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Susan Frank

Vice President and Chief Regulatory Officer
Regulatory Affairs



BY COURIER

October 2, 2014

Lynne Anderson
Managing Director, Applications and Regulatory Audit
Ontario Energy Board
Suite 2700, 2300 Yonge Street
P.O. Box 2319
Toronto, ON.
M4P 1E4

Dear Ms Anderson:

RE: EB-2013-0437 – North West Bulk Transmission Line – OPA Scope and Timing Received

As per the Ontario Energy Board's ("The Board") direction given in the Decision and Order on January 9, 2014, regarding **EB-2013-0437 – North West Bulk Transmission Line**; it required Hydro One Networks Inc to notify The Board within fourteen days of receipt, and provide a copy of, any recommendations received from the OPA related to the Northwest Bulk Transmission Line Project.

Attached herein is a copy of the OPA letter, dated October 1, 2014.

Sincerely,

ORIGINAL SIGNED BY SUSAN FRANK

Susan Frank

October 1, 2014

Mr. Mike Penstone
Vice-President, Planning
Hydro One Inc.
483 Bay Street
Toronto, Ontario M5G 2P5

Scope and Timing for the Northwest Bulk Transmission Line Project

Dear Mike,

The Northwest Bulk Transmission Line Project is a priority project identified in the 2013 Long-Term Energy Plan (LTEP). The purpose of this project is to augment the capacity and maintain the reliability of electricity supply to the area of northwestern Ontario (the Northwest) located west of Thunder Bay to support forecast electricity demand growth.

In designating this project as a priority project, the 2013 LTEP also instructed that Hydro One “begin planning for a new Northwest Bulk Transmission line, west of Thunder Bay, with the project scope to be recommended by the Ontario Power Authority (OPA).” This letter provides the project scope.

The supply today

The “West of Thunder Bay” area, for the purposes of this project, is shown in Figure 1. The area is bounded to the south and west by the US and Manitoba borders, and extends north to include Kenora, Dryden and Sioux Lookout, and east as far as (but not including) the City of Thunder Bay. The transmission system serving this area comprises the 230 kV and 115 kV circuits and stations connecting the Thunder Bay area and stations located at or near the major centres of Atikokan, Dryden, Fort Frances and Kenora, as shown in Figure 1. Note that the electrical system located north of Dryden is not included in this system definition; however as it is supplied from the West of Thunder Bay system, its net requirement (i.e. demand net of local resources in the area north of Dryden) is included for planning purposes as a power transfer out of the West of Thunder Bay transmission system at the Dryden station. The West of Thunder

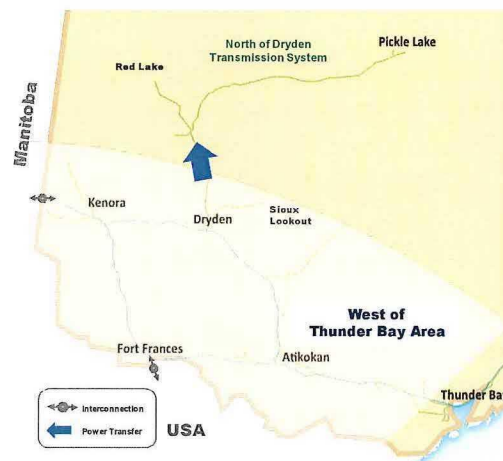


Figure 1: West of Thunder Bay Area

Bay transmission system is also interconnected with Manitoba at Kenora and Minnesota at Fort Frances.

The West of Thunder Bay area is generally self sufficient today. At present, peak electricity demand in the West of Thunder Bay area totals 210 MW in the winter and 145 MW in the summer. The West of Thunder Bay system also currently transfers up to 80 MW to the area north of Dryden (as described above). Local generation in the West of Thunder Bay area provides about 270 MW of dependable peak capacity – about 70 MW from run-of-river hydroelectric plants and 200 MW from the biomass-fueled unit at Atikokan GS. An additional 150 MW can be transferred to the West of Thunder Bay area through the transmission connection to Thunder Bay. The interconnections with Manitoba and Minnesota handle transfers scheduled on an economic basis and are not relied upon for supply adequacy at this time.

Potential Need for Increased Supply Capability

Both the West of Thunder Bay and North of Dryden areas have potential for economic development, in particular in the mining sector. The OPA's current demand forecast for the Northwest identifies a scenario of 160 MW of incremental load growth in the West of Thunder Bay area and about 75 MW in the North of Dryden area by 2025. Demand growth in the Northwest is highly dependent on mining sector related developments, and therefore carries uncertainty associated with timing, location and size of these developments. It is possible that demand could remain at today's levels, or could grow up to 30% higher than the current forecast. Due to the nature of the loads in the Northwest, demand growth can develop quickly and in large blocks, and planning for the area must take this possibility into account.

