

## 2.5 Long Paragraph on Information Technology Support System of Revenue Billing in Kanpur Electricity Supply Company Limited, Kanpur

### Executive summary

#### Introduction

Kanpur Electricity Supply Company Limited (KESCO) was incorporated (January 2000) with the main objective of distribution of electricity to consumers of urban area of Kanpur City District. KESCO had 700 HT consumers and 5.02 lakh LT consumers as on 30 September 2014. Billing of LT consumers is done through four outsourced agencies under supervisory control of Computer Billing Service Centre (CBSC) headed by an Executive Engineer and billing of HT consumers is done manually by bulk billing section at the company headquarters.

#### (Paragraph 2.5.1)

The important audit findings on information technology support system of revenue billing of LT consumers in KESCO are detailed below:

#### Information Technology (IT) strategy and IT plan

\* As per best practice, there should be a steering committee for overall direction of IT, formulation of IT policy/plan and a long term/medium term IT strategy.

Though the KESCO has adopted the online billing system since 2007, it neither constituted a steering committee nor documented a formal IT policy/plan and a long term/medium term IT strategy for carrying out billing activities of LT consumers independently.

#### (Paragraph 2.5.8)

\* As per best practice, every change/modification in application software consequent upon change in business rules, legislation and upgradation of application system should have been documented and approved by top management.

The changes/modifications made in application software in consonance with change in business rules were neither documented nor tested by taking fair representation of entire population resulting in short assessment of revenue of ` 35.41 lakh, short levy of fixed charge of ` 2.66 crore and excess levy of fixed and energy charge of ` 3.27 lakh.

#### (Paragraphs 2.5.14 to 2.5.16)

\* As per best practice, appropriate input control and data validation should have been ensured for creation of correct, complete and reliable database.

Input controls and validation checks were either not there or deficient as meter number in 460 cases, service connection number in 2,729 cases and security deposit in 88320 live LT consumers were found either zero or blank. Meters having same number had been installed with 29.48 *per cent* live consumers.

#### (Paragraphs 2.5.10 and 2.5.17)

\* Monitoring by CBSC was deficient because it was not headed/manned by an IT expert. CBSC failed to ensure generation of bills as per provisions of

tariff orders and applicable business rules and to get 100 *per cent* operative billable consumers billed through billing agencies.

**(Paragraph 2.5.11)**

\* As per best practice, business continuity and disaster recovery plan and associated controls should be in place so that the organisation can go ahead in an interruption or disaster.

The KESCO did not have a disaster recovery and business continuity plan outlining the action to be taken in the event of disaster. The backup of the database was maintained in the premises of CBSC only rather than maintaining backup of entire database in an off-site fire-safe location.

**(Paragraph 2.5.12)**

### **Mapping of business rules**

\* As per best practice, business rules being abstraction of policies and practices of a business should be mapped into software. There were discrepancies in mapping of various business rules which resulted in release of connections without obtaining security deposit of ` 16.54 crore from consumers.

**(Paragraph 2.5.22)**

### **Billing application system**

The billing application system was deficient as KESCO failed to provide User Requirement Specifications to system developer which resulted in billing of urban consumers under rural schedule and absence of system alerts.

**(Paragraphs 2.5.19, 2.5.20 and 2.5.21)**

## **Introduction**

**2.5.1** Kanpur Electricity Supply Company Limited (KESCO) was incorporated (January 2000) with the main objective of distribution of electricity to consumers of urban area only of Kanpur City District. The consumers of KESCO are mainly divided into two categories viz. High Tension<sup>23</sup> (HT) and Low Tension<sup>24</sup> (LT). The consumers of KESCO are getting supply as per urban schedule and are billed as per tariff orders approved by Uttar Pradesh Electricity Regulatory Commission (UPERC). HT consumers are billed in-house manually since inception and LT consumers are billed through online billing system from 2007. As LT consumers are billed online, IT support system of revenue billing of LT consumers only has been covered for audit scrutiny.

