

**Electricity**  
**(Distribution)**  
**Performance**  
**Standards Regulation**



**REGULATIONS MADE UNDER SECTION 54 OF THE SRI LANKA ELECTRICITY ACT, No. 20 OF 2009**

BY virtue of the powers vested in me by Section 54 of the Sri Lanka Electricity Act, No. 20 of 2009, and on the recommendation of the Public Utilities Commission of Sri Lanka, I, Ranjith Siyambalapitiya, the Minister of Power and Renewable Energy, do by this order make the undermentioned Regulations on Electricity (Distribution) Performance Standards.

RANJITH SIYAMBALAPITIYA,  
Minister of Power and Renewable Energy.

13th July 2016.

L.D.B 3/2009 (iii).

**SRI LANKA ELECTRICITY ACT, NO. 20 OF 2009**

REGULATIONS made by the Minister of Power and Renewable Energy on the recommendation of the Public Utilities Commission of Sri Lanka, under sections 54 of the Sri Lanka Electricity Act, No. 20 of 2009 read with sections 40 and 56 of the aforesaid Act.

L.D.B. 3/2009 (iii).

## REGULATIONS

1. These regulations may be cited as the Electricity (Distribution) Performance Standards Regulations No. of 2016.
2. These regulations shall establish-
  - (a) the procedural rules, requirements and indices for assessment of –
    - (i) operational performance of the distribution system of a Licensee; and
    - (ii) commercial performance of the retail business of a Licensee; and
  - (b) the methodologies for-
    - (i) determining the appropriate values for the said indices; and
    - (ii) assessing the compensation to be paid to consumers and customers in the event the performance indices fall below the target levels.
3. These regulations shall be used in conjunction with the Distribution Code and shall be applicable to:-
  - (a) distribution licensees;
  - (b) tariff customers and consumers; and
  - (c) embedded generators.
4. Distribution Licensees shall be responsible for –
  - (a) operating its distribution system in accordance with the standards specified in these regulations; and
  - (b) preparing, submitting and disclosing the relevant information as set out in these regulations.
5. The Users shall be responsible for –
  - (a) disclosing such information to the relevant Distribution Licensee as may be reasonably be required;
  - (b) a general awareness of the performance standards set out in these regulations;
  - (c) co-operate with the Distribution Licensee to ensure compliance with these regulations.

## SUPPLY QUALITY

### Performance indices for supply quality

6. In these regulations, criteria for establishment of performance indices are as follows:-
  - (a) distribution system performance in respect of supply quality of a distribution system owned and operated by a Distribution Licensee shall be measured, recorded, monitored and evaluated using a uniform set of system performance indices; and
  - (b) quality of supply achievable for any part of a distribution system will vary on the characteristics specific to that part of the distribution system. These are identified as –
    - (i) load density;

- (ii) customer mix;
  - (iii) sales mix;
  - (iv) specific consumption; and
  - (v) extent of the network.
7. The distribution system of each Distribution Licensee shall be divided into four distribution groups identified as “Feeder Class A”, “Feeder Class B”, “Feeder Class C” and “Feeder Class D”. Such groups shall be reviewed at least once in two years subject to the approval of the PUCSL.
8. The levels for the performance indices for each group in respect of supply quality shall be determined, as set out in these regulations.
9. The supply quality of the distribution system of each Distribution Licensee shall be assessed through two types of performance indices namely:-
- (a) individual performance indices; and
  - (b) overall performance indices.

#### **Individual performance indices**

10. The supply quality to each individual customer in a Feeder Class of a Distribution Licensee shall be measured through:-
- (i) total number of interruptions due to distribution system faults per calendar year,
  - (ii) total number of interruptions due to planned programme arranged by the Distribution Licensee per calendar year,
  - (iii) total number of interruptions owing to system faults due to inter-licensee distribution systems per calendar year,
  - (iv) total number of interruptions due to planned programmes of the inter-licensee distribution systems per calendar year,
  - (v) total number of interruptions due to failures and planned outage programmes of the transmission system per calendar year,
  - (vi) total duration of interruptions due to distribution system faults per calendar year,
  - (vii) total duration of interruptions due to planned programmes arranged by the Distribution Licensee per calendar year,
  - (viii) total duration of interruptions due to failures of the inter-licensee distribution systems per calendar year
  - (ix) total duration of interruptions due to planned outages arranged in the inter-licensee distribution systems per calendar year; and
  - (x) total duration of interruptions due to failures and planned outage programmes of the transmission system per calendar year.

#### **Overall performance indices**

11. In these regulations, the following indices shall be used for the measurement of overall performance:-
- (a) System Average Interruption Frequency Index (SAIFI) -  
the total number of sustained customer power interruptions within a given period divided by the total number of customers served within the same period;

- (b) System Average Interruption Duration Index (SAIDI) -  
the duration of sustained customer power interruptions within a given period divided by the total number of customers served within the same period;
- (c) Estimated Energy Not Supplied (EENS) -  
an estimate of the energy not supplied to customers due to interruptions during a specified period; and
- (d) Momentary Average Interruptions Frequency Index (MAIFI) -  
the total number of momentary customer power interruptions within a given period divided by the total number of tariff customers served within the same period.

- 12 (a) Every overall performance index shall be calculated by a Distribution Licensee for interruptions due to:-
- (i) distribution system faults;
  - (ii) distribution planned maintenance programmes;
  - (iii) inter-licensee distribution system faults;
  - (iv) inter- licensee distribution system planned programmes; and
  - (v) upstream (transmission) failures maintenance programmes,

for each Feeder Class on a monthly and yearly basis.

- (b) When calculated on a yearly basis the specified period set out in paragraph (a) shall be considered as a calendar year. When calculated on a monthly basis, the specified period shall be considered as the period from the first day of a calendar month, up to the last day of **that calendar month** both days included.
- (c) In calculating the performance indices, the following shall not be considered:-
- (i) interruptions due to consumers being disconnected due to defaults by customers or offences committed under the Act; and
  - (ii) interruptions due to switching off of the power supply to avoid catastrophic situations, such as tsunamis, cyclones or any danger to human life etc.
- (d) the Licensee shall submit monthly reports to the PUCSL within 60 days from the end of that month, using the LISS.
- (e) The PUCSL shall specify the targets for the performance indices to be achieved by a Distribution Licensee at the time of tariff reviews.

