Ontario Energy Board
Commission de l'énergie de l'Ontario

Report of the Board

EB-2014-0189

Electricity Distribution System Reliability Measures and Expectations

August 25, 2015

1. SUMMARY

This Report sets out the direction that is being taken by the Ontario Energy Board (OEB) to establish an expected level of electricity reliability performance by distributors.

These reliability expectations are in support of the OEB's Renewed Regulatory Framework. One of the outcomes of the renewed framework is operational effectiveness, which requires continuous improvement in productivity and cost performance; and that utilities deliver on system reliability and quality objectives.

Specific reliability performance objectives will set the level of performance a distributor is expected to deliver. Continuous improvement will be demonstrated by a distributor's ability to deliver improved reliability performance without an increase in costs, or maintain the same level of performance at a reduced cost.

The OEB will continue to use the system reliability indicators that are part of the performance Scorecard: the "Average Number of Hours that Power to a Customer is Interrupted" and the "Average Number of Times that Power to a Customer is Interrupted. (SAIDI and SAIFI[1] respectively)

A set of measures with baselines[2] will be established for each distributor, based on its' average performance over the previous 5 years. A distributor can also choose to propose different baselines, supported by rationale. In either case, these will remain in place for 5 years[3]. The distributor's actual performance will be measured annually, based on a five year rolling average of their performance. This rolling average will be compared to the established baseline in order to monitor performance trends.

In order to ensure the measured distributor performance is related to conditions that are within the distributor's control, outage events related to "Major Events" will be excluded from the data used to assess performance[4]. The definition of what constitutes a "Major Event" will be established in a separate consultation.

[1] System Average Interruption Duration Index and System Average Interruption Frequency Index
[2] Baseline is an initial set of critical observations or data used for comparison
[3] In conjunction with the filing of Distribution System Plans. Please see discussions in section C.5 of this Report.
[4] The current practice of excluding "Loss of Supply" events will also continue.

Along with defining Major Events, the OEB will be announcing a consultation related to a distributor's response to a Major Event. This project will establish a process for measuring the effectiveness of the implementation of a distributor's response plans.

The OEB will also move forward with the introduction of customer specific system reliability measures. A letter will be issued announcing consultations with industry stakeholders relating to the initiatives on Major Events and customer specific reliability measures at a later date.

2. INTRODUCTION

On September 18, 2013, the OEB issued a letter announcing the start of the electricity distribution reliability standards initiative. The objectives announced in the letter were to:

- Establish specific performance expectations for the existing system reliability measures. (SAIDI and SAIFI)

- Consider development of customer specific reliability measures (e.g. customers experiencing multiple interruptions), and the mechanisms for monitoring of momentary outages.

This initiative is intended to support the OEB's Renewed Regulatory Framework (RRFE). One of the outcomes of the renewed framework is operational effectiveness, which requires continuous improvement in productivity and cost performance; and that utilities deliver on system reliability and quality objectives.

On July 15, 2014, the OEB issued a Staff Discussion Paper that provided background related to objectives of this initiative. The paper summarized the feedback received from a Stakeholder Working Group on the issues, and offered OEB staff's initial proposals with respect to the objectives of the initiative.

Twelve stakeholders commented on the Discussion Paper. Their comments can be found at the following link on the OEB's web site, Electricity Distribution Reliability Standards.

After considering the results of the consultations, and the OEB's own expectations regarding the establishment of system reliability performance objectives and continuous improvement, *the OEB has concluded that it will proceed with establishing policies relating to system reliability performance objectives.*

This OEB Report sets out the approach that will be used to establish system reliability performance expectations for each distributor.

2.1 – Using System Reliability Performance Objectives

As described in the OEB's approach to measuring distributor performance, (the Scorecard Report[5]), in order to facilitate performance monitoring and eventually distributor benchmarking, the OEB is using a scorecard approach to effectively translate the four outcomes of the renewed regulatory framework into a coherent set of performance measures. This approach effectively organizes performance information in a manner that assists easy evaluations and meaningful comparisons.

Distribution system reliability performance measures and expectations are one of the keys to measuring distributors' performance and assessing the achievement of the Operational Effectiveness outcome.

