



EPCOR Distribution & Transmission Inc.

DISTRIBUTION SERVICE QUALITY AND RELIABILITY PERFORMANCE,
MONITORING AND REPORTING PLAN

2009 ANNUAL REPORT



EPCOR Distribution & Transmission Inc.

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INTRODUCTION / SUMMARY

1. Discussions of any changes to the Wire Owner's measurement protocol or to the internal reporting methods that are used to obtain the data measured related to this Plan and provide an explanation for the change.

As discussed in section 3.1.1 EDTI has made a minor refinement to its calculation of Percentage of Cumulative Meters with Readings Less Than or Equal to 65 Days. Upon review of its data collection methodology, EDTI has determined that its calculation of meter read completion was not including de-energized sites with no usage in its number of cumulative meters read. Meter readings for de-energized meters with no usage have been included in this calculation starting in Q4 2009 and have resulted in an increase in this meter reading performance measure.

a. Discussion of any missing data or other events that could reasonably affect the quality of the data immediately after becoming aware of the missing data or events

EDTI has no data quality issues to discuss.

b. Request by the Wire Owner to waive any applicable performance standard and the exceptional circumstances that lead to the failure to meet the standard

EDTI does not report under Rule 002 section 3.5 Call Answer Performance Measures as it does not operate a call centre other than staffing the EPCOR Power Emergency line which fields power outage calls. As expressly stated in Rule 002, calls to an outage or emergency call centre are to be excluded from the calculation of call answer performance.



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- c. Discussion of service quality issues, trends in service quality data including any proposed corrective action plans to remedy failing performance standards

EDTI comments are reflected through this document as appropriate.



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3.1 METER READING PERFORMANCE MEASURES

3.1.1 Percentage of Cumulative Meters with Readings Less Than or Equal to 65 Days

Standard: Settlement System Code, Appendix B 4.1.1

“Obtain at least one meter reading from 100% of cumulative meters every two months”

	<u>Month</u>	<u>A</u> <u>% Cumulative</u> <u>Meters Read</u>	<u>B</u> <u>Explanation of Results</u>
1	January	98.0	No Comment.
2	February	98.1	No Comment.
3	March	98.1	No Comment.
5	April	98.3	No Comment.
6	May	98.3	No Comment.
7	June	98.3	No Comment.
9	July	98.2	No Comment.
10	August	98.0	No Comment.
11	September	98.0	No Comment.
13	October	99.6	Upon review of its data collection methodology, EDTI has determined that its calculation of meter read completion was not including de-energized sites with no usage in its number of cumulative meters read. Meter readings for de-energized meters with no usage have been included in this calculation starting in Q4 2009 and have resulted in an increase in this meter reading performance measure.
14	November	99.6	No Comment.
15	December	99.5	No Comment.
16	Annual Average	98.5	



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Description of data collection methodology:

2. Meter readings are captured in EDTI's Meter Data Management ("MDM") System. EDTI runs reports at the end of each month that identify the number of sites that have at least 1 actual meter reading within the two previously completed reading cycles. On the last day of the month, an extraction is collected from the wires Site Management system to identify the number of cumulative meter sites in MDM responsibility.

3. The formula for the Cumulative Meter Reading Percentage reported for a particular month is as follows:

$$\frac{\text{\# of cumulative meters readings collected in the two previously completed collection cycles}}{\text{\# of cumulative metered sites in MDM taken at the last day of the month}}$$

Action Plans and Comments:

4. Meter Readers experience a number of challenges in obtaining meter readings from every premise. Reasons for "missed" reads include:

- Obstructed gates, no response at front door.
- Locked gates, no response at front door.
- Meter located inside the premises with no response from the customer.
- Access key does not work.
- Damaged meter.
- The meter is obstructed, or located in hazardous or hard to access locations.
- The meter has been removed.
- Aggressive dogs located in the proximity of the meter(s).



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5. The EDTI Meter Reading operation takes the following actions in its effort to eliminate missed reads:
- Meter Readers have been instructed to pay particular attention to meters that were not read during the previous reading cycle.
 - Meter Readers are directed to return and follow up on any “skipped reads” upon completion of their routes. (e.g. Gate locked, no answer at the front door at 9:00 am – the customer may be home later in the day)
 - A minimum of two Meter Readers are assigned to follow up on “skipped reads” from the previous day’s regularly scheduled assignments.
 - One Meter Reader is specifically tasked to follow up on missed reads appearing on the “Missed Actual Read Report” over an evening shift:
 - A “Missed Actual” meter will appear on the Missed Actual Read Report after 4 attempts to collect a read have been unsuccessful.
 - Duties include, checking keys, preparing and collecting access instructions, contacting customers by telephone to arrange access and on site visits.
 - The evening shift is suspended during the winter months and is resumed when daylight hours increase in the spring.
 - As a precautionary safety measure, Radio Frequency power and water meters that can be read remotely from the outside of a yard are being installed at selected locations that have been identified as containing extremely aggressive dogs and / or sites that have been identified as hazardous or hard to access locations. This ensures that readings will be collected from these sites.