## POWER QUALITY

### Power quality Assessment

13. In these regulations, the power quality of an electricity supply is assessed by measuring the variations in voltage, phase angle, phase balance, frequency, harmonics from the values specified in the Distribution Code.
14. These regulations shall apply in respect of payment of compensation for -
- (i) non compliance with the permitted voltage variations; and

- (ii) damages caused due to abnormalities of the electricity supply voltages and phase reversals.
15. The overall power quality of the electricity supply of a Distribution Licensee shall be assessed by monitoring the supply voltage at connection points through a voltage measurement programme and the customers or consumers shall be awarded compensation if the voltage measurements show that the power quality is below the specified levels.
16. The complaints made by tariff customers and consumers in respect of damages caused by abnormalities in the supply voltages and phase sequence reversals shall be investigated and affected parties shall be awarded compensation for consequential loss or damages.

### Overall power quality assessment

17. In these regulations, the deviation of actual voltage level from its nominal voltage shall not exceed the tolerance values specified as follows:-

Declared (nominal) voltage	Voltage variation (steady state change)
400V/230V	± 6 %
11,000 V and above	± 6 %

### Voltage measurement programme

18. In these regulations, the overall performance with respect to the adequacy of voltage level of customer installations shall be assessed through a voltage measurement programme at customer connection points.
19. Under the Voltage Measurement Programme, a Distribution Licensee shall be required to make at least:-
- one measurement for each MV/LV Bulk Customer **per** year; and
  - one measurement for every 1,000 LV Customers /Customer Service Centre **per** year.
20. The voltage level at a connection point shall be determined by recording its voltages over a 24 hour period. The average value of the rms voltages recorded in a 15-minute interval at a sampling rate not less than one sample/minute shall be considered as the voltage of an installation.
21. The voltage level of a location shall be considered to be within the specified levels, if the voltage so measured remains within the allowed tolerances during 90% of the time and the voltages measured during the balance 10% of the time, do not exceed 50% of the allowed tolerances.
22. The Distribution Licensee may use the facility for voltage measurement where the energy and demand meter installed at a Connection Point has the capability of measuring and recording the voltages.
23. In these regulations, when selecting customer installations for the voltage measurement programme for LV customers, the following shall be taken into consideration:-
- customers located in areas where voltage problems have been reported;
  - customers who have complained of voltage problems to the Licensee;
  - in case of LV customers, selection of customers equally from feeder ends and transformer ends; and
  - at least 50% of the randomly selected customers.
24. In these regulations,
- Distribution Licensee shall submit a list of selected locations for voltage measurement to the PUCSL quarterly;

- (b) the PUCSL may propose alternative locations;
  - (c) the programme shall be managed by the Distribution Licensee;
  - (d) the PUCSL may nominate a representative to witness the voltage measurements and data downloading, and in case PUCSL wishes to **nominate such person**, it shall give at least 10 days notice to the Distribution Licensee;
  - (e) the PUCSL may request the measurement results in electronic format;
  - (f) the Distribution Licensee shall inform the PUCSL of delays occurring in the implementation of the planned voltage measurement programme and the causes for such delays; and
  - (g) the PUCSL may request the measurement of voltages of a specific customer outside the planned voltage measurement programme, within a certain period, based on customer complaints and analysis done by the PUCSL.
25. The Distribution Licensee shall submit the quarterly report on voltage measurements before the last working day of the first month of the next quarter and the report shall comprise of the following: -
- (a) a list of locations categorized in accordance with the regulation 23;
  - (b) date and time periods of measurements;
  - (c) analysis summary of the results relating to-
    - (i) total number of locations of voltage measurements;
    - (ii) total number of locations falling outside the specified levels at each voltage level;
    - (iii) average monthly consumption based on the energy consumption of the last three months for each of the customer installations where voltage measurements were done, within the month of measurement; and
    - (iv) total energy supplied to the locations within the month, where the voltage was outside the specified levels;
  - (d) a report categorizing the locations with voltages falling outside the levels according to:-
    - (i) abnormality in voltage specific to a particular location;
    - (ii) abnormal voltages as a result of system inadequacy which shall affect the measured location and customers;
    - (iii) action proposed through the distribution system development plan or otherwise to improve the voltages;
    - (iv) list of locations where voltage improvement may take more than 12 months; and
    - (v) list of locations where voltages have been brought up to the required levels and the dates on which the corrections have been effected.
26. The Distribution Licensee shall maintain the voltage records for a period of two years.
27. These regulations shall not apply in respect of voltage imbalance and voltage fluctuations at this stage in keeping with the recommendations of the Distribution Code.



### INDIVIDUAL POWER QUALITY ASSESSMENT

#### METHOD OF APPLICATION

28. If any person wishes to claim compensation in the event his appliances, equipment or property is damaged due to abnormal voltages or phase reversals in the Distribution System of a Distribution Licensee, and –
- (a) if the person making the claim for compensation is the tariff customer, he shall–
    - (i) report the incident immediately to the Customer Service Centre (CSC) or Call Centre quoting the account number and obtain a reference number; and
    - (ii) submit a claim for compensation according to Form A1 specified in the Schedule hereto, to the Area Engineer or Branch Manager of the Distribution Licensee within seven days of the occurrence of the incident.
  - (b) if the person making the claim for compensation is not the tariff customer, before using the electricity supply at a tariff customer's premises-
    - (i) such person shall obtain written permission from the tariff customer to use electricity supply at his premises;
    - (ii) the tariff customer shall inform the CSC or the Call Centre quoting the account number, intended period of usage by such person, the name and National Identity Card number of the person who intends to use the supply of electricity; and
    - (iii) inform the Distribution Licensee as required by paragraph (a) .
29. No person shall repair or dispose damaged items without the prior written approval from the relevant Distribution Licensee.
30. In these regulations, the tariff customer or consumer shall –
- (i) submit the completed Form A1, along with the quotations for repairs, receipts of purchases or other evidence in support of the claim for compensation; and
  - (ii) make any payment as required by regulations 36(a) and 37,
- to the representative of the Distribution Licensee by hand, electronic mail or by registered post.
31. The representative of the Distribution Licensee shall be the Area Engineer in the operational areas of the Ceylon Electricity Board (CEB) Licensees and the Branch Manager of the operational areas of Lanka Electricity Company (LECO).

#### INVESTIGATING PERSONNEL

32. In these regulations, claims for damages to appliances, equipment or property due to abnormalities in voltages or phase reversals shall be investigated either by an independent professional or by any member of the Distribution Licensee's staff.
33. The tariff customer or the consumer shall select the party he prefers to conduct the investigation.
34. In these regulations, the independent professional shall be an Accredited Chartered Electrical Engineer and the Distribution Licensee shall maintain a register of such professionals who have agreed to serve in this capacity within a specific area of the Distribution Licensee's operational area.

