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## CHAPTER 1

### PRELIMINARIES

#### 1.1. AIMS AND OBJECTIVES OF CONSUMER SERVICE MANUAL

The Consumer Service Manual lays down the instructions in pursuance of Section 21 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 read with Rule 9 of the NEPRA Licensing (Distribution) Rules, 1999 which shall be administered by a distribution licensee to ensure safe, effective and reliable supply of electric power.

#### 1.2. SCOPE OF CONSUMER SERVICE MANUAL

The Consumer Service Manual is applicable to all consumers served by the KESC including the Bulk Power Consumers (where applicable) and includes without limitation the following matters, namely:

- a) Form and manner of application by the consumer for obtaining electric service connection, along with details of any documents to be submitted in support of the application.
- b) Time-frame for providing service connection to the consumer.
- c) Procedure and manner for installation of meters and other facilities for connection.
- d) The procedure and manner for billing, the time limit of payment of bills and procedure for collection of bills.
- e) Fees and charges for connection, installation of meters, other facilities for connection and reconnection.
- f) Procedure for issuing disconnection notice to consumer for non-payment of bills and the procedure thereof for disconnection of electric supply in case of non payment and reconnection after payment of outstanding dues.
- g) Collection of arrears upon or following reconnection.
- h) Procedure for disconnection and the charges and penalties for illegal abstraction/theft of electric power or for use of electric power for purposes other than those specified in the application for connection and service.
- i) Requirement of safety and security.
- j) Efficient use of electric power including with reference to characteristics of supply or usage such as time of day, week or season.
- k) Procedure and the time-frame for handling and redressal of different types of consumer complaints.

The Consumer Service Manual shall also act as the code of conduct of a distribution licensee and to be used in conjunction with the provisions of Distribution Code, Performance Standards (Distribution) Rules, 2005 (**Annexure-I**), Eligibility Criteria Regulation, 2003 (**Annexure-II**), Rules and regulations when and where applicable.

### 1.3. INTERFACES WITH CONSUMER FORUMS

KESC shall make efforts to have interface with the Consumer Forums/ Councils and Associations. The efforts shall be made to improve KESC-CONSUMER relationship and the consumer's awareness about utility's programs/ activities/ services. Consumer Services Centers and One-Window Operations shall be established for the convenience of the consumers operating round the clock.

### 1.4. DEFINITIONS

KESC operating in pursuance of the distribution license granted by NEPRA is allowed to charge only such tariff as approved by NEPRA. Such tariff provides for the terms and conditions of tariff applicable to different categories of consumers also determined by NEPRA. The definitions of the following terms are accordingly as per the determinations of NEPRA as amended from time to time. A copy of the current applicable Tariff Terms and Conditions as approved by NEPRA is annexed with this manual, as **Annexure-III**.

1. **Agricultural Supply:** As defined in the Tariff Terms and Conditions;
2. **Billing Demand:** As defined in the Tariff Terms and Conditions;
3. **Billing Period:** As defined in the Tariff Terms and Conditions;
4. **Energy Charges:** As defined in the Tariff Terms and Conditions;
5. **Fixed Charges:** As defined in the Tariff Terms and Conditions;
6. **General Supply:** As defined in the Tariff Terms and Conditions;
7. **Maximum Demand:** As defined in the Tariff Terms and Conditions;
8. **Industrial Supply:** As defined in the Tariff Terms and Conditions;
9. **Maximum Demand Indicator (MDI):** As defined in the Tariff Terms and Conditions;
10. **Month:** As defined in the Tariff Terms and Conditions;
11. **Power Factor:** As defined in the Tariff Terms and Conditions;
12. **Temporary Supply:** As defined in the Tariff Terms and Conditions;

#### OTHER DEFINITIONS

13. **Applicable Documents:** means the rules and regulations issued in pursuance of the Act by the Authority, from time to time, relating to the generation, distribution and transmission license, the grid code, the distribution codes, Consumer Service Manual and any documents, instruments, approvals or authorizations issued or granted by the Authority in exercise of its power under the Act.
14. **Applicant:** means any person who applies to a distribution licensee for provision of electric power service or modification thereof.
15. **Application:** A request to the authorized office of KESC for an electric service connection on the prescribed form. (Form annexed as Annexure IV);
16. **Bulk Power Consumer (BPC):** means a consumer who purchases or receives electric power, at one premises, in an amount of one megawatt or more or in such other amount and voltage level and with such other characteristics as the Authority may determine and the Authority may determine different amounts and voltage levels and with such other characteristics for different areas;
17. **Common Distribution System (CDS):** means the distribution system as defined in the Eligibility Criteria Regulations, 2003;
18. **Conductor:** means a wire, cable or other form having suitable capacity for carrying electric current and used for movement or delivery of electricity;
19. **Connecting Point:** means the point where the dedicated distribution system of the applicant is connected with the existing common distribution system;

20. **Consumer:** means a person or his successor-in –interest who purchases or receives electric power for consumption and not for delivery or re-sale to others, including a person who owns or occupies a premises where electric power is supplied;
21. **Consumer's Mailing Address:** means the address specified in the consumer's Application and Power Supply Contract form for the purpose;
22. **Consumer Sub Station:** means a sub station furnished, installed, owned and maintained by the consumer;
23. **Consumption:** means the amount of electricity used and measured over a given period of time;
24. **Declared Voltage:** means the voltage required to be supplied at the consumers' terminals with permissible variations according to Performance Standards (Distribution) Rules, 2005;
25. **Dedicated Distribution System (DDS):** means that part of the distribution system, required to supply power for the sole consumption of an applicant and not for supplying power to any other consumer and shall comprise of the distribution system from the connecting point up to the interconnection point of the applicant including the metering and service wire and such other connection arrangement;
26. **Distribution Sub Station:** means a sub station furnished, installed, owned and maintained by KESC;
27. **Distribution Lines:** mean overhead lines and/or underground facilities consisting of conduit and cable which are operated at nominal distribution voltages;
28. **Distribution Facilities:** means electrical facilities operating at distribution voltage and used for movement or delivery of electric power;
29. **DISCO:** means a utility/entity engaged in the business of distribution of electric power as licensed by NEPRA;
30. **Drop-Out Fuse:** means a current interrupting device, the mechanism of which is so designed that on melting of a fuse link the fuse carrier drops out to exhibit an open gap in the primary circuit;
31. **Earthing or Grounding:** means electrical connection to general mass of earth in such a manner as to ensure, at all times, an immediate discharge of energy;
32. **Consumer Eligibility Criteria:** means criterion for a non discriminatory provision of distribution service and sale of electric power to all the consumers within the service territory of a distribution company(KESC) **prescribed by NEPRA vide SRO.743 (I)/2003 dated July 26, 2003, as amended from time to time.**
33. **Energy Meter:** means a device that registers the quantity of electrical energy over a period of time;
34. **Horsepower (HP):** means a practical unit of power representing the ability to do work by some kinds of electrical equipment. One HP is equivalent to 746 watts of electrical power;
35. **Interconnection Point:** means the point where the metering installation and protection apparatus of the consumer is connected to the dedicated distribution system;
36. **Interruption:** means loss of electric power to one or more consumers;
37. **Load Factor:** means the ratio of average load over a designated period to the peak load in that period;
38. **Nominal Voltage:** means a suitable approximate value of voltage used to designate or identify a system;
39. **Overloading:** means a condition under which part of the system is subject to a electric power/current in excess of the normal design rating of that part of the system and not due directly to system fault current;
40. **NTDC:** means National Transmission and Dispatch Company as licensed by NEPRA.
41. **Power Factor:** means the ratio of kWh to kVAh recorded during the month or the ratio of kWh to the square root of sum of square of kWh and kVARh.
42. **Premises:** means the building/site /location where Electric Power is required/ consumed;
43. **Primary Service Connection:** means any connection which is provided at 11 kV or above;

44. **Public Lighting Supply:** means a supply given to a Government Department/ Agency or a Housing Society charged with public lighting, for the purpose of illuminating public lamps within the area of its jurisdiction;
45. **Reliability:** means the degree of performance of the elements of the electric power system that results in electricity being delivered to consumers within specified standards;
46. **Rural Area:** means the area falling within the jurisdiction of all rural local bodies including without limitation Union Councils, Tehsil Councils and Zila Councils;
47. **Sanctioned Load:** means the load in kilowatts sanctioned by the KESC;
48. **Service Drop:** means the cable of appropriate current carrying capacity to connect the CDS/DDS to the Premises at the inter connection point. The maximum length of this cable shall be such that the voltage at the inter connection point does not fall below the specified limits;
49. **Secondary Service Connection:** means a connection which is provided at 400 volts or below;
50. **Service Wires or Connection:** means the group of cables/conductors, whether overhead or underground, necessary to connect the service entrance conductors of the consumer to the KESC's supply line, regardless of the location of the KESC's meters or transformers;
51. **Sponsored Dedicated Distribution System:** means where a Common Distribution System (CDS) doesn't exist and is required to be developed for provision of service on behalf of expected applicants by any person/agency other than the applicant(s) such person/agency shall be called the Developer/Sponsor (D/S) and such a system for the purpose of ECR, 2003 will be referred as the "Sponsored Dedicated Distribution System (SDDS)".
52. **Tariff Schedules:** means the rates, charges, terms and conditions for generation of electric power, transmission, distribution services and sales of electric power to consumers by KESC as approved by NEPRA and notified by the Government of Pakistan;
53. **Underground Distribution System:** means an electric distribution system with all wires installed underground except those wires within surface-mounted equipment enclosures;
54. **Urban Area:** means the area falling within the jurisdiction of all urban local bodies or development authorities including without limitation Town Committees, Municipal Committees, Municipal Corporations, Metropolitan Corporations and Cantonment Boards;
55. **Voltage:** means difference of potential or "electric pressure" in an electrical circuit measured in volts;
56. **Voltage Drop:** means the reduction in the voltage between two reference points;
57. **Voltage Fluctuation:** means a series of voltage changes or a cyclic variation of voltage;

#### 1.5. ACRONYMS / ABBREVIATIONS

A& PSC	Application and Power Supply Contract
AM	Assistant Manager
BOC	Business Operation Center
BU	Business Unit
CC	Call Center
CEO	Chief Executive Officer
COO	Chief Operating Officer
CP Form	Commercial Procedure Form
CT/PT	Current transformer / Potential transformer
DCO	Disconnection Order
DCOO	Deputy Chief Operating Officer
DD	Dy Director
DGM	Dy. General Manager
Dir.	Director
DISCO	Distribution Company