There are 5,01,588 LT consumers as on 30 September 2014. During the period 2011-12 to 2013-14, the total revenue assessment and realisation from LT consumers were ` 2670.82 crore and ` 1984.11 crore respectively. The total arrears at the end of March 2014 was ` 2125.23 crore.

Computer Billing Service Centre (CBSC) of KESCO headed by Executive Engineer is responsible for online billing of LT consumers. CBSC engaged (2007) CMC Limited for the work of Data Base Administration and maintenance of server and Infinite India for operation and maintenance of hardware and software. For billing of the consumers, CBSC engaged (2007) three billing agencies which carry out the work of meter reading, bill

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<sup>23</sup>HT means consumer getting supply at voltage level above 650 volts and up to 33000 volts.

<sup>24</sup>LT means consumer getting supply at voltage level on or below 440 volts.

generation by using hand held machine and bill distribution to consumers. These agencies obtain the data of consumers from CBSC on monthly basis and after completing aforesaid activities the billing agencies provide the data to CBSC at the end of each working day for data updation. The data is uploaded to the server for updation of the details of payment to be received from the consumers. The collection of revenue is done through 48 payment collection centres working under the control of CBSC. The KESCO incurred expenditure of ` 13.14 crore on online billing system between the period October 2011 and September 2014.

The online billing system was setup on oracle 10g platform and the billing application setup was developed on *mPower*. The Operating System used for online billing was Solaris of *Linux*.

#### **Organisational set up**

**2.5.2** KESCO is governed by a Board of Directors (BOD) consisting of Managing Director (MD) who is the Chief Executive and is assisted by Chief Engineer (CE), a Superintending Engineer (SE) and four Executive Engineers (EEs) at headquarters. The area of operation is divided in four circles and 18 divisions headed by Superintending Engineer and Executive Engineer respectively. The CBSC, responsible for overall monitoring and supervision of billing system of LT consumers is headed by an Executive Engineer.

#### **Scope and methodology of audit**

**2.5.3** LT billing of all Divisions of KESCO for the period from October 2011 to September 2014 was analysed using Interactive Data Extraction and Analysis (IDEA), an audit tool during 20 October 2014 to 4 April 2015.

The methodology adopted for attaining the audit objectives with reference to audit criteria consisted of explaining the audit objectives to the Management in the Entry Conference held on 11 November 2014, collection of data and analysis thereof with the help of IDEA, issue of preliminary audit observations to the Management, discussion with the Management and issue of long draft paragraph to the Management/Government in June 2015 for comments.

The results of queries on the databases were cross verified with physical records, wherever made available to the audit team. An Exit Conference was held on 22 July 2015 with the Management. The replies of the Management were received on 19 July 2015 and have been duly considered while finalising the long paragraph. The reply of the Government is awaited (November 2015).

#### **Audit objectives**

**2.5.4** The audit objectives were to assess whether:

- Company had adequate Information Technology (IT) infrastructure, documented strategy and IT plan, adequate IT controls, business continuity and disaster recovery plan and monitoring mechanism to derive benefits of IT support system to achieve intended objectives; and
- the billing is done effectively, timely, correctly and efficiently in accordance with business rules viz. applicable tariff orders, codal provisions, laid down procedures and Regulations issued by UPERC.

#### **Audit criteria**

**2.5.5** The audit criteria adopted by the audit were as under:

- \* the rate schedule approved by the UPERC;
- \* U.P. Electricity Supply Code, 2005 (supply code);
- \* Electricity Act, 2003;
- \* agreements executed with outsourced billing agencies;
- \* circulars and orders issued by the KESCO/UPPCL/UPERC; and
- \* best practice.