35. The member of staff of the Distribution Licensee who investigates an incident of loss or damage, shall be an Electrical Engineer, who shall not have any direct operational responsibilities in the geographical area where the customer installation in question is located.

#### **Investigation - By Independent Professional**

36. In these regulations –
- (a) The affected customer shall pay a deposit to the Distribution Licensee in accordance with the allowed charges, to obtain the services of an independent professional.
  - (b) (i) if the investigation reveals that the damage to appliances, equipment or property is caused by abnormal voltages or phase reversals of the Distribution Licensee's electricity supply, the deposit shall be refunded; and  
(ii) where the investigation indicates otherwise, the deposit shall be used for the payment of professional fees.

#### **Investigation - By Distribution Licensee**

37. If the customer requests that the investigation to be carried out by any member of the staff of the Distribution Licensee, a fee or a deposit shall not be charged from the customer.
38. The Distribution Licensee shall not request any payment for the services rendered, even if the investigations reveals that the damage to property or appliances is not related to the distribution system supply voltage.

#### **Processing of the Claim**

39. On receipt of an application, the Distribution Licensee shall –
- (a) assign a reference number to the application with the date, time and the name of the Distribution Licensee's office that process the application; and
  - (b) acknowledge the receipt of the application and inform the tariff customer of the contact details of the officer and the reference number.
40. The Distribution Licensee shall check any previous claims by the customer for similar incidents and for any other information which can help in conducting an inquiry, and will make notes to that effect on the application.
41. The Distribution Licensee shall forward the application to the independent professional or a member of the staff within three working days.
42. The investigating officer shall –
- (a) make a prior appointment with the customer within three working days from the date he has consented to conduct the investigation;
  - (b) visit the installation on the appointed date;
  - (c) complete the investigation within two weeks in accordance with these regulations and the Licensee may allow a request for an extension for a maximum period of four weeks.
  - (d) submit a report to the Distribution Licensee within seven working days from the completion of the investigation.

43. Within one week of the receipt of the report, the Distribution Licensee shall communicate the outcome of the inquiry to the customer and pay compensation depending on the recommendations and conclusions stated in the report, provided the Distribution Licensee agrees with the same.
44. If the Distribution Licensee disagrees with the decision of the investigation officer, such Licensee shall inform the customer and the PUCSL about the decision and the PUCSL shall take steps to settle the dispute in accordance with the Electricity (Dispute Resolution Procedure) Rules.

#### **Assessment of compensation**

45. An inquiry to assess the damages caused, shall be conducted by an investigating officer in an impartial manner.
46. The investigating officer shall provide equal opportunities to the customer and the Distribution Licensee's representative who is in charge of the power supply in the area concerned, to present their cases.
47. The investigating officer shall not be prejudiced by the fact that previous claims have been made for damages and shall find out whether there are recurring problems in the electricity supply system or the customer is trying to take undue advantage of these regulations.
48. In recommending the compensation to be paid, the investigation officer shall –
  - (a) verify that the amount of compensation the person claims is commensurate with the damage(s) caused.
  - (b) make a comparison between the claim and the cost of replacing the person's appliances, equipment or property with items of substantially the same age, functionality and appearance or the cost of repairing the person's property to substantially the same functionality and appearance.

#### **Disputes**

49. If there is any dispute on the compensation recommended by the investigating officer or on the decision of the Distribution Licensee's representative, the aggrieved party may appeal to the PUCSL in accordance with the Electricity (Dispute Resolution Procedure) Rules.

### **COMMERCIAL QUALITY**

#### **Distribution system losses**

50. In these regulations, distribution system demand loss is the difference between the total demand of the distribution system and the sum of the demands of the customers at any given instant.
51. The distribution system energy losses are the difference between the energy purchased by the Distribution Licensee from the Transmission Licensee plus the energy fed into its distribution system from the embedded generators, and the total energy sold and invoiced during a specified period.
52. The energy sales invoiced shall include those invoiced to the customers and the energy used for powering auxiliary devices used in the operation of the distribution system.
53. In these regulations, distribution system losses shall be classified as follows:-
  - (a) Technical Losses -  
the energy consumed by the distribution system components when electrical energy is transported. These include the losses incurred by heating of conductors, transformer core losses and the consumption in the revenue meters; and
  - (b) Non Technical Losses -  
the difference between the distribution energy losses and the technical losses, which mainly comprise losses owing to pilferage, revenue meter errors, meter tampering and leakages through way leaves.

54. In these regulations –

- (a) at the commencement of a Tariff Period, PUCSL shall determine and approve caps on technical losses and non technical losses for a Distribution Licensee's medium voltage system and low voltage system separately in each case;
- (b) the caps approved may be different for each calendar year;
- (c) the Distribution Licensee shall be allowed to pass through the approved losses and recover the related cost from the end users through electricity tariffs in the manner stated in the Tariff Methodology; and
- (d) the caps will serve as target performance indices for distribution loss management and a Distribution Licensee shall endeavour to maintain losses lower than the caps.

55. The Distribution Licensee shall submit the loss levels on once a month, once in three months, once in six months and yearly basis. Methods and assumptions which is used in the determination of the technical loss levels at different voltage levels are given in the Distribution Code.

56. (a) The PUCSL shall calculate the losses and establish the correctness of reported losses by the Licensee, using the sales and purchases information submitted by the Licensee through LISS.
- (b) If there is a discrepancy between the losses calculated by the PUCSL and those reported by the Licensee, the PUCSL shall inform the Licensee of such discrepancy within two weeks from the date of submission of the loss report by the Licensee.
- (c) If the Licensee does not agree with the findings of the PUCSL under paragraph (b), the PUCSL and the Licensee shall take steps to resolve the issue.

#### **Customer service performance standards**

57. In these regulations, customer service performance shall be evaluated based on guaranteed standards.

58. (a) The Distribution Licensee shall be required to furnish the PUCSL with a report on its customer service programme, which shall include the target levels of performance for customer services listed in the Table 1 in the Schedule by first of December of every year;
- (b) The Distribution Licensee shall justify the basis for the determination of target levels and the PUCSL may propose changes to the same;
- (c) The PUCSL shall propose modifications and amend the targets and inform the Licensee accordingly within three weeks from the submission of the report; and
- (d) The report shall include the actions and proposals, the Distribution Licensee plans to implement to improve the customer services in the ensuing year and a comparison of the customer service levels achieved in the current year with the target levels of performance.