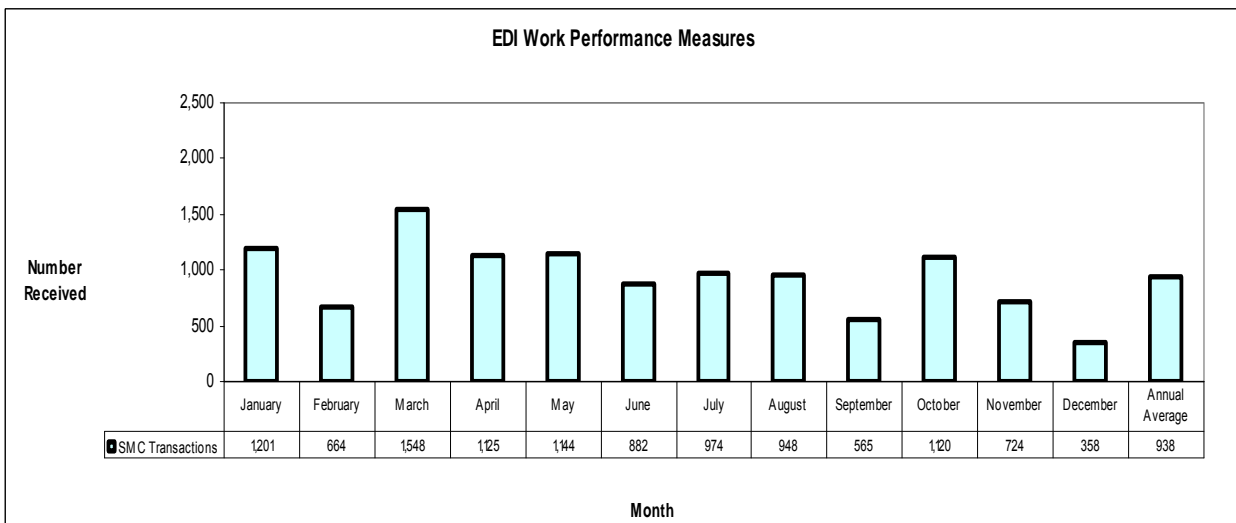
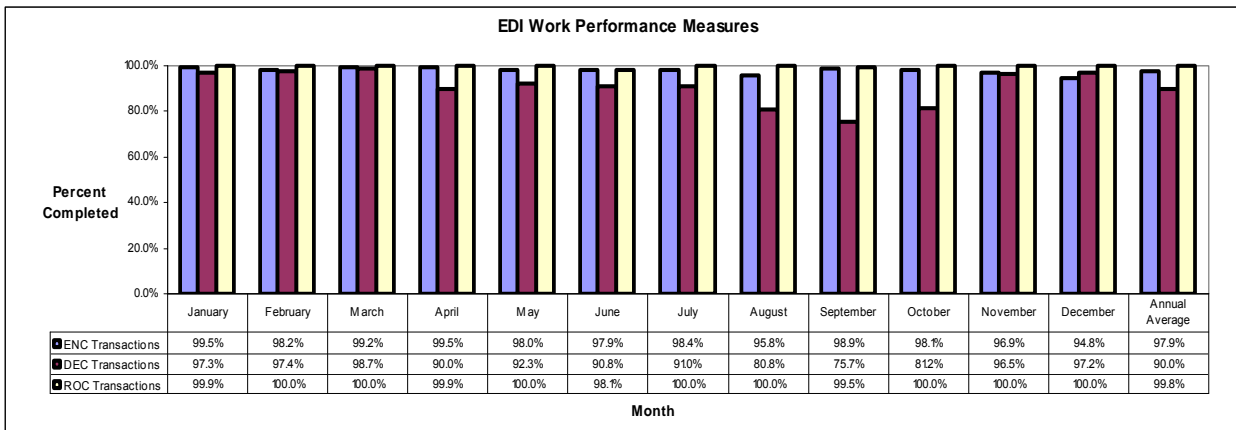
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3.2 WORK COMPLETION PERFORMANCE MEASURES

3.2.1 Percentage of Retailer-Requested Work Completed Within the Suggested Timing Notification of the *Settlement System Code*

Standard: Settlement System Code, Section B.8

ENC (Energize Completion)	5 Days
DEC (De-Energize Completion)	5 Days
ROC (Request Off Cycle Meter Read Completion)	5 Days
SMC (Site Metering Characteristics)	





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Description of data collection methodology:

6. All transactional data is logged and extracted from EDTI's Utility Information System ("UIS") and the Site Relationship Management System ("SRM"). All work completion measures are calculated based upon when the complete transaction is submitted to the retailer.

Explanation of Results:

7. Both the ENC and DEC results for the first quarter reflected a high completion rate. All orders were completed as requested with the exception being locations not ready for energization or locations where EDTI is unable to obtain access.

8. The ENC results for the second quarter continued to reflect a high completion rate. The DEC results for the second quarter reflected a slightly lower completion rate relative to the first quarter. EDTI experienced a significant increase in the number of DEC orders received over May and June as a result of the end of the winter rule period. This increase resulted in a lower completion percentage over the quarter.

9. The ENC results for the third quarter continued to reflect a high completion rate. The DEC results for the third quarter reflected a lower completion rate relative to the first and second quarters due to the following:

- In July EDTI experienced a major high wind storm which resulted in EDTI's meter installers being temporarily assigned to assist emergency crews in the removal of trees and debris from EDTI's distribution system.
- EDTI's Meter Installation Area experienced a slight turnover of employees resulting in manpower shortages and lower productivity while staff were orientated and trained.



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- EDTI has experienced ongoing difficulties in the coordination of keys required to access apartment buildings to complete service requests. This is a result of EDTI removing lock boxes from the exterior of buildings to address security issues associated with the vandalism of the lock boxes and the theft of keys.
10. These issues resulted in fewer deenergize requests being completed within the regular 5 day window.
 11. The ENC results for the fourth quarter reflect a slightly lower completion rate. This decrease was primarily due to the break down of two vehicles used for new service energizations. The DEC results for the fourth quarter reflect a significantly higher completion rate relative to the previous quarter.
 12. As discussed above, the low completion rates in the third quarter were a result of turnover of meter installation staff resulting in manpower shortages and lower productivity while replacement staff were orientated and trained. These new employees are now in place and adequately trained resulting in the improvement in completion rates for the fourth quarter.
 13. A report is run daily to indicate de-energized requests that are not completed. Resources are applied to complete these orders within the timeframes allowed.
 14. The ROC results for the year continue to reflect a high completion rate. All orders are completed with the exception being premises where access cannot be gained.
 15. SMC Transactions are customer driven requests.



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Action Plans and Comments:

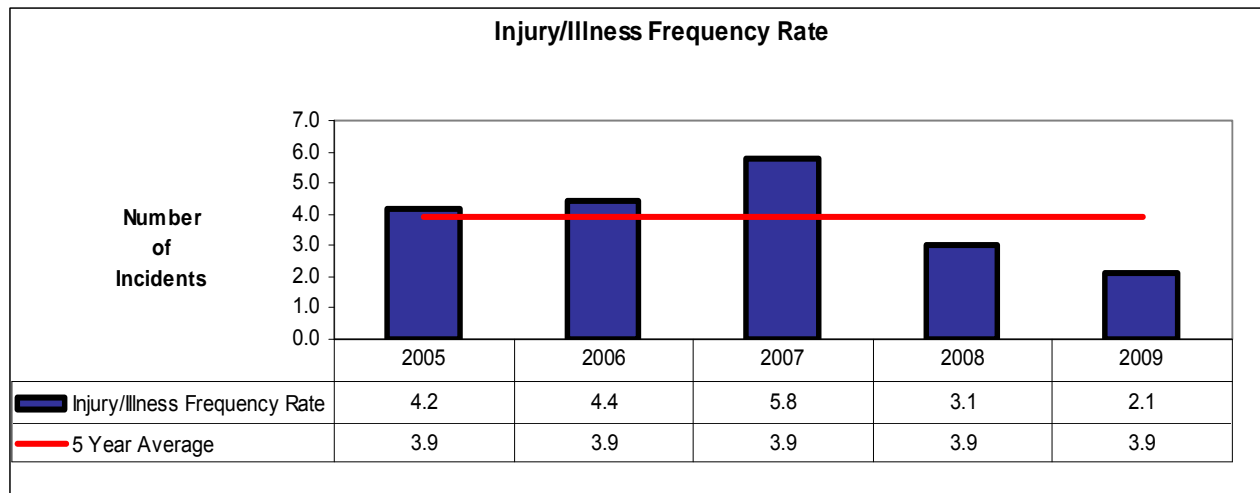
16. EDTI plans to continue with the existing processes currently in place to maintain the timeliness of completing ENC and DEC requests.



