

Chapter II

2. Performance reviews relating to Statutory Corporations

2.1 Performance review on Material management in Transmission and Distribution wings of Bihar State Electricity Board

Highlights

Materials valuing Rs. 2.39 crore were purchased in excess of the requirement.

(Paragraph 2.1.13)

The Board incurred unfruitful expenditure of Rs. 16.47 crore on purchase and installation of electronic meters and avoidable expenditure of Rs. 1.99 crore on purchase and transportation of PSC poles.

(Paragraphs 2.1.16, 2.1.17 and 2.1.18)

Annual Physical verification of stores was not carried out as per norms.

(Paragraph 2.1.19)

Stores valued Rs. 18.20 crore had not moved for more than five years and stores worth Rs. 1.5 crore were lying idle in locked stores.

(Paragraph 2.1.25)

The Board lost Rs. 3.24 crore due to inadequate action in cases relating to theft of materials.

(Paragraphs 2.1.21 and 2.1.22)

Out of total scrap of Rs. 44.53 crore, the Board disposed of scrap valuing Rs. 7.45 crore (17 per cent) during the period 2004-08 and scrap worth Rs. 37.08 crore was lying undisposed.

(Paragraph 2.1.26)

Priced store ledger and stores abstract book were not being maintained showing the absence of an effective system of stock reconciliation.

(Paragraph 2.1.28)

Introduction

2.1.1 Bihar State Electricity Board (Board) was formed on 1 April 1958 under section 5 of the Electricity (Supply) Act, 1948, mainly to supply electricity within the State. The Board is involved in generation, transmission and distribution of energy. To enable the Board to create and maintain its

infrastructure, materials and stores play a vital and effective role necessitating the need for adequate and proper material management.

The procurement of required materials is processed by the Central Purchase Committee (CPC). The Chief Engineer (Transmission) at Board headquarters procures the materials for transmission wing and the Chief Engineer (Stores & Purchase) for the distribution wing. Besides, the General Managers cum Chief Engineers of the two transmission zones and seven area Boards make purchases for the zones/area boards. Further, Superintending Engineers of the circles are delegated with power to procure materials for seven transmission and sixteen supply circles through Local Purchase Committees (LPC).

A review on material management in transmission and distribution wing of the Bihar State Electricity Board featured in the Report of the Comptroller and Auditor General of India for the year 1997-98 (Commercial), Bihar. The Report was yet (October 2008) to be discussed by the Committee on Public Undertakings.

The Bihar State Electricity Board is headed by a Chairman who is assisted by Member (Finance and Revenue), Member (Distribution and R.E.) and Member (Generation and Transmission).

Scope of Audit

2.1.2 The present review covers the performance of the Board in planning, procurement and utilization of the line materials for the five year period ended 31 March 2007¹. The activities of the Board were reviewed during the period from October 2007 to April 2008, covering Board Headquarters, five out of nine area boards/ zones (55 *per cent*) and 12 out of 23 supply/transmission circles (43 *per cent*) including stores, which were selected on the basis of despatch allocation and volume of purchase of materials (Rs. 270.72 crore, i.e., 66.25 *per cent*). Purchase transactions made during 2007-08 valued Rs. 53 crore were also selected for test check.

Audit Objectives

2.1.3 The performance review of material management in Bihar State Electricity Board was carried out to assess whether:

- the proper assessment of requirement of material was made before the purchase;
- the purchases were made ensuring economy while adhering to the laid down procedures and the materials procured were properly accounted for;
- physical verification of stocks was carried out as per norms and shortages/excess found were analysed promptly;
- the materials were guarded against theft/pilferage/overstocking etc;
- the materials procured were issued to the users promptly; and

¹ Figures for 2007-08 are not available.

- obsolete, unserviceable and condemned stores were duly identified and reported for disposal and these were disposed of in the best interest of the Board.

Audit criteria

2.1.4 The audit criteria, adopted for assessing the achievement of audit objectives were:

- Provisions of the Electricity (Supply) Act, 1948 and Electricity Act, 2003;
- Delegation of financial powers to the officers of the Bihar State Electricity Board;
- Financial and Account Code, Chapter-VII (Stores) (store manual).

Audit methodology

2.1.5 The following mix of methodologies was adopted:

- analysis of indents, Notice Inviting Tenders (NITs), Management Information System (MIS) returns and material budgets;
- review and analysis of Purchase Order files, deliberation of CPC/ LPC, registers and reports from user departments and case files relating to default and defective supply;
- review and analysis of reports of stores officers, reports on inspections, reports to authorities/ suppliers and MIS returns;
- review and analysis of records maintained at stores, survey committee reports, etc.