#### **IMPLEMENTATION**

##### **Implementation stages**

59. (a) Implementation of these regulations, except the Individual Power Quality Measurement, shall be carried out in three stages, namely –
  - (i) preliminary stage;
  - (ii) adaptation stage; and
  - (iii) hands-on stage.

- (b) The completion of the three stages shall not be more than 36 months from the date of these regulations come into force.
- (c) The Individual Power Quality Measurement as set out in Regulation 28 shall be enforced, within six months from the date of these regulations come into force.

#### **Preliminary stage**

- 60. The Preliminary stage shall be applicable for a period of twelve months and the Distribution Licensee is required to assess and acquire the information systems, financial and human resources required to implement these regulations.
- 61. The distribution Licensee is required to submit reports to the PUCSL as set out in Regulations 65, 66 and 67.
- 62. The PUCSL shall examine such reports, and approve the same or accept subject to modifications, or reject, within a month from the date of submitting the report. The PUCSL shall provide opportunities to the Distribution Licensees to justify their reports, if and when the PUCSL decides to reject or modify the same.
- 63. The Distribution Licensee shall commence work in accordance with the work plans immediately after PUCSL conveys its decision.

#### **Distribution system segregation**

- 64. (a) The Distribution Licensee shall calculate the distribution system characteristics given in Regulation 6 for each Consumer Service Centre area and submit the results to the PUCSL within six months from the date of these regulations come into force.
- (b) The PUCSL shall study the information in paragraph (a) and decide on the appropriate levels for distribution system Feeder Classes, in consultation with the Distribution Licensee and inform its decision within three months.
- (c) The Distribution Licensee shall classify the distribution system into classes accordingly, allocate areas and forward the relevant information to the PUCSL for approval within two months from the date of decision of the PUCSL.
- (d) The PUCSL shall study the submissions and approve the Feeder Classes of the distribution systems and the segregation of distribution system shall be completed during the Preliminary Stage.

#### **Overall and individual supply quality standards**

- 65. (a) Each Distribution Licensee shall compile a report on “Collection of Data for the Calculation of Performance Indices and Setting up of Information Systems” and forward to the PUCSL within three months from the date of these regulations come into force.
- (b) The report, shall comprise (minimum requirements) as follows:-
  - (i) Registering the system interruptions to calculate the performance indices;
  - (ii) Classifying of the interruptions as required by the regulations;
  - (iii) Identifying customer groups affected by each interruption;
  - (iv) Collecting information required for calculating the energy not served;
  - (v) Procedures for collection of data (i-iv);
  - (vi) Information systems required to be established taking into consideration the capability of the existing information systems;
  - (vii) Increase in annual revenue requirements requested, if any, and justification of the same; and
  - (viii) Work plan for implementation with a target date of completion of all tasks within eight months from receiving approval from the PUCSL.

- (c) Within six months from the date of the PUCSL granting approval to the reports, as set out in regulation 61 each Distribution Licensee shall establish a database, to include all necessary data to compute the performance indices as specified in these regulations.
- (d) The PUCSL or any authorised representative appointed by PUCSL may inspect the databases and the Distribution Licensee shall extend the fullest cooperation to such person.

#### **Power quality standards -overall standards**

66. Each Distribution Licensee shall assess the adequacy of its human resources and availability of equipment to carry out the voltage measurement programme as described in these regulations and submit a report to the PUCSL requesting appropriate increases in the annual revenue requirements, with necessary justifications, within six months from the date of these regulations come into force.

#### **Commercial quality standards**

67. Each Distribution Licensee shall assess the adequacy of its human resources and availability of the information systems to implement the commercial quality standards as described in these regulations and submit a report to the PUCSL requesting appropriate increase in the annual revenue requirements, with necessary justifications, within six months from the date of these regulations come into force.

#### **Adaptation stage**

68. The Adaptation Stage shall be applicable for a period of twelve months. During this period, the PUCSL and the Distribution Licensee shall implement the performance measurement and assessment programmes. Tasks that need to be completed by the Distribution Licensees and the PUCSL under this stage are stated below:-

##### **(a) Supply quality indices-overall and individual performance indices -**

- (i) work on the calculation of the performance indices both overall and individual shall commence immediately after making the information systems operational.
- (ii) At the end of the six month period from the commencement of the calculations, each Distribution Licensee shall submit to the PUCSL its first set of results calculated on monthly basis, rolling quarterly basis, rolling biannually basis and rolling annually basis.
- (iii) The PUCSL shall compare the results submitted by the different Licensees to ensure that every Licensee shall adhere to these regulations for the determination of these indices.

##### **(b) Power quality standards-overall standards -**

- (i) each Distribution Licensee shall submit the list of locations for its voltage measurement programme within six months from the date of the commencement of the adaptation stage;
- (ii) The PUCSL shall ensure that the selected list is in accordance with the requirements specified in Regulations 13, 14, 15 and 16 and request the Licensee to amend the programme where necessary and grant approval within one month from the date of submission; and
- (iii) On receipt of approval from the PUCSL for the voltage measurement programme, the Distribution Licensee shall commence the same.

##### **(c) Commercial quality standards -**

- (i) each Distribution Licensee shall ensure that all necessary information systems are established for the purpose of the calculation of the customer service indices within three months from the date of the commencement of the adaptation stage;

- (ii) each Distribution Licensee shall complete Table I in the schedule and submit the same to the PUCSL within three months from the date of the commencement of the adaptation stage;
- (iii) the PUCSL shall study the information provided and grant approval for the guaranteed standards with necessary changes within two months from the date of receipt of information from a Distribution Licensee; and
- (iv) each Distribution Licensee shall submit the results in respect of commercial quality assessment.

### **Hands-on stage**

69. Hands on stage, shall be applicable for a period of twelve months. The following tasks are required to be completed by the Distribution Licensees and the PUCSL during this period:-

#### **(a) Supply quality overall and individual performance indices**

- (i) the PUCSL shall study the results submitted by the Licensees with the objective of determining the appropriate levels for both overall and individual performance indices for different Feeder Classes, namely “Feeder Class A”, “Feeder Class B”, “Feeder Class C” and “Feeder Class D”.
- (ii) if any Distribution Licensee requests additional time for the completion of the tasks described above, the PUCSL shall study such requests and grant approval, if considered reasonable.
- (iii) after deciding on the appropriate levels in accordance with these regulations, the PUCSL shall calculate the compensation to be paid to the customers for non compliance using the formulae given in the Schedule .
- (iv) the PUCSL and the Distribution Licensee shall further adjust the specified levels for the individual and overall performance supply quality indices, studying the calculated results to enable the enforcement of these regulations for the improvement of the performance of the electricity industry, upon completion of the hands on stage.

