CHAPTER 7
SERVICE QUALITY

7.1 INTRODUCTION

PBR provides the electricity distribution utilities with incentives for economic efficiency gains. To discourage utilities from sacrificing service quality in pursuing these economic incentives, service quality performance measures are included in the PBR plan. Utilities will be expected to monitor and report on all of the service quality indicators included in the plan. The performance of individual electricity distribution utilities will be made publicly available to customers and the general public.

The service quality indicators, their associated monitoring and reporting requirements, and the minimum standard guidelines (where applicable) are described in this chapter. These standards represent the minimum acceptable performance standards. An electricity distribution utility should continue to establish its operating performance at any levels better than the minimum standards, taking into consideration needs and expectations of their customers.

The first generation service quality performance indicators include customer service indicators and service reliability indicators. The indicators included in the first generation PBR plan are listed in Table 7-1.

Table 7-1
Service Quality Indicators

Customer Service	Service Quality
Connection of New Services Underground Cable Locates Appointments Telephone Accessibility Written Response to Inquiries Emergency Response	System Average Interruption Duration Index System Average Interruption Frequency Index Customer Average Interruption Duration Index

In addition to imposing service quality performance standards, the Board may conduct surveys to determine customer satisfaction with the electricity distribution service quality. The Board may also conduct customer research to identify those elements of service quality most important to customers for use in setting standards for the second PBR term.

7.2 FIRST GENERATION PBR APPROACH TO SERVICE QUALITY PERFORMANCE

PBR task force survey results indicate that the degree of service quality monitoring that the electricity distribution utilities currently carry out varies. Therefore the Board's approach to encourage the maintenance of service quality during the first generation PBR plan is to apply minimum standard guidelines for customer service indicators, and to apply a utility's historic performance as its specific service reliability standards. Where a utility has not monitored service reliability in the past, it is required to initiate monitoring and reporting of the indices.

7.3 SERVICE QUALITY INDICATORS REPORTING AND MINIMUM STANDARDS

This section describes the definitions of service quality indicators, the reporting requirements and the minimum standards set for the service quality indicators. The Board will review filing and reporting requirements after the first year of the plan.

7.3.1 Customer Service Performance Indicators

A customer service indicator measures direct contact with the customer. In setting the customer service standards, minimum standard guidelines are provided that are intended to maintain customer service quality while providing the utilities with flexibility to set service levels to the demands of their customers above the minimum guidelines. The electricity distribution utilities are expected to achieve the minimum standards for a specified percentage of the time.

7.3.1.1 Connection of New Services

The connection of new services indicator measures the percentage of requests that are met within the required minimum performance standard.

As a minimum performance standard for the connection of new universal services, new low voltage (< 750 volts) services must be connected within 5 working days from the day on which all conditions of service are satisfied, including electrical safety inspection, at least 90 per cent of the time. New high voltage (≥ 750 volts) service must be connected within 10 working days from the day on which all conditions of service are satisfied, including electrical safety inspection, at least 90 per cent of the time.

The conditions of service that may need to be satisfied include payment of connection fees, signing of service contracts, completion of distribution system extensions, provision of adequate lead times for delivery of equipment, and receipt of an electrical safety inspection certificate.

The utility must monitor its performance monthly and report the information annually to the Board as specified in Chapter 12 of this Handbook. The monthly information is to be reported as follows:

(1) Number of new low voltage services connected
(2) Number of new low voltage service connected within 5-working days
(3) Per cent of requests for new low voltage service met within minimum standard [((2)*100)/(1)]
(4) Number of new high voltage service connected
(5) Number of new high voltage service connected within 10-working days
(6) Per cent of requests for new high voltage service met within minimum standard [((5)*100)/(4)]

7.3.1.2 Underground Cable Locates

The underground cable locates indicator measures the percentage of requests for cable locates that are completed within the minimum performance standard.

As a minimum standard, underground cable locates must be completed within 5 working days of a customer's request, at least 90 per cent of the time. For customers requesting a specific date, the locate must be completed within 5 working days of the requested date.

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

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

(1) Number of cable locates requested
(2) Number of cable locates performed within 5-working days
(3) Per cent of requests met within minimum standard [((2)*100)/(1)]

7.3.1.3 Telephone Accessibility

The telephone accessibility indicator measures the percentage of incoming calls to the general inquiry telephone number answered within the minimum performance standard.

As a minimum standard, incoming calls to the general inquiry telephone number must be answered in person by an operator within 30 seconds, at least 65 per cent of the time. The provision of a voice mailbox /answering machine does not constitute compliance with this standard.

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

(1) Number of general inquiry telephone calls answered
(2) Number of general inquiry telephone calls answered within 30 seconds
(3) Per cent of general inquiry telephone calls answered within minimum standard [((2)*100)/(1)]

7.3.1.4 Appointments

The appointments indicator measures the percentage of appointments at a customer's premises or work site that are met at the appointed time within the

minimum performance standard.

As a minimum standard, when it is necessary to meet a customer at the customer's premises or work site to conduct utility business, customers must be offered a choice of morning or afternoon appointments. The appointments must be met at the appointed time at least 90 per cent of the time.

Outside of the minimum standard established for this index, if the appointed time cannot be met the utility must notify the customer.