In consideration of the potential for significant but uncertain growth in the West of Thunder Bay and North of Dryden areas, the OPA updated its assessment of the capacity remaining on the existing West of Thunder Bay transmission system to serve demand growth in these areas. This assessment was conducted based on the latest demand and resource information, and is consistent with the IESO's ORTAC planning criteria.

The OPA's review identified, for planning purposes, two areas of adequacy concerns with the existing West of Thunder Bay transmission system. They are:

- There is 50-100 MW of additional capacity remaining that can reliably supply new loads in the North of Dryden area. Based on the current demand forecast, this capacity would be exceeded near the end of the decade.
- The power transfer capability from the Thunder Bay area (i.e. the two 230 kV transmission circuits from the Lakehead station to the MacKenzie station) is adequate today, assuming the generation at Atikokan is available. Currently, there is approximately 150 MW of margin remaining to serve new loads in the West of Thunder Bay and North of Dryden areas. However, if demand growth in the West of Thunder Bay and North of Dryden areas is in the range of the current forecast, the transfer requirement on this path will exceed these circuits' capability. If the Atikokan generation is not available, either

because of biomass fuel limitations or contract termination (in 2024), the shortfall will be accentuated.

Options for Augmenting the Supply Capability

Both transmission and generation options are viable options for augmenting the supply capability in the West of Thunder Bay area and addressing the adequacy concerns cited above. Due to the long lead time required for new transmission line projects, it is typical to initiate development work in order to better scope the transmission option, and to shorten the subsequent lead time required if the project is selected.

Scope and Timing

The Northwest Bulk Transmission Line Project, in conjunction with the existing transmission system, must be capable of increasing the total westbound transfer from the Thunder Bay area from about 150 MW to 550 MW. In addition, the total transfer capability to the Dryden transformer station (TS) would need to be increased from about 170 MW to 300 MW, as shown in Figure 2.

If demand grows as in the current forecast, the required in-service date for the Northwest Bulk Transmission Line Project could be as early as 2020.

The OPA has examined a number of configurations for the Northwest Bulk Transmission Line Project, including the option of ‘twinning’ the existing double-circuit 230 kV line between Lakehead TS and MacKenzie TS and the single-circuit 230 kV line from MacKenzie TS to Dryden TS. Hydro One should also consider other circuit configurations and routing options as appropriate. In all cases, only single-circuit or double-circuit 230 kV lines are to be considered. As requirements for switching and reactive facilities would depend on the configuration and line options, they are not specified at this time. Finally, consideration should be given to routing the section of the new line passing through the City of Thunder Bay such that it could facilitate future reinforcements of the electricity supply to the southern part of that city.

The scope of development work is to include preliminary design/engineering, cost estimation, public engagement/consultation, routing and siting, and Environmental Assessment preparation.

The OPA will provide support to Hydro One as required, including discussion of possible routing alternatives. As well, the OPA will continue to monitor developments in the region and confirm the best course of action to address the supply needs of the West of Thunder Bay area, and will keep Hydro One apprised of this work.

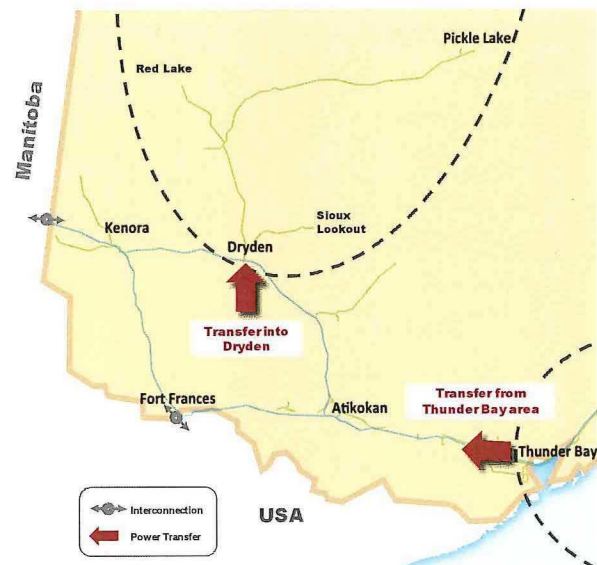


Figure 2: Power transfers from the Thunder Bay area and into the Dryden area

Sincerely,

A handwritten signature in dark ink, appearing to read 'A. Shalaby', with a stylized, cursive script.

Amir Shalaby
Vice-President, Power System Planning
Ontario Power Authority

cc
Bing Young
Ibrahim El-Nahas
Bob Chow
Joe Toneguzzo
Bernice Chan
Nicole Hopper
Nancy Marconi
Tabatha Bull
Luisa Da Rocha
Mark Wilson
Ahmed Maria
Ken Nakahara