ONTARIO ENERGY BOARD

Staff Discussion Paper

Regulation of Electricity Distributor Service Quality

EB-2008-0001

January 4, 2008

A. INTRODUCTION

In its December 20, 2006 *Report of the Board on Cost of Capital and 2nd Generation Incentive Regulation for Ontario's Electricity Distributors*, the Ontario Energy Board (the "Board") indicated that it would resume its earlier service quality regulation review with a view to refining the regime applicable to electricity distributors. At that time, the Board expressed its commitment to developing an effective service quality regulation regime to for implementation along with incentive regulation. The Board's commitment to implementing such a regime is also reflected in its 2007-2010 Business Plan.

Issuance of this staff Discussion Paper is an initial step in a consultation process designed to assist the Board in determining an appropriate set of electricity distributor service quality requirements ("ESQRs").

This Discussion Paper covers the following:

- The development of service quality regulation in Ontario.
- Existing and potential new customer service quality measures.
- Existing and potential new system reliability measures.

B. BACKGROUND

B.1 – The Current Regime

Distributors are currently required to measure and report to the Board their performance against a number of service quality indicators (the "Original SQI's").

The rationale for the existing service quality regime was expressed by the Board in its Decision with Reasons in proceeding RP-1999-0034 [1] as follows:

> One of the objectives of the [*Ontario Energy Board Act, 1998*] is protection of the consumers' interests with respect to prices, quality and reliability of electricity service. Any reduction in the quality and/or reliability of a service represents a reduction in the value of that service. Therefore, as part of its function in regard to approving or fixing just and reasonable rates, the Board has a responsibility to oversee that service quality is preserved and improved. (para. 5.1.15)

[1] http://www.oeb.gov.on.ca/documents/cases/RP-1999-0034/dec.pdf

The monitoring and reporting regime established by the Board at the time remains in place today, and consists of a requirement to monitor and report to the Board on a set of nine Original SQIs, six of which are customer service performance indicators and three of which are service reliability indices. The former measure performance relating to activities that involve direct contact with customers while the latter measure system outages. Minimum standards of performance were established for most of the Original SQIs, which were initially documented in the Board's First Generation PBR Electricity Distribution Rate Handbook, and were substantially reiterated in Chapter 15 of the 2006 Electricity Distribution Rate Handbook.[2]

Electricity distributors have been reporting their performance against the Original SQIs since 2000. Annual reporting of monthly data is currently required by section 2.1.4 of the Board's Electricity Reporting and Record Keeping Requirements ("RRR") and the most recent results of this reporting can be found in the 2006 Yearbook for Electricity Distributors.[3]

At the present time, there is no obligation on distributors to comply with the Original SQI, nor are there specific regulatory consequences for failure to achieve any minimum performance standards.

B.2 – The 2003 Consultation

In September 2003, the Board initiated a consultative process (RP-2003-0190) to review the Original SQIs. The consultation was initiated to review the Original SQI regime with a view to determining whether changes might be required. Among the matters to be considered were the need for additional measures and the issue of the regulatory consequences for persistent below-standard performance. The consultative process proceeded through to early 2004, at which time it was suspended due to changing priorities. Details of this process are available from the Board's website.[4]

For purposes of the consultation, a working group comprised of Board staff and representatives of distributors, consumer groups and other stakeholders was established. This working group was divided into sub groups ("SQI Consultation Sub Group(s)") and each SQI Consultation Sub Group was assigned to review and make recommendations on a particular Original SQI. Key concerns raised during the consultation process related to ambiguities in the definition of some of the Original SQIs and the techniques used to measure and report on each.

Staff has considered the observations and recommendations of the SQI Consultation Sub Groups in the development of this Discussion Paper. Those observations and recommendations represented the collective thoughts of the SQI Consultation Sub

[2] http://www.oeb.gov.on.ca/documents/edr_final_ratehandbook_110505.pdf
[3] http://www.oeb.gov.on.ca/html/en/abouttheoeb/statsandmaps.htm
[4] http://www.oeb.gov.on.ca/html/en/industryrelations/archivedinitiatives/ratepolicies/pbr2_sqrmain.htm

Groups at the relevant time and are referred to in this Discussion Paper as background. They do not necessarily represent the prior or current views of Board staff, individual distributors or other stakeholders.

B.3 – The Role of Service Quality in Regulation

The Board has concluded that it will implement a "standards approach" to service quality regulation. Under the "standards approach", compliance with the performance standard is mandatory and can be enforced through the Board's compliance process.

C. EXISTING CUSTOMER SERVICE INDICATORS

This section sets out the following:

- background information on the six Original SQIs that deal with customer service, including a review of reported performance and a comparison with the service quality regime that is currently in place for natural gas distributors (the "Natural Gas SQR");
- the observations and recommendations of the SQI Consultation Sub Groups on each of these Original SQIs; and
- changes that Board staff proposes be made to these Original SQIs as part of the development of mandatory ESQRs.

As discussed below, Board staff proposes that one of these Original SQIs ("Underground Cable Locates") be abandoned and its subject-matter included in others, and that four of the remaining five be modified and included in a mandatory ESQR regime. Board staff has made no proposal in relation to the sixth Original SQI ("Emergency Response"), preferring to first obtain additional input from stakeholders.

C.1 - Connection of New Services

Background

This Original SQI is defined as follows:

> The connection of new services indicator measures the percentage of requests that are met within the required minimum performance standard.
>
> As a minimum performance standard for the connection of new universal services, new low voltage (<750 volts) services must be

connected within 5 working days from the day on which all conditions of service are satisfied, including electrical safety inspection, at least 90% of the time. New high voltage (>750 volts) service must be connected within 10 working days from the day on which all conditions of service are satisfied, including electrical safety inspection, at least 90% of the time.

The conditions of service that may need to be satisfied include the following:

- payment of connection fees
- signing of service contracts
- completion of distribution system extensions
- provision of adequate lead times for delivery of equipment
- receipt of an electrical safety inspection certificate

The distributor must monitor its performance monthly and report the information annually to the Board. The monthly information is to be reported as follows:

(1) number of new low voltage services connected
(2) number of new low voltage service connected within 5 working days
(3) percentage of requests for new low voltage service met within 5 working days [((2*100)/(1)]
(4) number of new high voltage service connected
(5) number of new high voltage service connected within 10 working days
(6) percentage of requests for new high voltage service met within 10 working days [((5*100)/(4)]

The RRR data indicates that average annual performance in the sector in relation to this Original SQI over the past three years (2004 – 2006) has been 98% for low voltage connections and 100% for high voltage connections.

There is no equivalent service quality measure in the Natural Gas SQR.

SQI Consultation Sub Group Comments

The key observations and recommendations of the SQI Consultation Sub Group in relation to this Original SQI can be summarized as follows:

- Some distributors include requests for a service upgrade as the connection of a new service, while the majority considers that a new service connection is limited to circumstances where no service previously existed or the number of meters increases. In order to ensure consistency in the tracking and reporting of this

Original SQI, the concept of a "new service" should be clearly defined and limited to circumstances where an additional customer is connected to the distribution system.

- For additional clarity, the number of new connections that a distributor completes should be based on the number of additional meters added to the distribution system. A service upgrade that does not involve a change in the number of meters should be addressed under the "Appointments Met" indicator.

- The number of high voltage connections completed by distributors is very small and, in some cases, non-existent. Distributors differed on the issue of whether high and low voltage connections should be combined for purposes of this Original SQI, given the different levels of effort required. Nonetheless, it was recommended that the low voltage and high voltage connections be combined and that the minimum performance standard be that 90% of all new connections are connected within 5 working days once all preconditions are met.

