SERVICE QUALITY INDICATORS

1.0 INTRODUCTION

Hydro One Distribution monitors and reports service quality indicators as required in Chapter 15 of the Ontario Energy Board 2006 Electricity Distribution Rate Handbook. Hydro One tracks and internally reports results on ten customer service indicators and three service reliability indices on a monthly basis. Reports are provided to the OEB annually in accordance with the Distribution System Code (DSC) amendments that were issued in March and June 2008. Hydro One’s Customer Service and Service Reliability results and targets from 2010 to 2013 are shown in Tables 1 and 2. Over the historical period, Hydro One Distribution has met most of the OEB customer service indicator targets except the Rescheduling of Missed Appointments and Telephone Accessibility. Hydro One did miss its CAIDI target in 2010 and 2013 and in 2011 and 2013 the Emergency Response for Service Reliability target was missed.

1.1 Customer Service Indicators

Hydro One consistently tracks, analyzes and reports ten customer service indicators on a monthly basis as part of our internal performance reporting process. This process identifies areas of concern so that they can be immediately addressed and brought back in line with the OEB requirements.

Analysis of monthly and annual result trends provides valuable information for corporate planning, program planning and services management of resources.

The definitions of these indicators are provided in Section 2.1.
1.2 Service Reliability Indicators

Customer interruptions are analyzed and reported internally throughout the year. Interruption data is collected and recorded in the Distribution Operations and Maintenance Centre (part of Ontario Grid Control Centre), through communications with field staff involved in the interruption restoration. It is input into a database system called Outage Response Management System which provides data for in-depth performance analysis to drive strategy and business investment decisions.

Interruption data is used to calculate the OEB reliability indices (see Section 2.2 for definitions) monthly and results are reported internally. There is ongoing analysis of approximately 40,000 annual interruptions. Trends of frequency, duration, cause of interruptions, feeders, location, etc. are analyzed to allow prioritization of maintenance and capital programs on the distribution system.

2.0 DEFINITIONS

2.1 Customer Service Indicators

The ten customer service indicators are defined below:

2.1.1 Appointments

2.1.1.1 Appointment Scheduling

The percentage of appointment scheduling requests must take place within 5 business days on which all applicable service conditions are satisfied or at a later date agreed upon by the customer and Hydro One. This applies regardless of whether the customer or customer’s representative’s presence is required.
In instances where customer or customer representative presence is required, Hydro One must offer to schedule the appointment during Hydro One’s regular hours of operation within a window of time no greater than 4 hours, and must attend the meeting at the appropriate time. This does not apply to appointments that are subject to the requirements in the section on Connection of New Services.

2.1.1.2 Appointments Met

The percentage of appointments met (as requested in the morning or afternoon of a particular date) includes appointments for disconnects and/or reconnects for maintenance or upgrades, connecting new services, underground cable locates, inspections, meter reading and instructions on prepaid meters. The appointment may be considered to be met even when the customer failed to attend.

2.1.1.3 Rescheduling a Missed Appointment

In instances of rescheduling, an attempt to inform the customer before the appointment should be made and an attempt to reschedule should occur one business day following the initial appointment. This does not apply if the appointment is missed due to the failure of customer or customer representative to attend.

Section 7.5 of the DSC requires that, where an appointment is missed or is going to be missed, distributors must attempt to contact the customer (a) before the scheduled appointment to inform the customer that the appointment will be missed, and (b) within one business day to reschedule the appointment. This constitutes a service quality requirement under the DSC that must be met 100% of the time on a yearly basis. Hydro One is seeking an exemption from this requirement, requesting that it be obligated to meet this service requirement 90% of the time on a yearly basis. The exemption application is attached as Appendix A to this exhibit.
2.1.2  Connection of New Services

2.1.2.1  Low voltage connections
The percentage of connections for a request of a new low voltage service (<750 volts) that must be completed within 5 business days from which all applicable service conditions are satisfied, or at a later date agreed upon by the customer and Hydro One.

2.1.2.2  High voltage connections
The percentage of connections for a request of a new high voltage service (>750 volts) that must be completed within 10 business days from which all applicable service conditions are satisfied, or at a later date agreed upon by the customer and Hydro One.

2.1.3  Emergency Response
The percentage of responses to emergency trouble calls (including fire, ambulance, police) met within 120 minutes for rural utilities. Due to the predominantly rural nature of its distribution system, Hydro One Distribution is required to meet the 120 minutes response time. The elapsed time is measured from the call to the arrival of Hydro One qualified service personnel.