DN	Demand Notice
DP	Data processing
EAD	Energy Audit department
ERO	Equipment Removal Order
FMR	Faulty Meter Report
G.M(C.S)	General Manager(Customer Services)
IBC	Integrated Business Center
SIR	Site Inspection report
ITD	Information Technology department
KESC	The Karachi Electric Supply Company Limited
KWH	Kilo Watt Hour
LP	Late Payment
M	Manager
M (RC/DC)	Manager Reconnection/Disconnection
Manager BO	Manager Business Operations
MCO	Meter Change Order
MCA	Meter Change Advice
MDI	Maximum Demand Indicator
MI	Meter Inspector
MO	Manager Operations
MR	Meter reader
MRS	Meter Route Sheet
MSB	Meter Security Box
NCA	New Connection Advice
NCRF	New Connection Request Form
NEPRA	National Electric and Power Regulatory Authority
PEPCO	Pakistan Electric Power Company (Pvt) Ltd.
RCO	Reconnection Order
RPD	Revenue Protection Department
SC	Service Calls
SCO	Service Connection Order
SR	Store Requisition
T & C	Terms and Conditions
TD	Technical Director
Test Form	Test/completion Report for Alternating Current Installation
VIBC	Virtual Integrated Business Center

## CHAPTER 2

### NEW CONNECTION/EXTENSION AND REDUCTION OF LOAD/CHANGE OF NAME

#### 2.1. GENERAL INFORMATION

Information desired from KESC relative to subject matters covered by this Manual may be obtained by personal call, by telephone, or by mail and is also available on the web site i.e www.kesc.com.pk. The IBC/VIBC of the area is the main contact office where a separate window is available in addition to the consumer service centers established by KESC to provide all necessary information required regarding application for new connections and all other matters relating to consumer services and provision of electric power services.

#### 2.2. APPLICATION FOR SERVICE CONNECTION

- a) **Application and Power Supply Contract (A&PSC)** Forms in English and Urdu are available free of charge in each IBC/BOC/New connection office of KESC and on the KESC website. (**Annexure IV**)
- b) An applicant shall be required to fill in the forms and attach the required supporting documents as detailed therein.
- c) Any assistance or information required in filling the application form shall be provided to the applicant by the KESC staff in the office where form is to be submitted.
- d) Application for new connection can be submitted at KESC concerned office in person or by registered mail. A receipt as acknowledgement of the forms shall be issued by the KESC office.

#### 2.3. DOCUMENTS TO BE ATTACHED WITH THE APPLICATION

Documents to be attached with the Application and Power Supply Contract are as follows:

- a) Ownership proof of the premises (where connection is required) as determined by KESC.
- b) An affidavit from the owner of the premises to the effect that no connection existed previously at the premises for which connection is applied for and that he shall pay the KESC any outstanding dues in respect of any previous connection which existed at the premises in question, if noticed later on.
- c) "No Objection Certificate" from the landlord (if the applicant is a tenant along with landlord's proof of ownership and affidavit mentioned above).
- d) Attested copies of CNIC of the applicant and two witnesses.
- e) The power of attorney (in case of a Company), in favor of the applicant to the effect that the applicant is authorized to sign the application and execute agreement on behalf of the Company.
- f) If the connection is applied in the name of a company, duly incorporated under the law, then following additional documents shall be attached:-
  - i. Certificate of incorporation;
  - ii. Resolution of Board of Directors authorizing a person to sign and execute the application and agreement form;
  - iii. Charge creation certificate issued by the Securities and Exchange Commission of Pakistan equivalent to the amount of security;
  - iv. List of directors with complete addresses and copies of their computerized national identity cards.

- g) Available site plan of industry/premises where connection is required.
- h) In case of change of name/extension or reduction of load, a certificate from the concern IBC/BOC Office of KESC to the effect that no arrears are outstanding against the premises along with proof of ownership/NOC. Wiring test report would be required in case of extension/reduction of load.

#### **2.4. DESIGN, COST ESTIMATE AND DEMAND NOTICE**

- a) After the receipt of Application Form along with the required documents KESC Office shall issue an acknowledgement receipt and a serial number to the applicant for further reference/processing etc. Based on the site inspection, the application will be evaluated / processed and approved as per the provisions of Consumer Eligibility Criteria, Grid Code and Distribution Code (where applicable). A demand notice of cost estimate and security amount shall subsequently be issued by the KESC office for payment by the applicant.
- b) Demand Notices for Service Connection cost and Security Deposit shall be sent under registered post or courier to ensure their delivery to the applicant or applicant may receive it personally, for that receipt may be obtained from applicant for record.
  - i. For payment, branches of designated banks authorized to receive the Demand Notice charges, etc. shall be intimated to the applicant. The bank shall receive payment as per demand notice and issue an acknowledgement receipt etc.
  - ii. Subsequent to the deposit of payment mentioned in the demand notices, the applicant shall execute the power supply contract with the KESC in triplicate.
  - iii. KESC shall determine new final priority number of connection to each application after the demand notices have been paid and wiring test report submitted subject to the exemption granted under the policy of KESC.

#### **2.5. APPROVAL OF APPLICANT'S INSTALLATION**

Before any electrical wiring or energy consuming apparatus is connected to the KESC distribution system, the same shall be subject to inspection and testing by the KESC and no connection shall be made to the KESC system without the prior Inspection/satisfaction of the KESC.

#### **2.6. CATEGORIES OF APPLICANTS**

Categories of applicants are indicated at **Annexure V**.

#### **2.7. TIME FRAME FOR A NEW CONNECTION**

Time schedule for all categories of new connections is indicated at **Annexure VI**

## CHAPTER 3

### RELOCATION OF SERVICE CONNECTION AND TEMPORARY CONNECTION

#### 3.1. RELOCATION OF SERVICE CONNECTION

##### a) Due to Public Works

If, for public improvement such as street widening, grading, excavating sidewalk spaces, or for other reasons beyond the KESC control, the KESC has to move distribution facilities from the existing position or new facility is to be provided for improvement of the system, the shifting/relocation/addition of the facility (overhead or underground) shall be carried out at the cost of the sponsoring agency and not the affected consumer(s) or KESC.

##### b) On Consumer's Request

If a consumer requires the relocation of an overhead or an underground service connection for convenience, because of construction, or otherwise obstructing access to the service connection, the KESC shall, at the consumer's expense, relocate its service connection.

#### 3.2. REPAIR OR REPLACEMENT OF GENERAL SUPPLY SERVICE WIRE.

Routine repair/replacement of service wires feeding the consumer premises up to the metering point shall be the responsibility of the KESC.

#### 3.3. TEMPORARY CONNECTION

- a) A temporary electric power supply connection shall be provided by the KESC subject to the availability of load and the prevailing rules, when an applicant demands electric supply for a specific time period not exceeding three months, which may be further extendable on three-month basis up to 12 months by the load sanctioning authority subject to clearance of outstanding dues. In case the connection is to be continued more than 12 months then it will be allowed under regular tariff upon fulfillment of requisite information as explained for new connection in Chapter 2.
- b) An applicant may apply for temporary connection for the following purposes:
  - i) Illumination and lighting for weddings, festival, functions, exhibitions or national and religious ceremonies, etc.
  - ii) Construction of buildings.
  - iii) Testing of industrial equipments
  - iv) Any other emergent requirement of temporary nature

##### 3.3.1 Procedure for Application

- a) The applicant shall apply for temporary connection to the competent load sanctioning Authority as per corresponding regular category of connection.
- b) The applicant shall attach NOC/Authorization from the local Authority (where applicable) along with the documents as mentioned in the application form.
- c) The sanctioning authority shall approve in accordance with the Eligibility Criteria Regulations, 2003.

- d) The applicant shall be served with Demand Notice for the cost relating to the Dedicated Distribution System and security\*\* which will be deposited with the designated bank. For capital contribution, the terms of Eligibility Criteria regarding payments shall be applicable.

\*The amount against the security shall include:

The amount as per applicable tariff and load equal to the cost of expected consumption of electricity during the approved temporary connection period.

- e) KESC after the receipt of necessary payment and certificate shall provide the electric power connection immediately as per priority maintained for temporary connections.

### 3.3.2

- a) KESC shall provide temporary electric connection to the applicant on his demand for a specified period and disconnect the same after the expiry of this period unless extended further on the request of the consumer and confirmation by the KESC that the purpose for which temporary connection is required, still exists.
- b) The consumer shall apply for extension in the sanctioned period at least one week before the expiry of the sanctioned period. The consumer shall pay in advance as security an amount equal to the expected consumption of the period applied for extension.
- c) KESC shall discontinue service without notice whenever it is no longer temporary in character, or it is used for unauthorized purposes.
- d) After the expiry of the contracted period or after the period when connection is no more required and is disconnected, the cost of equipment installed for temporary connection shall be reimbursed to the consumer at depreciated rates, if it is dismantled and taken over by the KESC or if it is not dismantled and is taken over by the KESC.

## CHAPTER 4

### ENERGY METER INSTALLATION

#### 4.1 GENERAL

This chapter covers installation of energy meters at the premises of consumers of all categories receiving electric power from the KESC. KESC shall provide the appropriate metering equipment at the cost of the consumer for all types of consumer categories. However, in case of non availability of meter with the KESC, the consumer may procure the equipment according to the laid down specifications of the KESC for the metering equipment as per the Grid Code/Distribution Code.

#### 4.2 METER LOCATION

- a) It shall be the responsibility of the consumer to provide a safe and accessible location to the KESC for the installation of the metering equipment at his premises.
- b) The meters shall be installed at a reasonable height from the ground level or at a level from where the meter reading is possible without using climbing devices.
- c) For multi-occupancy buildings, the metering equipment of all the consumers residing in that building shall be installed at one location at the boundary of the building.
- d) The KESC shall have the right at any time to change the place and position of the metering equipment to conform to the provision of the Schedule of Tariffs in force from time to time and Consumer Eligibility Criteria, 2003.
- e) Should the consumer at any time requires the metering equipment to be shifted to another place or position within the same premises, he shall give not less than 7 days notice to the KESC, giving reasons also. The KESC after its satisfaction may shift the metering equipment upon receipt of such a request upon deposit of such shifting charges by the consumer as demanded through a demand notice by the KESC.