### **Audit findings**

**2.5.6** The objective wise audit findings as a result of analysis of 100 *per cent* online billing data of 5.02 lakh LT consumers for the period October 2011 to September 2014 are discussed in succeeding paragraphs:

### **IT strategy and IT plan**

**2.5.7** As per best practice, IT strategy and plan should be well formulated and documented while developing and further maintain the system. Following shortcomings were noticed:

#### **Non-constitution of steering committee**

**2.5.8** As per best practice, there should be a steering committee comprising of members from senior and middle management and user representatives from all areas of the business including the IT department. The steering committee should be responsible for the overall direction of IT including the issues beyond accounting and financial systems. Once the steering committee agrees on a future direction for IT, the decisions should be formalised and documented in an IT strategic plan.

Besides, a formal IT policy and a long term/medium term IT plan, incorporating the time frame, key performance indicators and cost benefit analysis for developing its own software and integration of various systems should be formulated and documented.

We noticed that KESCO neither constituted any steering committee nor documented a formal IT policy/plan and a long term/medium term IT strategy. Instead, KESCO engaged vendors for all the activities of online billing of LT consumers under the supervisory control of CBSC. In absence of IT strategy and plan, KESCO ultimately remained fully dependent on vendors for carrying out online billing of LT consumers.

The Management stated (July 2015) that a committee was formed for computerisation of KESCO.

Management reply is not acceptable as committee was formed for fixation of technical specifications and finalisation of tenders in respect of computerisation of KESCO. The facts remains that KESCO did not constitute steering committee, required to decide a formal IT policy/strategy and to keep pace with the development in IT.

#### **Change/modification in application software**

**2.5.9** As per best practice, every change/modification in application software consequent upon change in tariff by UPERC, business rules, supply code, legislation and upgradation of application system should have been documented and approved by the top management. Correctness of change in

**KESCO did not constitute steering committee for formulation and documentation of formal IT policy including long term/medium term IT strategy**

application software should also be tested by taking fair representation of entire population.

During analysis of billing data of 5.02 lakh LT consumers for the period October 2011 to September 2014, we noticed that KESCO changed/ modified application software three times during the period due to change in business rules regarding booking of 120 KWh in place of 80 KWh in case of provisional billing and twice due to revision in tariff by UPERC. The change/modification made were neither documented nor tested by taking fair representation of entire population.

Due to non-testing of the application software after changes/ modifications, cases of not following the uniform basis for provisional billing, incorrect assessment of fixed charges and incorrect application of rate were noticed as discussed in paragraphs 2.5.14, 2.5.15, 2.5.16 and 2.5.21.

The Management stated (July 2015) that any change in billing for tariff is done as per direction of UPERC and authorised by MD of KESCO. Further, testing of changed software is carried out in dummy environment before implementation of final modification.

The reply is not acceptable as preparation of provisional bill on different basis, incorrect assessment of fixed charges and incorrect application of rates for billing were indicative of inadequate testing of changed software.

### **Input controls and validation checks**

**2.5.10** As per best practice, it is necessary to ensure appropriate input control and data validation during the data entry for creation of correct, complete and reliable database which would help in reduction of duplication of efforts and redundancy of data.

We noticed that all input entries to databank were entered into by the clerk/assistant posted at different divisions and validated by Executive Engineer of the respective division. The system did not have input controls to ensure correct and complete data capture as analysis of billing data of 5.02 lakh LT consumers as on September 2014 using IDEA showed that some vital fields viz. service connection number, meter numbers, security deposit etc. were either left blank or invalid data were entered into data bank, as detailed below:

- \* meter number in 460 cases, service connection number in 2,729 cases and address of the consumer in five cases were found either zero or blank.
- \* in data for the period 30 September 2014 date of connection was recorded after 30 September 2014 in 36 cases.
- \* security deposit of 88,320 live LT consumers of different category was recorded zero in billing databank of 30 September 2014.

The Management accepted (July 2015) the observation and stated that necessary steps are being taken to update, complete and rectify the required fields in data bank.