#### **(b) Power quality standards-overall standards**

- (i) Each Distribution Licensee shall submit the results in accordance with Regulation 25.
- (ii) The PUCSL shall study the results and agree with the Distribution Licensee on the minimum number of locations where voltages have to be in accordance with the requirements specified in these regulations for each category in a feeder class within a Licensee’s operational area.
- (iii) By using the formulae given in the Schedule, the PUCSL shall calculate the compensation to be paid to the customers for non compliance in respect of power quality.
- (iv) The PUCSL and the Distribution Licensee shall arrive at acceptable levels for the individual and overall performance supply quality indices for the PUCSL to enforce on completion of the Implementation Stage.

#### **(c) Commercial quality standards -**

- (i) each Distribution Licensee shall calculate the performance indices in these regulations on a monthly basis and provide the same to the PUCSL through LISS;
- (ii) in respect of each customer standard, the Distribution Licensee shall evaluate its performance and submit a monthly report to the PUCSL;
- (iii) customers and consumers shall be compensated as set out in the Table 2 of Schedule for underperformance with respect to commercial quality;

- (iv) the distribution Licensees shall publish the contents of the Table 2 in the Schedule as specified by PUCSL in the daily newspapers and post it in the website of the Licensee to keep the customers and consumers informed of the compensation mechanism in respect of commercial quality;
- (v) Tariff Methodology includes the necessary provisions to ensure that the Distribution Licensees shall maintain the required standards in respect of the losses of the distribution system.

**Non-compliance with performance targets**

- 70. During the interim period of thirty six months, the PUCSL shall inform the Distribution Licensee, of the progress of the processing of relevant data and the results of the calculations of the compensation etc.
- 71. The failure of a Distribution Licensee to achieve the specified levels on performance shall not be considered as non-compliance:

Provided however, the following shall be considered as non compliance –

- (a) failure to submit any or all the information specified in these regulations at the specified time or period;
  - (b) provision of incomplete or inaccurate data or reports;
  - (c) failure to implement the procedures and information systems specified in these regulations within the specified periods;
  - (d) failure or unacceptable delays in the execution of the approved remedial actions and plans to improve quality of supply; and
  - (e) failure or unacceptable delays in correcting situations that imply inadequate power quality.
- 72. The Distribution Licensee’s failure to achieve the approved levels of performance in respect of supply quality, power quality or commercial quality shall be considered as Licensee’s failure to utilize the funds approved in the tariff filing process to achieve the required efficiency. If any Distribution Licensee fails to utilize allowed funds to achieve approved levels of performance, it shall be considered that funds allocated for efficiency improvements are available with the Licensee, and that amount shall be deducted from the allowed revenue for the succeeding year.
  - 73. The amount which is deducted shall be proportionate to the levels of the performance achieved and the formulae to be used for the determination of such amounts as specified in the Schedule .
  - 74. In these regulations, unless the context otherwise requires:-

“accredited Chartered Electrical Engineer” means a person qualified and experienced in design, installation and testing of electricity installations of retail and bulk customers, accredited by a due process established by the Distribution Licensee.

“active power or MW” means the product of voltage and current and cosine of the phase angle between them measured in units of

Watt (W)

kilowatt (kW) =  $10^3$  W

Mega Watt (MW) =  $10^6$  W

Giga Watt (GW) =  $10^9$  W

Tera Watt (TW) =  $10^{12}$  W;



“active energy” means the electrical energy produced, flowing or supplied by an electrical circuit during a time interval, being the integral with respect to time of Active Power, measured in units of watt-hours or standard multiples thereof, that is :-

$$1000 \text{ Wh} = 1\text{kWh}$$

$$1000 \text{ kWh} = 1\text{MWh}$$

$$1000 \text{ MWh} = 1\text{GWh}$$

$$1000 \text{ GWh} = 1 \text{ TWh} = 10^{12} \text{ Wh};$$

“ac” means an alternating Current;

“Act” means Sri Lanka Electricity Act, No. 20 of 2009;

“allowed charges” means approved charges Licensees are permitted to levy from customers, prospective customers and the general public for carrying out work requested by them;

“Apparatus” means all equipment in which electrical conductors are used, supported or of which they may form part;

“Black Start” means the process followed to restore power after a total or a partial shutdown;

“breakdown” means an occurrence relating to equipment of the supply system which prevents its normal functioning;

“bulk customer” means a customer whose contract demand exceeds 42kVA;

“connected load” means aggregate of rated capacity of all apparatus including portable apparatus in the Customer’s premises which are supplied or declared by the Customer to be taking supply from the system. This shall be expressed in kW or kVA;

“connection point” means a point at which a User’s Plant or Apparatus connects to the Distribution System;

“consumer” means a consumer of electricity in Sri Lanka and includes a prospective customer;

“customer” means a tariff customer;

“Customer Service Centre” means an office of a Distribution Licensee responsible for operation and maintenance of the Licensee’s distribution system and attending to customer needs, in a defined geographical area;

“Contract Demand” means maximum real (kW) or apparent (kVA) power demand agreed to be supplied by the Licensee or Supplier as stated in the declaration made by the customer;

“declared voltage” means a voltage declared by a Distribution Licensee for the supply of electricity to a customer;

“demand” means the requirement for active power and reactive power unless ;

“disconnect” means the act of physically separating User’s (or Customer’s) equipment from the Distribution Licensee’s system;

“Distribution Code” means a Code produced by Distribution Licensees pursuant to conditions of the License;

“Distribution Licensee” means a person appointed through a license issued by the Commission for the operation of the Distribution System;

“distribution system” means the system consisting of lines owned or operated by a Distribution Licensee for the purposes of distribution of electricity from a grid substation to another substation, or to or from any External Interconnection, or to deliver to customers, including any plant and Apparatus and meters owned or used by the Distribution Licensee in connection with the distribution of electricity;

“energy” means quantity of electrical energy measured in units equal to one Kilowatt hour (kWh) or multiples thereof such as:-

1000 Wh = 1 kWh

1000 kWh = 1 MWh

1000 MWh = 1 GWh;

“embedded generator” means a single generator, or a group of generators, connected to the distribution network, at voltages between 400 V and 33 kV;

“feeder classes” means different classes of distribution systems, being parts of the Distribution System of a Distribution Licensee, within its Authorised Area of operations, and identified as “Feeder Class A”, “Feeder Class B”, “Feeder Class C”, and “Feeder Class D” as applicable. There could be more than one such class in a given Authorised Area.