2.1.4  Telephone

2.1.4.1  Telephone Accessibility
The percentage of incoming calls answered within 30 seconds by the customer care center, with time counted from when the customer chooses to speak to a customer service representative (using IVR system) or from first ring in all other cases.
2.1.4.2 Telephone Call Abandon Rate

The percentage of incoming calls abandoned before being answered following the 30 second period outlined in 2.1.4.1 Telephone Accessibility.

2.1.5 Written Response to Inquiries

The percentage of responses to customers’ request for written information relating to their accounts, required to be met within 10 days from the date where any conditions associated with their enquiry have been satisfied or from the date of receipt of the enquiry. The written response is deemed to be sent on the date it is faxed, mailed or e-mailed by Hydro One, and when it includes a written acknowledgement of receipt of the qualified enquiry and a specific date in which a complete response will be provided.

2.1.6 Reconnection Standards

The percentage of re-connections of a disconnected customer for non-payment that must be completed within 2 business days after the customer has made full overdue payment or entered into an arrears payment agreement with Hydro One.

2.2 Service Reliability Indicators

The three Service Reliability Indicators are:

2.2.1 Frequency of Interruptions (SAIFI)

The average number of times which Distribution customers served by Hydro One were interrupted in the year.

2.2.2 Duration of Interruptions (SAIDI)

The average numbers of hours that Distribution customers served by Hydro One were without power in the year.
2.2.3 Average Interruption Time (CAIDI)

The average interruption duration (in hours) of Distribution customers who were interrupted.

The above reliability indices measure all interruptions caused by planned and unplanned interruptions of 1 minute or more.

2.3 Force Majeure

Hydro One deems a *force majeure* to have occurred when 10% or more of Hydro One customers have been interrupted by an event.

An event may be a storm (usually the case), the August 14, 2003 blackout or any other problems that interrupt 10% or more customers and causes a change in the normal restoration business processes.

All Hydro One customers interrupted throughout the duration of the event while normal restoration business processes are suspended are counted in the determination of the numerator of the percent interrupted. The denominator is the total number of customers served at the end of the month when the force majeure occurred. Details of all *force majeure* events that have occurred from 2010 to 2012 are provided in Section 3.3.

3.0 RESULTS

The results of the ten Customer Service Performance Indicators and the three Service Reliability Indices are attached in Tables 1 and 2 respectively.
3.1 Customer Service Indicators

Table 1 indicates that all measures except the Rescheduling Missed appointments and the 2011 Emergency response with Force Majeure are better than the OEB target.

This exhibit has been revised to indicate Forecast Targets for the Customer Service Indicators as recommended by Intervenors and Board staff during the Technical Conferences. Hydro One believes these forecast targets are achievable excepting events beyond the control of the corporation such as re-deployment of staff to address emergencies including but not limited to weather-related contingencies, significant events and due to abnormally high customer driven requests. All Hydro One Forecast Targets exceed the OEB requirements excepting Appointment Rescheduling. Included as Appendix A to this exhibit, is an exemption request for the Board’s consideration and approval, pertaining to this SQI measure.
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<td>- Met</td>
<td>≥90%</td>
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<td>- Scheduling</td>
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<td>- Reschedule (Contact customer ≤ 1 day before appointment missed)</td>
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<td>79</td>
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<td>(% completed in ≤ 5 days) ≤750V</td>
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<td>(% responded to in ≤ 120 min)</td>
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<td>Telephone Accessibility</td>
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<td>70</td>
<td>81</td>
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<td>(% answered in ≤ 30 seconds)</td>
<td>≤ 10%</td>
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<td>Written Response to Inquiries</td>
<td>≥ 80%</td>
<td>99</td>
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<td>≥ 85%</td>
<td>n/a</td>
<td>97</td>
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** Emergency Response results including the impact of Force Majeure.
3.2 **Service Reliability Indices** The Forecast Targets for the Service Reliability Indices (SRIs) assume required investments levels to maintain or slightly improve reliability. SRIs are provided including and excluding Force Majeure events however only forecast targets excluding Force Majeure have been provided.

