

Chapter V

Input Controls and Validation Checks

5. To ensure correctness, completeness and reliability of the database, it is necessary to ensure appropriate input controls and data validation during data entry. This helps in reduction of duplication of efforts and redundancy.

Lack of system alerts

5.1 Having a system that can send notifications automatically to large lists of contents can help in reducing time to be spent on collecting information and initiating timely action against the exceptions. Audit noticed following deficiencies in both the IT billing systems:

Failure in ceiling abnormal consumption

(i) A load of one kW can consume a maximum of 24 kWh (units) of energy in 24 hours and 720 units in a month of 30 days. Audit noticed from March 2019 data that 27,012 consumers (R-APDRP: 7,715 and non R-APDRP: 19,297) having load of one kW or below were monthly consuming more than 800 units *i.e.* ranging from 801 units to 93,475 units and 10,04,458 units in R-APDRP and non R-APDRP billing systems, respectively. This pattern of energy consumption was abnormal and the system should have an inbuilt mechanism to alert the Management to address such abnormal patterns.

The Company stated (July 2020) that the system has the provision of categorising the consumers under the ceiling defective if per kW consumption is violated.

The reply is not correct as the data analysis revealed that consumers having exorbitant consumptions were having healthy meter status.

Stop Billing of consumers against the provision of the Code

(ii) The Code contains provisions related to Temporary Disconnection and thereafter Permanent Disconnection (PD) if the causes of disconnection are not removed within the number of days provided in the notice. Further, the Code does not contain any provision on the basis of which the connection status on any consumer can be flagged under 'Stop Billing'.

Audit noticed from the data of March 2019 that there were 16,49,992 consumers (R-APDRP: 7,78,440 and non R-APDRP: 8,71,552) with contracted load of 43,43,541.22 kW (R-APDRP: 20,00,676.59 kW and non R-APDRP: 23,42,864.63 kW) under 'Stop Billing'. The Company failed to monitor the cases of 'Stop Billing' along with the period of its existence and acted against the provision contained in the Code. Due to lack in application control in both the IT billing systems, it allowed the field divisions to act in contradiction to the provisions of the Code.

The Company accepted (July 2020) the fact and stated that earlier the users had a tendency of doing PD in offline mode and posting the same as stop billing which increased the stopped billing in large numbers. This provision has been totally blocked as technically there seems to be no requirement of stopped billing.

New Connection Pending

(iii) There were 1,41,827 consumers in R-APDRP billing system, depicted in the category of 'New Connection (NC) Pending' in March 2019 data. Registration of these consumers had not been completed in the system due to migration of incomplete data of the existing consumers and entry of particulars of new consumers without completing the prescribed procedure for releasing new connections. Dates of connection of these consumers as per R-APDRP fall between the years 1911 and 2019.

Audit noticed that 2,910 out of 1,41,827 'NC Pending' consumers were last billed during the years 1901 to 2019 and there were 1,38,917 consumers, whose revenue billing was yet to be started.

Billing of consumers under 'NC Pending' status and existence of these consumers for such a lengthy period in R-APDRP billing system indicated lack of application controls. Further, these cases were also not flagged for periodical review by the system and resulted in lack of monitoring at Division level, due to which the numbers of such cases could not be reduced by the Company.

While accepting the audit observation, the Company stated (July 2020) that the consumers who have not completed all the new connection formalities are designated as new connection pending and billing cannot be started till completion.

Completeness of data

5.2 Audit noticed the following deficiencies in both the implemented IT billing systems:

Absence of vital details in the database

(i) UPERC, vide seventh amendment (May 2016) in the Code, made it mandatory to register mobile number/e-mail address/Aadhaar number of each consumer, within six months from the notification date. Audit noticed that out of 2,58,04,464 in-service consumers (R-APDRP: 66,86,222 and non R-APDRP: 1,91,18,242) on March 2019:

Mobile Numbers

In 1,48,58,455 cases (R-APDRP: 24,11,055 and non R-APDRP: 1,24,47,400), no phone number/mobile number was mentioned and in 27,945 cases (R-APDRP: 27,371 and non R-APDRP: 574) the mobile numbers mentioned were incorrect *i.e.* less than 10 digits.

The Company stated (July 2020) that it was mandatory on the part of the consumer to submit the above-mentioned details and consumers who voluntarily submitted the details were entered in the billing system.

The reply is not convincing as the Company failed to register the consumer details even after four years of notification which is quite essential for an IT-enabled system.

Consumers' personal data

The basic data of consumers like name, father's name and address were found incomplete in the data of the IT system as discussed hereunder:

- In 4,793 cases (R-APDRP: 01 and non R-APDRP: 4,792) the address field was found blank in the database.
- In 54 cases of Non R-APDRP billing system, the field of name, father's name and address all were found blank and in 787 cases of non R-APDRP billing system, the field of name and father's name were found blank.

Due to incomplete data, the purpose of IT billing systems and the attendant benefits which automation offered in terms of billing efficiency, revenue collection, reduction of losses etc. could not be achieved.

The Company stated (July 2020) that address field or name field left blank in the system are only cases in which connection formalities have not been completed by the consumer.

The reply is not correct as the cases pointed out are of active consumers whose billing is being done by the Company.