“frequency” means the number of alternating current cycles per second (expressed in Hertz or Hz) at which a System is running;

“generating unit” means any Apparatus which produces electrical energy;

“generator” means a person or agency who generates electricity and who is subject to the Grid Code;

“Grid Code” means the Code implemented by Transmission Licensee in terms of License issued;

“High Voltage or HV” means Nominal Voltage exceeding 33,000 Volt;

“HV Apparatus” means High Voltage electrical apparatus forming part of a System;

“kVA” means kilovolt ampere;

“license” means a license granted by PUCSL for the purpose specified;

“Licensee” Licensee or License Holder is a person or business entity to whom a License or authorization is issued by PUCSL, under the Public Utilities Commission of Sri Lanka Act, No. 35 of 2002 and Sri Lanka Electricity Act, No 20 of 2009, for carrying out Generation, Transmission, Distribution and Supply of electrical energy;

“LISS or Licensee Information Submission System” means a facility through which all Licensees are required to submit the required information on line to the PUCSL;

“live” means electrically charged;

“LKR” means Sri Lanka Rupee;

“load” means the Active and Reactive Power, as the context requires, generated, transmitted or distributed, and all similar terms shall be construed accordingly;

“Low Voltage or LV” means nominal voltage exceeding 50 Volt and not exceeding 1000 Volt;

“metering” means Tariff Metering and Operational Metering;

“Metering Code” means that part of Grid Code or the Distribution Code identified as the Metering Code;

“medium voltage” means the nominal voltage exceeding 1000 Volt and not exceeding 33,000 Volt;

“MVA” means Mega Volt Ampere = 1000 kVA;

“operational area” means in relation to an electricity Distribution Licensee, the authorised area specified in the License;

- “operational boundary” means the boundary between the systems of any two entities in the total system or network. It divides the responsibilities and facilities between the entities and defines jurisdiction;
- “outage” means in relation to Distribution Licensee’s Distribution System, the removal of any part of the Distribution Licensee’s Distribution System due to breakdown or maintenance.
- “overall accuracy” means the combined accuracy of meters and instrument transformers whose secondary circuits feed the meters;
- “overloading” means the condition under which part of a system is subject to a demand in excess of the normal design rating of that part of the system and not directly due to system fault current;
- “party” means any person, corporate body, company, organization, authority, firm or association subject to the provisions of the Distribution Code;
- “permit to work (PTW)” means a form of declaration signed and given by a Senior Authorized Person to a person in charge of work to be carried out on any earthed high voltage apparatus for the purpose of making known to such person exactly what apparatus is dead, isolated from all live conductors, discharged, connected to earth, and on which it is safe to work;
- “power factor” means Ratio of active power (kW) to apparent power (kVA);
- “Power Purchase Agreement or PPA” means the Agreement entered into between a Generator and Transmission Licensee pursuant to which Transmission Licensee amongst other matters agrees to purchase from the Generator the capacity of its Generating Units;
- “power station” means an installation comprising one or more Generating Units (even where sited separately) owned and/or controlled by the same Generator, which may reasonably be considered as being managed as one Power Station;
- “protection” means provisions for detecting abnormal conditions on a System and initiating fault clearance and activating alarms and indications;
- “PUCSL” means Public Utilities Commission of Sri Lanka established under PUCSL Act, No. 35 of 2002;
- “reactive power or MVAR” means the product of voltage and current and the sine of the phase angle between them measured in units of volt-amperes reactive (VAr) and standard multiples thereof i.e 1000 VAr = 1kVAr  
1000 kVAr = 1MVAR;
- “reactive energy” means the integral with respect to time of the Reactive Power measured in units of volt ampere hours reactive or standard multiples thereof, that is:  
1000 VArh = 1 kVArh  
1000 kVArh = 1 MVARh;
- “recorder” means an apparatus that stores a series of instantaneous readings at different times and intervals, and records the data obtained through a direct internal or external connection, feeding all such data into an instrument that allows such internal data to be retrieved at a future point in time;
- “retail customer” means a customer whose contract demand is less than 42kVA;
- “SLEA” means Sri Lanka Electricity Act, No. 20 of 2009;
- “substation” means an assembly of equipment including any necessary housing for the conversion, transformation, switching or control of electrical power;
- “Tariff Customer” means a person who requires a supply of electricity from a Distribution Licensee in pursuance of Section 25 of the SLEA and is supplied by the Distribution Licensee;



	Customer Service	Measure of Performance	Guaranteed standard										
			With no changes * required to the distribution system				With changes are required to the distribution system *						
			A	B	C	D	A	B	C	D			
5	Shifting of a meter	Number of working days upon making the payment for the shifting.											
6	Shifting of a pole	Number of working days upon making the payment for the shifting.											
7	Announcing scheduled outages	Number of working days of advance notice to be given to the customers											
8	Billing and payment queries	(a) Number of hours taken to answer the query. (b) Number of hours to rectify mistakes, if there are any											
9	Replacing the cut out fuses	Number of working days from the day of making the complaint.											
10	Attending to customer complaints other than those listed above and complaints on breakdowns	Number of working days after the receipt of the request.											

A- Feeder Class A; B-Feeder Class B; C- Feeder Class C; D- Feeder Class D

### Compensation for under-Performance

Regulation 69(a) (iii) and (b) (iii)

### OVERALL PERFORMANCE INDICES

At the end of a calendar year, PUCSL will calculate the funds Licensee has not effectively mobilized, using the formula given below:-

$$C_{m,i} = \text{Max} (C_{m,i}^{SAIDI}, C_{m,i}^{SAIFI})$$

where

$C_{m,i}$  Compensation in LKR to be paid by the Distribution Licensee “i” owing to non-compliance with the Overall Performance Indices for a distribution system feeder class “m” as defined in regulation 7, in the corresponding calendar year.

$Max ( \quad )$ : means the maximum of all the values indicated within the brackets.