#### 4.3 METER INSTALLATION

- a) KESC shall make its best endeavor to install the meters in accordance with the latest industry standards and workmanship.
- b) All meters shall be installed on a non flammable board in a true vertical position in a manner that will prevent water from entering the meters or meter cabinets.
- c) When metering equipment is installed in a multiple-occupancy building (two or more occupants), the meter connection devices shall be labeled, tagged, or stenciled showing the complete address and location of the area served such as the apartment, office, or store in the building and account no of the consumer for which the metering equipment is being installed.
- d) Conduit or wire connections to a meter connection device other than that for a single-phase 230 Volt self-contained meter shall be made below the meter terminal block.
- e) The metering equipment shall be installed with permanent attachment to a rigid, vibration-free wall or structure. When such facilities are installed indoors; the consumer shall provide and install a mounting board in accordance with the KESC specifications.
- f) In the case of multiple-position or grouped meter connections, conductors from the source of supply shall be continuous to the last meter and connected to the meter connection terminals in accordance with the KESC requirements.

#### **4.4 Meter Replacement**

- a) In case of replacement of a meter, the consumer's account shall not be liable to any adjustment on the basis of any discrepancy detected in the impugned metering equipment where the discrepancy is not attributable to any act or omission of the consumer.
- b) Should the KESC at any time, doubt the accuracy of any metering equipment, the KESC may after informing the consumer, install another duly calibrated and tested metering equipment (check metering equipment) in series with the impugned metering equipment to determine the difference in consumption or maximum demand recorded by the check metering equipment and that recorded by the impugned metering equipment during a fixed period. If on such comparative test being made the impugned metering equipment should prove to be incorrect, the impugned metering equipment shall be removed from the premises with the written consent of the consumer, and the KESC in the absence of any interference or alteration in the mechanism of the impugned metering equipment being detected by the KESC, shall install a "correct meter" without any further delay.
- c) Where it is not possible for the KESC to install check metering equipment of appropriate capacity (due to non availability of such equipment or otherwise) in series with the impugned metering equipment, to check the accuracy of the impugned metering equipment as described above, the KESC shall, after informing (in writing) the consumer, test the accuracy of the impugned metering equipment at site by means of Rotary Sub-Standard or digital power analyzer. If on such test being made, the impugned metering equipment should prove to be in-correct, the impugned metering equipment shall be removed and immediately replaced with a correct meter. The impugned metering equipment shall be removed upon settlement/payment of assessed amount. In case if a correct meter is not available then the multiplying factor shall be charged accordingly till the replacement with correct meter.
- d) Where a consumer is not satisfied with the accuracy of the meter, he may inform the KESC of his desire for the said metering apparatus be checked at site in his presence. Upon receiving such a request, the KESC will issue a demand notice as meter challenge fees for the checking of the said meter and will check the accuracy of the said meter within SEVEN working days from the date of receipt of payment of such challenge fee by installing a duly calibrated check meter in series with the impugned meter or in the absence of a check meter, through a Rotary Sub Standard or digital power analyzer accompanied by an engineer of the KESC's metering and testing laboratory. If upon checking the meter is found to be recording beyond the permissible limits, the meter shall be changed immediately and due credit be given for excessive units charged by KESC w.e.f date of request filed by the consumer with KESC.
- e) The charging of consumers on the basis of defective code, where the meter has become defective and is not recording the actual consumption will not be more than TWO billing cycles. The basis of charging will be 100% of the consumption recorded in the same month of previous year or average of the last 11 months whichever is higher. Only Authorized employee of the KESC will have the power to declare a meter defective. However the consumer has a right to challenge the defective status of the energy meter and the KESC will get the meter checked at site with a check meter or a Rotary Sub Standard or digital power analyzer accompanied, by an engineer of the metering and testing laboratory free of cost.
- f) Where any consumer gives a notice in writing to the KESC and informs of having requested the Electric Inspector/(POI) to check the accuracy of the KESC's metering equipment installed at his premises or the status of the meter regarding it being defective or otherwise, the KESC shall not remove or take off the impugned metering equipment from the consumer's premises until the Electric Inspector has conducted a test of the impugned metering equipment at site, in the presence of KESC's authorized representative, by means of a duly calibrated check meter installed in series with the impugned meter or through a Rotary Sub Standard or digital power analyzer and has given the result of his test.

g) The charging of consumers on the basis of type of defect or fault, where the meter has become defective and is not recording the actual consumption, will be as per table below:

Type of fault/defect	Cost of replacement of meter	Mode of determination of consumption	Competent Authority	Appellate Authority	Period of Loss	Remarks
Defective/damaged/burnt meter not due to consumer fault	Cost to be borne by KESC	As given above at 4.4.(e)	The Competent Authority to determine type of fault/defect shall be the respective load sanctioning authority	On meter being declared as defective— Next higher office, Review Committee, POI, NEPRA in the order of appearance	Defective charging to a maximum of two billing cycles for regular bills. No previous charging on defective code	Nil
Slowness owing to age/other reasons not related to illegal abstraction / stealing	Cost to be borne by KESC	Through previous consumption data, Check meter, Slowness through check/Rotary Substandard, Grid meter/power analyzer	do	do	do	Test check Proforma to be got signed by the consumer/his authorized representative or POI at the time of inspection
Meter defective / damaged / burnt due to Consumer's fault including overloading, internal wiring defect.	Consumer to pay	Verification of load, Check meter, Rotary Substandard, another meter in Series, OR at Grid meter/power analyzer	do	do	do	do

Note: See the matrix at Annexure-VIII.

## CHAPTER 5

### SECURITY DEPOSITS AND OTHER CONNECTION CHARGES

#### 5.1 NEW SERVICE CONNECTION CHARGES

- a) All service connection charges after sanction of a new connection, a demand notice for security deposit as per the rate approved by NEPRA and other connection charges as per provision made in Consumer Eligibility Criteria Regulations annexed with this manual as **Annexure-VII** shall be issued to the applicant for depositing the same in the designated bank branch.
- b) A period of one month for payment of Demand Notice is given (in case of all categories of connections).

#### 5.2 SECURITY DEPOSIT

- a) Security deposit is non transferable except as follows:

- i) **Relocation of Premises**

It the consumer moves to a new location within the Exclusive Service Territory of KESC and requests for a new connection at that location.

- ii) **Change of Name**

If the consumer sells the premises where the connection is installed, it shall be obligatory upon the new owner to apply to KESC for a change of name. Such an application shall be accompanied by written consent of the previous owner regarding transfer of Security Deposit in the name of new owner.

- iii) **Through Succession**

Upon death of the consumer, the Security Deposit shall be transferred according to the Succession Certificate granted by the court of competent jurisdiction.

Provided that the Security Deposit shall be updated and transferred if no arrears are outstanding

- b) In case of change of tariff category, shifting of site and change of ownership, the security amount shall be updated according to prevailing rates. In case of extension of load, the amount of security at prevailing rates shall be recovered to the extent of incremental load and not on the entire load.
- c) For the purpose of calculating the security deposit, the fraction of a kilowatt (for loads above one kilowatt) which is equal to or more than half kilowatt, shall be taken as one kilowatt, and the fraction which is less than half a kilowatt shall be ignored.
- d) The security amount deposited by the consumer at the time of getting connection shall be refunded at the time of permanent disconnection after getting approval for the refund from the load sanctioning authority. (Provided there is no other amount outstanding against the consumer). The security deposit amount can also be adjusted in the final bill, if applied by the consumer.
- e) The option of bank guarantee in lieu of security deposit shall be available to the industrial consumers under B-3 and B-4 categories only. The existing B-3 and B-4 category consumers can also avail option of Bank Guarantee by withdrawing their previous security deposits from KESC and submit a bank guarantee to the satisfaction of KESC on new security rates for a validity period of three years.

## CHAPTER 6

### METER READING AND BILLING

#### 6.1 METER READING

- a) Meter reading of all the consumers of a KESC is carried out on a routine basis each month to record the consumption of energy consumed by each consumer during a given period (Billing cycle/billing month). The meter reading is generally taken /recorded by the local Distribution office of the distribution company for the purpose; the consumers of each Business Division are divided into a number of batches. The meter reading program shall be prepared in such a way that the meters of a batch are normally read on the same dates each month.
- b) Meter readings of all types of connections with load up to 20 kW are required to be taken by the Meter Readers. Reading of Maximum Demand indicators of connections having load over 20 kW are to be recorded by the senior officers of the distribution company.
- c) Meter readings are taken preferably in the presence of customers or their authorized representatives. Following are noted:
  - i. Date of reading
  - ii. Meter Reading/MDI
  - iii. Units consumed during the month
  - iv. Append their initials.
  - v. Their remarks in case of any discrepancy observed

Meter reading officers/meter readers shall return the Consumer Meter Reading Cards to the consumers before leaving their premises.

- d) Meter Readers shall also check the irregularities/discrepancies in the metering system at the time of reading meters and report the same in the reading book/discrepancy book. Meter Supervisor/Inspector will take corrective action to rectify these discrepancies.
- e) KESC may develop alternative meter reading program and/or establish revised designations for meter readers as per KESC Commercial Organization Plan.

#### 6.2 ELECTRICITY BILL

- a) The Electricity consumption bill shall generally contain the following information

INFORMATION	DEFINITION
Billing Period	The period for which bill is being issued.
Reference No.	A dedicated number allotted to a consumer for identification.
Tariff	The applicable rates and charges approved by NEPRA for the category of connection.
Load	The load sanctioned for the connection.
Reading Date	The date on which the meter reading is taken.
Issue Date	The date on which bill is issued to the Consumer.
Due Date	The date by which amount of the bill is to be paid. However, if the due date falls on a holiday, the due date shall be the next working

	day.
ED	Electricity Duty levied by the Provincial Government.
Total units consumed	The units consumed during a Billing Period or estimated consumption in case of defective meter.
Total cost of Electricity	The cost as per applicable tariff of total units consumed or estimated consumption in case of defective meter.
Installments	Any amount to be paid as per installments allowed by the Competent Authority.
GST	The General Sales Tax levied by the Government of Pakistan
Amount Payable within due date	Total current amount of all the payment items as mentioned in the bill including arrears amount, if any
Arrears	Unpaid amount of the bill.
Late Payment Surcharge (LPS)	The amount levied on account of non-payment of bill within due date,
Amount Payable After due date	Total of amount payable within due date and Late Payment surcharge.
Fixed Charges	As defined in Tariff Terms & Conditions.
Variable Charges	As defined in Tariff Terms & Conditions.
Billing Demand	As defined in Tariff Terms & Conditions.
Other Charges	These charges include Fuel Adjustment charge, PTV Fee, Withholding Tax, any other charge/surcharge levied by the Federal Government etc.

- b) In cases where accumulated readings are recorded, segregated bills shall be prepared keeping in view the number of months for which the readings have been accumulated to give relief to the consumers.
- c) The consumers are advised to read the “INSTRUCTIONS FOR THE PAYMENT OF BILLS” given on the back of Monthly Electricity consumption charges bill of general consumers and bill for Industrial (MDI)/Bulk supply consumers for their knowledge and guidance. The monthly bill may also be downloaded from KESC’s website in case of non receipt of bill on usual delivery dates.