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3.3 WORKER SAFETY PERFORMANCE MEASURES

3.3.1 All Injury/Illness Frequency Rate



Description of data collection methodology:

17. The All Injury/Illness Frequency Rate is calculated in accordance with the CEA requirements and definitions as follows:

$$\frac{(\text{Disabling Injuries} + \text{Medical Aid Injuries} + \text{Fatalities}) * 200,000}{\text{Total hours worked by Wire Owner's employees per calendar year}}$$

18. Injury/Illness cases are the total number of incidents that result in the employee missing work or requiring medical attention as a result of an injury sustained while performing work for the Wire Owner. The All Injury Frequency Rate is also reported as a five-year rolling average.

19. Consistent with CEA reporting protocols, the EDTI safety information reported above excludes safety information for EDTI's Meter Readers as this function is grouped by the CEA with the retail / customer service organizations and therefore not included in the Distribution safety metrics reported above.



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Explanation of Results:

20. Number of injuries experienced decreased slightly while work hours increased which resulted in the all injury frequency rate decreasing to 2.1. Injuries experienced remain consistent with ergonomic type injuries being the predominant injury source resulting in strains and sprains.

Action Plans and Comments:

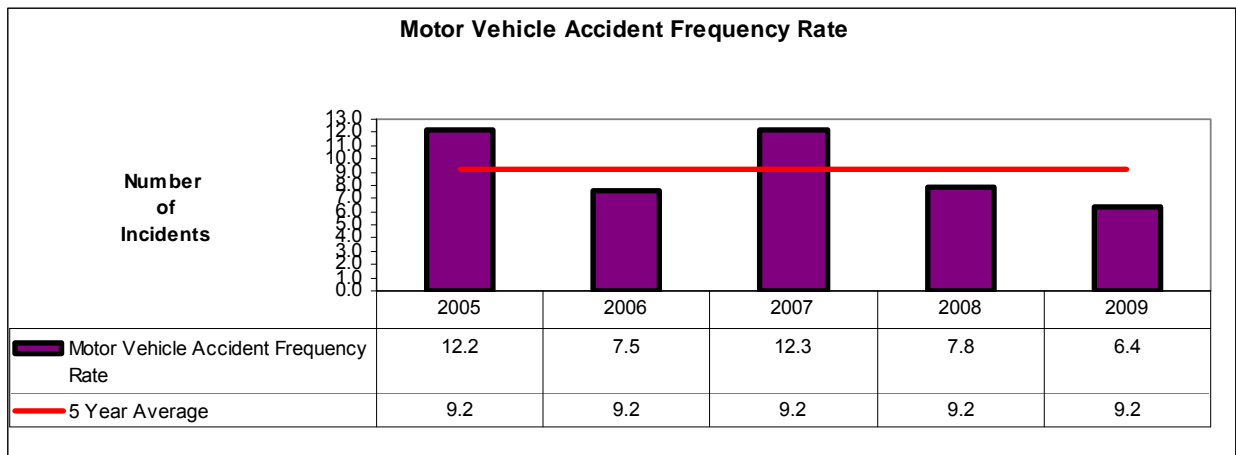
21. For 2010 EDTI has initiated a series of goals, strategies, and action plans for all aspects of the companies operations and includes safety as a major component. The theme for 2010 is "back to basics" whereby EDTI will ensure that all legislative requirements are being met and reviewing industry best practices.

22. The goal for EDTI's Health and Safety department is to maintain a healthy, safe and accident free work environment.



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3.3.2 Motor Vehicle Accident Frequency Rate



Description of data collection methodology:

23. The Motor Vehicle Accident Frequency Rate is calculated in accordance with the CEA requirements and definitions as follows:

$$\frac{\text{Number of Recordable Accidents} * 1,000,000}{\text{Kilometers Driven}}$$

24. A recordable accident is any occurrence involving a Wire Owner's vehicle that results in a recordable injury, or total damage in excess of \$1,000, while the vehicle is being operated by an employee. The Motor Vehicle Accident Frequency Rate is also reported as a five-year rolling average.

25. As a result, EDTI no longer includes safety information related to ETI or ETECH staff. Consistent with CEA reporting protocols, the EDTI safety information reported above excludes safety information for EDTI's Meter Readers as this function is grouped by the CEA with the retail / customer service organizations.



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26. EDTI also notes that in 2005, the CEA modified the standard for recording of the Motor Vehicle Accident Frequency Rate to include all preventable and non-preventable collisions.

Explanation of Results:

27. Number of vehicle incidents experienced decreased slightly while distances traveled increased which resulted in the recordable incident experienced dropping to 6.4.

