

Review relating to Statutory Corporation

6.2 Computerised energy billing system of Ranchi Electric Supply Circle of Jharkhand State Electricity Board

Highlights

Jharkhand State Electricity Board (JSEB) is a Statutory Organisation set up for the development, operation and maintenance of a co-ordinated efficient and economic system of electricity in the State. A review of the computerised Energy Billing System of Ranchi Electric Supply Circle revealed that entire operations of billing right from meter reading to courier delivery of bills were assigned to three private agencies. These agencies prepared inaccurate bills and did not fulfill the contractual obligations. JSEB did not monitor their performance, as a result it lost a revenue of Rs 20.52 crore with blockage of Rs.85.74 crore.

Goal of Jharkhand State Electricity Board to achieve specific improvements and to increase the revenue by outsourcing was not met. Cost of outsourcing has increased by 45 per cent whereas number of consumers has increased by only 11 per cent.

(Paragraph 6.2.5)

JSEB did not demonstrate any ability to monitor performance of the three agencies. As against at least 10 per cent of meter readings to be cross-checked by JSEB, it checked only 0.32 per cent in January 2003 (Urban-I). Agency's meter reading, on an average, was 78.20 per cent incorrect with reference to that of the Board in the cases test-checked for one month in December 2003.

(Paragraph 6.2.5)

Change of rules and tariffs by the JSEB were not reflected in software that led to incorrect categorisation of consumers and consequential loss of revenue to JSEB- Rs 73.22 lakh.

(Paragraphs 6.2.7 and 6.2.9)

Blockage of fund of Rs 30.86 lakh due to anonymous consumers.

(Paragraph 6.2.8)

Accumulation of arrears of Rs. 85.43 crore against consumers

(Paragraph 6.2.10)

Loss of revenue of Rs 18.91 crore to JSEB due to cases becoming time barred.

(Paragraph 6.2.11)

Loss of revenue to Jharkhand State Electricity Board due to short assessment of Rs 22.74 lakh.

(Paragraph 6.2.12)

Loss of Rs 40.27 lakh due to non levy of Delayed Payment Surcharge on amount kept in abeyance.

(Paragraph 6.2.13)

Over payment of Rs 25.05 lakh to external agencies.

(Paragraph 6.2.14)

6.2.1 Introduction

Consequent upon the reorganisation of the states of Bihar and Jharkhand, a separate electricity board for Jharkhand, Jharkhand State Electricity Board (JSEB) was constituted in March 2001 under section 5(i) of Electricity (Supply) Act, 1948. JSEB is thus a statutory organisation, a body corporate created under the provisions of a Central Law. It is essentially a technical-cum- commercial agency setup for the development, operation and maintenance of a coordinated, efficient and economic system of electricity in the state. JSEB adopted rules and regulation of Bihar State Electricity Board vide resolution dated 20 March 2001. Under Section 18 of the Electricity (Supply) Act, 1948, JSEB is responsible for generation, transmission and distribution of electricity in an efficient and economic manner within the State of Jharkhand. For the revenue purposes, the JSEB is empowered to collect tariff from different categories of consumers as per latest tariff orders.

Ranchi circle, one of the highest revenue generating circles of the JSEB, has outsourced the entire operations of billing right from meter reading to generation of monthly bills to three private agencies for computation and generation of monthly electricity bills of the consumers. Individual FOXPRO based programs have been created by each of the three private agencies to generate electricity bills for all the consumers. The private agencies input information like meter reading (past and present), load, class of consumer, bill due date and other details that are used to generate monthly electricity bills for effective consumers. This information is also used by the agencies to generate periodical reports like consumer ledger, which are sent to the JSEB. Meter reading, which forms the basis of billing, has also been outsourced to the same agencies. In addition, the agencies are also responsible for courier delivery of the bills to the consumers.

6.2.2 Organisational set-up

JSEB consists of six members including the Chairman. Member (Finance) assists the chairman in cash management including billing and collection of revenue. Electrical Superintending Engineers of 13 Supply circles, Electrical Executive Engineers (EEE) of 34 supply divisions and Assistant Electrical Engineers of 110 supply sub-divisions assist JSEB headquarters in collection of revenue and in accounting. The generation of electricity bills is based on meter readings taken by Board authorities in 27 Electric Supply Divisions and meter reading taken by third party agencies in seven Electric Supply Divisions.