### 6.3 TIME PERIOD FOR PAYMENT OF BILLS

The due date for payment of bills shall be within 15 days from the issue date of the bills. However, the consumers will have clear 7 days from the date of actual delivery of the bill for the purpose of payment.

### 6.4 PROCEDURE FOR BILLS DISTRIBUTION

- a) Batch wise computerized bills for consumers having load up to 20 kW shall be received by the local office of the area from the IT Department. The same shall then be handed over to the Bill Distributors on the same day for distribution to respective consumers.
- b) The Bill Distributors shall deliver the bills at the premises of the consumers within a day of receipt of the bills by them for distribution.
- c) Bills for industrial consumers and MDI connections above 20 kW load shall also be distributed to the respective consumers through Bill Distributors who shall obtain the acknowledgements of such bills from the consumers in the Bills Delivery Books.

## **6.5 COLLECTION /PAYMENT OF ELECTRICITY BILLS**

- a)** All Commercial Bank Branches and Post Offices of the respective City/District where connection exists shall be collecting Electricity Bills from consumers who have been given option to deposit their Electricity Bills in any designated bank branch/post office. Online payment and payment through Credit Cards or through cheques at designated bank branches can also be made where possible. NADRA KIOSK is also authorized to collect electricity bills.
  
- b)** Procedure in brief regarding payment of bills in Banks/Post Offices is as under:
  - i.** In order to avoid late payment surcharge, consumers shall pay their bills and demand notices in bank branches in cash or through Pay Orders/Bank Drafts/Crossed Cheques. Consumers can also make payments to Revenue Offices through Crossed Cheques or Bank Drafts.(For payments to avoid levy of late payment surcharge made through cheques a grace period of at least three days be given for the realization of payment and these days are included in the fifteen 15 days grace period).
  
  - ii.** The Banks/Post Offices shall receive bills, acknowledge the receipt of payment by stamping the bills and the counterfoils as "PAID" indicating the amounts received. Authorized officer of Bank/Post Office shall sign bills and counter foils in order to authenticate the transaction.
  
  - iii.** The Bank branches/Post offices shall retain counterfoils and return the acknowledged bills to Payers/ consumers.
  
- c)** KESC may develop and offer to consumers an option to receive bills and make payments via Internet or in such other manner as may be possible, convenient and effective.

## CHAPTER 7

### TARIFF

#### 7.1 TARIFF

Tariff means the rates, charges, terms and conditions for generation of electric power, transmission, interconnection, distribution services and sales of electric power to consumers by a KESC. KESC shall charge only such tariff from consumers as is approved by NEPRA and duly notified by Government of Pakistan from time to time. KESC shall apply to NEPRA for any change of tariff to be charged from different categories of consumers.

#### 7.2 AVAILABILITY OF SCHEDULE OF TARIFF

The schedule of tariff as approved by NEPRA and notified by the Government of Pakistan, shall be made available in KESC offices and shall be provided to the consumers on demand free of cost (copy thereof is attached as Annexure III). All consumer queries/clarifications in respect of applicable tariff shall be adequately addressed by the KESC.

#### 7.3 POWER FACTOR PENALTIES

The penalties for low power factor shall be levied according to the "Terms and Conditions" of approved tariff of respective category as annexed at Annexure-I with this document.

#### 7.4 CHANGE OF TARIFF

- a) The consumer shall apply, at least 30 days in advance, for the change of his existing tariff to the competent load sanctioning Authority.
- b) The consumer shall submit the application for change of tariff along with the required documents as mentioned in the application form.
- c) KESC shall accord approval for change of tariff within 30 days of receipt of application after site verification and confirmation of other information provided by the consumer in his application.

#### 7.5 MIS-USE OF TARIFF

- a) The consumer shall, in no case use the connection for the purpose other than for which it was originally sanctioned. In case of violation, the consumer is liable for disconnection and/or penal action.
- b) KESC shall serve seven (7) days clear notice to the consumer who is found mis-using his approved/sanctioned tariff. However, KESC shall immediately change the tariff and shall determine the difference of charges of the previous period of mis-use to be recovered from consumer. However, in the absence of any documentary proof the maximum period of such charges shall not be more than TWO billing cycles.

#### 7.6 TOD TARIFF

TIME OF DAY (TOD) metering for various classes has been introduced. The advantage of TOD metering is that the rates are less in off peak hours as per the schedules of TOD. In addition, it also helps in reducing the Peak Demand on the system. Consumers are advised to avail the facility of TOD metering.

## CHAPTER 8

### DISCONNECTION AND RECONNECTION

#### 8.1 DISCONNECTION

A premises is liable to be disconnected if the consumer is a defaulter in making payments of the energy consumption charges bill(s), or if he is using the electric connection for a purpose other than for which it was sanctioned, or if he has extended his load beyond the sanctioned load even after receipt of a notice in this respect from the KESC.

##### Disconnection Procedure

- a) The consumer shall be bound to pay his energy bill within due date specified in the bill or with the late payment surcharge if paid after due date, before the issuance of the next month bill.
- b) In case of nonpayment of the previous month's electricity bill, KESC shall serve a clear 7 days' notice to the defaulting consumer to either clear the out-standing dues with the current bill or face disconnection and penal action.
- c) Upon non receipt of payment even after the expiry of the notice period, the supply of the defaulting premises shall be disconnected. In such cases the disconnected supply shall not be reconnected or restored by the KESC until full payment along with late payment surcharge has been made by the consumer. The power supply of the consumers who are allowed by the KESC to make the payment in installments shall not be disconnected. However, if a consumer further defaults in making payment of installments, the power supply of such a consumer shall be disconnected without any further notice and shall only be restored after receipt of all arrears.
- d) The power supply of a defaulting consumer shall not be disconnected who has lodged a complaint/petition against any wrong billing or any dispute relating to the payment of energy bill with KESC, the Electric Inspectors office/ Provincial Office of Inspection or NEPRA (for all such, proper restraining orders shall be issued).KESC shall also not disconnect the supply if a restraining order to this effect has been issued from any court of law.
- e) If a consumer extends his existing load beyond the sanctioned load he shall be issued a notice along with evidence thereof to apply for extension of load within one month of the receipt of notice. The KESC shall disconnect the power supply if the consumer fails to avail this opportunity.

#### 8.2 Disconnection on consumer's request.

Temporary disconnection of supply is allowed to a consumer on his/her request, for a period of 30 days subject to the following terms and conditions:-

- a) That the consumer has paid the final bill up to the day immediately preceding the intended date of request for temporary disconnection.
- b) That exemption in payment of minimum/fixed charges will be admissible for the actual period of disconnection subject to a maximum of 30 days consecutive days during a period of twenty four consecutive months;
- c) That no reconnection fees shall be charged if the consumer gets the connection restored immediately after the expiry of the period of disconnection allowed to him/her;
- d) A seasonal consumer or a consumer whose connection is lying disconnected shall not be eligible to the allowance given in the temporary disconnection;
- e) After the expiry of the period allowed for disconnection as per clause (b) above, the connection shall be deemed to have been restored for payment of minimum/fixed charges even if the consumer does not request for reconnection and does not use electricity. In case the consumer defaults in making the future bills, his/her connection may be disconnected and equipment installed at his premises to

supply energy be removed after service of notice as per disconnection procedure. Restoration of supply to such a premises shall also be regulated as per the Reconnection Policy as given in section 8.3.

A consumer who intends to get his/her premises disconnected shall apply to the load sanctioning Authority of the connection concerned, who will arrange the final bill from the Revenue Officer concerned. After payment of final bill, the respective load sanctioning Authority will approve the disconnection. Disconnection for consumers supply shall be effected through removal of, such facilities to avoid misuse of electricity during the period of disconnection.

**NOTE:** In all cases of reconnection/MCOs or any case where meter is changed for any other reason, Part III and Part IV of the application form will be filled out and a copy sent to the consumer for his information duly signed by the officer in charge.

### 8.3 RECONNECTION

The disconnected premises shall be reconnected at the request of the consumer if all outstanding electricity charges are paid and subject to the following policy.

#### a) RECONNECTION POLICY

A disconnected premise shall only be reconnected after recovery of all outstanding energy consumption charges and Minimum/Fixed Charges as follows:

(A)	For General Supply Tariff- A-1 &A-II (single phase only)	Minimum/fixed charges of Rs 100 only for any period.
B)	For General Supply-Tariff A-1 & A-II 3-Phase Connections For Industrial Supply	a) Minimum/fixed charges for actual period of disconnection of supply if period of disconnection is up to ninety days. (+ amount of arrears due up to date of permanent disconnection).
(C)	Tariff (B-1, B-2, B-3, B-4) For Agriculture tube well and lift irrigation pumps	b) In case the period of disconnection of supply is More than ninety days and upto three years then the minimum/fixed charges will be recovered @ one month for every quarter in addition to the minimum/fixed charges for ninety days. Period less than a quarter will be ignored for the purpose of recovery of minimum//fixed charges (+ amount of arrears due up to date of permanent disconnection).
(D)	Tariff – D For Flat Rate	
(E)	Tariff – D-1	c) If the period of disconnection is more than three years from the date of disconnection, minimum fixed charges for the disconnected period beyond three years from the date of disconnection up to the date of reconnection shall be recovered in addition to the charges laid down in (a) and (b) above. The minimum/fixed charges for period beyond three years shall be @ one month for every year. Period less than a year shall be ignored in calculations.
(F)	For Bulk Supply Tariff (C1,C2,C3) For Public Lighting Tariff-G	NIL
(G)	For one point supply to residential colonies attached to the premises of industrial supply consumers, who have their own distribution facility.	NIL
(H)	Tariff-H	NIL

(I)	<p>For Seasonal Industrial Supply Tariff –F</p> <p>(As specified in Tariff Terms and Conditions and as amended from time to time)</p>	<p>Where a “Seasonal Supply” consumer does not come forward to have his seasonal Industry re-connected with the Company’s Supply System in any ensuing season, the service line and equipment belonging to the Company and installed at his premises shall be removed after expiry of 60 days of the date of commencement of the season previously specified by the consumer at the time of his obtaining new connection/re-connection. However, at least ten clear days notice in writing under registered post shall be necessary to be given to the consumer before removal of service line and equipment from his premises as aforesaid, to enable him to decide about the retention of connection or otherwise. No Supply Charges shall be recovered from a disconnected seasonal consumer for any season during which he does not come forward to have his seasonal Industry re-connected with the Company’s Supply System.</p>
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**Note:** For disconnected premises, Meter Rent/Service rent shall be charged (where applicable) for the entire period of disconnection up to the date of reconnection.