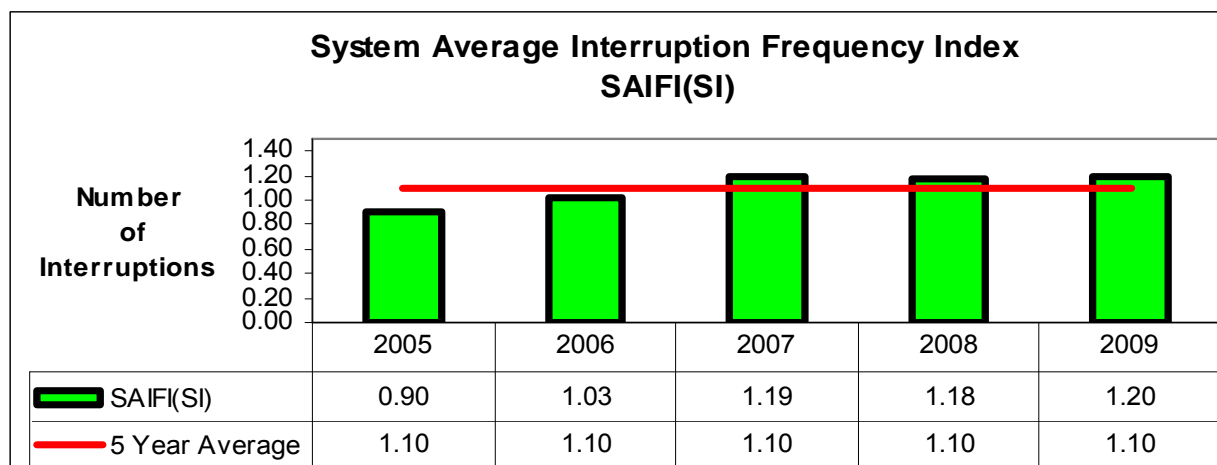
Action Plans and Comments:

28. EDTI maintains a continuous improvement philosophy that is supported through driver certification, defensive driver training, incident investigation and corrective action follow-up.

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3.4 RELIABILITY PERFORMANCE MEASURES

3.4.1 System Average Interruption Frequency Index SAIFI(SI)



Description of data collection methodology:

29. The System Average Interruption Frequency Index SAIFI will be calculated in accordance with the CEA requirements and definitions as follows:

Annual Total Number of Customer Interruptions
Average Number of Customers Served During the Year

- This measure reflects the *average number of times that customers are interrupted by* distribution system interruptions during a year.
- A customer interrupted is considered to be one interruption to one customer and includes all sustained interruptions, planned and unplanned, regardless of the cause.
- To be included the interruption must be a “sustained interruption” (SI) meaning that the duration of the interruption is at least 60 seconds.
- The measure is also reported as a five-year rolling average and reported to two (2) decimal places.



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Explanation of Results:

30. The SAIFI value of 1.20 for 2009 is slightly poorer compared to 1.18 in 2008. The primary drivers affecting the average frequency by which customers experienced an interruption were Major Storms, Cable Faults and Cable Cut.

31. On July 18, 2009 EDTI experienced a severe high wind storm during the early hours on Saturday through to the early evening hours of Monday July 20, 2009. This storm affected fifty three circuits on EDTI's Distribution System, caused eighty three unplanned interruptions and resulted in 310,975 hours of customer interruption. Excluding this event EDTI's SAIFI value would have been 0.87.

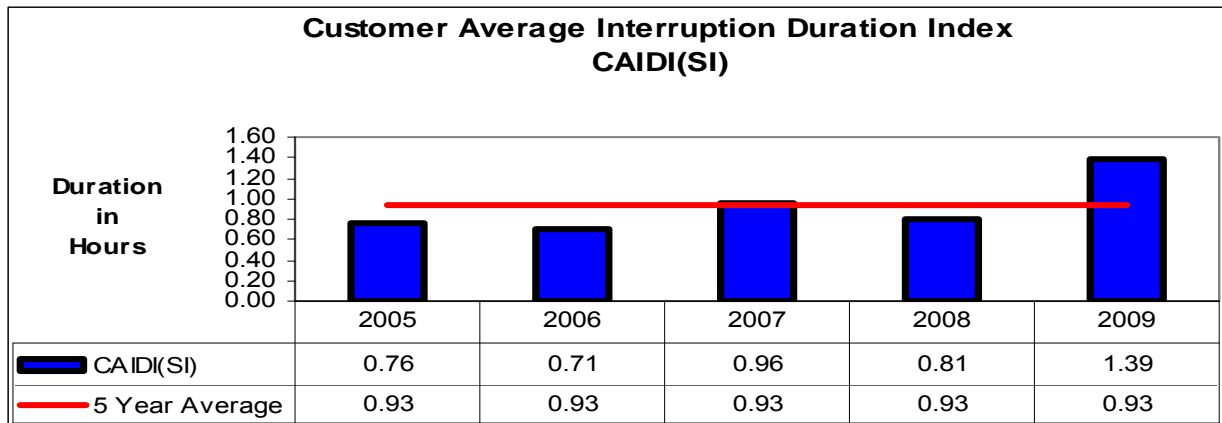
Action Plans and Comments:

32. See Section 3.4.4 "Action Plans and Comments."



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3.4.2 Customer Average Interruption Duration Index CAIDI(SI)



Description of data collection methodology:

33. The Customer Average Interruption Duration Index CAIDI is calculated in accordance with the CEA requirements and definitions as follows:

$$\frac{\text{Annual Total Number of Customer Hours of Interruptions}}{\text{Annual Total Number of Customer Interruptions}}$$

- This measure reflects the *average length of time required to restore distribution* system interruptions in a year.
- A customer interrupted is considered to be one interruption to one customer and includes all sustained interruptions, planned and unplanned, regardless of the cause.
- To be included the interruption must be a “sustained interruption” (SI) meaning that the duration of the interruption is at least 60 seconds.
- The measure is also reported as a five-year rolling average and reported to two (2) decimal places.



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Explanation of Results:

34. The CAIDI value of 1.39 for 2009 is poorer compared to 0.81 in 2008. The primary drivers affecting the average interruption duration of customers per interruption were Major Storms, Cable Faults and Cable Cut.