6.2.3 Audit objectives

Information technology based review on computerised billing package being used in JSEB was conducted for the period October 2002 to March 2004 in Electric Supply Divisions Urban I and Urban II of Ranchi Electric Supply Circle with a view to ascertain:

- ↘ The efficiency and effectiveness of the billing package in realising revenue from the consumers and
- ↘ Management of relationship by the JSEB with third party agencies to whom computerised billing process was outsourced so that business and revenue requirements of JSEB were achieved.

6.2.4 Scope and methodology of audit

For the purpose of this review, Electric Supply Circle, Ranchi under Ranchi Electric Supply Area was selected. This consisted of Urban-I, Urban-II and Ranchi Rural Electric Supply Divisions (ESDs). The work of meter reading, meter surveillance, computerised billing and bill distribution for Urban-I and Urban-II divisions was outsourced to three agencies – Prakriti Enterprises, Data Management Service Pvt. Ltd. And Vexcel Computer Pvt. Ltd. As per the contract, the three agencies were responsible for the work of meter reading, meter surveillance, computerised data logging and preparation of consumer bills and courier delivery of bills to consumers and to prepare and submit to the Board, Consumer Ledger and other related reports and statements and provide support/information/clarification in this regard as and when required. Hence, the entire work of billing which begins with meter reading at the consumer's premises and ends at delivery of monthly computerised bills to the consumers was entrusted to the third party service providers.

Computerised data maintained by the three service providers relating to the billing process was analysed using a Computer Assisted Audit Technique namely IDEA 2001(Interactive Data Extraction and Analysis) and MS Excel. Questionnaires were utilised to elicit information from the Board on outsourcing issues, evaluation of controls and management of contract with the vendors. In addition, audit of files relating to tender and billing section of Ranchi Urban-I and Urban-II divisions was also undertaken.

Data from 144 transaction files and 108 master files were analysed by using IDEA 2001 as well as filtering in MS Excel. Besides examining the data, the existence and adequacy of general IT controls in the package being run by the three agencies was also assessed.

Audit Findings

These findings were discussed with the Secretary, Energy, Government of Jharkhand on 26 April 2005. The Secretary agreed with the audit findings and recommendations and assured that suitable action would be taken.

Major audit findings are discussed below:

6.2.5 Outsourcing issues

Cost benefit analysis of outsourcing was not done

According to the Notice Inviting Tender, JSEB entrusted the work of meter reading, meter surveillance and meter billing to third party agencies to increase revenue and to increase effectiveness and accountability process. No planning documents existed in JSEB that documented the services to be outsourced and the current and expected costs. No Cost Benefit Analysis before outsourcing was done. JSEB also had not developed performance indicators or benchmarks prior to outsourcing in order to monitor the quality of services provided by the agencies and to achieve its goal of increasing revenue and increasing the effectiveness and accountability process. Over the period of audit, the cost of outsourcing had increased by 45 *per cent* whereas number of consumers increased by only 11 *per cent*.

Penalty was not levied on defaults committed by outsourced agency

JSEB also did not demonstrate the ability to implement and manage the relationship with the three external agencies. JSEB was completely dependent on the three agencies for periodical reports. Even though the EEEs, Urban-I and Urban-II Divisions claimed that monitoring of agencies' work was done, audit found that the Board did not have adequate mechanism to crosscheck or verify any of the reports prepared by the three agencies. Even though the contract provides for penalty, in no case was penalty ever levied; even for faulty meter reading. According to the agreement, JSEB to cross check at least 10 *per cent* of meter readings taken by the agency. During test check, Audit found that in the month of January 2003, JSEB cross checked only 159 meter readings of Urban-I Division which is 0.32 *per cent* of the total consumers. Records also showed that JSEB cross checked meter readings taken by agency of 211 CS-III consumers in December 2003, out of which 122 cases of short and 43 cases of excess meter readings were found. Thus, in 78.20 *per cent* of the meters checked, the reading taken by the agency was incorrect.