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<td><strong>SAIFI Frequency of Interruptions</strong></td>
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<td>(# of interruptions per customer)</td>
<td>≤3.6</td>
<td>2.9</td>
<td>≤3.5</td>
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<td>2.8</td>
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<td><strong>SAIFI including Force Majeure</strong></td>
<td>3.3†</td>
<td>4.6††</td>
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<td>*SAIDI Duration of Interruptions (hrs of interruption per customer)</td>
<td>≤ 8.6</td>
<td>7.5</td>
<td>≤ 8.6</td>
<td>7.4</td>
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<td>*SAIDI including Force Majeure</td>
<td>9.4†</td>
<td>22.1††</td>
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<td>27.3</td>
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<td>CAIDI Average Interruption Time (# of hrs per interruption)</td>
<td>≤ 2.4</td>
<td>2.5</td>
<td>≤ 2.4</td>
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<td>≤2.5</td>
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<td>CAIDI including Force Majeure</td>
<td>2.9†</td>
<td>4.8††</td>
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* SAIDI targets can be affected by Transmission system contingencies.

† See explanation in section “2010 Force Majeure Events”

‡‡ See explanation in section “2011 Force Majeure Events”

‡‡‡ See explanation in section “2012 Force Majeure Events”

‡‡‡‡ See explanation in section “2013 Force Majeure Events”
3.3 2010 Force Majeure Events

In 2010 there were two *force majeure* events that met the 10% of customers affected definition. The storms and restorations occurred on September 21st to 25th and October 26th to 28th. These two event interrupted 18% and 13% of customers respectively.

On September 21st to 25th 2010, a series of severe thunderstorms and heavy down pours with 100 km/hr winds and lightning moved through Muskoka toward eastern Ontario, causing damage on the distribution system. Restoration of this event lasted until September 25th and interrupted more than 211,000 (18%) of Hydro One’s customers.

On Oct 26 to 28th, a severe windstorm with winds gusting up to 80 kilometers per hour and heavy rain impacted most of Ontario, and spanned from the Manitoba border to the eastern part of the province. The windstorm interrupted more than 162,000 (13%) of Hydro One’s customers.

The effect of these storms resulted in a contribution to the annual SAIDI of 1.9 hours and annual SAIFI of 0.4 interruptions per customer.

3.4 2011 Force Majeure Events

In 2011, there were eight *force majeure* events that met the 10% of customers affected definition. The storms and restorations occurred on February 18-20, April 10-11, April 28-May 02, May 31- June 02, June 7-12, July 17-19, October 15-17 and November 29 to December 02. Each of those days interrupted the following percentages of customers respectively: 14%, 11%, 33%, 12%, 40%, 17%, 10% and 12%.
On February 18th to 20th, an event was caused by a windstorm that spanned from the Manitoba border to the eastern part of the province with speeds of up to 100 km/hr. This event affected 14% or 177,000 customers.

On April 10th to 11th, an organized cluster of severe thunderstorms caused widespread interruptions from Southwestern Ontario to Eastern Ontario with damaging wind gusts of up to 90 km/hr. This storm affected 11% or about 133,000 customers.

On April 28th to May 02nd, heavy downpour, lightning and very high winds of up to 100 km/hr swept across the province from Southwestern to Eastern Ontario wreaking havoc on the distribution system. This incident affected 33% or about 402,000 customers.

On May 31st to June 02nd, a severe thunderstorm moved across Northern Ontario to the Thunder Bay area with wind speeds of about 100 km/hr causing widespread interruptions. This incident affected 12% or about 146,000 customers.

On June 07th to 12th, a severe lightning storm moved across Southern Ontario impacting the distribution system causing trees to fall, poles to break and affecting other distribution equipment. This event affected 40% or 482,000 customers.

On July 17th to 19th, this event was caused by a cold front which moved southeast across the province generating severe thunderstorms. Most of the province saw wind speeds between 80 to 110 km/hr with lightning strikes and localized downpours. This event affected 17% or 205,000 customers.

On October 15th to 17th, damaging winds of up to 70 km/hr swept across the province, causing this major event. The main area of the storm occurred around the edge of
Georgian Bay which saw wind gusts of up to 65 km/hr. This event affected 10% or 125,000 customers.

On November 29th to December 02nd, freezing rain fell in the Muskoka region accompanied with winds of up to 65 km/hr. This region also received very heavy snowfall causing outages to customers. This event affected 12% of about 148,000 customers.

The effect of these storms resulted in a contribution to the annual SAIDI of 14.7 hours and annual SAIFI of 1.5 interruptions per customer.

### 3.5 2012 Force Majeure Events

In 2012, there were four *force majeure* events that met the 10% of customers affected definition. The storms and restorations occurred on Mar 02-04, July 23-26, Oct 29-31, and Dec 21-23. Each of those days respectively interrupted the following percentages of customers: 14%, 13%, 21%, and 12%.

