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Susan Frank

Vice President and Chief Regulatory Officer
Regulatory Affairs

BY COURIER

April 10, 2007

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

Dear Ms. Walli:

EB-2005-0315 – Supply to York Region - Hydro One Networks Response to Ontario Energy Board March 26, 2007 Direction to York Region Electricity Distributors

As requested by the Board in its March 26, 2007 letter, Hydro One Networks is providing the attached report (8 paper copies and one electronic copy in PDF format to the Board Secretary email address) which has been prepared jointly with PowerStream Inc. and Newmarket Hydro Ltd.

Sincerely,

ORIGINAL SIGNED BY SUSAN FRANK

Susan Frank

- c. P. Conboy, PowerStream
- Gaye-Donna Young, Newmarket Hydro
- Miriam Heinz, Ontario Power Authority
- Kim Warren, Independent Electricity System Operator

Attach.

April 10, 2007

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Secretary
Ontario Energy Board
Suite 2700, 2300 Yonge Street
P.O. Box 2319
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Dear Ms. Walli:

EB-2005-0315 Northern York Region Supply

Introduction

On behalf of Hydro One Distribution (“Hydro One”), Newmarket Hydro Ltd. (“NHL”), and PowerStream Inc. (“PowerStream”), (collectively the “York Utilities”), in accordance with the Board’s March 26, 2007 request, we hereby file a single report on the status of electricity distribution projects and CDM initiatives which are designed and expected to reduce the loading on Armitage Transformer Station (“Armitage TS”) during the summer season (June –September) of 2007. Initiatives expected to assist with the management of electricity demand for 2008 and 2009 have also been identified.

The York Utilities recognize the gravity of the situation in northern York Region and are concerned that further delays to proceed with the construction of the Holland Junction TS (HJTS) will continue to place a significant strain on the already overloaded Transformer Station at Armitage. Even with the construction of the HJTS, the York Utilities respectively remind the Board that the growth in northern York Region will require increases in capacity beyond what can be delivered by the HJTS. The York Utilities are working together to develop and implement interim emergency measures beyond normal contingency plans for this summer. These are described below. There are also a number of transmission related measures that are described in a separate letter from Hydro One Networks Inc.

We would like to emphasize the seriousness of the potential reliability concern regarding the electricity supply to the consumers in the Northern York Region. Working together the “York Utilities” will undertake best efforts to meet anticipated demand but these proposed measures together with the expected CDM results are only temporary band-aids. The larger scale more permanent solutions have to be implemented in the very near future.

The York Utilities have met several times to discuss the subject matter as part of a proactive, on-going process to formulate and review contingency and emergency measures to address the increasing excess loading at Armitage TS.

Reliability at Armitage TS

Table 1 shows how much the load at Armitage TS would exceed capacity during summer peaks over the next 5 years if the HJTS is not in service. It has been assumed that the 2006 peak load of 390 MW grows at 4% per year based on the LDC's load forecast ("optimistic" scenario). The table illustrates the amount of load that would be interrupted due to the actual load exceeding the capacity during peak load periods.

Table 1: Armitage TS Peak loading

Year	Station Rating with Caps (MW)	Total Load (MW)	Load Exceeding Capacity (MW)
2006	340	390	50
2007	340	406	66
2008	340	422	82
2009	340	439	99
2010	340	456	116
2011	340	474	134

As Table 1 illustrates, transformation supply capacity is the limiting issue during the peak summer months. If a transformer fails, to the extent that crews are unable to repair it on-site, the transformer would need to be replaced. Replacing a transformer can take several weeks to a month. As such, any contingency plan must first address the loss of a transformer. However, beginning in 2008, the capacity on any of the transmission lines feeding the transformer station will reach or exceed their voltage limits. This could cause the loss of a transmission line. This is a second contingency issue that will also need to be addressed.

Pre-contingency planning for the Armitage supply has Hydro One Distribution transferring as much load as possible away from Armitage TS. PowerStream will provide facilities for post-contingency emergency load transfers to other points of supply. While effective, these measures are limited and will not address the entire expected capacity shortfall.