Board Staff Comments and Proposal

Board staff believes that the definition of what constitutes a "new service" requires clarification along the lines proposed by the SQI Consultation Sub Group. It is also staff's view that the installation of a new and/or additional meter is an appropriate measure, as it leaves less room for interpretation and can result in better tracking and reporting.

The RRR data for this Original SQI reveals that almost half of distributors reported completing no high voltage connections in the previous year. As noted above, most of those that did have such connections reported that they were completed within the minimum performance standard 100% of the time. Therefore, staff also believes that the SQI Consultation Sub Group's recommendation to combine new low voltage and high voltage service connections is reasonable.

As noted above, the RRR data for this Original SQI reveals that average performance in relation to low voltage connections has been 98%, which significantly surpasses the current 90% minimum performance standard. Therefore, staff recommends an increase in the required performance standard to 94%, which is mid-point between the current standard (90%) and average performance within the sector (98%).

> *C.1 – Board staff proposes the following as a "Connection of New Services" ESQR:*
>
> This service quality requirement measures performance in relation to connections made in response to new service requests.

C.1 – Continued

For the purposes of this service quality requirement, a "new service request" is defined as a request that involves the installation of an additional meter on the distribution system where no meter previously existed.

Reconnecting a customer following a service upgrade of an existing service shall not be considered a new service request. Replacing an existing meter would also not be considered a new service request.

A connection associated with a new service request must be completed within 5 business days from the day on which all applicable service conditions are satisfied, or at such later date as may be specified by the customer, provided also that all applicable service conditions are satisfied. This service quality requirement must be met at least 94 per cent of the time on a yearly basis. For the purposes of this service quality requirement, the service conditions to be satisfied may include the payment of connection fees, the signing of an offer to connect, the completion of distribution system extensions, the delivery of any necessary equipment and the receipt of an electrical safety inspection certificate.

C.2 - Underground Cable Locates

Background

This Original SQI is defined as follows:

> The underground cable locates indicator measures the percentage of requests for cable locates that are completed within the minimum performance standard.
>
> The current minimum standard contained in the Board's service quality requirements is that underground cable locates must be completed within 5 working days of a customer's request, at least 90% of the time.
>
> For customers requesting a specific date, the locate must be completed within 5 working days of the requested date.
>
> Since the service quality indicators were developed in 1999, Ontario Regulation 22/04 has been proclaimed in force, and Utility Advisory

Council, working with the Electrical Safety Authority, has developed a "Guideline for Excavating in the Vicinity of Distribution Lines". The Regulation requires electricity distributors to respond to cable locate requests within a reasonable time. The Guideline indicates that the distributor shall make every reasonable effort to respond to notification requests and provide locates within 5 working days of notification. This five day standard may be shortened to two or three days as discussions at the Utility Advisory Council proceed.

Adherence to the standards set out in Regulation 22/04 is a legal requirement. The guidelines developed in consultation with the Utility Advisory Council received broad distributor input. Distributors are reminded that the Service Quality Indicators adopted by the Board represent minimum standards and were put in place by the Board to measure distributor performance over time. Under no circumstances should the SQIs be interpreted to suggest that the OEB is authorizing distributors to deviate from prevailing safety or engineering standards, standards set by law or standards contained in guidelines developed by other authorized regulatory agencies. The question of consistency between reported SQIs and technical and safety standards will be considered by the Board in its next review of its SQIs.

The cable locates included in this standard do not include emergency locates.

The distributor must monitor its performance monthly and report the information annually.

The monthly information is to be reported as follows:

(1) number of cable locates requested
(2) number of cable locates performed within 5 working days
(3) percentage of requests met within 5 working days [((2*100)/(1)]

The RRR data indicates that average annual performance in the sector in relation to this Original SQI over the past three years (2004 – 2006) has been 98%.

There is no equivalent service quality measure in the Natural Gas SQR regime.

SQI Consultation Sub Group Comments

The key observations and recommendations of the SQI Consultation Sub Group in relation to this Original SQI can be summarized as follows:

- There have been significant differences in the tracking and reporting of this Original SQI. Some distributors count a request from a contractor to plant 100

trees as a single request while others count it as 100 requests. Some use the customer's selected request date as the date on which the 5-day period for performance ends (such that the locate must be completed by that date in order to meet the performance standard), while others use the customer's selected date as the date on which the 5-day period for performance begins.

- In most cases, a customer would likely prefer to know the exact date and time at which a locate will be completed (or at which a distributor representative will meet them on site), rather than having the locate performed within a pre-determined and arbitrary number of days.

- There is already a considerable incentive as well as external pressure to ensure that locates are performed within a reasonable time. Removing the 5-day requirement would also allow distributors to negotiate times with their customers in order to smooth out their peak work loads.

- The cable locate SQI should therefore be eliminated, and requests for cable locates should be counted as part of the "Appointments Met" indicator.

Board Staff Comments and Proposal

Board staff acknowledges that the timely completion of cable locates is important to the safe operation of a distribution system. Staff agrees with the SQI Consultation Sub Group's comments that a customer is likely to prefer that a distributor provide a locate on a specific day and time, rather than providing it within a certain window. Including the requirement to complete a cable locate as part of the "Appointments Met" measure therefore appears reasonable, as it allows for distributor performance to be measured while also allowing for additional flexibility that could benefit all parties.

The Electrical Safety Authority's ("ESA") "Guideline for Excavating in the Vicinity of Distribution Lines" referred to in the above description of this Original SQI indicates that distributors are expected to fulfill a locate request within 5 working days. Including cable locates in the "Appointments Met" measure is not intended to relieve distributors from performing in a manner that meets the ESA's expectations, and distributors should therefore continue to accommodate and schedule requests for cable locates within the 5 working-day expected timeline unless the customer prefers a time outside that window.

This is in fact contemplated by the new "Appointment Scheduling" service quality measure proposed by Board staff (see section D.2 below).

> *C.2 – Board staff proposes that the Board abandon the "Underground Cable Locate" indicator as a stand-alone measure and that requests for cable locates be addressed as part of the "Appointments Met" and "Appointment Scheduling" measures.*

C.3 - Appointments Met

Background

This Original SQI is defined as follows:

> The appointments indicator measures the percentage of appointments at a customer's premises or work site that are met at the appointed time within the minimum performance standard.
>
> As a minimum standard, when it is necessary to meet a customer at the customer's premises or work site to conduct utility business, customers must be offered a choice of morning or afternoon appointments. The appointments must be met at the appointed time, at least 90% of the time. If the appointed time cannot be met, the distributor must notify the customer.
>
> The distributor must monitor its performance monthly and report the information annually.
>
> The monthly information is to be reported as follows:
> (1) number of appointments at a customer's premises or work site made
> (2) number of appointments at a customer's premises or work site kept at the appointed time
> (3) percentage of appointments at a customer's premises or work site made within minimum standard [((2*100)/(1)]

The RRR data indicates that average annual performance in the sector in relation to this Original SQI over the past three years (2004 – 2006) has been 99%.

The Natural Gas SQR regime has a similar "Appointments Met Within a Designated Time Period" requirement. Natural gas distributors are required to meet the scheduled appointment time, within a 4 hour window, 85% of the time. Only appointments that require a customer's presence are covered, including installations, meter reads and reconnection appointments.

SQI Consultation Sub Group Comments

The key observations and recommendations of the SQI Consultation Sub Group in relation to this Original SQI can be summarized as follows:

- The intent of this indicator should be to ensure that distributors are meeting pre-scheduled customer appointments within an acceptable timeframe. Maintaining

too broad a scope for this measure (i.e., reporting on all customer appointments) risks undermining the integrity of the tracking and reporting of this measure.