The Scorecard includes two of the OEB's existing system reliability indicators: SAIDI[6] (Loss of Supply) and SAIFI[7] (Loss of Supply). To improve understandability and transparency for customers, these measures are referred to respectively on the Scorecard as:

- Average Number of Hours that Power to a Customer is Interrupted
- Average Number of Times that Power to a Customer is Interrupted

As stated in the Scorecard Report, each measure included on the Scorecard will have an established minimum level of performance that a distributor is expected to achieve[8]. The original performance levels associated with the two reliability indicators were that a distributor will remain within the range of its historical performance. The policy set out in this Report will establish a new minimum level of performance for these measures.

The introduction of specific reliability performance objectives will establish the level of performance a distributor will be expected to deliver. Continuous improvement will be demonstrated by a distributor's ability to deliver improved reliability performance without an increase in costs, or maintain the same level of performance at a reduced cost.

[5] EB-2010-0379, Report of the Board Performance Measurement for Electricity Distributors: A Scorecard Approach, issued on March 5, 2014
[6] Average length of time of the outage, excluding outages caused upstream
[7] Average number of times there is an outage, excluding outages caused upstream
[8] Scorecard Report, Page iii

3. SETTING PERFORMANCE EXPECTATIONS

The OEB will use the following approach to setting system reliability performance expectations for use on the Scorecard:

- Use System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI)
- Use individual performance expectations for each index for each distributor
- Baseline levels will be based on the average of the distributor's performance over the previous 5 years.
- Distributors will have option to apply for establishing a different baseline at the time of filling their next Distribution System Plan.
- Baselines will be fixed and remain in place for five years. After five years[9], they will be revised.
- Baseline levels will be compared to a rolling average of the distributor's performance over the most recent five year period. Performance trend (improving/declining) will be analyzed.
- Measured performance will exclude both "Loss of Supply[10]" events and "Major Events[11]" outside of the distributor's control.
- Reporting of un-adjusted performance data (i.e. – including all outages) will continue in order to monitor the complete customer reliability experience.

3.1 – The Use of SAIDI and SAIFI

The original goal of this project was to establish performance baselines for SAIDI and SAIFI that would be used to monitor continuous improvement through the Scorecard. SAIDI and SAIFI (excluding Loss of Supply) are two of the measures currently being used on the Scorecard to measure the "Operational Effectiveness" outcome.

[9] To be aligned with COS applications or the filing of Distribution System Plans, where possible
[10] Defined as cause of outage – Code 2, customer interruptions due to problems associated with assets owned and/or operated by another party, and/or in the bulk electricity supply system.
[11] Typically related to high impact, infrequent weather events

Some stakeholders have suggested that rather than use those two measures, the OEB consider focusing on the causes of outages. Analysis of the cause of outages is an important way to review the underlying influences on a distributor's reliability performance. This data can be used as a guide to identify where investments should be made to maintain or improve reliability. Starting for the 2014 reporting year, the OEB requires distributors to report data on the causes of outages. Once this data is available it will be a valuable tool for the OEB to evaluate the effectiveness of a distributor's asset management plan.

However, the OEB believes that the most effective way to review a distributor's effectiveness in managing it system reliability performance is through indices and trends that measure outages from all causes, except for Loss of Supply and Major Events.

The OEB believes that for the purposes of the Scorecard, **SAIDI and SAIFI remain as the base indicators of reliability performance** (see discussion about normalizing the performance data for Loss of Supply and Major Events). These two measures are most commonly used to monitor system reliability around the world and provide a good representation of the customer experience.

3.2 – Individual Baselines for Each Distributor

The OEB believes that there should be an established minimum reliability expectation for all customers "of comparable service requirements and geographic settings". The policy approach set out in this Report is one of the first steps towards meeting that goal.

However, as outlined in the July 2014 Staff Discussion Paper, effective performance expectations must also reflect the business conditions in a distributor's service territory. In Ontario, distributors operate under many varying business conditions that have contributed to their current reliability performance, including their historical asset investment strategy, their design criteria, age of assets, the amount of underground assets mandated by the local authority, the mix of customers, population density and localized weather events, etc.