The Management stated (June 2005) that due to extreme shortage of staff, work of computerised energy billing was outsourced to competent agency. Management further stated that due to shortage of manpower, cost benefit analysis could not be done. Management also claimed that in the long term, outsourcing might prove economical.

The reply of the Management is not tenable as the agencies were not competent as was evident from their performance discussed above and in succeeding paragraph. The cost benefit analysis, before executing the agreement is a prime requirement of any contract which was completely ignored by JSEB. The claim that outsourcing might prove to be beneficial in the long term was unfounded in the absence of a cost benefit analysis.

6.2.6 Performance measurement and service level agreements

Though JSEB receives regular reports from service providers neither was any evidence available to indicate that JSEB uses these reports to manage the

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performance of service providers against agreed standards, nor was there any verification of the quality of these reports by the JSEB. Moreover, JSEB does not appear to have a performance measurement mechanism independent of regular reports from service providers.

Service Level Agreements, or similar documents, identify in a reasonably clear way the accountability arrangements between the agency and individual service providers. JSEB claimed that service level agreements were executed with the agencies but copies of agreements were not furnished to audit. In addition, there are no clearly identified personnel to manage the relationship with the external agency. Moreover, personnel dealing with the three agencies have no knowledge of IT and hence find it difficult to ensure compliance/detect violation of contract.

The management stated that the NIT prepared by the Board and agreements executed with the agencies had no provision to deploy IT personnel from the Board side. Management claimed that the Board had prepared scheme to train their staff in IT in future. The reply is not tenable as no 'Service Level Agreement' was executed. Further, Board is still contemplating imparting IT training to its staff.

6.2.7 Assessment of controls

Control activities are an integral part of an agency's planning, implementing, and reviewing processes. They are essential for proper stewardship and accountability of government resources and for achieving effective and efficient program results. General controls include the structure, policies, and procedures that apply to the agency's overall computer operations. It applies to all information systems, mainframe, minicomputer, network and end-user environments. General controls create the environment in which the agency's application systems operate.

It was observed in audit that two agencies (Prakriti Enterprises and Vexcel Computer Pvt. Ltd) had not laid down any computer security policy regarding safety of hardware and software. This could result in critical data being lost due to damage to software/hardware. Moreover, Audit found that there were no change management controls in place at the three agencies to modify the program due to any changes in business rules of the Board e.g. Changes in categories under new Low Tension Industrial Service (LTIS) [refer to para 6.2.9] where tariff notifications of 1993 and 2002 were not implemented till 2004. Thus the management has failed to assess the importance of control activities and no framework to assess control activities was put in place by JSEB.

The management noted the audit observation for future guidance.

Results of Data Analysis

6.2.8 Blockage of funds of Rs 30.54 lakh due to nameless consumers

Non realization of revenue of Rs. 30.54 lakh due to non recording of name and address of 362 consumers

The scope of work for agencies to whom the meter reading, meter surveillance, computerised billing and bill distribution for Electricity Supply Division (ESD), Urban-I was outsourced, stipulated preparation of master data files containing names and addresses of consumers and other details. Further, the agency has to provide consumer ledger, meter reading book and submit acknowledgement to the EEE every month for review as per the contract. For all these reports, names and addresses of the consumers are required. CAAT scrutiny of computerised billing database of consumers of Urban-I, Ranchi revealed that without recording names and addresses of 362 consumers, energy bills amounting to Rs 30.54 lakh were prepared and shown as delivered by the agencies during the period from October 2002 to March 2004. The cost of outsourcing on these works amounted to Rs. 0.32 lakh which were included in the monthly bills paid to the agencies as per agreement.

As the consumers names and address were not on record, energy bills could not have been served to them. This led to blocking of revenue to the extent of Rs 30.54 lakh and wasteful expenditure of Rs. 0.32 lakh incurred towards the cost of preparation and delivery of bills by the outsourcing agencies.

The Management, while accepting the audit observation, stated that corrective measures to trace the consumers had been taken and till identification of these consumer was done, billing had been stopped.