- The measure should be revised to provide a more specific description of the types of appointments to be included. The measure should only include appointments that are especially time sensitive (such as those relating to disconnections for service upgrades) or that require more than one scheduled meeting or attendance within a short period of time (such as on-site underground cable locate meetings). Individual contractor or engineering appointments should be excluded, since they are planning meetings that have a low risk of being missed because the staff involved is not also tasked to attend to a large number of short customer call appointments.

Board Staff Comments and Proposal

Board staff agrees that maintaining too broad a scope for this indicator runs the risk of jeopardizing its usefulness, particularly were it to become mandatory and need to be monitored for compliance. It is the view of Board staff that the more specific any ESQR can be, the better it can indicate the level of a distributor's performance.

As noted above, staff are proposing that cable locate requests be included within the "Appointments Met" indicator. Board staff also accepts that the true value of this indicator lies in tracking a distributor's ability to meet frequent customer service appointments rather than those that are more in the nature of planning meetings. It is the view of Board staff that customers are most interested in ensuring that scheduled appointments are kept when the appointment is of a type that requires the customer to wait at his or her residence or business for distributor staff to arrive.

As noted above, the RRR data for this Original SQI reveals that average performance has been 99%, which significantly surpasses the current 90% minimum performance standard. Therefore, staff recommends an increase in the required performance standard to 95%, which is approximately mid-way between the current standard (90%) and average performance within the sector (99%).

C.3 – Board staff proposes the following as an "Appointments Met" ESQR:

This service quality requirement measures performance in relation to appointments at a customer's premises, business or work site that are met at the appointed time.

When an appointment is requested either by a customer or with a customer by the distributor, the distributor must offer to schedule the appointment within a window of time that is no greater than 4 hours (i.e., morning, afternoon or evening) during which time the distributor commits to arrive for the appointment.

C.3 – Continued

The appointment must be kept as scheduled at least 95 per cent of the time on a yearly basis. If a scheduled appointment cannot be kept, the customer must be so advised in accordance with the "Rescheduling of a Missed Appointment" service quality requirement.

This service quality requirement applies only to appointments that are scheduled to occur at a customer's premises, business or work site and that are a frequently recurring part of the distributor's normal course of business. This includes the following:

- disconnecting and/or reconnecting service to effect maintenance or upgrades;
- connecting a new customer;
- connecting a new service for an existing customer;
- providing underground cable locates;
- gaining access to read or replace an inside meter or to provide the customer with instructions on the proper use of a prepaid meter or similar device; and
- appointments that are rescheduled as required by the "Rescheduling of a Missed Appointment" service quality requirement.

This service quality requirement does not apply to the following types of appointments:

- meetings with customers, contractors or engineering consultants to discuss new service layouts, designs or servicing options; and
- meetings with municipality staff, developers or staff from other utilities.

This proposed ESQR does not specify the time by which a distributor must contact a customer to reschedule a missed appointment. In order to address this issue, Board staff is proposing a new "Rescheduling of a Missed Appointment" ESQR, referred to above and discussed in section D.1 below. Similarly, the scheduling of appointments is proposed to be addressed through a new "Appointment Scheduling" ESQR, as discussed in section D.2 below.

C.4 - Telephone Accessibility

Background

This Original SQI is defined as follows:

> The telephone accessibility indicator measures the percentage of incoming calls to the general enquiry telephone number answered within the minimum of the performance standard.
>
> As a minimum standard, incoming calls to the general enquiry telephone number must be answered in person by an operator within 30 seconds, at least 65% of the time. The provision of a voice mailbox or answering machine does not constitute compliance with this measure.
>
> The distributor must monitor its performance monthly and report the information annually.
>
> The monthly information is to be reported as follows:
> (1) number of general enquiry telephone calls answered
> (2) number of general enquiry telephone calls answered within 30 seconds
> (3) percentage of general enquiry telephone calls answered within 30 seconds. [((2*100)/(1)]

The RRR data indicates that average annual performance in the sector in relation to this Original SQI over the past three years (2004 – 2006) has been 87%.

The Natural Gas SQR regime has a similar “Call Answering Service Level” requirement. Under this requirement, a natural gas distributor must answer calls to the distributor’s general inquiry number within 30 seconds, 75% of the time.

SQI Consultation Sub Group Comments

The key observations and recommendations of the SQI Consultation Sub Group in relation to this Original SQI can be summarized as follows:

- The existing definition needs to be made more specific, but also has to be flexible enough to apply in a straightforward manner to a wide variety of utilities and telephone systems.

- For simplicity and broad applicability, the telephone accessibility measure should focus on ”customer care” calls, and not necessarily include other calls. To that end, a definition of what constitutes a “qualified incoming call” should be added

and should include calls which normally reach a customer service representative and calls through an Interactive Voice Response System ("IVR") where a selection is made to speak to a customer representative. Where there are no effective means of tracking "customer care" calls separately, the indicator would apply to all calls received on the line(s) designated for "customer care" calls.

- For clarity, definitions of "customer care telephone number" (those given to customers for consumer issues) and "answered" (connected to a person) should be added to the description of the indicator.

- More precise direction should be provided in relation to the point at which the 'time-to-answer' calculation begins. For example, the time could begin on the first ring of a customer care line or once the selection through an IVR system is made.

- The existing standard of 65% within 30 seconds should be retained. Under "business as usual" conditions, utilities can be expected to exceed that standard. However, call volumes are volatile and often increase dramatically and suddenly as a result of external conditions that are outside of the utility's control (such as the level of retailer activity or changes in law or government policy). In contrast, resources such as call centre staff available to respond to increases in call volumes often require weeks or months to be put in place. The 65% figure provides some accommodation of utility operating circumstances and does not require a painstaking analysis of the effects of "extraordinary" events.

Board Staff Comments, Proposal and Question for Stakeholders

Board staff understands that the principle underlying the implementation of service quality standards is that they should track the provision of service to customers, and not the conduct of administrative activities. Staff therefore believes that applying the telephone accessibility measure principally to customer care calls is appropriate, and will also provide a more precise standard against which to ascertain distributor performance.

Board staff notes that the comparable requirement in the Natural Gas SQR regime refers to calls relating to "billing, collection, emergencies, and meter appointments". This captures not only "customer care" calls but also emergency phone calls. Staff believes that responding to emergency calls as quickly as possible is critical, and therefore recommend that these calls be included.

Staff also agrees that definitions of the following should be included: "qualified incoming call"; "customer care telephone number"; and "answered". Staff also believes that clear direction as to when the "time-to-answer" calculation begins would be useful.

As noted above, the RRR data for this Original SQI reveals that average performance has been 87%, which significantly surpasses the current 65% minimum performance

standard. Staff appreciates the concerns presented by the SQI Consultation Sub Group that the fluctuation in call volumes from month to month may have an impact on the distributor's ability to cost-effectively meet the standard every month. Nonetheless, average performance has been at a level that significantly exceeds the current standard. Therefore, staff recommends an increase in the required performance standard to 75%, which is approximately mid-way between the current standard (65%) and average performance within the sector (87%).

C.4 – Board staff proposes the following as a "Telephone Accessibility" ESQR:

This service quality requirement measures performance in relation to the answering of qualified incoming calls to a distributor's customer care telephone number.

For the purposes of this service quality requirement:

"answered" means connected to a person that is a representative of the distributor. Connection to a voice mailbox or an answering machine does not constitute answering.