As outlined in OEB's consultant's report, (the "PEG Report"), a review of the available reliability performance data indicates that there is great variability and apparent randomness in Ontario distributors' underlying reliability data. As a result, the OEB believes that initially, approaches like regional, peer-group or province-wide baseline expectations would not be reflective of today's reality, and can be better achieved through scorecard comparisons of actual historical performance, for each distributor.

Many stakeholders were supportive of setting individual objectives for each distributor. It was suggested by some, that setting Province-wide, regional or peer based targets would not be fair or realistic, due to the factors noted above. It was also suggested that such approaches may be appropriate for certain distributor targets, but could add further complexities that may not be applicable to all distributors' service territories. Stakeholders who supported regional or peer group targets believe that such targets will allow distributors to be benchmarked against their peers, and allow the OEB to determine the effectiveness of improvement in reliability metrics.

The presentation on the Scorecard of each distributor's individual baseline and annual performance will achieve the objective of comparing one distributor's performance to another. One of the intents of the OEB's performance Scorecard is to allow for the public to examine and compare all distributors' performance on a number of measures. The OEB believes that the use of individual reliability performance expectations, and subsequent performance results, will assist stakeholders in their efforts to benchmark distributors against their peers.

Therefore, **the OEB will set individual performance baselines for each index, for each distributor.** The OEB believes this a fair and reasonable approach to monitoring how the distributor is managing its own business conditions and evaluating how effective the distributor is in maintaining and improving its reliability performance.

3.3 – Baselines Based on 5 Year Historical Average

Historical baselines reflect a company's own operating circumstances and the typical factors faced by the distributor. As noted in the PEG report, extraordinary, and less frequent events can significantly affect measured reliability from year to year. Weather is the salient example. Statistics suggest that the annual variation can be many standard deviations different from the average. Understanding this excessive performance variation leads the OEB to conclude that a smoothing approach, to account for outlier performance and focussing on performance trends, provides a measure to assess the long term changes in a distributor's reliability performance.

The majority of stakeholders were supportive of establishing reliability performance baselines on a distributor's own historical data. An alternative suggestion was to base the expected performance level on the worst performing year over the past five years, while another suggestion was that the performance level should be based on the best 3 or 4 years in the last 5 years to ensure an expectation that reflects the need to improve. There was also a concern expressed that until distributors have the opportunity to

determine their customer needs and expectations; the relevance of historical performance is unknown.

Historical evidence suggests that using the worst performing year, would yield reliability baselines that are many standard deviations below the average or the 'normal' performance that customers have experienced, and would set too low a baseline value. For instance, in the example set out in Attachment A, the worst performing year in the past five showed a result of a SAIDI of 5. However, the five year average result for SAIDI is 3.28 and the best year's result was 2.11. Basing the performance expectation on the worst year would establish baseline that is 1.5 times worse than the average and 2.5 times worse than the best result. This approach would not reflect the principles expressed in the RRFE which requires operational effectiveness through continuous improvement in productivity and cost performance, and that utilities deliver on system reliability and quality objectives.

Removing only the worst performing year of the 5 year historical data set (e.g. – using the best 3 or 4 years from the last 5), removes the worst outlier, and will skew the performance results. Again, taking the example set out in Attachment A removing the worst year's performance from the last five years would result in an average SAIDI performance of 2.8, which is only marginally better than the result using the five year average approach.

Best practices in statistical analysis, would argue that removal of outliers must be done carefully[12], either exceptionally bad or good performance achievements must be considered for removal, if at all. Significant judgement will need to be applied, in order not to inappropriately skew the resultant baseline values. At this juncture, with the data set as reported, and the significant variation of performance year over year, little statistical value can be achieved in performing this exercise, at this point in time.

The OEB believes that setting objectives based on a distributor's 5 year historical average, will best allow the expected performance to reflect a company's own operating circumstances and the typical factors experienced by the distributor. This is a key to setting the initial expectations. The use of five years provides a period that is long enough to capture the impact of a distributor's external business conditions on its measured reliability data, but recent enough to reflect the current operating environment (e.g. - the methods being used to collect data on interruptions).