In the above formula the parameters shall be as follows,

**Compensation for SAIDI**

$C_{m,i}^{SAIDI}$ , expressed in LKR shall be calculated as follows

i. If the specified level for  $SAIDI_m = \overline{SAIDI}_m$ ,

$$C_{m,i}^{SAIDI} = (SAIDI_{m,i} - \overline{SAIDI}_m) \times \frac{YearEnergy_{m,i}}{8760} \times SUPPLYCOST_{m,i}$$

If  $SAIDI_{m,i} < \overline{SAIDI}_m$ ,  $C_{m,i}^{SAIDI}$  will be zero.

**Compensation for SAIFI**

$C_{m,i}^{SAIFI}$ , expressed in LKR shall be calculated as follows

ii. If allowed level of  $SAIFI_m = \overline{SAIFI}_m$ :

$$C_{m,i}^{SAIFI} = (SAIFI_{m,i} - \overline{SAIFI}_m) \times \left( \frac{SAIDI_{m,i}}{SAIFI_{m,i}} \right) \times \frac{YearEnergy_{m,i}}{8760} \times SUPPLYCOST_{m,i}$$

If  $SAIFI_{m,i} < \overline{SAIFI}_m$ ,  $C_{m,i}^{SAIFI}$  will be zero.

Where

$SAIDI_{m,i}$  and  $SAIFI_{m,i}$  : Actual (registered) values for each of such Overall Performance Indices for a particular distribution system feeder class “m” during the corresponding complete calendar year, for the distribution licensee “i”.

$\overline{SAIDI}_m$  and  $\overline{SAIFI}_m$  : Approved specified level for each of the selected Overall Performance Indices for the relevant distribution system feeder class “m”.

$YearEnergy_{m,i}$  : Annual Energy sales by the Distribution Licensee “i” to its customers in the distribution feeder class “m” during the year, expressed in kWh.

$SUPPLYCOST_{m,i}$  : Weighted Average Cost of supplying a kWh to the customers, expressed in LKR/kWh, in the distribution feeder class “m”, for the distribution licensee “i”.

### Compensation for EENS

$$C_{m,i}^{ENS} = \left( \frac{EENS_{m,i}}{ETOT_{m,i}} - \frac{\overline{EENS}_{m,i}}{\overline{ETOT}_{m,i}} \right) \times YearEnergy_{m,i} \times CENS_{m,i}$$

$$\text{If } \left( \frac{EENS_{m,i}}{ETOT_{m,i}} - \frac{\overline{EENS}_{m,i}}{\overline{ETOT}_{m,i}} \right) < 0, \text{ then } C_{m,i}^{ENS} = 0$$

$EENS_{m,i}$  Actual (registered) values of EENS for a distribution system feeder class "m" for distribution licensee "i" during the corresponding complete calendar year, expressed in kWh.

$$\left( \frac{\overline{EENS}_{m,i}}{\overline{ETOT}_{m,i}} \right)$$

: Specified ratio of EENS to total energy sales for a particular distribution system feeder class "m" for the distribution licensee "i" during the corresponding complete calendar year

$$C_{m,i}^{ENS}$$

: Compensation for exceeding the levels specified for EENS, for the distribution system feeder class "m" for the distribution licensee "i", expressed in LKR

$$CENS_{m,i}$$

: Cost of energy not supplied expressed in LKR/kWh for the distribution system feeder class "m" for the distribution licensee "i".

### Compensation for MAIFI

PUCSL shall develop a suitable compensation mechanism in respect of MAIFI using the Yardstick regulation, with the results submitted by the Licensees during the implementation period.

### INDIVIDUAL PERFORMANCE INDICES

1. Each Distribution Licensee shall compensate individual customers if the Individual Performance Indicators at the end of a calendar year exceeds the specified levels approved by PUCSL for such indicators.
2. Such compensation amounts shall be calculated using the following formula. The formulae below relate to the calculation of compensation to be paid to a customer owing to interruptions.

$$C_i^{CUST} = \sum_{j=1,J} ID_{i,j}^{CUST} \times \frac{YearEnergy_i}{8760} \times SUPPLYCOST$$

where

$C_i^{CUST}$  Compensation to be paid by the Distribution Licensee caused to customer “ $i$ ” during the calendar year owing to exceeding the tolerance specified for any Individual Performance Indicator for such customer.

$J$  Total number of interruptions to customer “ $i$ ”.

$ID_{i,j}^{CUST}$  Duration of the Interruption “ $j$ ” to customer “ $i$ ”, expressed in hours

$YearEnergy_i$  Energy sales to the customer “ $i$ ” within the calendar year, expressed in kWh.

$SUPPLYCOST$  Weighted average cost of supplying to the customers of the Distribution and Supply Licensee within the calendar year, expressed in LKR/kWh.

### POWER QUALITY INDICES

1. Each Distribution Licensee shall be subjected to a reduction of the annual distribution revenue if a power quality index is not in compliance with the standard specified.
2. Such annual distribution revenue reductions shall be calculated using the following formula for each distribution system feeder class.
3. The formulae below give the calculation of compensation, if the voltage measurement program shows that customers are served at a voltage not in compliance with the standards specified,

$$C_m^{VOLT} = \left( \frac{LLV_m}{LTOT_m} - \frac{\overline{LLV_m}}{LTOT_m} \right) \times \frac{ELV_m}{ETOT_m} \times YearEnergy_m \times SUPPLYCOST$$

$$\text{If } \left( \frac{LLV_m}{LTOT_m} - \frac{\overline{LLV_m}}{LTOT_m} \right) < 0 \text{ then } C_m^{VOLT} = 0$$

$C_m^{VOLT}$  Compensation to be paid by the Distribution and Supply Licensee owing to provision of electricity supply at voltages different to the specified standards, for distribution system feeder class “ $m$ ”, within a calendar year

$LTOT_m$  Total number of locations where voltage measurements were conducted, for the distribution system feeder class “ $m$ ”, within a calendar year

$LLV_m$  Total number of locations where the measured voltage falls outside the specified levels at each voltage level, for the distribution system feeder class “ $m$ ”, within a calendar year

$\left( \frac{\overline{LLV_m}}{LTOT_m} \right)$  Maximum acceptable ratio between the number of locations where the voltage falls outside the specified range, and the total number of locations measured, as defined by the Commission



$ELV_m$	Total energy supplied to customers whose power quality was tested for voltage variations during the year, in which voltages have been outside the specified levels in the year under consideration within a specified distribution system feeder class “m”.
$ETOT_m$	Total energy supplied to the customers whose supply quality was tested for voltage variations within the year, within a specified distribution system feeder class “m”.
$YearEnergy_m$	Energy sales by the Distribution and Supply Licensee within a calendar year to its customers during the year, for the distribution system feeder class “m”, expressed in kWh.
$SUPPLYCOST$	Weighted average cost of supplying to the customers of the Distribution and Supply Licensee within the calendar year, expressed in LKR/kWh.