"customer care telephone number" means a telephone number that is dedicated exclusively to, and given to the public by the distributor for the purpose of contacting the distributor on, matters concerning customer care, including customer accounts, other customer service and emergencies. Where a distributor does not have a telephone number dedicated exclusively to matters concerning customer care, any telephone number given to the public for the purpose of making inquiries of the distributor shall be deemed to be a "customer care telephone number".

"qualified incoming calls" means either (i) telephone calls for which the customer normally reaches a customer service representative directly or has been transferred to a customer care line by a general operator; or (ii) telephone calls in which the customer has reached the distributor's Interactive Voice Response ("IVR") system and selected the option of speaking to a customer service representative.

The following are not "qualified incoming calls": (i) telephone calls that are abandoned by the customer prior to asking for a customer service representative; and (ii) telephone calls for which the customer elects IVR self-service.

C.4 – Continued

Qualified incoming calls to the distributor's customer care telephone number must be answered within 30 seconds, at least 75 per cent of the time on a yearly basis. For qualified incoming calls from the distributor's IVR system, the 30 seconds shall be counted from the time the customer makes the selection requesting to speak to a customer service representative. In all other cases, the 30 seconds shall be counted from the first ring.

Stakeholder input on the following question would be of assistance in further considering this proposed ESQR:

- *Should the Telephone Accessibility ESQR apply only to those calls that are directed to a "customer care telephone number" or should it be expanded to apply to calls to other telephone numbers (such as telephone numbers identified as being for the purpose of inquiries relating to administrative or general matters)? Why or why not?*

The above proposed ESQR excludes consideration of telephone calls that are abandoned by the customer before they are answered. Board staff proposes to address abandoned telephone calls through a new "Telephone Call Abandon Rate" service quality requirement (see section D.3 below).

C.5 - Written Responses to Enquiries

Background

This Original SQI is defined as follows:

> The written response to enquiries indicator measures the percentage of responses to enquiries that require written responses that are made within the minimum performance standard.
>
> The minimum standard for responding to requests by a customer or an agent of the customer for written information relating to the customer's account, will be within 10 working days following receipt of the request. The written response time must be met at least 80% of the time.
>
> The distributor must monitor its performance monthly and report the information annually.

The monthly information is to be reported as follows:
(1) number of requests for written responses
(2) number of requests for written responses provided within 10 working days
(3) percentage of requests for written responses met within minimum standard. [((2)*100/(1)]

The RRR data indicates that average annual performance in the sector in relation to this Original SQI for the past three years (2004 – 2006) has been 99%.

The Natural Gas SQR regime has a similar "Number of Days to Provide a Written Response" requirement. Under this requirement, a natural gas distributor must respond to complaints requiring a written answer within 30 days, 80% of the time.

SQI Consultation Sub Group Comments

The key observations and recommendations of the SQI Consultation Sub Group in relation to this Original SQI can be summarized as follows:

- The definition of this measure is largely acceptable, but some limited revisions and clarifications are recommended.

- Aspects of customer service that are or may be measured elsewhere (such as underground cable locates, service transfer requests and general customer complaints) should be excluded from this measure. For clarity, this measure should apply only to "qualified written enquiries", defined as enquiries regarding the provision of service directly affecting a customer.

- Refinements are needed with respect to the calculation of dates and to recognize that some requests pertain to or are dependent upon future events.

Board Staff Comments, Proposal and Question for Stakeholders

Board staff agrees that this measure should focus only on written enquiries that relate directly to the provision of service to a customer. It does not appear necessary to use this measure to track activities that are measured by other indicators, such as cable locates or appointments. Since the existing definition of this indicator refers to requests relating to a customer's account, staff does not believe that this measure was designed to track the processing of general enquiries.

Staff also agrees that, for clarity, a definition should be added for the concept of "qualified written enquiries", and that more precise direction would be useful in terms of identifying when the response time begins.

As noted above, the RRR data for this Original SQI reveals that average performance has been 99%, which significantly surpasses the current 80% minimum performance standard. Therefore, staff recommends an increase in the required performance standard to 90%, which is approximately mid-way between the current standard (80%) and average performance within the sector (99%).

C.5 – Board staff proposes the following as a "Written Response to Enquiries" ESQR:

This service quality requirement measures performance in relation to responses to qualified written enquiries that require written responses.

For the purposes of this service quality requirement, a "qualified written enquiry" means a written enquiry (letter, fax or e-mail) received by a distributor from a customer pertaining to the customer's existing or prospective service. A "qualified written enquiry" does not include any of the following, which shall be addressed in accordance with other applicable requirements: cable locate requests, retailer Service Transaction Requests and enquiries of a general nature not relating specifically to service currently provided to a customer or to a new service being requested by a customer.

A written response to a qualified written enquiry shall be sent by the distributor within 10 business days at least 90 per cent of the time on a yearly basis. The 10 business days shall be counted from the date on which any conditions associated with the enquiry have been satisfied (such as the date of a move where there is a request for a final statement of account) or, if there are no such conditions, from the date of receipt of the enquiry. The response shall be deemed to have been sent on the date on which it is faxed, mailed or e-mailed by the distributor.

Stakeholder input on the following question would be of assistance in further considering this proposed ESQR:

- *Should the Written Response to Enquiries ESQR apply only to those enquiries that relate to the customer's existing or prospective service or should it be expanded to apply to enquiries that relate to administrative or general matters? Why or why not?*

C.6 - Emergency Response

Background

This Original SQI is defined as follows:

> The emergency response indicator measures the percentage of emergency responses that are made within the minimum performance standard.
>
> At a minimum, emergency trouble calls (e.g. fire, ambulance, and police) will be responded to within 120 minutes in rural areas, and within 60 minutes in urban areas. The definition of rural and urban should correspond to the municipality's definition. The arrival of a qualified service person on site will constitute the response. The minimum standards must each be met at least 80% of the time.
>
> The distributor must monitor its performance monthly and report the information annually.
>
> The monthly information is to be reported as follows:
> (1) number of emergency calls for rural customers
> (2) number of emergency calls for rural customers at which qualified staff were on site within 120 minutes
> (3) percentage of emergency calls for rural customers met within 120 minutes [((2*100)/(1)]
> (4) number of emergency calls for urban customers
> (5) number of emergency calls for urban customers at which qualified staff were on site within 60 minutes
> (6) percentage of emergency calls for urban customers met within 60 minutes [((5*100)/(4)]

The RRR data indicates that average annual performance in the sector in relation to this Original SQI over the past three years (2004 – 2006) has been 95% for urban areas and 97% for rural areas.

The Natural Gas SQR regime has a similar "Response to Emergency Calls Responded to Within One Hour" requirement. Under this requirement, a natural gas distributor must respond to an emergency call within 60 minutes, 90% of the time.

SQI Consultation Sub Group Comments

The key observations and recommendations of the SQI Consultation Sub Group in relation to this Original SQI can be summarized as follows:

- There is considerable confusion as to what is to be measured by this indicator. For example, some distributors interpret it to include all trouble calls or outage responses, regardless of origin. Other distributors include only responses associated with specific originating bodies (for example, only those that involve fire, ambulance or police services).

- Other factors and pressures already ensure that a distributor reacts to emergency situations as promptly as possible, so tracking emergency response as an indicator is not necessary.

Board Staff Comments and Questions for Stakeholders

Board staff acknowledges the SQI Consultation Sub Group's comments that there are factors that can be expected to incite distributors to respond to emergency situations. Staff research conducted during the development of the Natural Gas SQR regime and for the purposes of the 2003 Discussion Paper on electricity distributor service quality regulation[5] reveals that emergency response SQIs are not widespread in other jurisdictions. However, due to safety risks it was felt necessary to include such a requirement in the Natural Gas SQR regime.