[12] It is important that outliers are identified as truly special causes before they are eliminated. Extreme values should only be explained and removed from the data if there are more of them than expected under normal conditions.

As a result of these factors, the OEB will **use the average of the previous five years of historical data, to establish performance expectations.** The use of historical performance is also the most common method for setting benchmarks in reliability regulation and the targets that emerge from this approach appear generally reasonable[13]. The OEB notes that using historical results to set the performance expectations ensures that customers will at a minimum continue to receive the level of service that they have come to expect from the distributor. It also establishes an initial baseline used for comparison to determine whether a distributor is meeting the goal of continuous improvement.

3.4 – Alternate Option: Use Future Prediction of Performance

Comments received from a number of distributors suggested that an alternative, to using the historically established baseline, distributors should be able to apply to the OEB for performance levels based on their own projections of future performance, for a variety of reasons. This suggestion arises partly from the concern that the level of historical performance may not accurately reflect the future needs and expectations of the current customer base.

This suggestion is also based on the view of some of distributors that the operation of distribution systems will be changing in the near future, due to factors like limits in capital budgets and the implementation of smart grid technology. It has been suggested that changes to the operating environment may significantly impact future reliability performance results in comparison to historical performance. For example, the use of new smart gird technology will result in a distributor being able to more accurately monitor outage events and react more expeditiously in responding to those events. The use of more accurate monitoring systems typically identifies additional outage events or outage durations that were not identified previously, while on the other hand, self-healing grids and pin-point diagnostics may be able to mitigate the impact of those events. As a result, the SAIDI and SAIFI data may be reported more accurately, and those results may be different from historical yet the actual customer experience may not have changed.

Finally, recognizing that the historical baselines include major events, some distributors may elect to retrospectively adjust their historical reliability performance to reflect that major events will be excluded from future calculations of performance results, and thus propose reliability baselines better than the historical reference set.

[13] A five year time frame is also in keeping with other OEB initiatives like the Scorecard, Incentive Ratemaking and the filing of Distribution System Plans.

The majority of stakeholders supported the use of predictive performance expectations, provided the distributor could set out valid evidence for values that are different than ones based historical measurements. Some consumer groups were against this suggestion believing that such an approach would lead to deterioration in service because the distributor could get approval for performance levels that are worse than current levels.

The OEB believes establishing a performance expectation that is based on historical data is a reasonable starting point and may continue to be appropriate for many distributors. However, the OEB agrees with the arguments that some distributors will be able to provide evidence that supports the establishment of different expected performance levels based on the unique circumstances of the distributor.

Therefore, the OEB will allow **distributors who wish to establish performance expectations based on something other than historical performance, may apply for different performance expectations during a Cost of Service rates proceeding or any other time that the distributor is required to file a Distribution System Plan.** At that point, a distributor shall bring evidence of its capital and operational plan, and other factors that may justify the reliability performance it plans to deliver. Distributors should also bring the results of consultation with its customers that identifies the level of reliability desired by customers as part of justification for non-historical targets.

3.5 – Fixed Reliability Performance Expectations, Updated Every 5 Years

The majority of submissions on the July 2014 Staff Discussion Paper supported the use of a rolling average benchmark. (E.g. – one which is updated every year based on the most recent five years of performance.) These parties submit that a rolling average target will more accurately reflect a distributor's current level of performance. They suggest that a fixed target would become less and less relevant as time passed.

Those opposed to a rolling average are concerned that setting the expected performance level using such a dynamic approach will allow the target to be reduced if the performance in each subsequent year deteriorates. This approach would not be in keeping with the OEB's objective to encourage continuous improvement.

SAIDI and SAIFI are "lagging indicators" that represent the accumulating effect of years of investments in system maintenance and improvements. Distributor plans today may not impact SAIDI and SAIFI results until years later. As such, it is the OEB's view that updating a distributor's reliability performance expectations on a frequent basis will not

necessarily reflect a stable baseline from which to measure the effectiveness of a distributor's system planning and resulting reliability performance.