The two transformer pairs at Armitage TS are viewed as two separate transformer stations, each with its own pre and post-contingency supply capabilities. Therefore post-contingency emergency load transfers that will allow load to be transferred between the transformer pairs can be considered. This analysis includes identifying possible points for installation of emergency load transfer facilities and establishing operating procedures for their safe operation to restore load during a supply contingency. Planning will then progress to load restoration during transmission failures. This planning is very complex

and takes significant time. It involves the need to formulate detailed operating procedures to ensure worker and public safety should the plans be put into effect. It is expected that these plans could be completed in time for contingency decision making during the summer peak demand season in 2007. Also, as loading and/or information on equipment condition are updated, the plans will be constantly iterated.

York Utilities Distribution Projects

Listed below are the distribution projects for the York Utilities which are designed and expected to reduce the loading on Armitage TS during the summer of 2007 (June – September).

In the spring of 2004, Hydro One Distribution initiated a \$2.5M project to extend an existing 44 kV distribution line by 8 km in the East Gwillimbury area. This extension was designed to meet growing loads in Hydro One's service territory, enabling 17 MW of load to be transferred from Armitage TS to Brown Hill TS located in the Georgina Township in 2004.

This spring 2007, Hydro One Distribution began construction of a 10 km, 44 kV distribution line extension to enable the transfer of an additional 13 MW from Armitage TS to Brown Hill TS. This \$1.7M project is scheduled for completion in late 2007. The completion of this project will help alleviate the 2008 excess loading at Armitage TS.

There are no other incremental distribution efforts available to Hydro One to assist with the management of the demand expected in 2007, 2008 or 2009.

PowerStream has commenced the provision of three 28kV feeders from Southern York Region into Aurora for emergency use. These three new feeders will primarily serve as a backup supply to Aurora when the supply from Armitage is constrained. Each feeder will be able to supply roughly 10 MVA of load. The first feeder installation has been completed. The second will be completed by the summer of 2008. The third will be completed by the end of 2008. As such, approximately 10 MVA under contingency could be available this summer.

Newmarket Hydro Ltd. does not have means available to transfer load away from Armitage TS and does not have any specific distribution projects planned.

The net effect of these distribution projects is summarized in Table 2:

Table 2: Distribution Load Transfers

YEAR	Utility	Type	MW
2007	Hydro One	Pre-Contingency	13
	PowerStream	Post-Contingency Back-Up	10
2008	PowerStream	Post-Contingency Back-Up	20
TOTAL			43

York Utilities CDM Initiatives

Listed below are all the York Utilities CDM initiatives which are expected to reduce the loading on Armitage TS during the summer of 2007 (June – September), until the end of 2007, as well as a measures to assist with the management of the demand for 2008 and 2009.

Table 3 details the anticipated results of CDM initiatives in PowerStream’s Aurora service territory.

Table 3: PowerStream CDM Programs (kW)

YEAR	Demand Response	Distributed Generation	Business Incentive	Load Control	Other	TOTAL
2007	500	0	200	300	100	1,100
2008	0	4,000	0	0	0	4,000
2009	0	0	0	0	0	0
TOTAL	500	4,000	200	300	100	5,100

PowerStream has undertaken many CDM initiatives under the MARR-funded schemes as described below, the results of which are expected to help reduce energy consumption and/or system peak.

Air-conditioner peakSaver Program is a voluntary program which enables PowerStream, by means of a free programmable thermostat, to reduce the electricity being drawn by participating customer’s central air conditioning units for brief periods during peak demand periods. The system also enables participating customers to control the temperature of their business premises remotely through the internet. Two thousand units will be in operation by June 2007. PowerStream expects approximately 300 kW of savings in Aurora by the summer of 2007.

PowerWISE Business Incentive Program is a program offering PowerStream’s business customers the opportunity to receive up to \$50,000 in financial incentives for implementing conservation projects. PowerStream expects approximately 200 kW of savings by the summer of 2007.

A successful relationship with Honda Canada has resulted in PowerStream funding a 75 kW wind turbine that was installed in the Vaughan area at a car dealership. PowerStream has also helped fund a 75 KW co-generator in Aurora that will be available for load displacement in 2007.