**b) Cost of material to be recovered at the time of reconnection.**

- a) The material and equipment which is removed from the site as a result of disconnection shall be kept in the Manager’s for 365 days from the date of disconnection and an entry to this effect shall be made in a register to be kept for this purpose. It shall be re-installed after payment of reconnection charges without recovering cost thereof on application for reconnection within 365 days to be reckoned from the date of disconnection. If a disconnected consumer does not come forward for reconnection within 365 days from the date of disconnection, then the removed material and equipment shall be returned to the store. Removed material and equipment shall be taken on stock and it shall be issued as stock material by the concerned office.
- b) In case a disconnected consumer applies for reconnection after the expiry of 365 days of disconnection but within three years from the date of disconnection, credit on depreciated value of the removed material shall be given in the estimate for reconnection provided cost of the removed material was originally borne by the consumer or it was wholly subsidized by an external agency out side the KESC or if such cost had not element of subsidy by the KESC. No credit of the cost of the removed material will be accorded where it was partially subsidized by the KESC under any approved package. (Cost of such material and equipment under any partial scheme will be treated as if cost of the removed material was originally borne by KESC and as such no credit for depreciated value of subsidized cost will be provided).
- c) In case a disconnected consumer applies for reconnection after a period of three years from the date of disconnection, no credit of the cost of the removed material shall be accorded, even if he had originally paid the entire cost of the material and equipment at the time of obtaining connection.
- d) In case of reconnection of a disconnected premises where no arrears are outstanding against the premises and due to some reason serviceable equipment is available at site, KESC may utilize such equipment and cost of such material will not be recovered from the consumer subject to the satisfaction of the KESC that the material is genuine, operationally safe and the equipment has a reasonable serviceable life.

On receipt of payments the KESC shall issue reconnection orders for implementation by the field office after fulfilling the formalities as per Reconnection Policy mentioned above and immediately regularize the billing after execution of reconnection.

#### 8.4 SECURITY DEPOSIT AND CHARGES FOR RECONNECTION

- a) Once a consumer applies for reconnection, he shall be charged security deposit as per the following policy:
- i. For consumers whose security has not been adjusted against the outstanding arrears and their disconnected period is also less than or equal to 365 days no additional security deposit shall be charged.
  - ii. For consumers whose security has been adjusted against the arrears and their disconnected period is within 365 days or less only the amount of adjusted security shall be charged.
  - iii. For consumers whose security has not been adjusted against arrears but their disconnected period is more than 365 days, for such consumers the difference in amount between the security deposit already available with the KESC and the prevailing rate at the time of reconnection shall be charged.
  - iv. For consumers whose security has been adjusted against the arrears and their disconnected period is also more than 365 days, for such consumers the security at the prevailing rate shall be charged.
- b) Reconnection fee shall be recovered as per following rates for the amount of the arrears on the basis of which DCO/ERO was affected:
- |      |  |                |
|------|--|----------------|
| i.   | For arrears upto Rs. 1000/-  | : Rs. 100/-    |
| ii.  | For arrears between Rs. 1,001/- and Rs. 5000/-   | : Rs. 300/-    |
| iii. | For arrears between Rs. 5,001/- and Rs. 15000/-  | : Rs. 900/-    |
| iv.  | For arrears between Rs. 15001/- and Rs. 1 Lac  | : Rs. 2000/-   |
| v.   | For arrears between Rs. 1 Lac to Rs. 5 Lac   | : Rs. 2500/-   |
| vi.  | For arrears over Rs. 5 Lac   | : Rs. 10,000/- |
| vii. | For connection disconnected due to other reasons i.e. Disconnected on technical grounds, for unauthorized Extension in load, or seasonal consumers disconnected due to season off or disconnected due to misuse of Applicable Tariff, no reconnection fees shall be charged. | : Nil.         |
- c) All the disconnected consumers, having disconnected period of more than three years shall have the option to apply for new connection in the same premises subject to clearance of all dues outstanding against previously disconnected connection. In such cases nothing on account of fixed charges/minimum charges for disconnected period shall be debited against the premises previously disconnected, if new connection is sought instead of "Reconnection". For this purpose the security amount originally deposited by the consumer shall be adjusted against the arrears of the previous account number and the arrear bill of balance amount to be served to the consumer. Upon payment of the balance amount, the consumer can apply for a new connection as per new connection policy given in Consumer Service Manual. If any material is available at site or is lying with the KESC against the consumers premises, the same shall be considered and will be accounted for in preparing the estimate for the dedicated system of the consumer.
- d) Relief to industrial as well as agricultural tube well consumers shall be given as per insensitive package introduced from time to time. Consumers are advised to contact their local KESC office for further details.
- e) The disconnected consumers whose arrears have partially or totally been set aside by Courts, Electric Inspectors/POI, NEPRA or KESC's competent authorities or have been allowed part payments shall be allowed reconnections on deposit of remaining arrears or their first installment.

## **8.5 COLLECTION OF ARREARS UPON OR FOLLOWING RECONNECTION**

### **a) Causes of Increase of Amounts in Arrears**

- i. The consumers who default in making payments by due dates shall be issued Disconnection Notices printed on monthly Electricity Consumer Bills. The connections of consumers who still do not make payments of their arrears shall be disconnected on the maturity of disconnection notices after expiry of the stipulated period.
- ii. In case of the consumers who shift sites of their tube wells, poultry farms, cattle farms and industries to other locations without clearing the pending electricity bills, KESC shall take legal action to recover the arrears.
- iii. The consumers who sell their houses shops, industries, seasonal factories, etc without making payment of electricity bills, KESC shall recover the arrears from the new occupants of the defaulting premises.

### **b) Recovery of Arrears Amount**

Recovery of arrears from the consumers shall be made through their regular monthly bills. If the monthly bills are not paid in time necessary action for disconnection of such consumers shall be taken according to the procedure as described in Chapter No.8 "DISONNECTION AND RECONNECTION".

### **c) Proceedings Against Disconnected Defaulting Consumers**

In case consumers fail to pay the arrears amount, all legal measures/actions shall be initiated against such consumers for recovery of outstanding dues.

## CHAPTER- 9

### DISHONEST ABSTRACTION, CONSUMPTION OR USE OF ENERGY

#### 9.1 THEFT OF ELECTRICITY/ENERGY

##### a) DIRECT THEFT OF ELECTRICITY BY REGISTERED/ UN REGISTERED CONSUMERS OF A KESC.

- i) If a premises/person is found to be hooked directly with the KESC's supply line by bypassing the metering equipment or if the consumer is using electricity direct from the KESC's supply line and/or the person living in the premises is not a consumer of the KESC, then the KESC shall inter alia process the case as THEFT of electricity. For all such cases, the KESC shall register an FIR with the police. The FIR is to be registered by a responsible officer of the KESC not below the rank of Manager.
- ii) All theft cases of direct hooking would be dealt by KESC strictly in accordance with relevant clauses of Electricity Act 1910. The disconnection of electricity shall be carried out immediately under the supervision of Manager of the area or any other authorized Officer of the KESC. The removed material shall be preserved as a proof of theft and the same shall be handed over to the police authorities while reporting to the police.
- iii) KESC shall be authorized to recover its loss by raising a detection bill as per its own procedure.

##### b) ILLEGAL ABSTRACTION OF ELECTRICITY BY REGISTERED CONSUMERS

The following indications shall lead to further investigations by KESC for illegal abstraction of electricity. For such cases the KESC shall observe the procedure as laid down under 9.1(c).

- i. Prize bond/postal order/meter security slip removed
- ii. Bond/Terminal covers seal of the meter broken/bogus/tampered
- iii. Terminal cover of the meter missing
- iv. Holes made in the KWH meter bodies
- v. MSB of the meter showing signs of tampering
- vi. Meter hanging loose/tilted/physically unbalanced
- vii. Meter glass broken
- viii. Meter dead stop/burnt
- ix. Meter sticking
- x. Meter digits upset
- xi. Meter running reverse
- xii. Meter connected on temporarily/permanently disconnected premises
- xiii. Meter found missing at site
- xiv. Meter found at site but no record exists in the office
- xv. Any other means which can cause interference in true recording of quantum of energy (Units) by the metering equipment

##### c) Procedure for establishing illegal abstraction shall be as under:

- 1) Upon knowledge of any of the items in 9.1(b), the concerned office of the KESC will act as follows:
  - i. Secure meter without removing it in the presence of the owner/occupier or his Authorized representative/respectable person of the locality.
  - ii. Install check meter and declare it as billing meter.
  - iii. Shall constitute a raiding team including Magistrate, local representative(s) of the area (Councilor/Police officer), Officer of the KESC (in case of residential/commercial consumers not below the rank of Manager and in case of other consumers not below the rank of DGM) and an officer of the metering and testing division of the KESC (who should be an Electrical Engineer) inspect the meter secured at site and declare that illegal abstraction of electricity has, and/or is being carried out. However, for industrial consumers (B-2 and above), a representative of POI/Electric Inspector is mandatory)

- iv. Once confirmed that illegal abstraction is being done, serve notice to the consumer informing him of the allegations and the findings and the requirement of a written reply from the consumer.
  - v. Should wait for seven working days for receipt of reply
  - vi. The reply to the notice shall be examined by the officer higher in grade than the inspecting officer. If the reply is not convincing or if no reply is received or if the allegations as levied are proved, the inspecting office with the approval of the next higher office will immediately serve a detection bill for unclaimed energy limited to the period of three billing months or six months with the approval of CEO (or DCOO) previous from the date of establishment of illegal abstraction as elaborated at 9.1(c) (3).
  - vii. The detection bill along with a disconnection notice for payment within seven days will be issued by the inspecting office.
  - viii. Upon payment of the detection bill, the tampered meter shall be replaced by the KESC at the cost of consumer and no further action will be taken by the KESC.
- 2) In case the consumer does not make payment and also does not dispute over the quantum of energy assessed, then after the expiry of the stipulated period his premises be disconnected and the procedure for disconnection and reconnection as per Chapter 8 be followed thereafter.
  - 3) The maximum period for charging in such cases shall be restricted to three billing cycles for general supply consumers i.e. A-1 & A-II. For period beyond three billing cycles up to a maximum of six months is subject to approval of CEO of the KESC. The CEO may delegate its power and authorize a committee of Chief Engineer/Director level officers to allow charging of detection bill up to six months to general supply consumers after proper scrutiny so that no injustice is done. Also for such cases action will also be initiated against the officer in charge for not being vigilant enough. For other consumer classes, the period of charging can be more than three billing cycles up to a maximum of six billing cycles.
  - 4) If the consumer objects payment or disputes over the quantum of the units detected by the KESC, the appellant authority for revision of detection bill would be the review committee of the KESC headed by the next higher officer. The consumer will also be given personal hearing by the review committee.
  - 5) In case, the dispute remains unresolved even after exhaustive review, the KESC after getting approval of the Chief Executive Officer (or DCOO) may lodge the F.I.R. The consumer may also approach a competent court of law under the relevant provisions of Electricity Act, 1910.