Inappropriate security deposit

In 29,06,592 cases (R-APDRP: 11,14,076 and non R-APDRP: 17,92,516), under both the IT billing systems as mentioned in the **Table 5.1**, security deposit was either blank, zero or less than 100 and needed to be updated/reconciled or charged from the consumers:

Table 5.1: Abnormal security deposits of in-service consumers

Security Amount	No. of Consumers	
	R-APDRP	Non R-APDRP
Zero or Blank	39,527	2,08,314
0.01 to 0.99	8,63,479	0
1-99	2,11,070	15,84,202
Total	11,14,076	17,92,516

Source: Based on analysis of data provided by the Company

Audit further noticed that interest on security deposit of ₹ 147.11 crore was provisioned in the annual accounts of 2018-19 by the Company, whereas, interest of ₹ 87.98 crore only was passed on to the consumers through both the IT billing systems. Due to non-updation/reconciliation of security deposit, the interest of ₹ 59.13 crore could not be passed on to the consumers due to which the consumers were deprived from benefit of interest on their deposited amount of security.

The Company stated (July 2020) that new connections are released under various Government schemes where zero or lower security was charged and there is no security for domestic below poverty line consumers. Additionally, there are some old migrated consumers having low security to whom notices are sent from time to time to furnish old receipts so that the security can be updated.

The reply is not convincing as during data analysis, the below poverty line consumers and connections issued under any Government scheme were excluded.

Supply type

In 2,427 cases of R-APDRP billing system, no supply type was mentioned, which is the essential basis for billing of consumers under appropriate category.

The Company accepted the fact by stating that these are a few legacy cases migrated from old systems for which correctness of data can no longer be ascertained.

Duplication of entries in the database

(ii) Out of 2,58,04,464 in-service consumers (R-APDRP: 66,86,222 and Non R-APDRP: 1,91,18,242) of both the IT billing systems as on March 2019, Audit noticed the following deficiencies in the billing database:

- In 32,580 cases of R-APDRP billing system, the combination of consumer name, supply type and address were found duplicate. In 6,86,347 cases, of Non R-APDRP billing system, the combination of consumer name, father's name, supply type and address field 1, 2, 3 & 4 were found duplicate (*i.e.* appearing more than one time in the data).
- In 15,57,381 cases (R-APDRP: 484 and Non R-APDRP: 15,56,897), meter numbers were mentioned in duplicate. Since most of these cases relate to Non R-APDRP system, the Company should review and remove this shortcoming.
- In 244 cases (R-APDRP: 19 and Non R-APDRP: 225), the dates of connection were future dates *i.e.* after March 2019. Further, in 8,56,983 cases (R-APDRP: 6,50,625 and Non R-APDRP: 2,06,538), the dates of connection were prior to the date of establishment of Uttar Pradesh State Electricity Board *i.e.* before 1959.

Incomplete/incorrect entries of the consumers in the database have affected data integrity, as a result of which the Company failed in adjusting arrears from security deposit, allowing interest on security deposits, delivering demands/notices through electronic messages and finding the address of the consumers.

The Company accepted (July 2020) the fact and stated that as multiple legacy billing systems were migrated in both the IT billing systems, some data got duplicated and such cases are being checked on a case-to-case basis. Further, it also stated that meter numbers are unique to the division only and in many cases dummy meter numbers are fed against unmetered consumers. In respect of dates of connection falling in future date, the Company stated that these consumers are not live consumers. It further stated that in cases where RCs is issued, the divisions cannot ascertain whether the consumer is alive or not. Similarly, the District Authority needs to check such cases on a case-to-case basis.

The reply is not correct to the extent as all the data analysis was done by Audit on in-service consumers' data. Duplication in meter numbers was found within the divisions. Further, due to incomplete/incorrect entry of consumers' details, the Company could not trace many defaulting consumers.

The Company may consider using an IT-based business analysis tool to identify and correct these inconsistencies.

Incorrect categorisation of consumers

5.3 Clause 3.7 of the Code provides that the Licensee may classify or reclassify consumers into various categories from time to time and may fix different tariffs for different categories of consumers with the approval of the Commission. Applicable Rate Schedule, approved by UPERC from time to time, should be applied on the consumers after classifying them into appropriate category as provided in the Code.

Audit noticed that out of 4,214 incorrectly classified connections under both the IT billing systems, 3,569 connections (R-APDRP: 2,290 and non R-APDRP: 1,279) remained classified at lower tariff due to which the Company had to suffer revenue loss of ₹ 18.02 crore (R-APDRP: ₹ 16.60 crore and non R-APDRP: ₹ 1.42 crore) during the year 2018-19 (*Appendix-5.1*).

The Company accepted (July 2020) the fact and stated that routine rigorous field activity for data sanitisation and various drives are conducted in the field to check whether consumers are migrated to the right category or not and corrected on a regular basis. Further, the Company has accepted that some cases are still pending and will be taken up for correction.

Conclusion

In the present audit it has been found that the Company did not ensure validation checks for various data inputs. This resulted in deficient consumers' database and duplicate entries against already existing consumers causing blocking of revenue due to non-traceability of consumers in cases where dues are to be recovered. Further, non-linking of consumers to their respective categories of Rate Schedule caused loss of substantial revenue to the DISCOMs.

Recommendation

Recommendation Number	Recommendation	Response of Government
7	The Company should have robust in built input controls to ensure completeness and correctness of data in order to ensure integrity of database.	Accepted