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Enza Cancilla

Manager
Public Affairs



Dear Ms. Carruthers:

June 18, 2009

Re: Proposed Duart Transformer Station (Formerly Rodney Transformer Station)

Further to our letter dated May 15, 2009, we are pleased to respond to the Safe Hydro Alliance (SHA) letter regarding Hydro One's proposed Duart Transformer Station (TS) in the community of Highgate in the Municipality of Chatham – Kent. Our response is organized using the categories you provided in your letter.

Size and configuration of the Site over 17 acres (7 hectares)

The 17 acre site (7 hectares) purchased by Hydro One includes land required to accommodate the necessary setbacks from Hwy 401 and the connections to the existing transmission line. The land purchased also includes the existing transmission easement corridor, which Hydro One previously did not own. A buffer zone between our station and Hwy 401 is required to prevent contaminants such as road salt from damaging Hydro One equipment.

Some of the extra land would be used for implementing a landscaping plan to provide a visual screen for local residents and for travelers on the highway. This plan will be developed in cooperation with municipal officials, Ministry of Transportation (MTO) and affected residents. Hydro One is also open to leasing for agricultural purposes any available surplus lands after construction is complete and the station is in service.

Economic facilities justification as demand drops

The St. Thomas Transformer Station (TS) is nearing the end of its functional life. To properly serve area customers in the future, a new station is required.

Your area is served by distribution feeders that travel long distances from St. Thomas TS to Kent TS which has resulted in voltage issues and poor reliability for area customers. Rebuilding St. Thomas TS at its current location would not resolve this reliability issue. In addition, because Kent TS and St. Thomas TS operate with different wire systems, it is not possible to switch loads from one station to the other in the event of a power interruption.

Notwithstanding the strong technical need for a new TS to serve the community now and in the future, the Ontario Government's *Green Energy and Green Economy Act* passed into law in May, 2009, seeks to help ensure Ontario's green economic future. A major component of this *Act* requires Hydro One to facilitate the connection of renewable energy projects. The proposed Duart TS would provide an additional connection point on

Hydro One's transmission grid for any renewable generation that could be installed in the future.

Future plans related to incremental development of the Site

Hydro One plans to rebuild the existing distribution lines from Duart TS with poles that are slightly taller. Appendix A illustrates the location of the distribution feeder egress and direction.

We currently do not have any future plans to build infrastructure in addition to the proposed transformer station at the location on Duart Road.

Stray voltage and guarantee of non-existence

Stray (or tingle) voltage pertains to low voltage distribution supply (for example, power service to a farm), and not high voltage transformer stations, such as Duart TS. We are not aware of any stray voltage problems at present associated with transformer stations, and there is no technical reason to believe that the construction of a new TS would create stray voltage issues. The attached report, *Literature Review and Synthesis of Research Findings on the Impact of Stray Voltage on Farm Operations*, prepared by Dr. Douglas J. Reinemann, (Appendix B) provides a balanced summary of research on the subject. Dr. Reinemann was retained by the Ontario Energy Board (OEB) to provide an expert's view on the subject of stray voltage during the public consultation leading to changes in the Distribution System Code¹.

Increased local lightning strikes

The number of thunderstorm days will not change due to the presence or absence of a transformer station. If there is a thunderstorm, lightning is more likely to hit a tall object. A TS typically has a lightning mast to protect equipment within the station and a sophisticated grounding system to drain the energy from a lightning strike. If the lightning mast were the tallest object around, it would likely decrease the probability of lightning strikes to other nearby structures such as barns.

¹ The Distribution System Code is a regulatory document that sets the minimum obligations that an electricity distributor must meet in carrying out its obligation to distribute electricity under its license and the *Energy Competition Act*. In June 2007, the OEB received a directive from the Minister of Energy that required the OEB to implement measures to address the issue of stray voltage as it affects the farm sector. These changes will come into effect on September 16 2009. More information on this can be found on the OEB's website at www.OEB.gov.on.ca

Health impacts on humans, including EMF within 85 metres

Hydro One recognizes that some members of the public have concerns about Electric and Magnetic Fields (EMF) and we take seriously our responsibility to understand, appropriately address and communicate information on this issue. Information on EMF is available on our website at www.hydroonenetworks.com/en/environment/emf where you will also find links to international health agencies and sites with related information.

EMFs are found everywhere electricity is used and come from home appliances, computers, office equipment, wiring in our homes and workplaces, and electric power facilities, such as substations, transmission lines and distribution lines. However, EMF strength decreases rapidly with increasing distance from the source. The strongest EMFs around a TS are typically found where lines enter or exit the station, or adjacent to walls where electric assets (transformers, bus work, etc) are located within the station.

For more than 30 years, research studies have examined the possibility that exposure to EMFs might affect health. Hydro One looks to Health Canada for guidance on EMF issues. Both national and international health agencies including Health Canada and the World Health Organization have concluded that the scientific research does not demonstrate that EMFs cause or contribute to adverse health effects.

Impacts on livestock including pigs, poultry, cattle, horses, dairy

We understand that the health and safety of livestock is a key concern in your community. The presence of a new transformer station should have no more effect on livestock than the existing high voltage transmission circuits would. For many years throughout Ontario farmers have been grazing and housing livestock near Hydro One transformer stations and within Hydro One transmission rights-of-way.