**NOTE:** Mere occurrence of any of the above defects in a meter does not warrant illegal abstraction of electricity. In cases sometimes, weathering effects and atmospheric conditions also wear out the postal orders, seals and other parts of the metering equipment. The detecting Authority must be reasonably sure regarding the illegal abstraction happening before it actually decides to charge a consumer for the same. The same is true for the appellant forum as well. In addition in places where the meters are outside the premises, the prime responsibility of the maintenance of the healthy state of the meter rests with the KESC. A consumer shall not be charged if the meter wears out through normal atmospheric effects or through some internal fault in a meter for which a consumer cannot be held responsible. For such cases the normal course of action on part of a KESC should be to replace the meter with a healthy meter. However, if the KESC feels that the quantum of energy lost because of malfunctioning of the metering equipment is more than ONE billing cycle then in such a case the KESC shall install a check meter in series with the impugned meter and declare the check meter as the billing meter. Difference between the consumption of the two meters to be recorded and the same may be charged to the consumer for a maximum of two billing cycles. However, it must be ensured that this would not be a DETECTION BILL. See the matrix at **Annexure-VIII**.

## CHAPTER 10

### CONSUMER COMPLAINTS

#### 10.1 GENERAL

Complaints in respect of new connections, meter reading and billing, electric supply failures and other matters relating to supply of electric power services shall be handled by KESC expeditiously. In order to redress consumer complaints, Consumer Services Centers shall be approached for all types of complaints to be lodged by the consumers. Additionally, One Window Operations are established in the KESC offices wherein all types of complaints are received from the consumers who are given acknowledgement of the same with definite dates for their replies according to time frame for handling and redressal of such complaints.

KESC shall handle a complaint in accordance with the procedure as laid down in this chapter.

#### 10.2 COMPLAINTS REGARDING NEW CONNECTIONS

Complaints in respect of non-availability of Application and Power Supply Contract (A&PSC) and other material, delay in issuance of Demand Notices etc. shall be attended properly and connections given as per procedure and time schedule laid down in relevant chapter (s).

#### 10.3 COMPLAINTS REGARDING BILLING

- a) Common billing complaints including but not limited to the following shall be entertained for redressal /reply within the time as given below:
  - i. Errors in bills arising from wrong meter readings, wrong calculation of charges, etc (within 7 days from the receipt of complaint).
  - ii. Tariff changes.(within 30 days from the receipt of complaint)
  - iii. Defective meters (within 2 billing cycles for meters charged under defective code).
  - iv. Wrong application of surcharge, e.g. late receipt of bank scrolls or loss of a scroll (within 3 days of receipt of complaint).
  - v. Adjustments arising on various matters including extension of due date and waiver of surcharge (within 3 days from the receipt of complaint).
  - vi. Generally, the data for bills preparation is not sent in time to the KESCs Computer Center. This has consequential effects and in turn consumer bills are delayed as they do not get SEVEN clear days for payment of bills. In such cases, the Officers of KESC can extend the date in accordance with powers delegated to them.
  - vii. Bills calculated on an average basis are usually on the higher side which need reconsideration and correction from the next higher authority (within 15 days from the receipt of complaint).
  - viii. Detection bills are prepared on the basis and for a period not acceptable to the consumers (if referred to KESC decision within 15 days from the date of receipt of request).
  - ix. Detection bills issued on mere assumptions or reasons which cannot be attributed to consumer's involvement in illegal act/theft of energy (if referred to KESC decision within 7 days from the date of receipt of the complaint).
  - x. Wrong billing due to wrong meter reading (within 3 days from the receipt of complaint).
  - xi. Delay in issue of 1<sup>st</sup> Bill against New Connections (Maximum of Two billing cycles). The consumer should receive his 1<sup>st</sup> bill within 2 months of the date of connection. The bill should have the appropriate slab for the period. If delivered later, it should have appropriate slab corresponding to the number of months for which the accumulated reading bill delivered)
  - xii. Inclusion of paid amounts in next month's bills. Managers as well as Bank Managers, In charge Post Office where the last bills were paid are competent to amend the bills (same day) upon production of previous paid bill.
  - xiii. Arithmetical Errors: Managers and DGMS are both competent to correct such bills forth with upon receipt of the complaint.

- xiv.** Late delivery of bills: As printed on the reverse of the monthly bills, in such cases the Officers of KESC can extend the date in accordance with powers delegated to them.
  - xv.** Issuance of duplicate bill: Managers and In-charge Customer Services Centers are competent to issue the duplicate bills. (Same day). Consumers having internet facility can also download their electricity bills from the KESC's web site.
  - xvi.** Change of Tariff: Decisions are taken by Managers in cases of tariffs A1 and A2. In all other cases next higher load sanctioning authorities are competent to change the tariff. (Within 30 days from the date of receipt of complaint)
  - xvii.** Late intimation of input data after the implementation of Meter Change Orders (MCO), delayed implementation of MCOs even after replacement of meters (Suitable number of installments to pay the outstanding amounts are allowed by the load sanctioning authority proportionate to the delay).
- b)** All the above complaints regarding billing shall be registered in the Manager Business Operation office or Consumer Service Center or One-Window Operation in KESC offices wherein dates for their rectification shall be given to the complainants as per procedure and time frame for handling and redressal of complaints. All these complaints shall also be monitored by KESC Complaint Cells.

Time Frame for the redressal of each category of the above complaint is given in the various Chapters of this Manual and above also. A performance appraisal of all such complaints shall be carried out at the end of each financial year of the KESC. The consumers are encouraged to approach NEPRA in case their complaints are not handled by the KESC according to this Manual.

#### **10.4 COMPLAINTS REGARDING FAILURE OF ELECTRIC SUPPLY**

- a)** Common complaints regarding failure of electric supply are mentioned as below:
- i.** Individual complaints of consumers regarding failure/fluctuation of supply voltage other complaints of technical nature which can be rectified locally.
  - ii.** Collective complaints due to fault on 11 kV feeder.
  - iii.** Collective complaints due to fuse blown up on 11 kV side of distribution transformer.
  - iv.** Collective complaints due to damage of distribution transformer.
  - v.** Frequent Tripping of 11 kV feeders.
  - vi.** Touching of branches of trees with the 11 kV/LT conductors.
  - vii.** Defect in 11 kV/LT jumpers, insulation, etc.
  - viii.** Entangling of string used for kite flying with 11 kV/LT lines.
  - ix.** Leakage of current in poles/structures/other equipment installed on the system.
  - x.** Low voltage at consumer's premises.
  - xi.** Fluctuations in the system due to deposit on joints of copper/aluminum conductor.
  - xii.** Substandard quality of supply/maintenance.
  - xiii.** Any other technical complaint.

For technical complaints, the time frame is specified in the NEPRA Performance Standards (Distribution) Rules, 2005. Abstract of the standards are given in Annexure – I of this Manual.

- b)** The complaints shall normally be attended to in the following order of priority:
- i.** Attend leakage of current immediately on receipt of such complaint.
  - ii.** Attend collective complaints of consumers.
  - iii.** In case of damage of transformer, this should be replaced with trolley mounted transformer if available in the sub division or after arranging from some other sub division to meet with the emergency till proper transformer is arranged for replacement.
  - iv.** Trimming of branches of trees touching the electric lines as well as other preventive maintenance work shall be carried out in order to avoid unnecessary trippings/damage to electric installations as per well advertised programme.
  - v.** Attend individual complaints of consumers.

- vi. The complaints regarding low voltage at consumer's premises shall be investigated by Sub Divisional Officer and remedial measures taken so as to improve the voltage thereby reducing the chances of damage to electric gadgets of the consumers.
  - vii. The complaints regarding sub-standard quality of supply shall also be investigated by the Manager and remedial measures adopted so as to improve the same.
- c) At the end of each shift in the complaint office an abstract shall be prepared as follows:
- i. Number of complaints received
  - ii. Number of complaints attended
  - iii. Number of complaints lying un-attended with Sr. Nos. and reasons.
- d) The KESC shall have independent Complaint Offices to attend such complaints. These complaint offices shall work on 24-hours basis even during holidays. The working of these complaint offices is to be supervised by higher officers as well as KESC's Complaint Cells.
- e) **SPECIAL ARRANGEMENTS FOR HANDLING SPECIAL REQUESTS FROM ELDERLY AND HANDICAPPED CONSUMERS**
- KESC shall make special arrangements for handling requests from elderly and handicapped consumers with regard to consumer related issues.
- f) **DEVELOPMENT OF WEBSITE FOR CONSUMER SERVICES**
- The KESC shall develop a Website for Consumer Service. The consumer service can also be part of the KESC main Website. The site shall contain following information /facilities:
- i. Consumers billing status;
  - ii. Consumers billing record/historical data;
  - iii. Distribution Code, NEPRA Eligibility Criteria, NEPRA Performance Standards (Distribution) Rules,2005 and Consumer Service Manual;
  - iv. Tariff information;
  - v. Network information in GIS Format, indicating the loading of feeders;
  - vi. Payment of bills through credit cards, if possible and
  - vii. All kinds of forms required by a consumer.
- The manual shall contain the telephone numbers of all the important officers of the KESC and the complaint centers. The KESC shall also place a soft copy of the approved manual on its website for down loading.

## CHAPTER 11

### TRANSFORMER AND CONSUMER SUB STATION

#### 11. TRANSFORMER INSTALLATION ON CONSUMER'S PROPERTY

##### 11.1 GENERAL

In case of consumers of Category I to IV (as defined in Chapter 2) where line voltage (11000 volts or higher up to 132kV) is stepped down on the consumer's property to the service voltage required by the consumer, the facilities necessary to accommodate the transformer or transformers and the related equipment will be either:

- a) A Distribution Sub Station, if furnished, installed, owned, and maintained by the KESC, or
- b) A Consumer Sub Station, if furnished, installed, owned, and maintained by the consumer.