### **Monitoring mechanism**

**2.5.11** The KESCO has Computerised Billing Service Centre (CBSC) for monitoring of online billing system of LT consumers through outsourced billing agencies. CBSC has to ensure 100 *per cent* meter reading and correct

**Billing system did not have appropriate input controls and validation checks which resulted in entry of invalid data in data bank**

**Monitoring mechanism of online billing system in KESCO was deficient as it failed to ensure generation of bills as per tariff orders and business rules**

and timely generation of bills of operative billable consumers by hand held billing agencies as per the provisions of tariff orders, supply code and prevailing business rules. CBSC also provided a node (a connection point /work station that can create receive or repeat a message) to all 18 distribution divisions for further monitoring of the billing of their consumers, correction of the bills and generation of prescribed MIS reports by the concerned Executive Engineers.

We noticed that CBSC failed in its duties and could not ensure

- \* generation of bills as per tariff orders as discussed in paragraphs 2.5.15, 2.5.16 and 2.5.21;

- \* application of business rule as discussed in paragraph 2.5.14; and

- \* 100 *per cent* meter reading and spot billing of billable consumers in each billing cycle as hand held billing agencies could bill only 82.31 to 97.24 *per cent* operative billable consumers during October 2011 to September 2013.

Deficient monitoring by CBSC was mainly due to fact that it was not headed/manned with IT expert.

The Management stated (July 2015) that concerned EEs (Distribution) and EE-CBSC closely monitor the billing through MIS and other tools. The irregularities/deficiencies pointed out above concluded that concerned EEs and CBSC failed to ensure error free billing.

### **Business continuity and disaster recovery plan**

**2.5.12** As per best practice, business continuity and disaster recovery plan and associated controls should be in place so that the organisation can go ahead in the event of an interruption or disaster leading to temporary or permanent loss of computer facilities and it would not lose the capability to process, retrieve and protect the data. Business continuity and disaster recovery plan consists of

- \* availability of standby facilities at alternative sites;

- \* identification of key members of IT department and their alternative in case of loss of key members;

- \* regular backup of systems software, financial applications and underlying data files; and

- \* storage of backups together with a copy of the disaster recovery plan and systems documentation, in an off-site fire-safe location.

We noticed that

- \* KESCO did not have a disaster recovery and business continuity plan outlining the action to be taken in the event of disaster.

- \* The backup of the database was maintained in the premises of CBSC only. Backup of entire database was not maintained in an off-site fire-safe location.

- \* The key configuration items viz. hardware, software and key IT staff which were required for business continuity had not been identified and documented.

- \* KESCO did not have any alternative key IT personnel for continuing its billing activities in case of default on the part of outsourced billing agencies.

**KESCO did not have a disaster recovery and business continuity plan and backup of data base was also not maintained in an off-site fire safe location**

We further noticed that all the online billing activities of LT consumers were outsourced to vendors but agreements with them did not contain any clause to give prior notice for terminating the agreements or discontinuing the billing operation by them to avoid hampering of billing activities at any point of time. The Management accepting (July 2015) the view point of audit, stated that plan to take billing database to a well equipped data centre with facility of disaster recovery will be implemented very soon.

### Recommendation

KESCO needs to constitute a steering committee to develop a long term/medium term IT plan including business continuity and disaster recovery plan so that IT infrastructure is developed and dependency on outside agencies is eliminated.

### Mapping of business rules

**2.5.13** As per best practice, business rules being abstractions of the policies and practices of a business organisation should be mapped into software. Mapping of business rules is used to define, deploy, execute, monitor and maintain the variety and complexity of decision logic that is used by operational systems within an organization and to determine the tactical actions that take place in applications and systems.

Infinite India, the vendor, was responsible for mapping of business rules while developing the billing application software (*mPower*) and making necessary change in the application software in accordance with changed business rules.

An analysis of data bank of 5.02 lakh LT consumer showed that mapping of business rules viz. manual of computerised system of billing, tariff order and supply code while developing billing application software in 2007, and subsequent changes made therein from time to time was not done properly. As a result, cases of short/excess billing were noticed as discussed in the following paragraphs:

### Short assessment of revenue

**2.5.14** Clause 6.2 of Supply Code provides that if licensee is not able to read the meter, a provisional bill may be issued on the basis of the average consumption of the previous three billing cycles in respect of 'Billing when Meter Reading not available'.