Access from the 401 without an interchange

Hydro One owns almost 400 transformer stations across Ontario, and some are on country roads or near major highways, but not near a highway interchange. Proximity to a major highway interchange is not a criterion considered in our Class Environmental Assessment (EA) to identify or select a transformer station site.

The construction of this project will be outsourced to a construction contractor. Once a company has been hired, we will advise residents of the route vehicles will take during construction. We do not expect any major traffic interruptions during the construction phase. Once built, the station will only be accessed occasionally by Hydro One crews for maintenance purposes.

Adjacent Spencer Airport location, Highgate Aerodrome in N42 33 16/ W81 48 11 identifier is CNA2

Transport Canada has indicated that it has no requirements or issues with the proposed Duart TS project and does not require Hydro One to follow any specific approvals

process. The proposed Duart TS will not introduce any structures higher than the existing towers from the 230 kV east-west line, which parallels Highway 401 in the vicinity of the site. Transport Canada has suggested that the owner of the aerodrome should deal directly with Hydro One regarding any specific issues related to the station.

Interference with personal and business electronic communications equipment affecting reliability

Transformer stations do not typically cause interference with personal and business electronic communications equipment, such as cell phones, computers, and internet connections. In the event of such occurrence, Hydro One would investigate the reported issues and work with the property owner to mitigate the situation.

Property Devaluation

Transformer stations exist all across the province, in urban and rural areas forming part of the provincial landscape. We work cooperatively with residents, municipal officials and the MTO to build landscape features to improve the appearance of the site and help screen the area. The fenced station area will comply with municipal and provincial ministry guidelines and Hydro One design setbacks to maintain adequate separation from abutting properties

The Municipality of Chatham – Kent’s Official Plan and the current zoning by-laws recognize a transformer station as a complying use. The site is occupied by a 230 kV transmission line that has existed since the early 1950’s and remains operational. The southeast property line of the site parallels Highway 401.

Historically we have found that there may be a small effect on surrounding property values during the construction period. After construction is complete, property values return to their pre-construction values.

Soil characteristics that do not ground circuits and equipment well

A soil resistivity test was conducted for the Duart TS site and the results are acceptable and in accordance with the *Ontario Hydro Transmission and Distribution Grounding Guide* for building the proper grounding equipment and transformers within the station.

Visibility Impacts

Hydro One will undertake selective landscaping to further mitigate potential visual effects of the station for residents, and travelers on Duart Road and Highway 401. Currently, visual effects of the proposed TS location are minimized by the overpass bridge for highway travelers on the west bound lanes, and by the wooded area for the east bound lanes.

The landscape treatment will reflect the existing character of this rural setting through the use of predominantly coniferous hedgerows and shelterbelts. Input from residents, the municipality and MTO will be sought before these plans are finalized.

Sound Impacts

The highest noise levels associated with the proposed Duart TS will occur during the construction phase; however this will only be temporary and intermittent between the spring of 2010 and the summer of 2011.

Once the station is in-service it will produce a humming sound during operation. The noise will be subject to the regulatory approval under the *Environmental Protection Act*, and will meet the Provincial Noise Emission Guidelines. A noise study will be conducted, and subject to the outcome of the study, appropriate noise mitigation measures such as noise barriers would be implemented, if necessary. Given the proximity to Highway 401, background noise levels in the vicinity of area homes will not change.

Impacts on wildlife such as sound and construction

Stations are built to meet all environmental requirements, including minimal effects to wildlife that reside within the study area. Biological field studies have determined that there are no Environmentally Sensitive Areas and species at risk in the vicinity of and on the proposed Duart TS site. The construction will be localized and we do not anticipate any significant effect on wildlife resulting from construction and operation of the proposed transformer station.

Effectiveness of study area and alternative locations

We are interpreting your use of the word “effectiveness” as meaning “properly identified and evaluated”. The study area was selected to meet the following criteria:

- i. Location near the electricity load centre for St. Thomas TS and Kent TS in order to minimize the length of distribution lines and line losses;
- ii. Proximity to the existing 230 kV transmission corridor that parallels Highway 401 in the Municipality of Chatham-Kent and the Municipality of West Elgin to minimize the length of high-voltage line needed to connect the proposed station to the grid

These criteria resulted in a study area four kilometres wide aligned along the existing transmission corridor between 1 km east of Blacks Road in West Elgin and Orford Road in Chatham-Kent.

Ten potential sites were identified within the study area that satisfied the environmental, socio-economic and technical criteria for the proposed new TS. A description of these

alternative sites and the site selection process are provided in the Draft Environmental Study Report (ESR).

We will be sending you an electronic and hard copy of the Draft ESR during the week of June 22, 2009. We understand that you would like to meet with Hydro One during the formal 60-day Draft Environmental Study Report (ESR) review period. Please feel free to call me at 416-345-5892 or Ms. Marylena Stea at 1-877-345-6799 to discuss a possible meeting date if you still feel one is required following our response.

Sincerely,

A handwritten signature in cursive script, appearing to read "Enza Cancilla".

Enza Cancilla,
Manager, Public Affairs

Enc.