##### 11.2 DISTRIBUTION SUB STATION

The KESC will install a Sub Station for such General Purpose consumers. The KESC shall ensure that all the installations are in accordance with the KESC's approved design specifications and standards.

##### 11.3 CONSUMER SUB STATION

The responsibility for the provision of space, installation and maintenance of step down transformer and all allied equipment in a consumer substation shall be that of the consumer. The layout of the substation, the equipment installed must meet the specifications, design and standards as approved by the KESC. The equipment may be supplied by the KESC on payment. However, for such facilities, the responsibility of the KESC shall only be up to the metering point (Interconnection point).

For such installations, the consumer shall provide land/space for the lines which will extend to and from the sub station and obtain consents, way-leaves and authorizations pertaining to the right of way.

##### 11.4 CONSUMER OWNED GRID STATION

Consumers of Category V (for supply at 66 kV and above) shall at their own sole risk and expense, furnish, install and maintain in good and safe condition all electrical wires, lines, machinery and apparatus of any kind or character which may be required for:

- a) Receiving electrical energy from the KESC/NTDC system; and
- b) Utilizing such energy, by installing step down transformer and all other allied accessories and equipment including protection devices at the consumer premises.
- c) The consumer will be responsible for the payment of construction charges and all costs associated with line extensions payable as per provision laid down in the Consumer Eligibility Criteria.
- d) The design of the station shall conform to KESC/NTDC design practices, guidelines and applicable safety codes.

##### 11.5 METERING EQUIPMENT AND INSTALLATION REQUIREMENTS

- a) Meter installation shall comply with Pakistan Standard Institute (PSI) or International Electric Technical Commission (IEC) standard or Standards developed/adopted by the KESC/NTDC.
- b) The KESC/NTDC shall determine the location and method of installation for all metering equipment as provided in the distribution code, Grid Code and related manuals.
- c) Whenever any electrical wiring is modified, new metering equipment complying with these service requirements shall be used, except when in the opinion of the KESC/NTDC the existing metering equipment is satisfactory and adequate to register all energy to be supplied.
- d) Line side (unmetered) conductors and load side (metered) conductors are prohibited from occupying the same enclosure.

**11.6 GROUNDING SYSTEM**

As defined in Distribution Code, Grid Code and the PSI Wiring Regulations, proper neutral and protective earthing/grounding system shall be installed by the consumer and checked by authorized representative of KESC and NTDC.

**11.7 FIRE EXTINGUISHERS**

Suitable fire extinguishers shall be provided and maintained by the owner agency to meet with any hazardous situation.

**CHAPTER 12**  
**SAFETY AND SECURITY**

**12.1 GENERAL**

In order to prevent accidents which may result in injury or death, or damage to public or KESC/NTDC property, the consumers shall abide by the general safety requirements of the "Safety Code".

KESC/NTDC shall take all the safety and security measures to avoid fatal/non fatal accidents. The consumers shall be educated through all possible means to observe safety measures in order to avoid any casualty especially during the monsoon season.

**12.2 OBLIGATIONS OF KESC/NTDC**

KESC/NTDC shall monitor and implement the safety and security plan for consumers. The safety and security objectives can be achieved by adopting good engineering practice, including the following measures:

- a) Operation and maintenance of KESC's/NTDC electrical distribution system /Network shall be carried out only by the KESC's/NTDC authorized and trained personnel.
- b) The KESC's/NTDC system equipment, including overhead lines,poles/structures/towers underground cables, transformers, panels,cutouts, meters, service drops, etc. shall be installed and maintained in accordance with good engineering and utility practice.
- c) To ensure proper operation of the KESC's/NTDC network under abnormal conditions (short-circuits, overloading, etc.) appropriate protective relays shall be installed and properly coordinated.
- d) The earthing systems installed shall be dimensioned and regularly tested to ensure protection from fire and shock hazards.
- e) The steel structure installed on the public places shall be earthed at ONE point through steel/copper conductor, in accordance with the KESC's/NTDC laid down procedures.

**12.3 OBLIGATIONS OF THE CONSUMER**

The consumer is responsible to monitor and implement safety and security standards within his own premises. The safety and security objectives can be achieved by adopting good engineering practice, including the following measures:

- a) No matter how small, electrical installations, including earthing system, must be designed, installed and maintained by competent Electrical Engineers and/or licensed electrical contractors, which must be inspected and certified by an Electric Inspector as per terms and conditions laid down in ECR-2003.
- b) Wiring materials and electrical equipment installed must conform to the approved relevant standards and be of a good quality.
- c) For the protection of the consumer it is necessary that electrical installation at the consumer's premises conform to the rules established by the KESC/NTDC and approved by the Authority as per the terms and conditions of the Eligibility Criteria, Performance Standards (Distribution) Rules, 2005, Distribution Code, Safety Code and Grid Code.
- d) No additions, alterations, repairs and adjustments to existing installations, (except such replacement of lamps, fans, fuses, switches, low voltage domestic appliance and fittings as in no way alter the capacity and the character of the installation), shall be carried out within a consumer's premises, except by a licensed electrical contractor.

- e) In case of fatal electrical accident to a person, an immediate report shall also be made to the nearest police station and to the KESCs Complaint centre /NTDC.
- f) Any consumer committing a breach of procedures/rules outlined above shall render himself liable for disconnection of his electric power and punishment with punitive damages.

#### **12.4 SOME USEFUL SAFETY TIPS**

Electricity, while being a very useful and convenient form of energy, has a number of hazards, and consumers would be wise to treat electrical installation with respect.

The following tips shall be kept in mind:

- a) Hazardous conditions on utility systems shall be monitored and immediately reported to the KESC.
  - i. Damaged or faulty insulators
  - ii. Burns on conductors, insulator pins, or metal-work
  - iii. Damaged cross- arms on poles/structure /towers
  - iv. Broken strands or wires on overhead conductors, or fallen wires
  - v. Uneven sagging of lines
  - vi. Leaning or damage to poles/structures /towers
  - vii. Branches of trees interfering with overhead conductors
  - viii. Loose stay- wires
  - ix. Construction of new roads, buildings, or other structures near the line
  - x. Damaged or faulty transformer structures, including oil leakages
  - xi. Leakage of currents in poles and other structures /towers
  - xii. Unsafe working practices by employees
- b) RCDs (Residual Current Devices), also called Earth-Leakage Circuit Breakers (ELCBs), Ground-Fault Circuit Interrupters (GFCIs) are extremely sensitive circuit breakers that can prevent fires and shocks in electrical installations. Obtain specialist advice on their installation at appropriate locations in your electrical systems.
- c) Electricity is more dangerous in the presence of water. During rains, near swimming pools, tanks or other water bodies, in laboratories, on construction sites, for temporary functions/weddings, etc., special care must be taken to use proper wiring and protective equipment, especially RCDs. Such installations need to be inspected on a regular basis
- c) Use proper circuit-breakers in preference to re-wireable fuse cut-outs.
- d) Metallic and chemical string must not be used for kite flying as it poses serious danger to life and damages electricity installations.
- e) Safety clearances from electricity conductors and equipment (e.g., hazardous extension of balconies at the upper stories of houses in mohallas which comes within close proximity of electric lines) must be maintained to avoid electrocution.
- f) Animals must not be tied to poles/structures/towers of electricity lines in order to avoid accidents/electrocutions.

## CHAPTER 13

### EFFICIENT USE AND CONSERVATION OF ELECTRIC POWER

#### 13.1 GENERAL

KESCS shall take steps towards improving the quality and reliability of electric service to maximize the value of the energy that is used and to increase the sale of power.

Electricity adds to the quality of life, hence it makes good sense to use it wisely. Consumers are advised to be “energy smart”.

#### 13.2 ENERGY EFFICIENCY AND ENERGY SAVINGS

The use of present day technology boosts the efficiency of energy systems – such as the super-efficient compact fluorescent lamps. This revolutionary yet reliable bulb yields the same pleasing light as a conventional incandescent while consuming less electricity.

There are many other proven ways to maintain and operate energy systems to save energy costs all the time, many of which are at low or no cost.

a) Many of the quickest and easiest ways to save energy also cost little or nothing. In fact, a lot of energy savings can be achieved by doing the following:

- i. Turn off lights when not needed.
- ii. Remove unneeded light bulbs.
- iii. When replacing bulbs, use lower wattage or more efficient ones
- iv. Reduce air conditioning thermostat setting.
- v. Reduce air conditioning during unoccupied hours.
- vi. Reduce air conditioning before the end of operating hours.
- vii. Have the ventilating and air conditioning systems serviced and adjusted.
- viii. Turn off machines and equipment when not needed.
- ix. Make sure all automatic controls are in good working condition and are set properly.
- x. Ensure all motive machinery is properly lubricated and maintained.

b) The following steps may be read carefully:

- i. **Find out last year’s energy use and cost.** Twenty to thirty percent savings may be possible with little effort.
- ii. **Do an energy “audit”.** Take a good look at how and where you use – and waste – energy.
- iii. **Get some expert help with the audit if needed.**
- iv. **Ask friends for their ideas and listen to their concerns about health and comfort.** They should be fully involved in energy management efforts.
- v. **Decide the top priority things to do.** Include them in the Energy Action Plan.
- vi. **Do them – with outside help if needed.** The sooner a start is made, the better savings are made.
- vii. **Keep a record of savings.** See if what has been done is working and how much being saved.

#### c) Lighting

Lighting energy can be wasted in several ways, such as:

- i. **Inefficient light sources** – when the lamp or fixture is inefficient in converting electricity to light, using more watts (units of electric power) than necessary to produce the lumens (units of light output);

- ii. **Illumination losses** – when dirt or some other obstruction blocks some of the light; or when the light source is too far away from what you want illuminated;
- iii. **Over lighting** – when more light is used than is needed; when a “free” source such as day light is not used; and when lights are on, for no reason (e.g., when no one is present).

Three major ways to save

- i. Turning lights off when they are not needed;
- ii. Reducing light levels wherever you have more light than you need;
- iii. Installing more efficient lighting or controls

**d) Information About Benefits Of Saving Electric Power**

KESC shall provide sufficient information to the consumers to make them aware of the benefits of efficient use and saving of electric power which in turn would result in savings to the utility. KESC shall publish pamphlets or make advertisements or issue handbills from time to time for the education of consumers with regard to efficient use and saving of electric power.

KESC shall inform consumers about energy efficiency opportunities by way of “information inserts” included in monthly bills.