Audit findings

2.1.6 The audit findings were reported to the Government/Board in June 2008 and discussed in the meeting of the Audit Review Committee for Public Sector Enterprises (ARCPSE) held on 12 September 2008 which was attended by the Secretary, Energy Department, Government of Bihar and the Chairman, Bihar State Electricity Board. The views expressed by the Management have been taken into consideration while finalising the performance review.

The Audit findings are discussed in succeeding paragraphs.

Material management

2.1.7 Material Management is an integrated Management approach to efficient planning, economic procurement and efficient utilisation of material inputs to control material cost and inventories to ensure uniform flow of materials of requisite quality and quantity at the appropriate time with minimum storage cost.

Planning

2.1.8 The main functions of Planning Department of the Board were as follows:

- Formulation, implementation and monitoring of five year plan and annual programme,
- Preparation of annual development programme and material budget,
- Compilation of statistical data from field offices, and
- Preparation of monthly administrative report and annual progress reports.

Audit observed that electricity statistics report were prepared only up to 1999-2000. Though the Board prepared annual budgets for generation, purchase and sale of energy, the same were not communicated to the concerned units. As a result the Board could not monitor their performance.

The Chief Engineer (Planning) stated that monitoring of plans was not possible due to shortage of officers and staff. The Planning Wing in the Board is not functioning as required for the various functions stated above.

Assessment of requirement

2.1.9 To ensure efficient control over stores, proper estimates of requirements have to be made keeping in view the principles of material management which includes ABC value analysis and movement analysis. As per F&A Code, half-yearly indents for the periods ending 30 September and 31 March must be prepared in the sub stores and divisional stores and submitted to the Circle Superintending Engineer. These indents should reach the Superintending Engineer (Store & Purchase) by 15 January and 15 July respectively, from the Circle Superintending Engineers. This system has not been followed by the Board.

It was observed in Audit that:

- The Board had not followed the above system of assessment of requirements.
- Though the Board evolved a system of fixing limits for inventory holding, the same could not be followed due to discontinuance of maintenance of Bin cards in stores and as such the assessment of requirements was not worked out scientifically.
- The Board had prepared its requirements on ad hoc basis rather than on realistic basis.

Purchase procedure

2.1.10 As per Para 7-21 of the F&A Code of the Board all stores for construction, operation and other activities of the Board are purchased through a Central Purchase Committee (CPC) working at Headquarters. According to the delegation of financial powers issued in July 2000, the Board has full

power to purchase the materials. However, it has delegated its powers to a Central Purchase Committee to the extent of Rs. 5 crore in each case, Chief Engineers of Headquarters up to Rs. 50 lakh, General Manager-cum-Chief Engineers of area boards/zones up to Rs. 10 lakh limited to Rs. 50 lakh in a year and Electrical Superintending Engineers up to Rs. 1 lakh limited to Rs. 5 lakh in a year.

Deficiencies in procedure

2.1.11 A review of the purchase procedure followed for purchases at the Headquarter and in the field offices revealed the following deficiencies:

- Non preparation of material budgeting on scientific basis to control inventory holdings;
- Non- maintenance of register of purchase orders and suppliers to indicate the commitments made and liabilities of the Board;
- Non-evolution of a vendor rating system or a data bank of vendors relating to their performance on the past supplies of materials and their manufacturing facilities based on site visits for helping in future procurement;
- Absence of standardised specification for various major supply items/materials;
- Absence of any system to compare to actual quantity procured against quantity approval obtained from the Board/sub committee meetings;
- Non recording of reasons for going in for limited tenders instead of open tenders;
- Non-adoption of a system to ascertain the minimum and maximum stock levels defeating the purpose of correct assessment of materials; and
- Absence of procedure of pre despatch of materials.

Details of purchase

2.1.12 The details of opening balance, purchases, consumption and balances of stock held in respect of transmission and distribution wings during 2003-07 as per Annual Accounts of the Board are given below:

(Amount: Rupees in crore)

Particulars	2002-03	2003-04	2004-05	2005-06	2006-07
(A) Opening balance	101.50	106.43	94.54	97.95	113.00
(B) Purchases	53.70	79.37	100.80	87.29	87.47
(C) Total (A+B)	155.20	185.80	195.34	185.24	200.47
(D) Issue for consumption	55.34	93.87	99.99	69.59	112.50

(E) Issue to contractors	(-)6.57	(-)2.61	(-)2.60	2.65	Nil
(F) Net issue (D+E)	48.77	91.26	97.39	72.24	112.50
(G) Closing balance(C-F)	106.43	94.54	97.95	113.00	87.97
Percentage of closing balance over annual consumption (Net issue)	218	104	101	156	78
Closing stock in number of month's consumption	26	12	12	19	9

Note : Figures for 2007-08 are not available.