While the OEB agrees that an annually updated rolling average reflects the distributors' actual level of performance, the OEB believes that establishing a set of performance expectations for the distributor's planning horizon, provides both the distributor and their customers a starting point that can be used to support the asset management plan of investments that also reflect customer expectations. Further, over this planning horizon, investments and the impact of those investments on the performance can be measured, against the plan approved by the OEB.

Establishing a five year time frame for the expected performance level is in keeping with other OEB initiatives. For example, the Scorecard monitors the performance of distributors over the previous five years. Also, the OEB requires distributors to develop Distribution System Plans on a five year basis. Therefore, the OEB will use **performance baselines that will stay in effect for a period of five years[14].**

After five years of performance results, the expected level of distributors' performance will be reset to reflect the average operating levels from the previous five years. The most effective judge of whether a distributor has met the renewed framework's goal of continuous improvement will be seen in the year over year performance trends and whether the distributor's new performance objective is an improvement over the previous one, or the same but at a lower cost.

The OEB does recognize the value in monitoring a rolling average of a distributor's performance to reflect current conditions. For that reason the OEB plans to compare the established performance expectations to a rolling average of performance. (See the discussion in section 3.7 for more details.)

[14] The OEB believes that it will be most effective to have this five year period coincide with a distributor's five year Distribution System Plans. Therefore as part of the phase in of these performance targets, a distributor's initial five year target period should be adjusted to reflect the timing of the filing of its Distribution System Plan. (As a result, the first target period may only be for one year.) When a Distributor's Distribution System Plan is next filed after the implementation of this policy (2016), the target will be based on an average of performance over the previous five years. (Unless, the distributor wishes to apply for a different target as discussed in Section C.4.)

3.6 – Setting Dead bands for Performance Baseline Expectations

Many stakeholders supported having fixed performance expectations (e.g. one that is set at a specific number). These parties cite concerns that an expectation that allows for a range of performance (e.g. with dead-bands) would provide an opportunity for distributors to reduce performance while still staying within the required range.

Others argued for an objective that does allow for a range of performance. They cited the need for flexibility to represent the natural yearly fluctuations in performance that distributor's experience. Another concern, raised regarding the use of a specific value developed from an average, is the fact that the distributor will be always over or under performing an average. As a result, it was suggested there should be dead-bands applied to the performance expectations.

Dead-bands are a common way to accommodate year-to-year fluctuations in external factors. Variation in the company's performance around a historical mean will, at least in part, reflect short run fluctuations in those business conditions. Dead-bands, if used, should reflect the observed variability in measured system reliability.

However, analysis of the available performance data indicates that there are significant fluctuations in a distributor's performance from year to year. For instance, in the example set out in Attachment A, the best SAIDI performance over the previous five years was 2.11, while the worst was 5.01. This results in worst performance that is 2.5 times worst then the best. The average performance is a SAIDI of 3.28. Applying dead-bands around the average to encompass the range of past performance would require a dead-band range of 1.5 times the average performance.

Establishment of dead-bands typically are applied to processes and performance measures that are principally stable and exhibiting less randomness. The OEB is concerned that attempting to set a target range, or use of dead-bands that would accommodate the significant fluctuations that exist in Ontario data, would result in a performance expectations that would be too broad to be meaningful.

3.7 –Use of Rolling 5 year Average to Describe Actual Performance

The OEB recognizes the value in monitoring performance on a similar basis to that used in establishing the baseline expectations. Therefore, using a rolling 5 year average, of a distributor's performance provides a measure that is consistent with the baseline. As discussed earlier, the use of a rolling average helps to smooth out the natural yearly

fluctuations in performance that distributor's experience, while still offering the insight on its performance and performance trending.

Therefore, the OEB will **compare a fixed performance baseline (average of the historical 5-year performance) against a rolling 5-year average of the distributor's actual performance.**

The OEB believes that from an analysis point of view, the overall trend in a distributor's actual performance (as demonstrated by the directional trend symbol on the Scorecard) will provide the valuable insight into whether a distributor's performance is declining or improving. Please see Attachment A for a demonstration on how this approach will be implemented in practice.

