The Voice Of Ontario's Electricity Distributors

December 20, 2011

Board Secretary
Ontario Energy Board
P.O. Box 2319
27th Floor
2300 Yonge Street
Toronto, ON - M4P 1E4

Via email

Dear Board Secretary:

Re: Board File No. EB-2010-0249; Phase 2 – Initiative to Develop Electricity Distribution System Reliability Standards

The Electricity Distributors Association (EDA) is the voice of Ontario's local distribution companies (Distributors). The EDA represents the interests of the over 80 publicly and privately owned Distributors in Ontario.

The EDA would like to provide the attached submission on the Phase 2 initiative to developing electricity distribution system reliability standards. The EDA's submission has been prepared in consultation with the EDA members of the Regulatory Council and the Operations Council.

The EDA would like thank the Board for the opportunity to provide further comments on this initiative and we look forward to having the issues addressed by the proposed Reliability Data Working Group.

Yours truly,

"Original Signed"

Maurice Tucci
Policy Director, Distribution Regulation

Attached: EDA submission

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EDA's Comments on Phase 2- OEB Initiative to Develop Electricity Distribution System Reliability Standards (EB-2010-0249)

On March 31, 2011, the Ontario Energy Board (OEB) issued a letter on next steps on codification of distribution system reliability measures and performance targets. The OEB stated that consultations should focus on:

- resolving issues relating to the quality and consistency of reliability data gathered and reported by distributors; and
- understanding and resolving the implementation issues associated with monitoring and reporting requirements relating to the normalization of data, causes of outages, customer specific reliability measures, and a "worst performing circuit" measure.

On November 23, 2011 the OEB issued a letter to all distributors announcing that OEB staff are proceeding with consultations outlined as Phase 2 of the reliability standards project. The purpose of Phase 2 is to: (a) resolve issues relating to the quality and consistency of the reliability data gathered and reported by distributors, and (b) understand and resolve implementation issues associated with monitoring and reporting requirements relating to both existing and proposed measures. Some of this data relates to measures that are currently reported to the OEB (e.g. SAIDI, SAIFI and CAIDI), while other data relates to measures used by some distributors for internal planning purposes (e.g. worst performing circuits).

The ultimate objective of Phase 2 is a common understanding regarding how reliability measures should be monitored and reported.

OEB staff has invited distributors and other interested parties to form a Reliability Data Working Group to consider feedback provided and address the technical aspects of improving the quality of the reliability data being reported by distributors. The Working Group will bring practical experience associated with how data is collected and hopefully will involve distribution staff that are directly involved in implementing the reporting requirements. The EDA agrees with the establishment of a working group to address these issues and has encouraged its members to volunteer for the Reliability Data Working Group.

Updating Wording of the SAIDI, SAIFI, CAIDI Definitions.

A key objective of this consultation and the Working Group should be to address any changes or improvements needed to the definitions for current reliability measures (SAIDI, SAIFI, CAIDI & MAIFI). It has been noted by EDA members that the quality of the data could be improved if explicit definitions and example calculations were provided to distributors for various situations.

OEB staff indicated they understand there are inconsistencies in the interpretation of existing reliability indicators and the way results are calculated. Data may be submitted consistently from year to year by the same distributor, but differences in interpretation of the definitions may differ from distributor to distributor and may lead to the reporting of inconsistent data between distributors. OEB staff has also expressed concern that adequate practices and protocols may not

be in place for every distributor to establish that reliability data is being collected and recorded properly. For example, the use of judgment associated with the determination of the duration of outages and the number of customers affected should be well documented.

The EDA believes that current reliability definitions do not provide guidance in certain outage instances such as those associated with temporarily vacant premises. The current reliability definitions calculate the start of the interruption based on the earlier of either: a) the time at when the distributor received a communication from a customer reporting the outage, or b) the time at which the distributor otherwise determined that the interruption occurred. Firstly, should the distributor report on outages associated with temporarily vacant premises, and secondly, the distributor may not be aware that there has been an outage until a customer reports the outage, which could be a number of months in the case of cottage customers. This is an example where distributor judgment is needed, since current definitions do not address the situation.