6.2.9 Incorrect categorisation of consumers resulting in loss of Rs.73.22 lakh to JSEB

Loss of revenue of Rs.73.22 lakh due to incorrect categorisation of consumers

As per Tariff Notification (1993) of the Board, commercial consumers (CS) having load upto 60 KW were to be categorised under new LTIS tariff which was applicable for use of electrical motor and other industrial appliances of less than 80 Horse Power. Consumers having load above 80 Horse Power/ 75 Kilo Volt Ampere/ 60 Kilo Watt were to be categorised and billed under High Tension tariff schedule. Further, the Jharkhand State Electricity Board's circular issued in August 2002 stated that existing LTIS consumers having a contract load of 107 Horse Power should be converted to High Tension category within two months from the issue of registered notice by the Board and be billed accordingly.

CAAT scrutiny of computerised database of energy billing system of Electric Supply Division, Urban-I, Ranchi for the period October 2002 to March 2004, revealed that contrary to the tariff provisions, five connections having loads between 144 HP & 115 KW were billed under CS-III tariff and one connection having connected load of 144 HP was billed under LTIS tariff instead of HT tariff. This resulted in loss of revenue to the tune of Rs. 73.22 lakh during the above period. Moreover no notice was served on the consumers for execution of fresh agreement under HT Tariff.

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The Management stated (June 2005) that the matter related to higher load detected by inspecting team rather than incorrect categorisation. The reply of management is not tenable as the consumers should have been categorised as per Bihar State Electricity Board (BSEB) tariff notification (1992) before executing the agreement with the consumers, which was not done in these cases.

6.2.10 Accumulation of arrears of Rs. 85.43 crore against the consumers

Arrears were allowed to accumulate upto 10 to 100 times the security deposit

As per clause 15.4 of Tariff Notification (1993) in case of non-payment of monthly energy bills, seven days notice is to be served to the consumers. Thereafter, their line is to be disconnected if no payment has been received within this period. In no case, the amount of arrears should exceed the security money deposited by the consumer. CAAT scrutiny of computerised database of energy billing systems of Electric Supply Division, Urban I and II for the period October 2002 to March 2004 revealed that against 1597 LTIS, 13,199 Commercial Service and 50,176 Domestic Service consumers, Rs 9.78 crore, Rs 42.82 crore and Rs 32.83 crore (total Rs 85.43 crore) respectively were shown as arrears of revenue upto March 2004. It was also noticed that arrears were allowed to accumulate upto 10 to 100 times the security deposit but notices for disconnection were not served by JSEB.

Audit scrutiny also revealed that overlooking the contractual scope of work, security deposits of consumers were not being recorded in the database by all the three computer agencies to whom the work of computerised billing was outsourced. Thus, due to incomplete entries in the database and lack of proper monitoring and non-adherence to tariff provisions by JSEB, arrears were allowed to accumulate. This defeated the very purpose of outsourcing for realisation of revenue that accumulated and remained unpaid to the tune of Rs 85.43 crore upto March 2004.

The Management accepted (June 2005) the audit observation and stated that sincere efforts had been initiated for recovery of dues and assured that in future, arrears would not be allowed to exceed three months security amount.

6.2.11 Loss of revenue of Rs.18.91 crore to JSEB due to cases becoming time barred.

Revenue amounting to Rs. 18.86 crore became irrecoverable

Scrutiny of computerised database of energy billing system of Electric Supply Division, Urban-I & II, Ranchi for the period October 2002 to March 2004 revealed that though the outsourcing agencies supplied lists of defaulting consumers to JSEB as per their scope of work, yet both the divisions neither took timely action for recovery of dues from defaulters nor were the consumers disconnected. This defeated the purpose for which outsourcing was resorted to. As a result thereof, the electricity dues aggregating to Rs 18.86 crore upto March 2004 against LTIS, domestic and commercial consumers became irrecoverable/time barred as per the Limitation Act. In the absence of proper monitoring, action was not taken by filing certificate cases against defaulters and disconnected consumers within the stipulated period of three

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years from the date of disconnection. It was also noticed that outsourcing agencies raised bills on disconnected consumers for the works of meter reading, preparation of bill, courier delivery of bills at the rates specified in agreement, the cost of outsourcing for these works amounted to Rs. 5.45 lakh which was included in the monthly bills paid to the outsourcing agencies. Thus, JSEB was left without any legal recourse for realisation of revenue of Rs 18.86 crore, which had become time barred and the expenditure of Rs. 5.45 lakh incurred on meter reading, bill preparation and delivery of bills proved to be nugatory.