3.8 – Normalizing Performance Data for Major Events

Stakeholders commenting on the July 2014 Staff Discussion Paper raised an issue relating to the treatment of major events in evaluating reliability performance. Major Events are unique events that exceed the normal design criteria of the distribution system, and it is uneconomic to increase the design criteria to withstand these infrequent events.

Events such as the 2013 ice storm have the broadest impacts on electricity customers and currently manifest themselves as higher values of SAIDI and SAIFI. Yet these events may obscure or overwhelm the key reliability question, of how consistent and reliable is the distributor's reliability performance, reflecting the efficacy of its asset management plan and maintenance strategies. It has been suggested that in order for the OEB to effectively review a distributor's reliability performance (and ultimately the efficiency of a distributor's system plan), an analysis of a distributor's typical performance, is required to allow for more accurate year to year comparisons of performance. Therefore, stakeholders commented that distributors should be allowed to report reliability data that has been adjusted to remove the impact of Major Events.

In most jurisdictions around the world, distributors exclude significant outage events (typically weather events) from their reliability statistics because these events are atypical and idiosyncratic[15], so including them can lead to a distorted perception of the distributor's underlying reliability performance. By normalizing the reliability data (e.g. –

[15] The general assumption is that it is not cost effective to upgrade the system to withstand these infrequent, high impact events.

removing the effects of Major Events), distributors and regulators can review data that more closely represents typical service conditions.

- The OEB recognizes that a distributor's reliability performance is influenced by factors that are both external and internal to the distributor's actions. The OEB believes that in order to move towards the goal of establishing a minimum reliability expectation for all customers "of comparable service requirements and geographic settings" and to accurately review a distributor's performance, it is important to exclude events that are outside of the distributor's reasonable control. Therefore, the OEB will **exclude "Major Events" from the data used to establish reliability performance.** [16]

- The OEB will be announcing a new initiative to begin consultations with stakeholders to develop a reasonable definition of what constitutes a Major Event shortly.

- The OEB notes that the current historical data that will be used to establish the performance objective will not have been adjusted for Major Events. However, the future performance data, which will be used for comparison will be adjusted to exclude Major Events. As a result, for the next five years, a distributor's performance objective will be compared to data that does not include one or more significant outage events, (unless the distributor elects to apply for an adjusted performance benchmark that excludes these). The OEB understands that this could provide distributors with a better opportunity to meet or exceed the established performance expectations, in the medium term.

- Major Events by their very nature will be rare. Therefore, there may not be much variation between adjusted and unadjusted data. However, it is a fact that the historical performance objective will be based on a result that is calculated on a different basis than the annual results. Given this fact, closer scrutiny will be given when reviewing a distributor's reliability results. In essence, a decline in reliability performance based on adjusted (Major Event excluded) data, when compared to unadjusted data will signify a greater cause for concern.

- Normalization of data, by excluding Major Events, is important for use in determining whether a distributor has met the goal of continuous improvement. However, it is also important for the OEB to continue to monitor the complete reliability performance of a distributor, including all outages. From the customer

[16] The current practice of excluding "Loss of Supply" events will also continue.

perspective all outages have an impact and the cause for the outage is not relevant to their experience. An awareness of increasing frequency of major events can lead to the distributor examining their design criteria, and to assess the cost benefit in developing a strategy to harden the assets, over the longer run. For that reason, the OEB will also continue to require distributors to report unadjusted reliability data, as is the current practice.

4. MONITORING RESPONSE TO MAJOR EVENTS

4.1 – Background

While agreeing to exclude the impact of Major Events from reliability performance data, the OEB continues to believe that the way a distributor responds to a Major Event is important.

These events are by their very nature the most extreme and impactful outage events that customers experience. In consequence, these are events that would require the distributor to initiate its emergency preparedness response capabilities.

The impact of climate change and the issue of system resiliency is an increasingly important issue for distributors, consumers and regulators. Following the 2013 Ice Storm, a number of distributors completed assessment reports of their response to the storm. These reports identified issues related to a distributor's preparedness for events including; the ability to handle customer call volumes; the need to improve Outage Management Systems, including increased smart meter functionality; and more effective co-ordination between work crews and internal departments. Most importantly, the ability to communicate accurate restoration times to customers in a timely manner was identified as the biggest requirement and the biggest challenge.