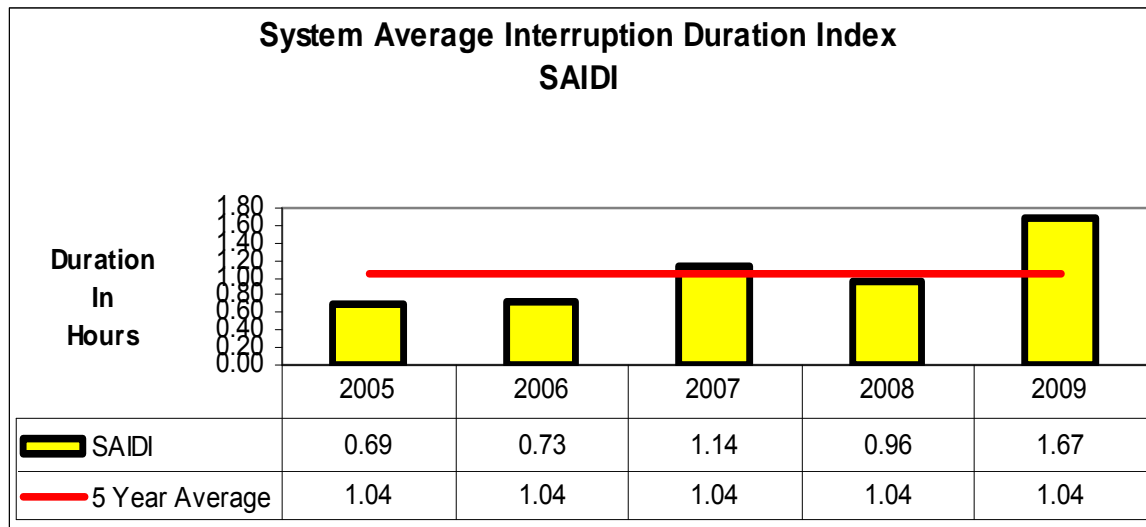
35. On July 18, 2009 EDTI experienced a severe high wind storm during the early hours on Saturday through to the early evening hours of Monday July 20, 2009. This storm affected fifty three circuits on EDTI's Distribution System, caused eighty three unplanned interruptions and resulted in 310,975 hours of customer interruption. Excluding this event EDTI's CAIDA value would have been 0.86.

Action Plans and Comments:

36. See Section 3.4.4 "Action Plans and Comments".

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3.4.3 System Average Interruption Duration Index SAIDI(SI)



Description of data collection methodology:

37. The System Average Interruption Duration Index SAIDI is calculated in accordance with the CEA requirements and definitions as follows:

$$\frac{\text{Annual Total Number of Customer Hours of Interruptions}}{\text{Average Number of Customers Served During the Year}}$$

- This measure reflects the *average interruption duration time experienced by customers* in a year.
- A customer interrupted is considered to be one interruption to one customer and includes all sustained interruptions, planned and unplanned, regardless of the cause.
- To be included the interruption must be a “sustained interruption” (SI) meaning that the duration of the interruption is at least 60 seconds.
- The measure is also reported as a five-year rolling average and reported to two (2) decimal places.



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Explanation of Results:

38. The SAIDI value of 1.67 for 2009 is poorer compared to 0.96 in 2008. The primary drivers affecting the average interruption duration time by customers on the system were Major Storms/Lightning strikes, Cable Faults/Splice failures and Pole Hit/Switching Cubicle Hit/Cable Cut by 3rd parties.

39. On July 18, 2009 EDTI experienced a severe high wind storm during the early hours on Saturday through to the early evening hours of Monday July 20, 2009. This storm affected fifty three circuits on EDTI's Distribution System, caused eighty three unplanned interruptions and resulted in 310,975 hours of customer interruption. Excluding this event EDTI's SAIDI value would have been 0.75.

Action Plans and Comments:

40. See Section 3.4.4 "Action Plans and Comments".



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3.4.4 Worst Performing Circuits on the System

Standard: “The Wire Owner shall identify three percent of worst performing circuits on its system based on the Wire Owner’s formalized evaluation process for determining worst-performing circuits.” Identify the factors underlying the poor performance and outline actions to improve performance. “All circuits that have been identified according to this standard shall be monitored each year, over a five year period.”

41. The following table summarizes EDTI’s worst performing circuits for all circuits identified as worst performing over the 2005-2009 periods. The table has been updated to include the 8 worst performing circuits in 2009 as well as contributing factors and proposed and completed corrective actions. In addition EDTI provides historical contributing factors and corrective actions for worst performing circuits identified in previous years. More detailed descriptions of these factors and actions can be found in the text section following this table.

EDTI’s Worst Performing Circuits for 2005-2009

	A	B	C	D	E	F	G	H
	Worst Performing Circuits	Customer Hours of Interruption 2005	Customer Hours of Interruption 2006	Customer Hours of Interruption 2007	Customer Hours of Interruption 2008	Customer Hours of Interruption 2009	Contributing Factor	Applicable Improvements: Proposed, Ongoing and Completed
1	R35	253	2,489	23	7,775	34,320	Major Storm Lightning Arrestor	Tree Trimming Program Replaced Lighting Arrestor
2	G1					30,692	Major Storm	
3	H6					27,075	Major Storm Tree Contact Squirrel	Tree Trimming Program Tree Trimming Program Wildlife Program
4	H9					26,084	Major Storm	
5	H8					25,556	Major Storm Guy Wire Hit Wire Squirrel	Circuit Reconfiguration Wildlife Protection Upgrade
6	H3					24,881	Major Storm Cable Fault Lightning Unknown Transformer	Cable Management Lightning Arrestor Installation



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	A	B	C	D	E	F	G	H
	Worst Performing Circuits	Customer Hours of Interruption 2005	Customer Hours of Interruption 2006	Customer Hours of Interruption 2007	Customer Hours of Interruption 2008	Customer Hours of Interruption 2009	Contributing Factor	Applicable Improvements: Proposed, Ongoing and Completed
7	23E	45,117	12,319	37,091	33,449	18,711	Splice	Cable Management
							Cable Fault	New Circuits
							Second Terminal Failures	Installation of Automated Switches
							Switch Failure	Replaced Switch
							Insulator	Replaced Insulator
							Padmount Hit	Location Evaluation
							Cable Cut	Improved Underground locating
							Unknown	
8	H7				9,140	18,230	Major Storm	Fusing
							Riser	Wildlife Protection Upgrade
							Bird	Coordination Study
9	CD21	5,541	6,309	992	18,497	261	UG Splice	Cable Management
							Cable Fault	Cable Management
10	12E				11,674	13,930	Pole Fire	Installation of Automated Switches
							Loss of Dist-EPCOR 25KV	Wildlife Protection Upgrade
11	M22	391	809	1,427	9,335	3,002	Cable Fault	Cable Management
							UG Splice	Cable Management
12	J22		8,072	5,549	8,696	660	Major Storm	
13	L13				8,296	436	Cable Cut	Cable Locating
							Switching Cubicle Hit	Location Evaluation
14	CD73	8,519	8,274	40,376	8,055	12,619	UG Splice	New Circuit
							Loss of Dist-EPCOR 15KV	Cable Management
15	P74			26,644	0	21	Cable Fault	Cable Management Circuit returned to normal configuration
16	D72			13,778	1,477	1,108	Cable Cut	Cable Locating
							Loss of EPCOR BES	Revised settings on differential relay
17	CD81			11,893	126	365	Pole Hit/Wire Down	Pole location evaluated
							Cable Fault	Cable Management
18	P23	1,009	557	10,280	5,259	0	Cable Fault	Cable Management
19	CD22			10,078	1,251	8,622	Switching Cubicle Hit	Pole location evaluated
							Pole Hit/Wire Down	GI Switch Replaced
20	V38			8,582	2,451	0	Major Storm/Lightning/Wire Down	Pole location evaluated
							UG Splice	Cable Testing
21	P13		16,858	1,562	158	52	Bird	Added new circuit-P84
							Cable Fault	Improved Underground locating
							Cable Cut	Cable Locating
							Tree in Wire	Tree Trimming Program
							Blown Elbow	Cable Management



