence or modeling information clearly indicating lower EMF levels along proposed transmission line routes.
9. On April 16, 2010 the TDSB received Procedural Order Number Three (3) from the Board; granting intervenors the opportunity to file relevant evidence with the Board in accordance with section 96 (2) of the *Ontario Energy Board Act, 1998*, S.O. 1998, c. 15, Schedule B. This submission is made in response to that order.

Objection to Hydro One's Proposed Transmission Route

10. The TDSB respectfully objects to the proposed placement of the transmission line towers near Bennington Heights Elementary School. The TDSB submits that it cannot adequately assess the proposed location of the transmission lines without additional information on the modeling software utilized by Hydro One (i.e. Hydro One's calculation of magnetic field levels including the input data to the program along proposed transmission lines).
11. The TDSB submits that its concerns with the location of the proposed transmission lines results from the fact that three public schools are located within the vicinity of Hydro One's transmission corridor: Cottingham Junior Public School, Whitney Junior Public School and Bennington Heights Elementary School. The first two schools (Cottingham Junior Public School and Whitney Junior Public School) are located between Bayview Junction and Balfour Junction; along the path of the new underground tunnel. Bayview Junction is located next to Bennington Heights Elementary School. Two circuits coming into the Bayview Junction from the East (i.e. from Leaside Junction) which are currently on thirty (30) foot towers will be replaced with new forty (40) foot towers. Hydro One intends to install an additional 115 Kv overhead circuit (wire) to relieve loading on the existing two circuits between Leaside Junction and Bayview Junction while replacing an aging underground cable by adding a second cable. The second cable uses a deep-rock

tunnel 60 to 70 metres below ground and would require the installation of five (5) shafts; five (5) meters in diameter to provide access for construction and future maintenance.

12. The shafts would be located just east of the Bayview Junction. Other activities anticipated to take place at the Bayview Junction include:
 - The construction of a new soil retaining wall at the southern edge of the Bayview Junction;
 - The installation of a new fence; and
 - The installation of a termination structure for tapping the new 115 kV overhead circuits to the new 115 kV underground cables.
13. The TDSB submits that the above noted activities and the proposed location of the transmission lines are within close proximity to TDSB Lands at Bennington Heights Public School raising concerns of increased EMF levels; potentially jeopardizing the health and safety of students, staff, and residents.
14. Upon review of the map provided by Hydro One (attached hereto as **Appendix 'B'**) it appears that the transmission line towers will be located closer to TDSB Lands than the current towers. Accordingly, even accepting Hydro One's modelling outcomes that the EMFs (power frequency magnetic fields) at specified distances from the towers will be lower than those produced by the current lines, the magnetic fields within TDSB Lands may in fact exceed current levels resulting in a potentially deleterious stochastic effect. Current scientific information suggests that as EMF exposure levels increase health and safety risks associated with increased exposure may also increase. To date, Hydro One has failed to provide the TDSB with sufficient statistical data or modeling information that indicates EMF exposure levels along transmission routes within close proximity to TDSB Lands will be maintained or lower than current levels. As such, the TDSB respectfully submits that it cannot approve of the proposed transmission line/tower location routes without more detailed EMF modeling information.

15. The importance of minimizing childhood exposure to EMF levels has been highlighted in a report by Toronto Public Health entitled “*An Assessment of Health Implications Associated with Exposures to Electromagnetic Fields in and next to Hydro Corridors in the City of Toronto*,” attached hereto as **Appendix ‘C’**.¹ As indicated in this report, the City of Toronto has adopted a policy of “Prudent Avoidance” which advocates minimizing childhood exposures to magnetic fields where feasible based on low-cost options.

“Prudent avoidance is an application of the precautionary principle. It encourages actions which can increase protection or reduce exposures at little or no additional cost when there is uncertainty about possible risks. Given the possible link between the exposure to EMF and leukemia in children, taking practical actions that can reduce exposures to children is prudent.”²

16. In light of the City of Toronto’s adoption of prudent avoidance policies, the potential impact of increased magnetic field levels at the Bennington Heights Elementary School (or potentially at Cottingham Junior Public School and/or Whitney Junior Public School), and the close proximity of the proposed transmission line routes to TDSB Lands; the TDSB requires the following information from Hydro One:

- The precise location of the current towers and those of the replacement towers within the vicinity of Bennington Heights Elementary School; and
- Information on modeling software utilized by Hydro One to calculate magnetic field levels including the input data to the program.

Conclusions

17. The TDSB respectfully submits that the location of the proposed transmission lines routes along Bennington Heights Elementary School raises health and safety concerns.

¹ Toronto Public Health. *An Assessment of Health Implications Associated with Exposures to Electromagnetic Fields in and next to Hydro Corridors in the City of Toronto June 2008* (Online). Available: http://www.toronto.ca/health/hphe/pdf/emf_backgrounder.pdf. [June 2008].

² *Ibid.* at ii.

18. Consistent with prudent avoidance policies advocated by Toronto Public Health and the potential for increased EMFs within TDSB Lands (i.e. Bennington Heights Elementary School, Cottingham Junior Public School or Whitney Junior Public School) subsequent to the line upgrades, the TDSB requests that:
 - The Toronto Public Health principle of prudent avoidance be applied to the positioning of the transmission line towers; and
 - The EMF modeling information requested by the TDSB is provided by Hydro One for independent verification of field levels.
19. The TDSB respectfully submits that the safety of students, staff, and residents must be a priority when determining the location of transmission routes, as such; sufficient modeling information must be provided by Hydro One to the TDSB before the Board grants leave to construct transmission facilities for the Toronto Midtown Transmission Reinforcement Project.

In light of the above, the TDSB opposes the location of the proposed transmission routes within the vicinity of TDSB Lands until Hydro One provides detailed modelling information (i.e. software utilized by Hydro One to calculate magnetic field levels including the input data to the program) that confirms EMF levels along proposed transmission line routes remain at current levels or will be lower than those under current line configurations.

ALL OF WHICH IS RESPECTFULLY SUBMITTED.

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