The Management stated (June 2005) that in some instances certificate cases had been filed. Some consumers had been transferred to HT tariff and for the rest, efforts were being made to recover arrears. The reply of the management is not acceptable because no evidence of any certificate case was shown to audit. Audit contends that on time barred cases, change in the category of consumer is of no use in recovery of outstanding dues as the cases have already become time barred and thus barred from recovery.

6.2.12 Loss of revenue of Rs 22.74 lakh to JSEB due to less assessment

Analysis of computerised data of Electricity Supply Divisions (ESD) Urban –I and Urban – II for the period October 2002 to March 2004 revealed that unmetered connections were provided to 91 CS (Urban) consumers overlooking Board's norms which stipulated that no unmetered connection should be provided in township area (Urban area) for any category except DS–I and CS – I. Further, the outsourcing agencies, while raising energy bills resorted to billing on monthly minimum consumption or at the rate of 144 units per KW per month instead of 288 units per KW per month as per the provision of applicable clause 16.9 of Tariff Notification (1993). This resulted in short assessment of revenue to the tune of Rs 12.06 lakh as 7,59,355 units were short billed.

Provision of unmetered connections overlooking Board's norms, resulted in short assessment of Rs. 12.06 lakh

The Management stated (June 2005) that some progress had been made in installation of energy meters and balance would be installed within 15 days. The Management thus accepted its failure in providing service connections without energy meters in township area.

Non adoption of provisions of tariff notification relating to average billing resulted in short assessment Rs.10.68 lakh

Similarly in the case of average billing of CS consumers under ESD, Urban-I, Ranchi for the period October 2002 to March 2004, it was noticed that overlooking provisions of applicable clause 16.9 of Tariff Notification (1993), energy bills were raised for 2,082 CS consumers on average rate of 144 units per KW per month instead of 288 units per KW per month per consumer. This resulted in short assessment of revenue to the tune of Rs 10.68 lakh to JSEB as 6, 69,168 KW units were short billed.

The Management stated (June 2005) that clause-16.9 was applicable in case of theft of power only. The reply of the Management is not acceptable. This is because for DS category (having power factor of 0.20) average Billing was done at the rate of 144 units per month for consumers with defective meters.

But, in the case of CS Category consumers (having power factor of 0.40) average at the rate of 288 units per month per KW should have been charged.

6.2.13 Loss of Rs 40.27 lakh due to non-levy of delayed payment surcharge on amount kept in abeyance

Revenue amounting to Rs. 1.32 crore was kept in abeyance without specifying reasons and DPS amounting to Rs. 40.27 lakh was not levied

As per the provisions contained in clause 16.2 of the Tariff Notification (1993), if the consumer does not pay the bill in full by the date indicated in the bill, Delayed Payment Surcharge (DPS) at the rate of two *per cent* per month on the outstanding amount or part thereof for the period of delay is chargeable by the Board. Scrutiny of computerised database of energy billing system of ESD, Urban-I & II, Ranchi revealed that revenue amounting to Rs 1.32 crore was shown as kept in abeyance in the database of agencies i.e. pending for collection during the period October 2002 to March 2004. No reason for keeping the amount in abeyance was recorded by the Board. It was also noticed that the Board had not charged DPS amounting to Rs 40.27 lakh on amount kept in abeyance.

The Management stated (June 2005) that reasons for keeping amount in abeyance would be furnished. The reply of the Management is not tenable as the Management itself was not sure of the reasons for keeping the amount in abeyance.