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	A	B	C	D	E	F	G	H
	Worst Performing Circuits	Customer Hours of Interruption 2005	Customer Hours of Interruption 2006	Customer Hours of Interruption 2007	Customer Hours of Interruption 2008	Customer Hours of Interruption 2009	Contributing Factor	Applicable Improvements: Proposed, Ongoing and Completed
22	13E		12,022	2,062	3,978	243	Cut Cable	Improved underground locating
							Storm	New Circuit -12E
23	41WE	4,981	8,422	5,157	236	7,227	Padmount Hit	Installation of Automated Switches
24	V43		6,149	2,429	106	1,148	Pole Hit	Potential pole relocation
25	V33	11,003	1,437	5	12	6,119	Building Fire	Pole Location Evaluated
26	CD11	7,155	3,770	32	1,180	44	Cable Fault	Cable Management
27	M11	6,425	291	269	31	1,176	Cable Cut	Cable Management
							Cable Fault	Improved Underground locating
28	W16	5,701	2,041	5,013	342	143	Building Fire	Pole Location Evaluated

Description of data collection methodology:

42. In 2009 EDTI had 281 distribution circuits in service. Accordingly, EDTI has identified the 3% or the 8 worst performing circuits based on the criteria discussed below.

43. EDTI has elected to identify its “worst performing circuits” on the basis of the number of customer hours of interruption attributed to each circuit for unplanned interruptions in a year. While this measure does not control for the size of a particular circuit, as would a SAIDI measure, it does point to where the greatest number of customers are being impacted by unplanned interruptions.

44. EDTI will monitor the circuits identified in a particular year over a five year period to determine the effectiveness of the improvement measure and to identify further measures that may be required.

Explanation of Results:

45. *Note: On July 18, 2009 EDTI experienced a severe high wind storm during the early hours on Saturday through to the early evening hours of Monday July 20, 2009. This storm affected fifty three circuits on EDTI’s Distribution System and caused eighty three unplanned interruptions.*



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46. Circuit R35 experienced two unplanned interruptions; one due to a major storm and one due to a lightning arrestor. The worst of these causes was the Major Storm as indicated above.
47. Circuit G1 and H9 had only one interruption each due the Major Storm as indicated above.
48. Circuit H6 experienced five unplanned interruptions; three due to the Major Storm as mentioned above, one due to wildlife contact and one due to tree contact. This circuit has been included in the wildlife protection upgrades and tree trimming schedule.
49. The main causes for the remaining circuits (H8, H3, 23E and H7) were Major Storm as indicated above, foreign interference (equipment hit, cable cut, wildlife contact) and equipment failures. The measures that EDTI takes to address these issues are described in detail later in this section.
50. EDTI notes that 23E circuit remains on the top eight worst performing circuit on its system for 2009. This circuit experienced nine unplanned interruptions; six were due to equipment failures, two due to foreign interference and one cause was unknown. The performance of this circuit has improved due to the installation of two aerial and two underground automated switches in 2008. In 2009 the circuit was split into two circuits, reducing its line exposure. In addition, EDTI installed an additional automated switch, and upgraded the radio hardware to further improve reliability on 23E circuit. EDTI continues its effort to improve reliability as described in detail later in this section.

Action Plans and Comments:

Installation of Automated Switches on Selected 25kV Circuits:

51. The automated 25 kV switching project involves installing motorized switches with localized intelligent controllers, which communicate with the controllers of other switches, through telecommunication equipment, and

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interfaces to the Supervisory Control and Data Acquisition (SCADA) system. This system is designed to restore supply to customers, on unfaulted sections of a circuit within one minute after a fault occurs. Significant reliability improvements will be experienced as a result of the following:

- The system automatically switches around the fault ensuring that only a minimum number of customers will be affected by the outage.
- Identification of the state of the automated switches allows for faster identification of the fault location resulting in faster restoration of service to those customers on the faulted portion of the circuit.

The timeline for installation of the automated switching is as follows:

- By the end of 2009 –Automated switches were installed and commissioned on the following circuits: 12E, 14E, 23E, 12C, 25P, 25O, 41WE, 13C and 22C.
- In 2010 – Five circuits are planned for automation, 11S, 12S, 31WE and 21S.

52. EDTI notes that this program is currently being planned for EDTI's 25 kV circuits which are typically found in the outer areas of Edmonton – the areas that were annexed from TransAlta. These 25 kV circuits tend to be longer, and more heavily loaded than the 15 kV circuits that are common to most of Edmonton. Subsequent installations will evaluate opportunities on other parts of EDTI's system for implementation in 2010 and beyond.

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New Circuits:

53. Installation of new circuits helps to improve reliability on existing circuits in several ways.

- New circuits provide a backup circuit that EDTI can switch affected customers when a fault occurs on their regular circuit. This allows for faster restoration of service to many customers during an outage.
- New circuits allow EDTI to offload customers existing circuit that may be carrying excessive load. Overloaded circuits are more prone to reliability issues such as cable faults.
- Additionally, permanently transferring customers off of a particular circuit reduces the number of customers affected when an outage is experienced.

54. The following new circuits or modification are expected to improve reliability in the future:

- A new 14E circuit was completed in 2009 to reduce loading on 23E circuit and to provide additional backup capability for 23E circuit
- The W1 circuit extension was completed in 2009 to take over supply of some of CD73's load and to provide additional backup supply capability to CD73.
- Construction of the new South Edmonton Substation (Summerside Substation) is currently underway and will address many of the issues EDTI is experiencing with south Edmonton circuits, particularly those fed from East Industrial Substation. It is expected that new circuits out of this substation will be in service in the fall of 2010.
- In 2009 the circuit 22C was split into 12C to accommodate the new Clover Bar Pod installation thus reducing line exposure.