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

(1) Number of appointments at a customer's premises or work site made
(2) Number of appointments at a customer's premises or work site kept at the appointed time
(3) Per cent of appointments at a customer's premises or work site made within minimum standard [((2)*100)/(1)]

7.3.1.5 Written Responses to Inquiries

The written response to inquiries indicator measures the percentage of responses to inquiries that require written responses that are made within the minimum performance standard.

The minimum standard for responding to requests by a customer or an agent of the customer, for written information, relating to the customer's account will be within 10 working days following receipt of the request. The written response time must be met at least 80 per cent of the time.

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

(1) Number of requests for written responses
(2) Number of requests for written responses provided within 10 working days
(3) Per cent of requests for written responses met within minimum standard [((2)*100)/(1)]

7.3.1.6 Emergency Response

The emergency response indicator measures the percentage of emergency responses that are made within the minimum performance standard.

At a minimum, emergency trouble calls (i.e. fire, ambulance, police etc.) will be responded to within 120 minutes in rural areas and 60 minutes in urban areas. The definition of rural and urban should be according to the municipality's definition. The arrival of a qualified service person on site will constitute the response. The minimum standards must each be met at least 80 per cent of the time.

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

(1) Number of emergency calls for rural customers
(2) Number of emergency calls for rural customers at which qualified staff were on site within 120 minutes
(3) Per cent of emergency calls for rural customers met within 120 minutes [((2)*100)/(1)]
(4) Number of emergency calls for urban customers
(5) Number of emergency calls for urban customers at which qualified staff were on site within 60 minutes
(6) Per cent of emergency calls for urban customers met within 60 minutes [((5)*100)/(4)]

7.3.2 Service Reliability Indices

Service reliability indices measure system outage statistics. The monitoring and reporting of service reliability indices are intended to encourage utilities to maintain or exceed their existing service reliability performance.

7.3.2.1 System Average Interruption Index

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

$$\text{SAIDI} = \frac{\text{Total Customer-Hours of Interruptions}}{\text{Total Number of Customers Served}}$$

All utilities are required to monitor this index monthly and report to the Board on an annual basis. Utilities that have not monitored this index in the past are required to start monitoring and reporting on this index when they start their first PBR plan.

Utilities that have at least 3 years of data on this index should, at minimum, remain within the range of their historic performance.

The monthly information is to be reported as follows:

(1) Total customer-hours of interruptions
(2) Total number of customers served
(3) SAIDI [(2)/(1)]

7.3.2.2 SAIFI

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

$$\text{SAIFI} = \frac{\text{Total customer Interruptions}}{\text{Total Number of Customers Served}}$$

All utilities are required to monitor this index monthly and report to the Board on an annual basis. Utilities that have not monitored this index in the past are required to start monitoring and reporting on this index.

Utilities that have at least 3-years data on this index should at minimum remain within the range of their historic performance.

The monthly information is to be reported as follows:

(1) Total number of customer interruptions
(2) Total number of customers served
(3) SAIFI [(2)/(1)]

7.3.2.3 CAIDI

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

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

All utilities are required to monitor this index monthly and report to the Board on an annual basis. Utilities that have not monitored this index in the past are required to start monitoring and reporting on this index.

Utilities that have at least 3 years of data on this index should at minimum remain within the range of their historic performance.

The monthly information is to be reported as follows:

(1) Total customer hours of interruptions (SAIDI)
(2) Total number of customer interruptions (SAIFI)
(3) CAIDI [(2)/(1)]

7.3.2.4 Cause of Service Interruption

Monitoring the cause of outages in addition to monitoring the system reliability indices provides valuable information as to the remedial work required. The electricity distribution utilities should therefore maintain a record of the causes of the outages, at a minimum in accordance with the list presented in Table 7-2. While annual reporting of this information to the Board is not mandatory, should a review of the utility's service reliability be necessary, the Board will expect the utility to produce this information.

Table 7-2
Cause of Service Interruption

Code	Cause
0	Unknown/Other Customer interruptions with no apparent cause that contributed to the outage.
1	Scheduled Outage Customer interruptions due to the disconnection at a selected time for the purpose of construction or preventive maintenance
2	Loss of Supply Customer interruptions due to problems in the bulk electricity supply system
3	Tree Contacts Customer interruptions caused by faults resulting from tree contact with energized circuits
4	Lightning Customer interruptions due to lightning striking the distribution system, resulting in an insulation breakdown and/or flash-overs
5	Defective Equipment Customer interruptions resulting from equipment failures due to deterioration from age, incorrect maintenance, or imminent failures detected by maintenance
6	Adverse Weather Customer interruptions resulting from rain, ice storms, snow, winds, extreme temperatures, freezing rain, frost or other extreme weather conditions (exclusive of Code 3 and 4 events)
7	Human Element Customer interruptions due to the interface of utility staff with the system
8	Foreign Interference Customer interruptions beyond the control of the utility such as animals, vehicles, dig-ins, vandalism, sabotage and foreign objects

7.4 REMEDIAL ACTIVITY

In the absence of historical service quality data, it is not possible to identify service degradation during the first year of the PBR plan. However, upon review of the first year's results, the Board will determine whether there is sufficient data to set thresholds to determine service degradation for years 2 and 3. When established, the Board will issue these thresholds and any utility whose performance falls below these thresholds will be required to file a remedial action plan.

It is anticipated that by the second generation PBR plan, there will be sufficient data collected to set industry service quality performance standards. Once these standards have been established, PBR incentive mechanisms with economic consequences will be introduced around the service quality indicators.