### COMMERCIAL QUALITY INDICES

### Regulation 69 (c) (iii)

Each Distribution Licensee shall pay compensation to the consumers/customers at the rates given in Table 2, if it fails to achieve the specified levels (SL) in respect of the commercial quality standards published by a Distribution Licensee.

**Table 2**

#### Compensation for Underperformance on Commercial Quality

<i>Customer Service</i>	<i>Performance Standard</i>	<i>Compensation to consumer/customer</i>
1 Provision of an estimate for a new electricity supply	Guaranteed period to render the service.	LKR 100 per each day of default, up to a maximum of LKR 1000
2. Provision of a new electricity supply	Guaranteed period to render the service.	LKR 200 per each day of default, up to a maximum of LKR 2000
3 Reconnection of electricity supply after a disconnection for non payment.	Guaranteed period to render the service.	LKR 500 per each day of default, up to a maximum of LKR 5000
4 Testing of revenue meters	Guaranteed period to render the service.	LKR 50 per each day of default, up to a maximum of LKR 500
5 Shifting of a meter	Guaranteed period to render the service.	LKR 50 per each day of default, up to a maximum of Rs 500
6 Shifting of a pole	Guaranteed period to render the service.	LKR 50 per each day of default up to a maximum of LKR 500

<i>Customer Service</i>	<i>Performance Standard</i>	<i>Compensation to consumer/customer</i>
7 Announcing scheduled outages	Guaranteed period of notice.	LKR 50 per/affected customer/ each day of default, up to a maximum of LKR 500
8 Billing and payment queries  (a) Number of hours taken to answer the query. (b) Number of hours to rectify mistakes, if there are any	Guaranteed period to render the service.	a. LKR 10/hour exceeding the guaranteed standard up to a maximum of LKR 500. b. LKR 10/hour exceeding the guaranteed standard up to a maximum of Rs 500
9 Replacing the cut out fuses	Guaranteed period to render the service.	LKR 500 per each day exceeding the guaranteed standard to provide the service, up to a maximum of LKR 2000.
10 Attending to customer complaints other than those listed above and breakdowns	Guaranteed period to render the service.	LKR 25 per each day exceeding the guaranteed standard to provide the service, up to a maximum of LKR 2000.

**Regulation 28.**

**Form A1:**

**CLAIM FOR DAMAGES OWING TO ABNORMAL SUPPLY VOLTAGES/ PHASE REVERSALS**

This form is to be used by a customer when making a claim for damages or losses caused to his property/equipment/appliance owing to voltage variations exceeding the permissible limits or phase reversals. Compensation for the claims will be made in accordance with the Electricity (Distribution) Performance Standards Regulations No... made under the Sri Lanka Electricity Act No 20 of 2009.

<b>Tariff customer Information</b>	
Name	
Address	
Customer service Centre ( If known)	
Email address	
Telephone	.....(Home).....(Office).....( Mobile)
<b>Electricity supply details</b>	
Customer account number	
Bulk customer or Retail customer	
Details of the damages caused	
Date of Incident	
Time of Incident	
Brief description <sup>1</sup>	
Details of prior claims	
Total claim <sup>2</sup>	
Your preference for the inquiry to be held by	Independent Professional <sup>3</sup> <input type="checkbox"/> Licensee Staff <input type="checkbox"/>
Table 1	
Item name	
Item manufacturer/supplier	
Model No	
Year of purchase and purchase price <sup>4</sup>	
Amount claimed for replacement claimed <sup>5</sup>	
If “Repair” – Amount claimed <sup>6</sup>	

1. Please provide details requested in the Table 1 for each item for which damages are claimed.
2. Please give a break-up of the compensation claim. No items should be disposed or repaired without written permission from the Licensee.
3. A payment of a deposit of LKR ..... is required. This will be refunded, if inquiries reveal that the damages to appliances/property have been caused by abnormal voltages/phase reversals.
4. A receipt of purchase is the preferred evidence of purchase price. If you do not have a receipt, you may estimate the purchase price.
5. Attach a quotation from a reputed supplier for the replacement.
6. Attach any evidence, copies of quotes for repairs to support your claim.

I declare that to the best of my knowledge the information provided above is true in every detail and that all relevant information has been provided. I declare that I am the tariff customer of the property identified in this Claim Form. I understand that this claim may not be processed or approved if the information I provide is insufficient or found to be false.

Signature of the Customer

Date:

<p><b>For office use : Acknowledgement of Receipt</b></p> <p><b>Date &amp; time of receipt:</b></p> <p><b>Reference No:</b></p> <p><b>Name &amp; Designation of Officer:</b></p> <p><b>Signature:</b></p> <p><b>Licensee Office Address:</b></p> <p><b>Telephone/Email address:</b></p>
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**Regulation 19**

**Forms for the Voltage Measurement Programme**

**Voltage Measurement Programme - Retail Customer List**

Licensee	Quarter	Retail customers	Submission date
Area or Branch / Customer Service Centre (CSC)	Customer location	Account number	Selection criteria (a,b,c,d,e)
<b>Total no of retail customers of CSC</b>		<b>No of Locations/ CSC total retail customers</b>	

- (a) Customers located in areas where voltage problems have been reported:
- (b) Customers who have complained of voltage problems to the Licensee:
- (c) Feeder end customers:
- (d) Transformer end customers:
- (e) Randomly selected customers:

**Voltage Measurement Programme - Bulk Customer List**

Licensee	Quarter	Bulk customers total	Submission date
Area or Branch/Customer Service Centre	Customer location	Account number	<b>Bulk Customer Type (MV or LV)</b>
<b>Total no of customers</b>		<b>% of the total bulk customers</b>	

**Quarterly report on Voltage Measurement**

Licensee	Quarter		Submitted date						
Location	Account number	Average monthly Consumption (kWh)	Measured date and time period		Deficiency		Cause and Correction		
			Date	Period	High(H) /Low(L) Indiv (I) Group (G)	Date corrected	>12 months	System inadequacy	Improve ment*

\* Development Plan (D), Phased balancing (P), Other measures (M)

**Analysis Summary**

Licensee	Quarter	Submitted date	
Total no of locations	Locations falling outside the limits	<b>Energy consumption per month</b>	
		All locations tested	<b>Locations where voltage is not within accepted levels</b>