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Cable Testing, Injection and Replacement:

55. EDTI maintains an ongoing underground cable management program as described below, to identify and proactively replace/repair/rejuvenate cables likely to fail:

- Diagnostic testing on underground cables to assess their condition and identify those cables that will be prone to faults in the future. This information is used to develop an appropriate long-term replacement plan.
- Those cables found to be in severe condition will be planned for replacement.
- Some XLPE cables are identified by testing as candidates for cable injection. These cables are rejuvenated by silicone injection to extend cable life and reduce failures.

56. Cable testing, injection and replacement occurs on all circuits in the EDTI system including the worst performing circuits identified in the table above. Specifically, in 2009 EDTI completed work associated with cable replacement in the following current and historical worst performing circuits: CD21, K31, L22, K21, and P23.

57. In 2009 EDTI completed 12 Km of cable injection on circuit CD21.



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Ongoing Actions:

58. The actions described below represent ongoing programs that EDTI implements to improve reliability on many of its circuits on a continual basis:

Pole Relocations:

59. Poles that are in locations that present a high possibility of being struck by vehicles, or prone to other issues such as interference by wild life, often pose outage risks. Often a simple solution is to review the pole and engineer a modification to reduce or eliminate the concern. Specifically in 2009 EDTI completed 9 projects of this nature. The location and criticality of these poles was evaluated to see if the poles could be moved or modified where possible to reduce the outage risk due to third party damage.

Remote Fault Indication to Control:

60. The installation of Remote Fault Indication was started in 2005 and will be an ongoing process. This allows information from selected underground and aerial remote fault indicators to be communicated directly to the EDTI Control Room. This allows Control Operators to determine the approximate fault location, dispatch crews accordingly and plan the restoration while the crews are in route to the site. Faster identification of the fault location improves restoration time to the customer.

61. Additional fault indicators were added at key locations to speed fault location identification and restoration.



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Visible Underground Fault Indicators:

62. On an ongoing basis EDTI is installing fault indicators designed to be visible from the street without the need to open padmount switching cubicles. This will speed up fault location and therefore circuit restoration. This is a standard on all padmount switching cubicles installed and will be retrofit on selected cubicles in the future.

Aerial and Underground Fusing:

63. Installation of additional or upgraded aerial and underground distribution fusing on branch aerial and underground circuit segments has been completed on some circuits. In some cases, the substation breaker relay protection settings are also revised to improve coordination with these fuses. This fusing minimizes customer outages by isolating permanent faults on branches rather than taking down the entire or large portions of, the circuit. Additionally, the operated fuses provide a quick means for the patrolling field crews to identify the fault location thereby improving the restoration time of the affected customers. Specifically in 2009, EDTI installed fusing on the following circuits: H8, N3, N14, R45, L31, W12, L33, and W11. In 2010, seven additional circuits are planned to have fusing installed, these circuits include: R14, R15, R26, R28, and R35.

Installation of System Neutrals on 25 kV Circuits:

64. A number of the 25 kV circuits, that previously supplied small rural loads, do not have a continuous multi-grounded neutral. A program to add continuous multi-grounded neutrals on 25 kV circuits supplying higher density urban or industrial load was started in 2008. This is expected to improve safety and ensure the reliability/predictable performance of the circuit's protection.



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Replacement of Underground Road Crossing Cables:

65. EDTI has an ongoing program to replace smaller sized underground cables in road crossings with larger sized cables in those areas where emergency loading could possibly cause overload damage to the cable and result in a failure. This will reduce the risk of a cable faults on main feeder cables which could result in long outages to large numbers of customers.

Underground Utility Locating Services:

66. EDTI, through a consortium of utilities, provides, free of charge, underground utility locating services to all parties digging in the EDTI service area. Provision of these services is intended to eliminate cable cuts caused by 3rd parties digging near buried EDTI cables. Taking steps to eliminate cable cuts caused by digging helps reduce outages as well as improve public safety. Ongoing public awareness campaigns are being implemented to ensure that the public is aware of the “Call Before You Dig” program in an effort to reduce these issues.

Wildlife Protection Upgrades:

67. EDTI is now undertaking to complete detailed patrols of circuits that are experiencing higher than normal volumes of outages due to wildlife related causes. These reviews have identified locations where the wild life protection installed throughout the circuit requires to be refitted with an improved standard. EDTI plans to undertake refits of these areas until the higher volume of wild life outages are eliminated.



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3.6 CUSTOMER SATISFACTION MEASURES

3.6.1 Percentage of Customer Satisfaction Following Customer-Initiated Contact with the Wire Owner

Standard: 75% or more of the customers are satisfied with their last transaction with the Wire Owner.

	Month	A Number of Interviews*	B Customer Satisfaction %	C Explanation of Results
1	January	100/5	91.2	None.
2	February	100/15	90.2	None.
3	March	125/19	86.0	None.
4	April	100/18	88.5	None.
5	May	100/11	89.1	None.
6	June	125/26	90.0	None.
7	July	100/32	88.0	None.
8	August	100/28	89.1	None.
9	September	125/25	90.2	None.
10	October	100/9	92.8	None.
11	November	125/23	89.8	None.
12	December	100/10	88.8	None.
13	Annual Average		89.5	

Description of data collection methodology:

68. EDTI has contracted Leger Marketing to conduct monthly transaction research by conducting interviews with customers who contacted EPCOR Power Emergency.

The Customer Satisfaction Percentage represents a simple average of:

- (i) The percentage of customers who were satisfied with their last call to the EPCOR Power Emergency line, and
- (ii) The percentage of customers who were satisfied with the action taken by EPCOR Power Emergency in response to their call.



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Action Plans and Comments:

69. None planned.



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3.6.2.1 Complaint Response - Complaint Reports To AUC

- Standard: (i) 80% of complaints forwarded by the AUC in any given month are investigated and a Complaint Report provided to the AUC within 14 calendar days.
- (ii) 100% of complaints in any given month investigated and Complaint Report provided within 30 calendar days.