PowerStream’s demand response program (“enerShift”) is designed to reduce demand at peak periods and improve system reliability. Participating customers receive a monthly capacity payment in return for agreeing to reduce their consumption at designated peak demand periods. Customers also benefit by reducing their actual electricity costs by scaling back their consumption during the peak periods. PowerStream expects approximately 500 kW of savings in Aurora by the summer of 2007.

PowerStream also anticipates developing CDM initiatives, designed and expected to reduce the loading on Armitage TS during the summer seasons of 2008 and 2009. The details of these programs have not yet been determined and are pending the coordination and funding through the OPA. PowerStream also hopes that OPA funding will be available to continue the current programs now funded by MARR.

PowerStream has identified the potential for 4 MW of back-up generation from a water pumping station in Aurora that could be available for dispatch at times of peak demand. However section 141 of the Electricity Act prohibits municipalities (and regions) from generating power. PowerStream is anticipating a regulatory change that will exempt the Region of York from this provision. A successful and expeditious exemption to this provision will provide these 4 MW of savings at peak times.

Table 4 details the anticipated results of CDM initiatives in Newmarket Hydro’s service territory.

Table 4: Newmarket Hydro CDM Programs (kW)

YEAR	Residential Incentive	Distributed Generation	Business Incentive	TOU Pilot	TOTAL
2007	500	0	200	300	1,000
2008*		0			
2009*		0			
TOTAL	500	0	200	300	1,000

* actual savings are yet to be determined. The savings will come from the OPA administered LDC fund programs.

NHL’s diverse CDM programs have saved a total peak demand of 0.8MW in 2006 which is expected to be maintained for 2007 and onwards. Most of the NHL’s 2006 MARR funded CDM programs will be continued through OPA directed funding for the summer of 2007 and beyond.

NHL’s 2006 residential CDM programs included Energy Star appliance rebates, an appliance recycling program, CFL discounts and giveaways, LED Seasonal light

exchange Kill-A-Watt electric usage monitor program and time-of-use pilot project with demand reduction programmable thermostats. In 2006, NHL provided incentives to business/commercial/industrial customers to participate in energy-efficiency upgrade programs.

In addition to the above listed CDM initiatives, NHL also participated in two (2) provincial programs: Switch to Cold, and Keep Cool 2006, which together yielded a peak demand savings of 0.1MW. NHL will continue to sponsor the Keep Cool campaign in 2007 and is targeting 0.5MW of peak demand savings from this program.

NHL's CDM smart thermostat TOU residential load control and critical peak price rebate Pilot that was implemented in the Fall of 2006 is expected to yield a summer 2007 peak demand savings of 0.3MW that was not seen in 2006. Continued installation of more load control thermostats is planned through participation in the OPA's residential and small commercial demand response program for the 2007 cooling season.

Also for 2007, NHL has two (2) industrial retrofit CDM initiatives underway, one of which is projected to reduce the summer peak demand load by 0.2MW. The other retrofit reduces the winter peak demand.

NHL has begun execution of plans to install smart meters on applicable meter points in its service area. This plan also anticipates the introduction of time-of-use rates as approved by the Ontario Energy Board for all residential consumers beginning in the fall of 2007 with completion prior to the 2008 summer peak.

NHL will be participating in all of the OPA's LDC Conservation and Demand Management Programs planned for 2007, 2008 and 2009. Program performance targets are presently being established. Of particular note is NHL's preliminary performance target for the residential and small commercial demand response program. NHL is targeting an accumulating 10% enrollment of eligible residential consumers for this program annually beginning in 2007. This performance is based on experience gained through the TOU Pilot which achieved a 33% enrollment of eligible consumers as well as current enrollments gained at public education meetings on smart meters and TOU rates representing 25% of the 2007 target. Assuming a three year program, the enrollment target represents an additional 1.5MW of demand response in 2007 growing to 3 MW in 2008 and 4.5 MW in 2009. The preliminary targets are not included in Table 4 above as they are being planned, but not yet committed. Further plan refinement may see them revised upwards prior to commitment. Targets for the summer savings, small business incentive and refrigerator retirement programs are being formulated.

Table 5 details the anticipated results of Hydro One CDM initiatives in York region.