**e) Monitoring Use Of Energy**

The consumer shall be educated and encouraged to prepare the figures of months energy bills for the last calendar year and this year by collecting from the monthly bills and recording in the table given below. Comparison of these figures on monthly basis shall give the “baseline” for making efforts for potential savings. In this way, keeping in view all the suggestions for saving and keeping a strict watch on the energy consumption, some fruitful results are achievable and it will be observed that energy management efforts actually do pay off.

**TABLE FOR CONSUMPTION OF ELECTRICITY**

Month	ELECTRICITY USE			ELECTRICITY COST		
	LAST YEAR	THIS YEAR	% DIFF-ERENCE	LAST YEAR	THIS YEAR	% DIFF-ERENCE
January						
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						
Total						

**f) GENERAL TIPS-INDUSTRIAL OPERATIONS**

**a) Saving energy makes good business sense**

Many companies think of energy as a fixed overhead but saving energy is actually one of the easiest ways to reduce costs and improve your reputation.

**b) Save money**

Simply by switching machines off after use, or turning the cooling/heating down as per weather requirement, you can make real savings on your energy bill. And just reducing it by 20% could add the same amount to your profits as a 5% increase in sales.

**c) Offer better value to your customers**

Cutting your overheads means production costs will go down, making your products and services more competitive

**Here are some tips specifically for manufacturing/ or industrial processes, to help you save energy in key areas:**

**i. Motors**

**Keep your motors maintained / extend your motors operating life.**

If a motor is not working at its most efficient, it can add 5% or more to your energy costs. So make sure your motors are always well maintained. Also check that voltage is balanced on all phases.

**Use high efficiency motors**

When you next change your motor, replace it with a Higher Efficiency Motor. Also consider the induction of Variable Speed Drive if favorable.

**Don't keep motors running with an empty load**

Always check that motors are switched off when you don't need them, as even an empty motor uses 40% of the full load power.

**ii. Compressed air**

**Find and fix leaks**

Most businesses using compressed air can save up to 30% simply by fixing any leaks.

**Try to lower the operating pressure**

Reducing it by just 1 bar (15 psi) will save about 7% of the energy

**Ensure there is a good supply of cool air around the compressor**

This will ensure it doesn't get overheated and use more energy than necessary

**iii. Refrigeration**

**Keep freezer doors closed**

On an average, it will cost you Rs.1/= every day a freezer door stays open.

**Ensure your system is at the right temperature**

If it's even 1°C lower than needed, your costs could rise by 2 to 4%.

**Don't let the condensers get overheated**

Make sure they are located in a place with sufficient airflow.

**Don't put too much refrigerant charge in**

If it leaks it can increase your energy costs by over 10%.

**iv. Improve Heating operation Systems**

By checking burner air to fuel ratios and the heat transfer surfaces.

**v. Improve Pumping Operation Systems**

By matching the pumps to system requirements

**g) Suggestions And Recommendations**

**Form an Energy Team**

Energy teams in manufacturing facilities track and report energy use, identify energy-saving opportunities, develop an energy plan, and implement cost-saving measures. Energy teams typically include members from plant and process engineering, maintenance engineering, procurement, and production. Any energy

team will enjoy greater success with support and involvement from senior managers, who can remove barriers and commit resources to projects.

### **Objective of Energy Team:**

Performing a formal energy assessment is one of the best ways that your team can develop a cost-effective plan to lower plant energy costs. The energy assessment team (which sometimes includes outside experts in energy management and troubleshooting) works both during and after the assessment process to

- i. Evaluate all of the industrial systems to calculate how and where your plant uses energy,
- ii. Help find opportunities to increase efficiency,
- iii. Determine potential upgrades and emerging technologies that might work for your plant, and
- iv. Implement cost-saving measures.

### **Employee Involvement**

Emphasis will be given on the employees' involvement by educating and encouraging them to follow the tips like:

- i. Turn off lights ,when leaving work areas,
- ii. Report leaking faucets, lavatory fixtures, piping etc.
- iii. Keep windows and outside doors closed, if air conditions are in use.
- iv. Leave thermostats at a constant setting to avoid forcing the system OFF and ON.
- v. Turn off all tools and portable appliances when not in use,
- vi. Assign responsibility for turning off designated items to specific employees.

### **RECOMMENDATIONS**

- i. Install power factor correction capacitors
- ii. Turn OFF equipment when not in use
- iii. Begin a practice of monitoring electric demand
- iv. Repair compressed air leaks
- v. Redirect air compressor intake to use outside air
- vi. Lower air pressure in compressors
- vii. Repair steam valve leakages
- viii. Install water cooled chillers instead of replacing air cooled chillers
- ix. Install Speed controllers on twisting machines
- x. Replace standard Fluorescent lighting with energy efficient tubes.
- xi. Reduce luminance to minimum required levels via delamping.
- xii. Install timers on lighting systems, where necessary

## CHAPTER 14

### RIGHTS AND OBLIGATIONS VIS-À-VIS CONSUMER AND KESC

#### 14.1 ACCESS TO THE CONSUMER'S PREMISES

A duly authorized employee of the KESC shall be entitled at all reasonable times, and on informing the occupier of his intention (after giving a notice of clear 3 days), to enter the premises to which energy is or has been, or is to be supplied by the KESC, for the purpose of:

- a) Examining, inspecting and testing the electric supply lines, meters, maximum demand indicators or other measuring apparatus, electric wires, fittings, works or an apparatus for the supply or use of energy, whether belonging to the KESC or to the Consumer, or.
- b) Ascertaining the amount of energy supplied or the electrical quantity contained in the supply or the apparatus, or.
- c) removing, where a supply of energy is no longer required, or where the KESC is authorized to take away and cut-off such supply, any electric supply lines, meters, maximum demand indicators or other measuring apparatus, fittings, works or apparatus belonging to the KESC, or.
- d) Along all other things necessary or incidental to the proper supply or maintaining such supply to the consumer's premises.

#### 14.2 FACILITIES TO BE PROVIDED BY THE CONSUMER

- a) The KESC authorized staff member has access to meters, service connections and other property owned by it which may be located in consumer's premises for purposes of installation, maintenance, operation or removal of the property at the time service is to be terminated.
- b) The consumer's utility system shall be open for inspection to authorized representatives of KESC. The consumer's failure to do so within a reasonable period of time may result in disconnection.
- c) Consumers must provide access to all electric meters upon request for billing purposes. If a premise is unoccupied/locked, an appointment to obtain meter readings will suffice for a maximum period of three (3) months. After that, a new appointment will be required to update the readings.

#### 14.3 PROPERTY DAMAGE

- a) The KESC is not responsible for any loss or damage caused by any negligence or wrongful act of a consumer or his authorized representative in installing, maintaining, operating or using any or all appliances, facilities or equipment.
- b) The consumer will be held responsible for damage to KESC's meters and other property or facilities resulting from the use or operation of appliances and facilities on consumer's premises, including but not limited to damage caused by electricity, steam, hot water or chemicals.
- c) If a consumer, new applicant, developer or other person is found to be responsible for any damage done to the KESC property; such damages shall be reimbursed to the KESC.

#### 14.4 LIABILITY OF THE CONSUMER FOR DAMAGE TO THE KESC APPARATUS

- a) The consumer shall be solely responsible for and shall pay for any loss of, or damage to, any electric supply lines, meters and/or other apparatus belonging to the KESC and in use of the consumer for supply of energy purpose, whether caused maliciously or through negligence or default on the part of the consumer or any of his employees, or whether arising out of fire, theft or any other cause beyond the control of the KESC, always excepting reasonable wear and tear and loss or damages arising out

of defects in the aforesaid electric supply lines, main fuses, meters and/or other apparatus belonging to the KESC on the consumer's premises.

- b) Provided that the liability of the consumer for the cost of resealing any metering equipment or other apparatus belonging to the KESC on the consumer's premises shall be as prescribed in the KESC Schedule of General Charges in force from time to time.

#### **14.5 RIGHT OF WAY**

- The right of way shall be as per the terms and conditions set in the Eligibility Criteria.

#### **14.6 FAILURE OF SUPPLY DUE TO FORCE MAJEURE**

- The KESC shall not be liable for any claims for loss, damage or compensation whatsoever, arising out of failure of supply when such failure is due to force majeure, as defined in the Performance Standards (Distribution) Rules, 2005.

#### **14.7 OBLIGATIONS OF CONSUMERS**

##### **(a) Interference with Service**

- i. Consumers who operate equipment which causes detrimental voltage fluctuations (such as but not limited to, hoists, welders, x-ray apparatus, radio transmitters, elevator motors, compressors and furnaces) must reasonably limit such fluctuations upon request by the KESC. The Consumer will be required to comply with the necessary corrective measures.
- ii. Separate service is required for x-ray units over 5 kVA, welder units over 3 kVA, radio transmitters and resistance welders.
- iii. KESC may require the consumers to provide, at their own expense, special furnace type transformers and reactors and capacitors sufficient to limit secondary short-circuit current values to 200% of full load value. In such cases, the KESC shall furnish energy at 11 kV.
- iv. The consumer should also make arrangements to filter out or prevent harmonic distortions traveling onto/interfering with the KESC's system.

#### **14.8 POWER FACTOR**

- The KESC encourages consumers to maintain a power factor of at least 90% to avoid penalties.

#### **14.9 Consumer's Obligation to Remedy**

- Consumers must use their best endeavors to avoid any non-compliance of this Manual within the time period specified in any notice of non-compliance sent by KESC.

#### **14.10 Disconnection of Supply for Non-Compliance**

- i. KESC may disconnect supply to a consumers if,
- ii. The consumer has not fulfilled an obligation to comply with this Manual; and
- iii. The KESC has given the consumer 7 business days' written notice of disconnection (such notice to be in addition to the notice already given); and
- iv. The consumer fails to comply with the notice.

## CHAPTER 15

### Violation of Instructions

- 15.1 The distribution company shall ensure that it complies with the provisions of the Consumer Service Manual while dealing with consumer complaints. The Consumer Service Manual shall be treated as an applicable document as defined in Chapter 1. In case the consumer/complainant is not satisfied with the response/decision of the distribution company or the distribution company does not reply at all, the consumer shall have the following options:
- 15.2 The consumer may file a complaint with Provincial Office of Inspection in respect of metering, billing and collection of tariff applicable under section 38 of the NEPRA Act; or
- 15.3 Under section 39 of the NEPRA Act, any consumer/interested person, including a Provincial Government may file a written complaint with Consumer Affairs Division at NEPRA. The complaint shall be processed under the NEPRA Complaint Handling and Dispute Resolution (Procedure) Rules, 2009 and the decision thereon shall be passed. The distribution company shall comply with the orders/decisions/instructions as may be passed by the Authority with regard to the complaint which shall be enforced under the laws/rules.