Further, Manual of "computerised system of billing" adopted by KESCO, provides that billing of LMV-1 category applicable to domestic light, fan of consumers shall be done on provisional basis at 80 units/KW/month and with effect from 19 February 2014, 120 units/KW/month in case of average consumption of previous three billing cycle is not available and meter status is Identified Defective/Appeared Defective/Reading Defective (IDF/ADF/RDF).

We noticed that in 10,880 cases, consumers were not billed uniformly at the rate of 80/120 units /KW/month due to incorrect mapping of business rules in the billing system software. This resulted in short assessment of revenue of ` 35.41 lakh (Energy Charge: ` 34.07 lakh and Electricity Duty: ` 1.34 lakh) during October 2011 to September 2014 as detailed in **Annexure-2.5.1**.

The Management stated (July 2015) that they were following billing rules as prescribed in clause 6.2 of supply code and manual of computerised system of billing.

Consumers of LMV-1 category having defective meter were not billed as per applicable rules resulting in short assessment of revenue by ` 35.41 lakh

The reply does not address our observation as to why provisional bills in 10880 cases were not raised uniformly at the rate of 80/120 units.

### Short levy of fixed charges

**2.5.15** As per rate schedule of LMV-6 applicable to small and medium power consumers, fixed charges on the contracted load should have been charged at the rate of ` 115/KW/month up to 30 September 2012 and thereafter at the rate of ` 225/ KW/month.

LMV-6 consumers were short billed by ` 2.66 crore due to incorrect levy of fixed charges

We noticed that in 42,197 cases, fixed charges were levied on the basis of billable demand (75 per cent of contracted load or actual load whichever was higher) instead of contracted load during October 2011 to September 2014. This resulted in short charge of ` 2.66 crore from the consumers as detailed in **Annexure-2.5.2**.

The Management stated (July 2015) that the short charge of ` 2.44 crore on account of fixed charges already been charged to consumers in months of May 2013 and November 2013.

The Management's reply confirms the deficiency in the software. Further, the required change/rectification in the software was not made by the management to restrict occurrence of such deficiency as short charged amount of ` 7.71 lakh for the period December 2013 to September 2014 still could not be levied on the consumers.

### Excess charge of fixed and energy charge

**2.5.16** Rate schedule LMV-1 applicable to domestic light, fan & power consumers and also to consumers getting supply at single point for bulk load and effective from 15 April 2010 provided that consumers getting supply at single point for bulk load (50 KW or more) shall be charged at the rate of ` 40/KW/month for fixed charge and ` 3.20/KWh for energy charge whereas other consumers shall be charged at the rate of ` 65 /KW/month for fixed charge and ` 3.45/KWh up to 200 units and beyond it, ` 3.80/KWh for energy charge.

LMV-1 consumers having bulk load were not billed as per applicable rate schedule resulting in excess charge of ` 3.27 lakh

We noticed that in 65 cases, consumers getting supply at single point for bulk load were billed as per the rate of charge applicable to domestic light, fan & power consumers during October 2011 to September 2012. This resulted in excess charge of ` 3.27 lakh from consumers getting supply at single point for bulk load as detailed in **Annexure-2.5.3**.

The Management accepted (July 2015) the observation and stated that consumers having load more than 50 KW and getting supply at single point are being identified by the concerning divisions and being transferred to Bulk billing division for further billing.

### Duplicate meter numbers

**2.5.17** The software developed and used by KESCO does not have adequate input controls to check that duplicate meter numbers are not entered into the system. The meter serial number, phase, make and rating are unique within itself and no other meter entry with the same parameters should be accepted by the system.



We noticed that data bank in respect of 1,46,479 consumers (29.48 per cent) for the month of September 2014 showed same meter number installed at two to 102 consumers' premises as detailed in **Annexure-2.5.4**.

The Management accepted (July 2015) the observation.

#### **Discrepancies in due date**

**2.5.18** Clause 6.1 (g) of the supply code prescribes that the licensee shall allow seven days time to consumer for payment of the bill.