There has been discussion about the improvement of data quality once smart meters are deployed. It may to be noted that data from smart meters may, for some distributors, be used to determine when an outage occurred. Without this capability, a distributor may not have addressed an outage at the actual time of occurrence because it was not aware that there was the outage until notified by the customer. For these situations, the outage duration would be based on when the customer notified the distributor. Other distributors have this capability and know when the outage began before the customer calls in, which assists the distributor in dispatching crew earlier than had they depended on a customer notification.

Optional smart metering capabilities can result in different practices between distributors, and as a result, reliability data may not be directly comparable across all distributors. Data available from smart meters beyond the load/billing information required for the MDMR will vary between distributors depending on both the meter technology/vendor which has been deployed, as well as the selection of in-house software and data storage. As these investments have already been made, generalizations about what information is or can be made available from smart meters (start and end time of an interruption in this case), need to acknowledge that this data is not available to all distributors, and that there would be significant investments required for some distributors if such data/functionality were made a requirement.

This lack of comparability needs to be recognized and distributors believe the best comparator is their own previous reliability performance. In the Concept Paper prepared by PEG for the OEB consultation EB-2010-0379 “Defining, Measuring and Evaluating the Performance of Ontario Electricity Networks”, there is valuable discussion with respect to comparability among distributors: In section 3.1.3 Measuring Quality, it is “sensible to have indicators that are measured on less than a system wide basis. This is because system-wide measures may mask persistent service quality problems for “pockets” of customers. An example may be circuit reliability performance standards… appropriate measurement of reliability is particularly challenging. Measured reliability statistics can vary substantially for a given utility over time, or across utilities because of differences in their territories and customer bases. Care must therefore be taken when reliability measures are used in regulation.”

In section 4.3 Service Quality Standards, "Setting standards can also be important for promoting service quality goals. In practical terms, two main sources of information can be used to set standards and deadbands in regulatory plans. The first option is peer performance. In principle, peer–based benchmarks may be attractive since they are commensurate with the operation and outcomes of competitive markets, where firms are penalized or rewarded for their price and reliability performance relative to their competitors. In practice, however, peer–based benchmarks are challenging. One reason is that uniform data are not generally available for some utility metrics, such as reliability. Differences in measure definitions would make peer data difficult to compare and inappropriate as benchmarks. Even if measures are defined comparably across utilities, peer benchmarks should control for differences in utility business conditions that affect performance. Controlling for the impact of business conditions on expected system reliability performance is complex.

The alternative is the utility's own performance as an indicator. For example, benchmarks could be based on average performance on a given indicator over a recent period. Reliability assessments would then depend on how an individual utility's measured reliability levels differ either positively or negatively from its recent historical experience."

OEB staff has asked for examples of various outage occurrences and the methodology used to calculated timing and duration. The EDA supports the idea that a comprehensive database be developed and made available to distributors, providing all types of outages and the associated measurement. Such a database would be very useful and the EDA proposes that this task be taken on by the OEB's Working Group. The EDA also notes that consideration should be given to reviewing the definitions used by the Canadian Electricity Association (CEA) for the collection of reliability data towards enhancing existing OEB definitions. The CEA definitions may provide more comparability between various distributors across Canada.

Improved Monitoring and Reporting Processes

The OEB conducted a survey which found that some distributors did not have a SCADA system. Distributors with SCADA systems indicated SCADA only tracks certain outages, such as those involving auto-reclosures on high voltage feeders. OEB staff suggest the quality of data would be improved were distributors to use the most effective and efficient practices and procedures for monitoring outages. OEB staff is considering whether the OEB should develop a guide of best practices for monitoring and reporting reliability data. A key goal for the Working Group should be to consider whether a guideline of best practices is needed, and/or even possible to compile.

The EDA agrees that the Working Group should review whether a best practices guide would be practical recognizing that not all issues may be resolvable.

Normalizing Reliability Data for Major Events

Normalizing reliability data to remove the impact of major events allows distributors and regulators to be able to better determine year to year comparisons of reliability performance. Major events are events that occur rarely but have a significant impact, like ice or wind storms. OEB staff is aware that a few distributors review system reliability data adjusted to remove

major events, but this practice is not widespread and data may not be adjusted consistently across distributors. OEB staff believes data should be normalized based on a consistent approach. An outstanding question is which approach to use.

Presently the two most common approaches used in Ontario are removing events that affect a certain percentage of the customer base (e.g. 10% of customers affected); or the Institute of Electrical and Electronics Engineers (IEEE) standard 1366. Many stakeholders have suggested using IEEE Standard 1366 for normalizing data (determine a major event based on an outage which exceeds the average outage duration by a certain percentage). Others have suggested the IEEE Standard is flawed, and would prefer percentage of "customers affected".