The OEB's Distribution System Code (DSC) includes provisions related to a distributor's emergency response plans. Including section 4.5.6 of the DSC, which requires a distributor to develop and maintain appropriate emergency plans in accordance with the requirements of governments and the Market Rules. Section 4.5.7 of the DSC requires a distributor to establish outage management policies including arrangements for on-call personnel and the operation of a call centre. The efficacy of response management also links closely with effectiveness of a distributor's normal or routine system performance.

Given the impact of Major Events or emergency situations on system reliability and the customer's experience, it is important the OEB ensures that distributors are meeting the requirements of the DSC and are adequately prepared to respond to Major Events and the challenge of restoring service promptly and efficiently.

To achieve this objective, the OEB will be launching an initiative **to introduce new reporting requirements that will provide the OEB with the information necessary to assess a distributor's response to** a Major Event.

As these new reporting requirements will be triggered when a Major Event occurs, the development of the requirements will be in conjunction with the initiative to develop a reasonable definition of what constitutes a Major Event.

5. CUSTOMER SPECIFIC RELIABILITY MEASURES

5.1 – Background

The July 2014 Staff Discussion Paper put forward a proposal to undertake a pilot project with a number of willing distributors to work towards the goal of implementing the monitoring of outages at the individual customer level. The paper also asked for input on the question of whether the OEB should set a deadline date for the implementation of customer specific reliability measures.

The majority of submissions on the Staff Discussion Paper were supportive of the OEB undertaking a pilot project related to examining the implementation of customer-specific reliability measures.

Some parties supported the introduction of a deadline for the implementation of customer specific measures. Their view is that there is no reason why Ontario distributors could not have systems in place to monitor performance at this level and a deadline would encourage distributors to move ahead with implementing the necessary requirements.

Other parties were against the introduction of a deadline. Their view is that more information is required before moving ahead. Most notably these parties submit that an analysis of the costs, and determination of whether consumers want such reporting, should be completed first.

The OEB has long recognized the need to explore reliability performance beyond the system wide level. The OEB is concerned with the extent to which specific customers may experience significantly below average reliability performance. A move towards customer specific reliability measures is essential to identifying those pockets of underserved customers.

Therefore, the OEB will **move forward with the introduction of customer specific system reliability measures**, as soon as practical.

OEB staff will begin consultations with the industry to determine what monitoring and reporting approaches will be appropriate for introducing such measures. When that consultation is complete, the OEB expects to introduce customer specific reliability measures and reporting requirements.