	Month	<u>A</u> Forwarded from AUC to EDTI	<u>B</u> Responded within 14 Day Deadline	<u>C</u> Responded within 30 Day Deadline	<u>D</u> Explanation of Results
1	January	0	0	0	None forwarded to EDTI.
2	February	0	0	0	None forwarded to EDTI.
3	March	0	0	0	None forwarded to EDTI.
4	April	0	0	0	None forwarded to EDTI.
5	May	0	0	0	None forwarded to EDTI.
6	June	0	0	0	None forwarded to EDTI.
7	July	0	0	0	None forwarded to EDTI.
8	August	0	0	0	None forwarded to EDTI.
9	September	0	0	0	None forwarded to EDTI.
10	October	0	0	0	None forwarded to EDTI.
11	November	0	0	0	None forwarded to EDTI.
12	December	0	0	0	None forwarded to EDTI.
13	Total	0	0	0	
14	Annual Average	0.00	0.00	0.00	

Action Plans and Comments:

70. None planned.



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3.6.2.2 Complaint Response – Wire Owner Escalated Reports

- Standard: (i) Report and investigate the number of complaints made directly to the Wire Owner in any given month.
- (ii) Report the number of complaints where a resolution was not provided within 30 Days of the escalation of the complaint.

		<u>A</u>	<u>B</u>	<u>C</u>
	<u>Month</u>	<u>Total Number of Complaints</u>	<u>Number of Complaints Unresolved After 30 Days</u>	<u>Explanation of Results</u>
1	January	0	0	None.
2	February	0	0	None.
3	March	0	0	None.
4	April	0	0	None.
	May	1	0	After receiving a detailed investigation report regarding the failure of a High Voltage Current transformer at a substation, the customer contacted the City of Edmonton Councilor’s office indicating that he was still concerned that safety standards were not met. EDTI met with the customer to address his specific concerns. EDTI reiterated that it has equipment life cycle programs in place that include bi-weekly inspections and design, construction and maintenance practices in line with industry standards but could not guarantee that failures could not occur. Although the customer seems satisfied with the EDTI responses there is a continuing dialog about planting trees and making changes to the berm.
5				
6	June	0	0	



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7	July	1	1	<p>Customer contacted the Councilor's office indicating that Contractors and EDTI crews damaged the lawn in front of the Customers residence. Upon investigation it was found that EDTI did do some work at this location in 2008 and at that time the area was cleaned up properly. After several attempts by EDTI to contact the customer, a letter was sent to the Councilor indicating that due to the construction of a new condominium complex across the street from the customer, the grass has been damaged. EDTI has booked a landscaper to lay new sod in the spring of 2010. With the aforementioned construction and due to high foot-traffic volume, to do so any sooner would result in the area returning to its present state.</p>
8	August	2	1	<p>1. The customer had a concern regarding the installation of a new pole behind his house. Due to a redesign of the area, the installation of two new poles is required and one of these poles is by the customers' home. The pole locations were approved by the City on June 16, 2009 through the Utility Line Assignment process. The new design met all of EDTI's construction standards and is considered to be a standard design. After careful consideration of the customers concerns, EDTI will not be placing the pole behind his house.</p> <p>2. The customer contacted the Councilor's office regarding concerns he has with the cost for the re-location of the service wire hook up at his house. He would like his house service moved to the side of his house for safety and aesthetical reasons. EDTI met with the customer and indicated that the cost to move the house service connection by an independent electrician would be the responsibility of the home owner. EDTI has sent a letter to the customer explaining this as per EDTI's Terms and Condition of Service, Customer Connection Guide. EDTI is prepared to relocate the service wire at EDTI's cost to a new attachment point once it meets the current Electrical Code requirements and is approved by an Electrical Inspector. EDTI indicated that the owner of the house is responsible for the cost of relocating service connection point on the house.</p>



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9	September	2	1	<p>1. The customer contacted the Councilor's office regarding concerns with a pole that is leaning toward their house. The pole was leaning due to the Telus and Shaw attachments. Converting the communications cables to underground is preferred by the customer, but not in EDTI's control. Options were discussed with the customer and for this particular application, based solely on esthetic and EDTI's reputation, it was agreed to install a self supporting pole. EDTI completed negotiations with Telus to bear the cost with no charge to the customer. The pole will be ordered and an engineering package will have to be issued so the work can be done.</p> <p>2. Councilor contacted EDTI regarding a power interruption in his area and a remark made to his neighbor by an EDTI employee regarding the number of power interruptions to this area and that the next power interruption could be an extensive duration. A letter was sent to the Councilor addressing the concern of what plans are in place to address the issue of power interruptions to the area. The area has experienced multiple cable faults and EDTI has plans in place to address this by replacing sections of cable by late 2009 or early 2010. This area has a loop feed therefore if a cable experiences a fault; there are alternatives to feed the neighborhood from another direction. EDTI will inform staff that offhand remarks are not appropriate in any situation as they can cause undue concern to EDTI's customers.</p>
10	October	0	0	None.
11	November	0	0	None.
12	December	0	0	None.
13	Annual Average	0.50	0.25	

Description of data collection methodology:

71. EDTI has implemented a "Work Practice" for Recording, Investigation and Reporting of Escalated Complaints made by EDTI Customers.

Action Plans and Comments:

72. None.



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3.7 OVERALL CUSTOMER SATISFACTION MEASURES

3.7.1 Customer Satisfaction with the Wire Owner

Standard: The minimum performance standard for this customer performance measure shall be 75% of customers with overall satisfaction in the three following areas.

- Reliability performance of the Wire Owner, including service restoration after a power outage
- Performance and satisfaction with customer service (access to the Wire Owner)
- Employees who are understanding, courteous, and informative.

	<u>Month</u>	<u>A</u> <u>Number of</u> <u>Interviews*</u>	<u>B</u> <u>Customer</u> <u>Satisfaction %</u>	<u>C</u> <u>Explanation of Results</u>
1	January	100/5	91.2	None.
2	February	100/15	90.2	None.
3	March	125/19	86.0	None.
4	April	100/18	88.5	None.
5	May	100/11	89.1	None.
6	June	125/26	90.0	None.
7	July	100/32	88.0	None.
8	August	100/28	89.1	None.
9	September	125/25	90.2	None.
10	October	100/9	92.8	None.
11	November	125/23	89.8	None.
12	December	100/10	88.8	None.
13	Annual Average		89.5	

Description of data collection methodology:

73. EDTI has contracted Leger Marketing to conduct monthly transaction research by conducting interviews with customers who contacted EPCOR Power Emergency.



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74. The overall satisfaction measure is based on the average of the five responses listed below and reported as one number.

- Reliable service
- Restores power quickly
- Easy to reach
- Informative in handling problem/inquiry
- Understanding/courtesy

Action Plans and Comments:

75. None planned.