6.2.14 Loss of Rs 25.05 lakh due to over payment to the external agencies

As per clause 2(A) & (B) (i) of the agreements for computerised Energy Billing system executed with the three agencies the payment was to be made to the agencies for the works of meter reading, processing, preparation and issuance of monthly energy bills for effective consumers, under clause 1(B) (ii) payment was to be made for courier delivery of bills to consumers and under clause (C) for quarterly surveillance of meter per consumer.

Overpayment of Rs. 4.31 lakh was made to outsourcing agencies

Test check of records revealed that agencies claimed payments for registered consumers, JSEB passed the bills of external agencies on effective consumers, which were less than the registered consumers as claimed by the agencies during the period of audit. Even then, the sum total of running (Effective) consumers which were paid by the Electric Supply Circle, Ranchi was higher than the running consumers as recorded in Revenue statement-I maintained in the two Electric Supply Division. This resulted in over payment of Rs 4.31 lakh to the external agencies.

Further, as per the contract, the external agencies were to be paid according to number of effective consumers. But in April 2003 Ranchi, Electric Supply Area, issued letter in which payment terms were altered, that is, payment on “effective consumers” were changed to payment on “registered consumer”. This change in nomenclature from effective consumers to registered consumers increased the number of consumers without corresponding increase in the actual work, as 6171 consumers were disconnected.

Alteration in payment terms resulted in over payment of Rs. 20.74 lakh

The records showing such payments to the external agencies were not produced to audit. Over payment of Rs. 20.74 lakh as worked out by audit from the scope of work (which specifies payment for meter reading, bill preparation, bill issue and courier delivery & surveillance) cannot be ruled out.

6.2.15 Non adherence to contract provisions by the agencies

Additional security deposit bills were not raised by outsourcing agencies and no penalty for default was imposed

As per clause 15.3 (C) of the Tariff Notification (1993), if half of the aggregate amount of six months bill from April to September or from October to March exceeded by 20 *per cent* of the existing security deposit, the same was to be enhanced to that extent and consumers were to be served notice to deposit additional security. As per the scope of work issued to external agencies, they were to do a six monthly review of security deposits of consumers as per tariff provisions and issue additional security bills, if required. Further, they are required to compute annual interest on security deposit and make adjustments of the same in the bills of the consumers in the month of April every year. Scrutiny of computerised database revealed that all the three agencies were not making entries regarding security money deposited by each consumer. As a result, they are unable to issue additional security bills or compute annual interest on security deposit. Consequently, arrears against defaulting consumers could not be recovered from the security money resulting in loss to the Board. In addition, the Board's accounts could not reflect correct liability to that extent. Moreover, no penalty was imposed on the external agencies for this default.

The Management stated (June 2005) that review of security amount could not be done in absence of records and shortage of manpower. Further, external agencies were being pressurised to review security amount and issue additional security bills. The reply of the Management is not acceptable as the scope of work of the contract clearly spelt out review of security deposit and issuance of additional security deposit bills by the external agencies, which was not done even in a single case.

The matter was reported to the Government/Board (May/September 2005); their replies had not been received so far.

6.2.16 Conclusion

JSEB has outsourced electricity billing for the Ranchi Electric Supply Circle to three external agencies who prepare and deliver computerised bills to the consumers falling under this supply circle. Audit found that the three external service providers prepared inaccurate bills by applying incorrect tariff, charges like energy charges were not billed and undue benefit was given to consumers. There were cases of short assessment, non-levy of Delayed Payment Surcharge and time barred cases. Neither was the performance of the three external agencies monitored by JSEB nor were they penalised for non-fulfillment of contractual obligations like maintaining full address of consumers, making entry of security deposit in the database and reviewing additional requirement of security deposit. As a result JSEB lost revenue of Rs. 20.52 crore and Rs 85.74 crore were blocked.

6.2.17 Recommendations

Government / Board should:

- * draw up specific performance indicators to measure and monitor the performance of the third party agencies.
- * ensure that the tariff billed and collected was according to the rules of the organisation and any changes in the tariff provisions should be implemented immediately by the third party agencies.
- * ensure that the service providers perform all the work allotted to them as per the contract/scope of work.
- * take timely action to disconnect lines of defaulters and file certificate cases against them.