The closing balance of stock as a percentage of consumption has remained high though it decreased in 2006-07. The Board has not finalised the norms for inventory level. This, coupled with absence of proper system for assessment of requirement, has resulted in huge piling up of stores as discussed in succeeding paragraphs. It was also observed that the Board has not adopted any system of ABC value analysis and movement analysis.

Purchase in excess of requirement

2.1.13 As per para 7-21 of F&A Code all stores required must be consolidated and purchases effected in the most economical manner. Audit observed that the Board purchased (October 2005) 1164 MT GI wire no. 8 valuing Rs. 4.20 crore for use in RE and other works. As per the despatch instructions, materials were allocated to 12 central stores. A test check of seven stores revealed that in four central stores 729.35 MT wire was received (January 2006) while the issue was only 66.278 MT (9 *per cent*) during the period 2006-08. The balance material 663.072 MT valuing Rs. 2.39 crore was still lying in the stores. Audit scrutiny revealed that the materials were despatched to the stores without any indent for requirement from these stores. This had resulted in blocking of fund of Rs. 2.39 crore and consequent loss of interest of Rs. 62.00 lakh at 13 *per cent* for two years.

The Board admitted the fact and replied (September 2008) that materials could not be used due to shortage of matching materials. These would be used in Rural Electrification work to be undertaken by the Board in future. The reply confirms the fact that the Board had purchased the material without assessing the requirement, leading to blocking of fund of Rs. 2.39 crore.

Delay in finalisation of tenders

2.1.14 As per para 7-34 of F&A Code, the acceptance of the tender shall be communicated as soon as possible and not later than a week after the opening of tenders. As delays in acceptance result in the tenderers withdrawing due to fluctuations in the market prices and results in subsequent purchase at higher rate, the acceptance is to be sent with utmost expeditiousness. But, it was observed that these provisions were not followed by the Board.

A test check of tenders finalised during April 2004 to September 2007 revealed delays in finalisation of tenders against prescribed norms which resulted in avoidable expenditure on purchases as discussed below:

GI wire No. 8 worth Rs. 2.39 crore was purchased in excess of requirement.

Avoidable expenditure on purchase of SF-6 Gas cylinders

2.1.15 Tender for procurement of 76 no. SF-6 Gas (an operation & maintenance item required for functioning of 145 and 245 KV SF-6 circuit breakers installed at various Grid Sub Stations) cylinders (containing 26 Kgs SF-6 Gas) was invited (June 2005) by the Board. Among the three valid tenders received the price quoted by M/s Ajay Air Products Limited was the lowest. The price quoted was valid for 240 days (upto 26 February 2006) from the date of opening (1 July 2005). A purchase order was issued (March 2006) for Rs. 23.00 lakh to M/s Ajay Air Products Ltd after delay of nine months and beyond the price validity period. However, the supplier did not respond to the Board's purchase order. A fresh tender was invited (July 2006) and 57 nos of cylinders were purchased (August 2007) from M/s SMS Multitech India Pvt Ltd for Rs. 36.12 lakh and 19 nos of cylinders were purchased (October 2007) from M/s Vadilal Chemical Ltd for Rs. 12.04 lakh. Thus, due to delay in finalisation of purchase order, the Board had to pay Rs. 48.16 lakh as against Rs. 23.00 lakh, resulting in avoidable expenditure of Rs. 25.16 lakh.

Avoidable expenditure of Rs. 24.66 lakh was made on purchase of SF-6 Gas cylinders.

The Board admitted the fact and stated (September 2008) that the firm has been debarred from participating in three subsequent tenders of BSEB and their earnest money amounting to Rs. 0.50 lakh was also forfeited. But the fact remained that the avoidable expenditure of Rs. 24.66 lakh (Rs. 25.16 lakh – forfeited amount Rs. 0.50 lakh) has already been incurred. Moreover, no action has been taken against the officials of the Board responsible for making inordinate delay in finalising the purchase order and causing loss to the Board.