On Mar 02nd to 04th, an early spring storm that tracked up from Texas across Lake Huron and Georgian Bay to Lake Nippissing dragged a sharp cold front with very strong winds from east to west across Southern Ontario. The strong and gusty winds reached up to 105 km/hr along the Niagara Peninsula. This event affected approximately 173,000 or about 14% of customers.

On July 23rd to 26th, a strong lightning/thunderstorm, with hail and winds gusting up to 110 km/h moved through southeast Ontario and crossed over the Northeast areas. This tornado-like storm caused widespread damage and affected approximately 158,000 or 13% of customers.
On Oct 29th to 31st, remnants of hurricane Sandy with winds moving at 100 km/hr moved across Southern Ontario from the lower Great Lakes, passing through Sarnia, Georgian Bay and the Niagara region. The combination of strong winds and residual leaves on trees caused power outages due to falling limbs and downed trees snapping power lines. This event affected approximately 21% or approximately 258,000 customers.

On Dec 21st to 23rd, environment Canada issued a weather warning for Eastern and Northern Ontario when snow of up to 30 cm fell in these regions. This winter storm caused severe damage on the Distribution system with heavy wet snow and high winds that caused coniferous trees to contact phases. This event affected approximately 12% or 147,000 customers.

The effect of these storms resulted in a contribution to the annual SAIDI of 3.9 hours and annual SAIFI of 0.6 interruptions per customer.

### 3.6 2013 Force Majeure Events

In 2013, there were seven force majeure events that met the 10% of customers affected definition. The storms and restorations occurred on April 12-16, May 21-24, May 31-Jun 03, July 19-23, Nov 01-03, Nov 17-19, and Dec 21-29. Each of those days respectively interrupted the following percentages of customers: 34%, 12%, 10%, 35%, 25%, 28% and 46%.

On April 12th to 16th, Environment Canada issued a weather warning when a slow moving low pressure system combined with warm artic air to produce a messy mix of snow, rain, ice pellets and freezing rain over Southern Ontario. It laid down a blanket of 2 to 4 cm of snow and ice pellets in a swath from Toronto to Lake Huron. The storm was
accompanied with gusting winds of up to 65 km/hr that caused downed tree limbs resulting in widespread power outages. This event affected approximately 34% or about 419,000 of our customers.

On May 21st to 24th, a tornado warning was issued by Environment Canada when two clusters of thunderstorms made their way through Southern Ontario. Both tornadoes were accompanied by intense lightning, hail, heavy downpour and wind gusts of up to 100 km/hr that caused broken poles and downed trees. This event affected 147,000 customers or approximately 12% of customers.

On May 31st to June 3rd, a line of thunderstorms with winds up to 90 km/hr moved through Southern and Central Ontario. Hail, heavy rain and frequent lightning accompanying the storm caused severe widespread outages. This event affected 121,000 or approximately 10% of customers.

On July 19th to 23rd, scattered thunderstorms moved over North Western Ontario accompanied by wind gusts of 90 km/hr, hail greater than 2 cm in diameter and torrential downpours of up to 50 mm. At the same time, isolated thunderstorms moved over Southern and Central Ontario also accompanied with high winds, hail and torrential downpour. Both incidents resulted in power interruptions to 434,000 customers or approximately 35% of customers.

On Nov 1st to 3rd, a Colorado low pressure system bought rain and high winds to much of Southern Ontario. The winds reached speeds of up to 100 km/hr in areas near Lake Eire and Lake Ontario. These strong winds caused broken poles and down tree branches that negatively affecting the distribution system. This event affected 315,000 or 25% of customers.
On Nov 17th to 19th, an intense low pressure system from Colorado caused a strong cold front with heavy winds of up to 90 km/hr for much of South Western and South Central Ontario. This event impacted both the Distribution and Transmission system and caused interruptions to approximately 367,000 or 28% of customers.

On Dec 21st to 29th, a low pressure system originating in Texas collided with a warm front causing up to 40 mm of freezing rain, snow and ice pellets to spread into Southern and Southwestern Ontario. As a result, ice accumulated on tree branches causing widespread outages from downed trees. After the storm passed, light rain continued with extreme cold temperatures allowing ice to build up to 30 mm on surfaces and tree branches. The ice storm was followed by a windstorm of up to 55 km/hr that caused the ice covered tree branches to contact the distribution line. This severe ice storm affected approximately 585,000 or 46% of customers.