We noticed that the system is not applying this provision uniformly to all consumers. This was due to manual feeding of due date by billing clerk and lack of validation control by the Executive Engineer of distribution divisions.

It was observed that in 990 cases, time for payment was allowed in excess of seven days and in 4,285 cases, time for payment was allowed less than seven days as detailed in **Annexure-2.5.5**. As a result, in 990 cases consumers were facilitated for payment beyond the prescribed period without late payment surcharge and in 4,285 cases consumers were over burdened for payment prior to the period prescribed in supply code.

The Management stated (July 2015) that software has provision to provide seven days for the payment however due date was different in cases where bills were revised and due dates were fed manually by the concerning officials/officers.

The reply confirms that billing was not free from manual intervention due to which payment days were allowed in contravention of provisions of the Supply Code.

#### **Absence of system alerts**

**2.5.19** A load of one KW can consume a maximum of 24 units of energy in 24 hours and 720 units in a month of 30 days.

We noticed that the consumption of energy shown in 2,857 cases against LMV-1 and LMV-2 consumers ranged from 721 to 10,00,035 units per KW/month as detailed in **Annexure-2.5.6** which is impossible. Absence of system alert not only deprived KESCO to check actual connected load of such consumers but also led to unwarranted bill revisions and obstruction of revenue realisation, as in 844 cases out of 2,857, payment was made by the consumers within the due date.

The Management accepted (July 2015) the observation and stated that rectification in the software will be carried out.

#### **Recommendation**

KESCO should map the business rules correctly so that the generation of incorrect bills is checked.

#### **Billing application system**

**2.5.20** Billing application system should be designed in such a manner that business rules are not compromised. A written statement "User Requirement Specifications" (URS) in non-technical language should have been provided by the KESCO to system designer/ developer/vendor at the initial stage of system development.

Due date was allowed in excess of prescribed seven days in 990 cases and less than prescribed in 4285 cases

The billing system did not have system alert to check and control higher consumption enabling KESCO to mitigate unwarranted bill revision

The KESCO did not provide URS to Infinite India, the vendor/developer of computerised billing system (Hardware and Software) due to which system designed was deficient as discussed in the following paragraphs:

#### **Incorrect application of rate**

**2.5.21** Manual of “computerised system of billing” classified consumers on the basis of supply type (ST<sup>25</sup>) i.e. urban schedule, rural schedule. The rate of charge prescribed for urban schedule were applicable to the consumers of KESCO as the jurisdiction of KESCO was limited to Kanpur city only. Thus, the rates prescribed for urban schedule in tariff orders were applicable to all LT consumers of KESCO.

An analysis of the billing data of 5.02 lakh consumers for the period October 2011 to September 2014 showed that in 243 cases KESCO classified consumers under rural schedule in place of urban schedule. As a result, consumers were short charged by ` 1.72 lakh.

The Management, while accepting our observation, stated (July 2015) that concerning divisions have been asked to correct supply type of the consumers and charge the bill accordingly. The fact remains that corrective action has not been taken as of November 2015.

#### **Existence of consumers without security Deposit**

**2.5.22** Chapter 3 of Cost Data Book provides that initial security shall be charged per KW/HP/KVA or part thereof as the case may be at the rates specified therein.

We noticed that out of 5.02 lakh consumers, 88,320 consumers of various categories were depicted without security deposit as on 30 September 2014. It indicated that connections to such consumers were released either without security amount of ` 16.54 crore or security recovered from the consumers was not recorded in the data bank as detailed in **Annexure-2.5.7**.

The Management accepted (July 2015) the audit observation.

#### **Recommendation**

KESCO should provide User Requirement Specifications to the vendor/developer of computerised billing system to ensure correct application of tariff order, supply code and cost data book.