Whichever approach is used, OEB staff has suggested all distributors should measure and report data both inclusive and exclusive of the impact of major events, as well as report the cause(s) of major event days.

The EDA notes that there are issues associated with either approach. The IEEE 1366 has recently been recognized by IEEE as having a problem because a distributor that experiences a major event will subsequently have a higher threshold (e.g. more customers without power) to pass in order to remove the next major event based. This higher threshold persists for five years as it will remain in the calculation database for five years. This is due to the methodology where there is reliance on an erroneous assumption of a log-normal distribution of major event incidences.

The percentage of customers may not work very well given the large differences between Ontario distributors. If a 10% threshold is used to normalize (10% of customers without power) then this will likely result in more incidents being removed for distributors with fewer customers.

The EDA suggests that all events that are outside the control of the distributor should be removed from the normalized data. In effect, if distributors use reliability statistics that consider the cause of the outage and remove outages outside their control, then normalization would not be necessary as noted below.

<u>Reporting of Reliability Data for Outages Caused by Distributor-Controlled Factors.</u>

The OEB noted that stakeholders have suggested outages caused by factors within the control of a distributor are deserving of greater attention and outages should be reported on to understand their origin (e.g. controllable, non-controllable, loss of supply, planned).

Currently, distributors are required to keep records of, but not report to the OEB, interruptions by "cause code". Distributors are currently reporting SAIDI, SAIFI and CAIDI inclusive and exclusive of Cause Code 2 – Loss of Supply. The rationale behind this is that loss of supply is an event outside of a distributor's control. OEB staff has suggested that distributors be required to report their reliability statistics based solely on outages that are caused by factors within the control of the distributor.

The EDA agrees with OEB staff on this issue and agree that the most relevant causes under distributor control are Code 1 – Scheduled Outages, Code 5 – Defective Equipment, and Code 8 – Human Element. Code 3 – Tree Contacts, should also be considered as outages caused by tree contact may have been prevented by the distributor's vegetation management program. The EDA has been informed that the CEA is also reviewing cause codes and also sub-cause codes that the Working Group should consider.

OEB staff has noted that accuracy of the data recorded would depend on a good understanding of the definitions.

The EDA agrees and believes the task of defining cause codes and providing examples should be assigned to the Working Group. Data on the causes of interruptions would further assist distributors with system planning and investment.

Standardizing Certain Customer-Specific Measures/ Worst Performing Circuit Measures

Some stakeholders have indicated support for a move towards indicators and standards focused on the impact of outages on individual customers. Currently some distributors use measures such as "Customers Experiencing Multiple Interruptions" (CEMI), "Customers Experiencing Long Duration Interruptions" (CELID), "Customer Interruptions per KM", and "Customer Hours of Interruptions per KM".

The EDA agrees with OEB staff that this information may be useful in assessing and improving customer satisfaction for customers that persistently experience poor reliability.

It is recognized that while a distributor may have a reasonable system-wide performance, it may also have certain assets with chronic reliability issues not evident in system-wide reporting measures. Identifying these underperforming assets may help distributors focus their resources on those parts of the system that are delivering poor performance to customers, possibly due to assets needing repair or replacement.

The OEB has noted that some distributors have cautioned against the use of the worst performing circuit measure since automated distribution systems can be reconfigured on a regular basis and the concept of a fixed feeder may not apply.

OEB staff understands that a number of distributors, including those that raised the concern, have reported that they in fact, currently track their feeder performance through various methodologies. OEB staff has said they believe it would be valuable to establish a standardized definition of such a measure for use by distributors who do monitor their worst performing circuits.

The EDA notes that there are a number of potential issues with regard to measuring customer specific outages and worst performing assets. The data may not be comparable between distributors and should ideally be used as an internal tool only for focusing resources. For some distributors, the worst performing service area or group of customers may in fact always be in that situation, given the nature of the assets which are operating as they were designed (e.g.

customers at the end of a long line in a heavily wooded area). This data should be used internally to determine why the performance is below average and to determine if it is practical to improve reliability and whether these assets should be repaired or replaced. The EDA believes that these measures should not be used to compare distributors and ask that this issue be addressed by the OEB's Working Group.