6. COMPLAINTS ABOUT MOMENTARY OUTAGES

6.1 – Background

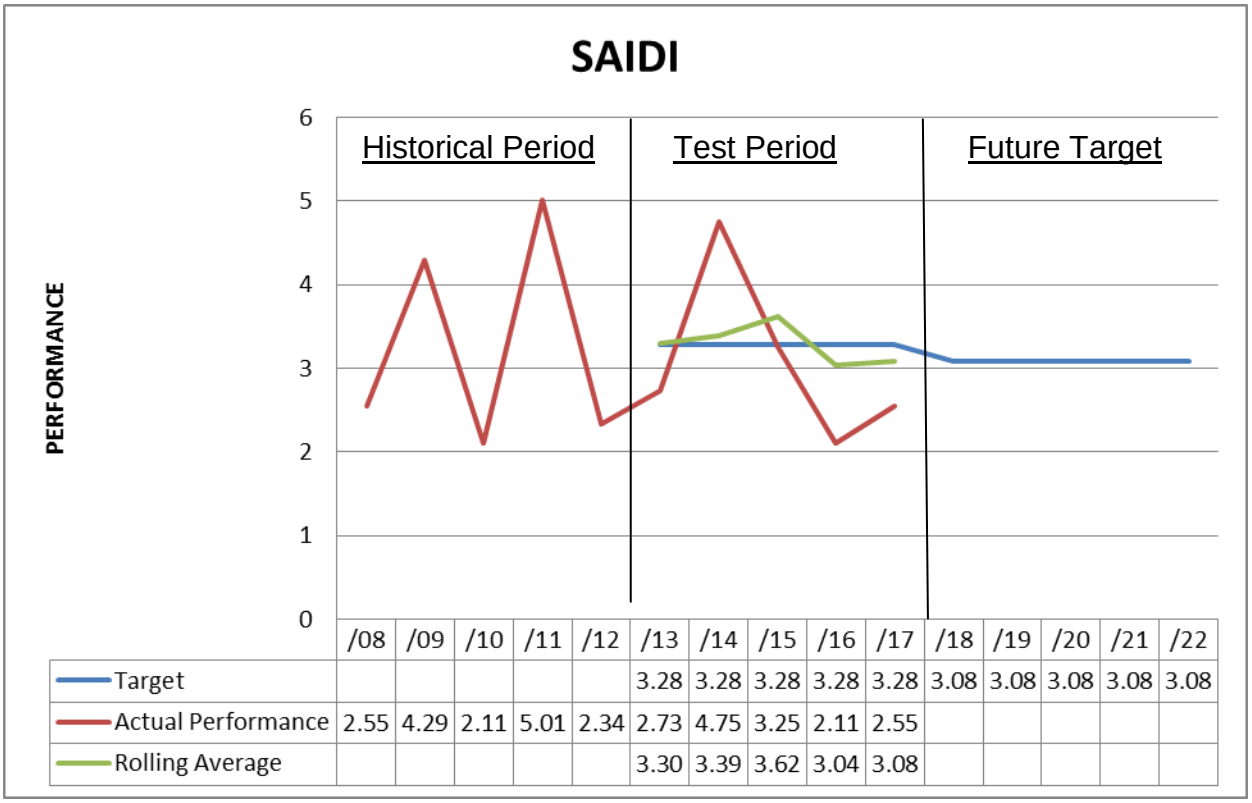
The July 2014 Staff Discussion Paper put forward a proposal that all distributors develop and implement written practices and procedures for responding to customer complaints about momentary outages[17], including investigating ways to minimize the effect of such outages.

Submissions on the staff paper suggested that there is no need to implement written procedures for responding to customer concerns regarding momentary outages. Parties suggest that existing mechanisms are sufficient to respond to customer concerns. Even customers groups involved in this initiative offered the view that such action was not necessary.

Accordingly, the OEB will **not move forward with a requirement to implement written procedures for responding to concerns relating to momentary outages**. However, the OEB recognizes that momentary outages are having a greater and greater impact on customers. Therefore, the OEB does expect that distributors will have robust processes in place that address the roles and responsibilities of parties when attempting to limit the impact of momentary outages. Distributors should also ensure that concerns over momentary outages are addressed through their customer engagement processes.

[17] typically caused by accidents, acts of nature, etc., which require automatic operation of a utility's protective equipment with a very short loss of power outage duration lasting less than one minute

ATTACHMENT A
(Monitoring of Performance)



	/08	/09	/10	/11	/12	/13	/14	/15	/16	/17	/18	/19	/20	/21	/22
Target						3.28	3.28	3.28	3.28	3.28	3.08	3.08	3.08	3.08	3.08
Actual Performance	2.55	4.29	2.11	5.01	2.34	2.73	4.75	3.25	2.11	2.55					
Rolling Average						3.30	3.39	3.62	3.04	3.08					

Performance Trend					

The red line on the chart above represents this distributor's yearly SAIDI performance results.

The SAIDI performance objective for this distributor starting in 2013, based on the previous five years performance is 3.28. (The blue line on the chart.)

The five-year rolling average of this distributor's performance (the green line on the chart) does not meet the target in the first three years of the test period. However, the distributor's five-year rolling average performance improved in the final two years of the target period and exceeded the target.

Most importantly, the performance trend improved or remained steady in four of the five years of the target period.

After five years, the performance objective will be re-set. The target for the future objective period shows an overall improvement in the distributor's actual performance with an objective for SAIDI of 3.08 vs. 3.28.