C.6 – Stakeholder input on the following questions would be of assistance in further considering this issue:

- Should the Board abandon the "Emergency Response" indicator from the service quality regime? Why or why not?

- If the measure were to remain and be included in a mandatory ESQR regime, what changes should be made to the measure to improve clarity and effectiveness? In this regard, Board staff agrees that a more precise definition of what constitutes an "emergency" would be useful, along the lines of the approach used in the Natural Gas SQR regime.

- If the measure were to remain and be included in a mandatory ESQR regime, should the performance requirement be increased? If so, to what level? Should the same increase apply to responses in both urban and rural areas, or just to one or the other?

[5] http://www.oeb.gov.on.ca/documents/cases/RP-2003-0190/sqr_discussionpaper_150903.pdf

D. PROPOSED NEW CUSTOMER SERVICE REQUIREMENTS

This section discusses three new service quality requirements that Board staff proposes be considered for inclusion in the mandatory ESQR regime.

D.1 - Time to Reschedule an Appointment

Background

The "Appointments Met" measure requires a distributor to advise the customer when an appointment will not be met, but does not address the related issue of rescheduling of a missed appointment.

Under the Natural Gas SQR regime, there is a specific and separate requirement for the rescheduling of a missed appointment. This requirement requires the distributor to contact the customer to reschedule a missed appointment within 2 hours of the end of the original appointment time. Arrangements to reschedule the missed appointment must be made within this 2 hour time limit 100% of time.

Board Staff Comments and Proposal

In the event that an appointment is missed, it is important that customers be provided with the opportunity to have the appointment rescheduled as soon as possible. It is the view of Board staff that missing a scheduled appointment represents a serious lapse in customer service, which is only compounded if associated with a failure to promptly take steps to reschedule the missed appointment.

> *D.1 – Board staff proposes that the Board consider adopting a new "Rescheduling of a Missed Appointment" ESQR. The following is the proposed definition and performance standard for this new measure, based on the comparable measure found in the Natural Gas SQR regime:*
>
> This service quality requirement measures performance in relation to the rescheduling of missed appointments. When an appointment to which the "Appointments Met" service quality requirement applies is missed or is going to be missed, the distributor must contact the customer to reschedule the appointment no later than 2 hours after the end of the original appointment time. Arrangements to reschedule the missed appointment must be made before the expiry of that time 100% of the time on a yearly basis. The rescheduled appointment becomes a new appointment for the purposes of the "Appointments Met" service quality requirement.

D.2 – Appointment Scheduling

Background

The "Appointments Met" measure requires a distributor to keep a scheduled appointment within a specific window of time, but does not address the issue of the date by which an appointment must be scheduled once it has been requested by a customer.

Board Staff Comments and Proposal

Customers often either require or desire that an appointment be scheduled on or by a specific date, and the ability of a distributor to accommodate such requests is an important element of good service quality. At the very least, a customer should be in a position to know the advance time necessary to book an appointment in order to ensure that the required service is provided when needed.

The "Connection of New Services" measure addresses this issue in relation to new connection services. Board staff believes that it is appropriate to create a new measure that addresses this issue in relation to all services to which the "Appointments Met" measure applies. This would also have the effect of maintaining a requirement for the timely scheduling of underground cable locate appointments notwithstanding the above proposal that there no longer be a separate stand-alone measure for cable locates.

D.2 – Board staff proposes that the Board consider adopting a new "Appointment Scheduling" ESQR. The following is the proposed definition and performance standard for this new measure, based on similar requirements applicable to the "Connection of New Services" measure:

This service quality requirement measures performance in relation to the scheduling of appointments.

An appointment to which the "Appointments Met" service quality requirement applies shall be scheduled to take place within 5 business days of the day on which all applicable service conditions are satisfied or on such later date as may be specified by the customer, provided also that all applicable service requirements are satisfied. This service quality requirement must be met at least 90 per cent of the time on a yearly basis.

D.2 – Continued

For the purposes of this service quality requirement, the service conditions to be met may include the payment of connection fees, the signing of an offer to connect, the delivery of equipment, the completion of distribution system extensions and the receipt of an electrical safety inspection certificate.

This service quality requirement does not apply to appointments that are subject to the "Connection of New Services" service quality requirement.

D.3 - Telephone Call Abandon Rates

Background

The "Telephone Accessibility" measure deals with how quickly a customer's call is answered, but does not provide an indication of how many customer calls are going unanswered.

Under the Natural Gas SQR regime, there is a specific and separate requirement relating to abandoned telephone calls. This requirement stipulates that the number of qualified calls that are abandoned by the customer should be no more than 10%.

Board Staff Comments and Proposal

It is the view of Board staff that the percentage of customers who abandon their attempts to reach a customer representative is as important an indicator of service quality as is the speed with which their telephone calls are answered. The level of frustration experienced by a customer who abandons his or her attempt to contact a distributor may well be even greater than the frustration of waiting a long period for an answer.

Board staff research conducted during the development of the Natural Gas SQR regime[6] revealed that other regulators, such as the Pennsylvania Utilities Commission and the Alberta Energy and Utilities Board, include standards relating to call abandon rates. Staff therefore believes that it is appropriate to establish a similar service quality requirement for electricity distributors.

---

6 http://www.oeb.gov.on.ca/documents/cases/EB-2005-0453/natural_gas_discussionpaper_290705.pdf

D.3 – Board staff proposes that the Board consider adopting a new "Telephone Call Abandon Rate" ESQR. The following is the proposed definition and performance standard for this new measure, based on the comparable measure found in the Natural Gas SQR regime:

This service quality requirement relates to calls to a distributor's customer care telephone number that are abandoned by the customer before they are answered.

The number of qualified incoming calls to a distributor's customer care telephone number which are abandoned before they are answered shall be 10% or less on a yearly basis.

For the purposes of this service quality requirement, "qualified incoming calls", "customer care telephone number" and "answered" have the same meaning as in the "Telephone Accessibility" service quality requirement.

E. EXISTING SYSTEM RELIABILITY INDICATORS

This section sets out the following:

- background information on the three Original SQIs that deal with system reliability.
- an analysis of current performance in the sector in relation to these Original SQIs.
- changes that Board staff proposes be made to these Original SQIs.
- changes that Board staff proposes be made to the reporting of these Original SQIs.

As discussed below, Board staff proposes that these Original SQIs not become mandatory ESQRs at the present time but be retained in a modified form for monitoring and reporting purposes.

E.1 – Setting Standards for System Reliability

Background

The Original SQIs include three system reliability indicators, which are defined as follows:

System Average Interruption Duration Index (SAIDI)

SAIDI is an indicator of system reliability that expresses the length of outage customers experience in the year on average. All planned and unplanned interruptions of one minute or more should be used to calculate this index. It is defined as the total hours of power interruptions normalized per customer served, and is expressed as follows:

$$SAIDI = \frac{\textit{Total Customer Hours of Interruption}}{\textit{Total Number of Customers Served}}$$

A distributor is required to monitor this index monthly and to report to the Board on an annual basis.

A distributor that has at least 3 years of data on this index should, at minimum, remain within the range of its historical performance.

The monthly information is to be reported as follows:
(1) total customer-hours of interruptions
(2) total number of customers served
(3) SAIDI [(1)/(2)]

System Average Interruption Frequency Index (SAIFI)

SAIFI is an indicator of the average number of interruptions each customer experiences. All planned and unplanned interruptions of one minute or more should be used to calculate this index. It is defined as, the number of interruptions normalized per customer served, and it is expressed as follows:

$$SAIFI = \frac{\textit{Total Customer Interruptions}}{\textit{Total Number of Customers Served}}$$

A distributor is required to monitor this index monthly and to report to the Board on an annual basis.

