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Ontario Energy Board
P.O. Box 2319
27th Floor
2300 Yonge Street
Toronto, Ontario
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**Attention: Ms. Kirsten Walli, Board Secretary**

Dear Ms Walli:

**Re: EB-2010-0249 System Reliability Standards**

Pursuant to the OEB's letter of August 23, 2010, Waterloo North Hydro Inc. (WNH) is submitting its written responses to the Questions posed in Attachment A of the Board's letter.

WNH has previously forwarded an electronic filing of this letter through the Board's web portal.

If there are any questions, please contact Chris Amos at 519-888-5541, camos@wnhydro.com or myself at 519-888-5542, asingh@wnhydro.com .

Yours truly,

***Original Signed By***

Albert P. Singh, MBA, CGA
Vice-President, Finance and CFO

# ATTACHMENT 'A' RESPONSE TO QUESTIONS

## Current Practices

***1. In addition to SAIDI, SAIFI and CAIDI, what, if any, other system reliability measures do you use?***

WNH has also calculated the MAIFI Index (Momentary Average Interruption Frequency Index), since 2007.

***2. Provide a detailed description of your methodology utilized to record SAIDI and SAIFI.***

WNH tracks every reported (either by SCADA alarm or by customer call) distribution system outage. For each outage the start time, stop time, circuit affected and outage cause are recorded. WNH uses a "circuit trace" tool within its Geographic Information System (GIS) to count the number of customers affected by each outage to determine the total customer minutes associated with each outage. Based on information received from field staff dispatched to restore power, a cause code is assigned to the outage.

On a monthly basis WNH tabulates the number of sustained (1 minute or greater) outages, the number of customers affected by these outages, the total number of customer minutes associated with these outages, the number of autoreclosure breaker operations, and the number of customers affected by autoreclosure breaker operations. WNH tabulates this information in two ways: one set of data is summarized for events related to WNH owned equipment (exclusive of interruptions attributable to upstream transmission system outages) and the second set is inclusive of all outages. These monthly figures are then summarized into annual totals prior to calculating the annual indexes for SAIDI, SAIFI, CAIDI and MAIFI.

***Please include information such as:***

***a) The degree of use of automated event tracking from SCADA systems, as well as reliance on manual observations.***

WNH has a SCADA system that monitors its 3 transmission connected transformer stations, and 13 of its 17 municipal and rural distribution stations. Circuit breaker operations at these stations generate alarms that are recorded in WNH's SCADA system.

These alarms are monitored by an On-Duty System Operator and this information is used to initiate outage reports.

WNH presently has 4 municipal and rural distribution stations that are not monitored by its SCADA system. WNH also has 19 pole-mounted reclosers that protect its rural overhead lines which are not monitored by the SCADA system. Sustained outage events affected by this equipment are included in the statistics when WNH receives outage notification from affected customers calling in, or, by field staff observations of an initiating plant failure event. Momentary interruptions associated with this equipment are not presently tracked.

***b) Whether planned outages are tracked separately.***

Waterloo North Hydro does track planned outages separately and this information is included in the calculation of the annual SAIDI, SAIFI and CAIDI indexes.

***c) The level of detail captured throughout a stepped restoration process to record the total customer duration impact.***

Waterloo North Hydro System Operators manually calculate the customer minutes for each planned and unplanned sustained outage. Times documented on WNH's Switching Orders are used to calculate stepped restoration when practical. During extreme events, such as major storms with multiple outages, this is not always possible. During these cases interruptions are calculated using the "worst case" start and stop times (i.e. assume no stepped restoration).

***3. Do you use system reliability performance results in planning, investment and maintenance expenditures, as well as establishing operation and maintenance procedures? Please explain.***

WNH notes that system reliability performance results are one component in the process in determining planning, investment and maintenance expenditures, as well as establishing operation and maintenance procedures.

Waterloo North Hydro's Information Technology Staff developed new automated tools for tracking power outage events in late 2009, which was implemented in January 2010. WNH will thus be able to more effectively summarize its reliability results, which will enable additional trend analysis by feeder circuit and cause code.

***4. Do you identify and track the impacts of extraordinary events?***

Waterloo North Hydro does not regularly identify and track the impacts of extraordinary events on its system reliability indexes. The blackout in 2003 is the single extraordinary event that has been identified separately in WNH's statistics.

WNH reviews all major outages and determines any system enhancements necessary to improve system reliability.

***5. What other actions do you take to manage system reliability performance?***

Waterloo North Hydro conducts regular maintenance and inspection programs of its distribution system, including regular tree trimming, infrared inspections, pole testing, visual inspections, insulator washing for overhead plant in high contamination areas, and dry ice cleaning of pad-mounted switchgear. These maintenance activities are used to identify and maintain plant that requires corrective action to manage reliability performance.