#### **Performance of hand held billing agencies**

**2.5.23** KESCO entered (September 2008) into agreements with three firms for meter reading, bill generation and its distribution to consumers for the period September 2008 to September 2013 and for period October 2013 to September 2018 again (October 2013) with these three firms. The scope of work in the agreements mainly provided recording the present meter reading and generation and distribution of bills. We noticed that:

\* billing data obtained by the billing agency from CBSC on monthly basis was to be updated with respect to present meter reading only and no other field/data was to be modified/edited. After recording present meter reading, billing agency had to provide the data at the end of each working day to CBSC for uploading the same on the server.

88320 consumers of different category were depicted without security deposit in databank

Data to billing agencies were provided in editable form instead of encrypted form

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<sup>25</sup>Supply Type (ST) indicates the sub-classification of consumers in a particular rate schedule

We noticed that data ranging between 0.69 and 3.37 *per cent* provided by billing agencies for uploading on server during October 2011 to September 2013<sup>26</sup> was not accepted due to mismatch of data. This indicated that data were provided to billing agencies were in editable form instead of encrypted form.

The Management stated that the billing agencies were provided data in text format through email and vice-versa and billing data provided by the billing agency is rejected due to bill already generated on the system by divisional officials/officers. The reply confirms our observation that data is submitted to agencies in editable format.

\* billing agencies were required to take 100 *per cent* meter reading of operative billable consumers and issue the bills to the consumers.

We noticed that the agreements executed were deficient as it did not provide the number of person required for meter reading of given number of consumers to ensure 100 *per cent* and timely billing. As a result, billing agencies could bill only 82.31 to 97.24 *per cent* of operative billable consumers during October 2011 to September 2013 and revenue realisation of remaining consumers could not be tapped timely.

Management stated that 100 *per cent* billing can be achieved in ideal condition. Reply is not acceptable as agreement provided for meter reading, billing and distribution of bills to 100 *per cent* operative billable consumers by the billing agencies.

\* the cases of not access/not read (NA/NR) where access of consumer premises was not possible, billing agencies were required to report such cases to the divisions fortnightly in each month so as to check that cases of NA/NR were reported after visit of consumer's premises and in case of false reporting the penalty at the rate of ` 100 per bill was levied on the billing agency.

We noticed that 37,992 cases of NA/NR found in the billing data for the period October 2013 to September 2014 were not reported by the billing agencies to the division. As a result, the division failed to impose penalty, if any, on the billing agency and ensure billing on the basis of meter reading.

The Management stated (July 2015) that consumers billed on NA/NR basis and master data had been provided to distribution division every month. If false reporting is found division can penalize the billing agency.

The fact remains that in the cases pointed out by audit penalty was not imposed in terms of provisions of the agreement.

### Conclusion and Recommendations

**On the basis of IT audit of KESCO, we conclude that:**

\* **KESCO neither constituted a steering committee nor documented a formal IT policy/plan and a long term/medium term IT strategy for carrying out billing activities of LT consumers independently since adoption of the online billing system in 2007. Further, it did not have a disaster recovery and business continuity plan.**

**KESCO needs to constitute a steering committee to develop a long term/medium term IT plan including business continuity and disaster**

<sup>26</sup>Records for the period made available.

recovery plan so that IT infrastructure is developed and dependency on outside agencies is eliminated.

\* The changes/modifications made in application software in consonance with change in business rules were neither documented nor tested by taking fair representation of entire population resulting in short assessment of revenue of ` 35.41 lakh, short levy of fixed charge of ` 2.66 crore, excess levy of fixed and energy charge of ` 3.27 lakh and short charge of revenue of ` 1.72 lakh.

**KESCO should map the business rules correctly so that the generation of incorrect bills is checked.**

\* There were discrepancies in mapping of various provisions of rate schedules, U.P Electricity Supply Code and manual as due date for making payment was allowed less/more than the prescribed, system alerts were not inbuilt and 88320 consumers of various categories were either released connections without security amount of ` 16.54 crore or security if recovered, was not recorded in the data bank.

**KESCO should provide User Requirement Specifications to the vendor/developer of computerised billing system to ensure correct application of tariff order, supply code and cost data book.**