A distributor that has at least 3 years of data on this index should, at minimum, remain within the range of their historical performance.

The monthly information is to be reported as follows:
(1) total number of customer interruptions
(2) total number of customers served
(3) SAIFI [(1)/(2)]

Customer Average Interruption Duration Index (CAIDI)

CAIDI is an indication of the speed at which power is restored. All planned and unplanned interruptions of one minute or more should be used to calculate this index. It is defined as the average duration of interruptions in the year, and it is expressed as follows:

$$CAIDI = SAIDI = \frac{SAIFI}{\text{Total Customer Hours of Interruption}} = \frac{}{\text{Total Customer Interruptions}}$$

A distributor is required to monitor this index monthly and to report to the Board on an annual basis.

A distributor that has at least 3 years of data on this index should, at minimum, remain within the range of their historical performance.

The monthly information is to be reported as follows:
(1) total customer hours of interruptions (SAIDI)
(2) total number of customer interruptions (SAIFI)
(3) CAIDI [(1)/(2)]

Options for Measuring Reliability Performance

The current standard simply states that distributors with three years of data for the applicable Original SQI must "at a minimum, remain within the range of their historical performance". This performance standard does not, in the view of Board staff, provide a sufficient basis on which to adequately measure reliability performance, especially in the context of the potential for these standards to become mandatory. To provide a better basis for discussion, staff has analyzed the available data[7] against different

[7] The following information is based on the reliability data filed under the RRR for the three years 2004 - 2006. Because the data reported in the earlier years may not have been reported consistently or calculated properly, staff has removed any statistics that appeared to be unreliable. This approach may result in a slightly less than completely precise and comprehensive analysis, but staff believes that the analysis based on this more selective data represents a more accurate picture of general trends.

options for establishing a performance standard. Staff assumed that a reasonable performance standard would be the average level of performance of a comparative group of distributors. Staff then determined the average performance of different comparative groups and analyzed the performance of each distributor against that average. Those distributors whose outage statistics are higher than the average would not meet the required standard. The results of this analysis are set out below.

Board staff acknowledges that each of the performance standard options considered below may suffer from one drawback or another. For example, apart from lack of precision the current standard may also allow distributors to undergo slight decreases in reliability yet still remain within the "range of performance". Similarly, a standard based on a sector or group average may allow reliability of the sector or the group as a whole to decline unless a minimum reliability benchmark is included. Nonetheless, Board staff believes that the analysis set out below provides useful information against which to consider reliability performance by distributors.

i. Sector Average

Under this approach, the performance standard would be based on an average of reliability performance within the sector for the preceding three years. Using this approach, the results are the following:

Indicator	Standard Based on Sector Average Performance	% Of Distributors That Would Not Meet Standard	Average Performance of Distributors That Would Not Meet Standard
SAIDI	3.15	28%	6.11
SAIFI	1.81	36%	3.09
CAIDI	2.10	25%	4.07

ii. Rural and Urban Group Averages

Under this approach, different performance standards would apply depending on whether the distributor's service area is predominantly urban or predominantly urban. The performance standard would be based on an average of reliability performance within each group. Using this approach, the results are the following (a distributor was assigned to a group based on whether the majority of its service area is rural or urban, based on RRR filings):

SAIDI

GROUP NAME	# of Distributors in Group	Standard Based on Group Average Performance	% Of Distributors That Would Not Meet Standard	Average SAIDI of Distributors That Would Not Meet Standard
Rural	36	4.04	28%	8.15
Urban	53	2.34	26%	5.38

SAIFI

GROUP NAME	# of Distributors in Group	Standard Based on Group Average Performance	% Of Distributors That Would Not Meet Standard	Average SAIFI of Distributors That Would Not Meet Standard
Rural	36	2.11	39%	4.10
Urban	53	1.60	34%	2.86

CAIDI

GROUP NAME	# of Distributors in Group	Standard Based on Group Average Performance	% Of Distributors That Would Not Meet Standard	Average CAIDI of Distributors That Would Not Meet Standard
Rural	36	2.33	33%	3.39
Urban	53	1.77	30%	3.93

iii. Comparator Averages

Under this approach, different performance standards would apply depending on the cost comparator group to which the distributor belongs. As part of the Board's ongoing initiative relating to the comparison of electricity distributor costs, distributors have been divided into the following groups:[8]

Hydro One Networks Inc.
Hydro One Remote Communities
Small Northern distributors
Large Northern distributors
Southwestern Small Town distributors
Southwestern Midsize Town distributors

[8] More information on the cost comparator initiative and how these groups were developed is available at http://www.oeb.gov.on.ca/html/en/industryrelations/ongoingprojects_comparison-ontarioelectricitydistributorscosts.htm.

Eastern distributors
Large City Southern distributors
GTA Towns distributors

The performance standard would be based on the average of reliability performance within each comparator group. Using this approach, the results are the following (Hydro One Networks Inc. and Hydro One Remote Communities have not been included in the analysis):

SAIDI

GROUP NAME	# of Distributors in Group	Standard Based on Comparator Group Average Performance	% Of Distributors That Would Not Meet Standard	Average SAIDI of Distributors That Would Not Meet Standard
Small Northern	11	6.39	27%	10.66
Large Northern	6	4.13	50%	6.09
Southwestern Small Town	17	2.64	29%	4.46
Southwestern Midsize Town	16	3.91	19%	6.46
Eastern	10	2.58	40%	3.69
Large City Southern	10	1.34	30%	1.71
GTA Towns	16	1.45	31%	2.79

SAIFI

GROUP NAME	# of Distributors in Group	Standard Based on Comparator Group Average Performance	% Of Distributors That Would Not Meet Standard	Average SAIFI of Distributors That Would Not Meet Standard
Small Northern	11	2.03	36%	3.43
Large Northern	6	1.98	50%	2.76
Southwestern Small Town	17	1.26	47%	2.14
Southwestern Midsize Town	16	2.15	44%	3.37
Eastern	10	1.34	40%	1.87
Large City Southern	10	1.61	50%	2.14
GTA Towns	16	1.65	25%	4.02

CAIDI

GROUP NAME	# of Distributors in Group	Standard Based on Comparator Group Average Performance	% Of Distributors That Would Not Meet Standard	Average CAIDI of Distributors That Would Not Meet Standard
Small Northern	11	3.52	36%	5.43
Large Northern	6	2.50	33%	4.98
Southwestern Small Town	17	4.41	12%	12.77
Southwestern Midsize Town	16	1.52	38%	2.38
Eastern	10	1.70	40%	2.25
Large City Southern	10	.82	10%	1.17
GTA Towns	16	.97	50%	1.28

iv. Canadian Electricity Association Data

Under this approach, the performance standard would be based on reliability statistics compiled by the Canadian Electricity Association ("CEA") and reported in the CEA's 2005 *Annual Service Continuity Report on Distribution System Performance in Electrical Utilities*. Using this approach, the results are the following:

Indicator	Standard Based on CEA Data Average Performance	% Of Distributors That Would Not Meet Standard	Average SAIDI of Distributors That Would Not Meet Standard
SAIDI	4.80	14%	10.03
SAIFI	2.13	25%	3.37
CAIDI	2.26	25%	4.07

Board Staff Comments and Proposal

Based on the above analysis, the performance of a significant portion of distributors would not meet the performance standard regardless of which of the identified options were to be adopted, and they would not meet the standard by a considerable margin in many cases.[9]

[9] Changing the manner in which SAIDI, SAIFI and CAIDI are calculated (such as by excluding interruptions caused by loss of supply, which is discussed in section G.3 below), would affect the results of the analysis set out above.