Table 5: Hydro One CDM Programs (kW)

YEAR	Demand Response	Distributed Generation	Residential Incentive	Load Control	TOTAL
2007	1,000		500	3,000	4,500
2008*					
2009*					
TOTAL	1,000		500	3,000	4,500

* actual savings are yet to be determined. The savings will come from the OPA administered LDC fund programs.

Hydro One cannot isolate CDM load reduction results specifically for Armitage TS, but all the CDM activities in York Region will contribute to a reduction in the Armitage TS load. Hydro One has made a conscious effort to make York Region a priority market for its conservation activities in Ontario.

The first phase of Hydro One's residential load control program, Smartstat, which was introduced in July 2006, was exclusively focused on York Region. Consequently, by early in 2007 more than 2,700 customers had been enrolled in the program, representing approximately 3MW of load control capacity. Smartstat will continue enrolling customers with MARR funding through the summer of 2007, at which point it will switch over to OPA directed funds from the \$400 million LDC fund through 2009.

The Double Return program, Hydro One's commercial and industrial demand response initiative, has generated another 1MW peak demand reduction in the Region. Hydro One only has funds to offer Double Return to interval metered customers for summer 2007, but with OPA funding it could be expanded to all demand billed customers.

Hydro One's Social Housing Program has enrolled 20 buildings containing 879 units in York Region, Audits and retrofits will be completed by summer of 2007.

Hydro One, PowerStream and Newmarket Hydro jointly participated in the Keep Cool Program in York Region in 2006. Over 400 window air conditioners were retired within Hydro One's territory for a demand reduction of 0.5 MW.

Hydro One's appliance retirement program, Cold Shoulder, collects second refrigerators, freezers and window air conditioners and permanently removes them from service. Cold Shoulder, available throughout Southern Ontario including York Region, has retired more than 7,000 appliances with a further 2,000 enrolled. MARR funding is in place for at least 10,000 units after which funding will migrate to OPA directed funds from the \$400 million LDC fund.

The PowerSaver Business Incentive Program (PBIP), an incentive based program aimed at reducing the peak demand of business customers, was launched in the fall of 2006. There is a prescriptive technology component and a custom design option whereby customers can redesign processes/operations/technology to reduce peak demand. Hydro

One will continue to process applications using MARR funding through the summer of 2007, at which point it will switch over to OPA directed funds from the \$400 million LDC fund through 2009.

Hydro One undertook a project with the Chippewas of Georgina Island to do basic conservation measures on all housing stock and to audit and retrofit electrically heated homes. Seventy houses received basic measures and fifteen received thermal envelope improvements.

As noted above, of the four programs to be offered with from the \$400 million LDC fund administered by the OPA in 2007, Hydro One is already delivering three of them with MARR money and does not expect to need to access the fund for these programs until the summer or fall of 2007. Hydro One does not currently have a 10/10 program, but does plans to access the LDC fund to participate in the program in 2007.

Hydro One has other CDM programs, such as Double Return and In-Home Displays, which are currently constrained by geography or customer type due to the limited MARR funds available. It is Hydro One's intention to seek funding to expand such programs, including in York Region, once the OPA is receiving applications for funding of custom programs. The current schedule for reviewing applications for custom programs will delay implementation of any such programs until 2008.

Also to address 2008 and 2009 demand management, Hydro One's phased roll out of smart meters commenced in York Region, although the customer or system cannot yet realize the savings from installed smart meters.

Conclusion

The York Utilities would again like to emphasize the seriousness of this situation. We want to assure the Board that we are making best efforts to develop contingency and emergency plans for the upcoming summer months. We would be pleased to meet with you to discuss our proposed distribution projects and CDM activities further. The York Utilities also respectively suggest that the OEB undertake discussions with the Ministries of Energy and Environment to help understand the legislative and regulatory issues that are affecting the timely completion of the HJTS.

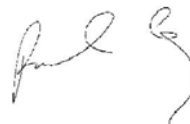
We are pleased with your strong interest in this area and are confident that by working together we can determine and implement the best long term solution.

Yours truly,



ORIGINAL SIGNED BY
SUSAN FRANK

Susan Frank



Paul Ferguson



Paula Conboy