Board staff acknowledges that system reliability is critical for customers. However, Board staff has noted the following issues relating to implementation of SAIDI, SAIFI and CAIDI as mandatory ESQRs at this time:

- Board staff is not aware of any widespread concerns with the current level of reliability being provided by distributors. A comparison of Ontario distributors' performance against the performance of distributors across Canada, as indicated by the CEA data, shows that 75% - 85% of Ontario distributors provide better reliability than the Canadian average.

- A number of distributors would not be able to comply with the mandatory requirements without incurring costs to come up to standard. The cost implications are currently not known, but could be substantial.

- There is currently no objective measure of the level of reliability that might be considered appropriate or adequate for the sector generally, or for individual distributors or groupings of distributors.

- There is currently no information regarding the willingness of customers to pay the costs associated with bringing their distributor up to a certain level of reliability performance.

The associated issues of the need for investments in distribution infrastructure and the facilities management processes of electricity distributors have been identified by the Board as warranting review.[10] Deferral of the implementation of mandatory reliability service quality requirements until those issues have been examined in greater depth will allow for a more comprehensive and coordinated consideration of reliability issues.

E.1 – Board staff proposes that distributor performance in relation to SAIDI, SAIFI and CAIDI continue to be monitored and reported, but not be the basis of mandatory standards at this time. As described in section E.2, staff is proposing that the definition of these measures be refined to provide additional clarity in order to improve consistency of reporting and accuracy of data.

The gathering of additional and improved data on these measures will contribute to the creation of a better empirical basis for the development of mandatory reliability standards in the future, and may also be of assistance in the development of restoration standards (see section F.2 below) and the assessment of distributor facility management processes.

[10] See the Board's 2007-2010 Business Plan and its draft 2008-2011 Business Plan.

E.2 – SAIDI, SAIFI and CAIDI Definitions

Background

Board staff believes that improvements to the definitions of each of the three reliability Original SQIs are appropriate in the context of the proposal that they be retained for monitoring and reporting purposes only at this time.

SQI Consultation Sub Group Comments

The key observations and recommendations of the SQI Consultation Sub Group in relation to the three reliability Original SQIs can be summarized as follows:

- It should be made clear that these measures apply only to sustained interruptions of one minute or more.
- Direction should be provided on how to calculate the number of customers against which performance is to be measured (i.e., yearly average or monthly average).
- The term “interruption” should be defined.
- Direction should be provided on how to calculate the duration of an interruption (i.e., when does the start time begin?).
- Examples should be provided on how to perform the calculations.

Board Staff Comments and Proposal

Board staff agrees that the definition of these Original SQIs could usefully be improved to address issues such as the nature and length of interruptions covered, the number of customers to be used in determining whether the performance standard has been met and the time at which an interruption is considered to have started. This will provide greater clarity for all concerned.

> *E.2 – Board staff proposes the following revised definitions for the SAIDI, SAIFI and CAIDI measures:*
>
> Service Reliability
>
> For the purposes of each of the three system reliability indicators set out below:

E.2 – Continued:

"interruption" means the loss of electrical power, being a complete loss of voltage, to one or more customers, including interruptions scheduled by the distributor but excluding part power situations, outages scheduled by a customer, disconnections for non-payment or power quality issues such as sags, swells, impulses or harmonics.

"sustained" means uninterrupted for a period of one minute or more.

"total number of customers served" means the average number of customers served in the distributor's licensed service area during the reporting period, calculated by adding the total number of customers served at the beginning of the reporting period and the total number of customers served at the end of the reporting period and dividing by two.

For the purposes of the definition of "total number of customers served" and the application of each of the three system reliability indicators set out below, the number of customers served shall be equal to the number of meters in service at the relevant time (such that a customer with two meters shall be counted as two customers).

For the purposes of the application of each of the three system reliability indicators set out below, in calculating the duration of an interruption the start of the interruption shall be considered to have occurred on the earlier of:

(a) the time at which the distributor receives a communication from a customer reporting the interruption; or

(b) the distributor otherwise becomes aware that the interruption has occurred.

System Average Interruption Duration Index (SAIDI):

SAIDI is an indicator of system reliability that expresses the length of interruptions that customers experience in a year on average. All planned and unplanned sustained interruptions should be used to calculate this index. It is defined as the total hours of sustained interruptions normalized per customer served and is expressed as follows:

$$\text{SAIDI} = \frac{\text{Hours of Sustained Interruptions for all Customers}}{\text{Total Number of Customers Served}}$$

E.2 – Continued:

System Average Interruption Frequency Index (SAIFI)

SAIFI is an indicator of the average number of sustained interruptions each customer experiences. All planned and unplanned sustained interruptions should be used to calculate this index. It is defined as the number of sustained interruptions normalized per customer served, and is expressed as follows:

$$\text{SAIFI} = \frac{\text{Number of Sustained Interruptions for all Customers}}{\text{Total Number of Customers Served}}$$

Customer Average Interruption Duration Index (CAIDI)

CAIDI is an indicator of the speed at which power is restored. All planned and unplanned sustained interruptions should be used to calculate this index. It is defined as the number of sustained interruptions normalized per customer served, and it is expressed as follows.

$$\text{CAIDI} = \frac{\text{Hours of Sustained Interruptions for all Customers}}{\text{Number of Sustained Interruptions for all Customers}}$$

E.3 – Adjusting Reliability Measures for "Loss of Supply"

Background

Under the current service quality regime, distributors are not only required to report on their SAIDI, SAIFI and CAIDI data but are also expected to monitor and record the cause(s) of service interruptions. The causes that distributors are expected, as a minimum, to monitor are identified in Table 15.2 of the 2006 Electricity Distribution Rate Handbook.

One of the causes is referred to as "Loss of Supply", and targets customer interruptions that are due to problems in the bulk electricity supply system. Many distributors have expressed to Board staff the view that distributors should be able to report their reliability performance data exclusive of interruptions due to loss of supply. According to those distributors, outages caused by a loss of system supply are not representative

of the quality of their respective facilities. Therefore, including outages due to loss of system supply misrepresents distribution system performance.

The CEA has reported on the causes of outages across Canada in their 2005 *Annual Service Continuity Report on Distribution System Performance in Electrical Utilities*. This report indicates that loss of supply is the cause leads to the most customers being interrupted and the most hours of interruption among all of the causes reported. Over a five year period, loss of supply accounted for 2.3% of the number of interruptions, 24.1% of the customers interrupted, and 26.9% of the hours of interruption.

As part of the process for reporting 2007 reliability data, the Board has requested that distributors also report, on a voluntary basis, their SAIDI, SAIFI and CAIDI data exclusive of interruptions that were caused by a loss of supply.

Board Staff Comments and Proposal

If, as proposed by Board staff, SAIDI, SAIFI and CAIDI will be maintained as monitoring and reporting requirements rather than as mandatory standards, some of the concerns that distributors have relating to the inclusion or exclusion of interruptions caused by a loss of supply may be diminished.

Staff notes that, when the Original SQI's were implemented, the Board concluded that all service interruptions should be reported, regardless of the cause. As and for so long as a service quality measure is implemented for monitoring and purposes only, it is not inappropriate for the measure to reflect events that are outside of a distributor's control.

However, given the significance of loss of supply as a causal factor in customer interruptions, Board staff believes that there is value in requiring distributors to report on their SAIDI, SAIFI and CAIDI data both inclusive and exclusive of interruptions caused by a loss of supply. The same would apply to MAIFI data, if a MAIFI service quality measure is adopted (see section F.4 below). Among other things, this will provide the Board with better information on the basis of which to move towards mandatory standards for these reliability measures.

> *E.3 – Board staff proposes that the RRR be revised to require distributors to report their SAIDI, SAIFI and CAIDI data both inclusive and exclusive of interruptions caused by a loss of supply. The same proposal would apply to MAIFI data if a MAIFI service quality measure is adopted.*

F. PROPOSED NEW SYSTEM RELIABILITY MEASURES

Although Board staff is not proposing that the three existing reliability Original SQIs become mandatory standards at this time, this does not detract from the importance that Board staff attaches to reliability as the most important element of service that a distributor can provide. In recognition of that importance, Board staff has identified three additional reliability measures that could be considered at this time, initially for monitoring purposes and ultimately as mandatory standards.

F.1 – Worst Performing Circuits

Many electricity service quality regimes in other jurisdictions have service quality requirements that relate to the performance of certain circuits. For example, in some jurisdictions distributors are required to report on any circuit with a SAIDI over 12, in others they must report their 10 worst performing circuits, and in yet others they must report on the worst 3% of their circuits.

In the past, stakeholders have recommended to Board staff that distributors be required to annually report on their five worst performing circuits in terms of system reliability.

It is believed that reporting on the worst performing circuits would allow reliability data to be disaggregated to a finer level of detail in order to determine the specific parts of a distributor's system that may be most problematic. Identifying and repairing the circuits that experience the most outages may be as or more important to customers than the interruptions measured by the reliability Original SQIs. The fact that a circuit appears on this list for two or three consecutive years would be a cause for concern, as it may signal that some customers are consistently receiving a lower level of service than other customers.

Participants in the 2003 consultation recommended that further consideration be given to this measure before it is adopted as a regulatory requirement. The concern was that distributors with a mix of urban and rural customers will almost always have rural feeders on the worst performing list due to the fact that rural circuits are always longer and are therefore significantly more susceptible to outages. In addition, if a feeder is a worst performer, switching can often be done to move the supply point off of the feeder to another station, although this may simply shift the problem to another circuit rather than eliminating it altogether.

Staff believes that it may be appropriate to establish a service quality measure for worst performing circuits. Staff proposes that this measure be implemented initially as a monitoring and reporting requirement with an associated performance standard, with a view to becoming a mandatory standard in the future.

F.1 – Stakeholder input on the following questions would be of assistance in further considering the implementation of a Worst Performing Circuits measure:

- Should a reliability measure be developed in relation to worst performing circuits? Why or why not?
- If such a reliability measure is developed, should it be implemented initially as a monitoring and reporting requirement or is it reasonable to move immediately to a mandatory standard?
- What should be measured (for example, the 5 worst circuits, the worst 3% of circuits, etc.)?
- How should the term "worst" be defined (for example, by the highest SAIDI, SAIFI and CAIDI, by a simple calculation of most outages, etc.)?
- What should the performance standard be?

F.2 – System Restoration

In addition to worst performing circuits, another common reliability indicator in use in other jurisdictions is a distributor's "restoration" performance. These measures relate to the time within which circuits must be repaired under normal and emergency circumstances.

Staff believes that it may be appropriate to establish a service quality measure for restoring supply to customers. Staff proposes that this measure be implemented initially as a monitoring and reporting requirement with an associated performance standard, with a view to becoming a mandatory standard in the future. The requirement could be to monitor and report, for each outage, the time to restore supply to 50% of the affected customers, the time to restore supply to 75% of the affected customers, and the time to restore supply to 100% of the affected customers.

F.2 – Stakeholder input on the following questions would be of assistance in further considering the implementation of a System Restoration measure:

- Should a reliability measure be developed for performance in terms of the restoration of supply? Why or why not?
- If such a reliability measure is developed, should it be implemented initially as a monitoring and reporting requirement or is it reasonable to move immediately to a mandatory standard?
- What should be measured?
- What should the performance standard be?

F.3 – Effect of System Interruptions on Other Distributors

The reliability of a host distributor's distribution system affects not only the distributor's customers but also the customers of any of its embedded distributors.

Loss of supply from the bulk electricity system is a significant causal factor in service interruptions experienced by customers of distributors. Each distributor is currently expected to monitor the effect that a loss of supply from an outside source has on its own system reliability (see section E.3 above). However, there is currently no requirement for a host distributor that causes a loss of supply to an embedded distributor to track the number of times that it is causing an outage or the number of distributors that are affected.

In order to get a better picture of a distributor's system reliability and of the effect that its level of performance is having on other distributors, Board staff believes that it may be appropriate to develop a service quality measure relating to such interruptions. Staff proposes that this measure be implemented initially as a monitoring and reporting requirement with an associated performance standard, with a view to becoming a mandatory standard in the future. The requirement could be to monitor and report on the number of such interruptions that are experienced by each embedded distributor.

F.3 – Stakeholder input on the following question would be of assistance in further considering the implementation of a new System Interruption measure:

- Should a reliability measure be developed in relation to outages caused to embedded distributors? Why or why not?
- If such a reliability measure is developed, should it be implemented initially as a monitoring and reporting requirement or is it reasonable to move immediately to a mandatory standard?
- Should the length of each outage be measured as well as the number of outages?
- What should the performance standard be?

F.4 – Momentary Average Interruption Frequency Index (MAIFI)

Each of the existing reliability Original SQIs measure performance in relation to interruptions that last for one minute or more. A "Momentary Average Interruption Frequency Index ("MAIFI") would measure interruptions that last for less than one minute.

In its Decision with Reasons in proceeding RP-1999-0034 referred to above, the Board stated as follows:

> The Board sees merit in the suggestion that a measure of system reliability for shorter duration or momentary outages (MAIFI) be monitored and reported. However, the Board was not provided with sufficient information on the current use of MAIFI within the Ontario distribution electricity industry. The Board expects that this measure will be further investigated and considered in the review for second generation PBR. (para. 5.1.23)

Although Board staff is not aware of customers raising momentary interruptions as a significant issue, it is reasonable to expect that the desire to minimize such interruptions has gained importance with the increased use and importance of computers and digital equipment

The SQI Consultation Sub Group commented that system design and technical limitations would limit the usefulness of this indicator as a regulatory requirement if applied to all distributors. Therefore, it recommended that MAIFI not be included as a requirement at that time but that further research is done in consultation with distributors to determine the overall costs and benefits of reporting on MAIFI events.

This initiative is the first opportunity for the Board to further consider the introduction of MAIFI as a service quality measure. Board staff acknowledges that additional information is required to enable a more meaningful assessment of MAIFI, including whether and to what extent MAIFI information is currently being collected by distributors and the difficulties and costs associated with that collection.

F.4 – Stakeholder input on the following questions would be of assistance in further considering the implementation of MAIFI as a measure:

- Have distributors been tracking MAIFI performance? If so, what difficulties have been experienced in collecting the information?
- What costs would need to be incurred to track MAIFI performance?
- Should a reliability measure be developed in relation MAIFI? Why or why not?
- What should the performance standard be?

G. CONSEQUENTIAL CHANGES TO RRR

Board staff's proposed revisions to the definitions of the customer service Original SQIs (proposed to become ESQRs) and the definitions for the proposed new customer service ESQRs would eliminate all references to reporting. Board staff proposes that all of the reporting matters associated with these measures be included in the RRR.

Board staff also believes that the RRR is the appropriate instrument in which to both set out the existing reliability Original SQIs (in the modified form proposed by staff) and the additional proposed reliability measures, and to provide for monitoring and reporting in relation to them.

All service quality matters would be removed from the 2006 Electricity Distribution Rate Handbook, and all monitoring and reporting matters would be consolidated into one document that is in greater current usage.