Unfruitful expenditure in supply/installation of defective electronic meters

2.1.16 The Board decided (September 2002) to replace normal electro mechanical meters by tamper proof electronics meters to ensure the accurate reading of consumers meters and to avoid the tampering of meter readings. Tender was invited (September 2002) for supply, installation, testing and commissioning of 2,46,300 single phase whole current static energy meters with antitamper features. Purchase orders were issued (November 2003) to M/s Jenus Overseas Electrical Ltd., Jaipur, M/s ECE Ind. Ltd., Hyderabad, M/s TTL Ltd., Delhi and M/s EMCO Ltd, Thane for supply, installations, testing and commissioning of 1,26,300, 40,000, 40,000 and 40,000 nos. of meters respectively at the rate of Rs. 935.83 per meter (Rs. 755.83 for supply and Rs. 180.00 for installation) in a phased manner. As per the terms & conditions of the purchase order, the meters were to be protected against fraudulence and jamming by spurious signal injection/high magnetic field application. Further as per clause 19 & 20 of purchase order, meters were to be inspected by the Board representatives during the process of manufacturing and all tests were to be carried out on each individual meter and meter box by the contractor prior to despatch.

Audit observed that:

- The compliance of clauses of the purchase order regarding provision of antitheft feature by the suppliers were not ensured by the Board before supply. After receipt of complaint in meters installed at Patna, an enquiry committee was constituted.

- Test check of meters supplied was made on 10 March 2006 and 16 May 2006 at Board's Laboratory.
- It was found that the Meters supplied by three suppliers out of four (except M/s EMCO) were found (March 2006) defective as they were not found protected against tampering and meter jamming by spurious signal injection/high magnetic field application which was essential as per the conditions of purchase order.
- The samples of defective meters were sent to CPRI¹, Bangalore for detailed testing. The CPRI opined (August 2006) that the meters were mal-functioning due to improper filtering provided in the meter design and suggested to connect a capacitor of 0.25 μ F inside the meter depending upon the rating of the meter and the box need to be sealed.
- As per suggestion of CPRI, the suppliers were asked to provide the required filters in the meter before installation. However, 1,75,981 meters already installed have been left untouched due to huge amount involved in the de-installation, reopening and reinstallation of meters after providing necessary filter. Hence these meters were prone to tampering.

Unfruitful expenditure of Rs. 16.47 crore was made on purchase of meters.

Thus due to failure of the Board in ensuring compliance of provisions of the purchase order, the expenditure of Rs. 16.47 crore² incurred on purchase and installation of these meters had become unfruitful. Besides the purpose of installing these tamper proof meters by removing already installed normal electro-mechanical meters could not be achieved.

The Board stated (September 2008) that all necessary specifications required to avoid tampering of the meters were incorporated in the purchase orders and checks were carried out but new technologies for tampering with the meters were evolved by the consumers which resulted in malfunctioning of the meters. The reply is not in consonance with the fact that out of four suppliers, meters supplied by one supplier were found to be tamperproof and the meters supplied by other suppliers were found defective due to provision of improper filter which required rectification by adding additional filter. Besides, the fact remained that the meters worth Rs. 16.47 crore which were already installed without proper rectification, were still susceptible and not protected against tampering.

Avoidable expenditure on purchase/transportation of PSC poles

2.1.17 Audit noticed (November 2007) that the pole units could cast 1,04,463 poles (62.63 *per cent*) only during 2002-05 against the set target of 1,66,800 resulting in shortfall of 62,337 poles (37.37 *per cent*). The Board purchased balance quantity of 62,337 poles from market at an average price of Rs. 1,122 per pole as against average cost of production of Rs. 874 per pole,

¹ Central Power Research Institute

² 1,75,981 x Rs. 935.83

The Board incurred avoidable expenditure of Rs. 1.99 crore on purchase and transportation of PSC pole.

leading to an extra expenditure of Rs. 1.55 crore being the differential amount between the purchase price and the production cost of poles. The reasons for the shortfall in production as attributed by the Board were shortage of input materials viz. Ordinary Portland Cement and High Tensile Steel wire etc.

Had the Board optimally utilised its resources by ensuring the availability of input materials at their pole manufacturing units through proper planning and procurement, and achieved the target fixed by itself, the extra expenditure of Rs. 1.55 crore could have been avoided.

2.1.18 In Magadh Electricity Supply Area, Gaya (MESA), one PSC pole unit at Barun could not fulfill the requirements of PSC poles in MESA due to production of 11,009 poles lower than the target during 2003-05. In that period 8,644 nos PSC poles were procured from the pole unit, Muzaffarpur and transportation charges were paid to the tune of Rs. 44.11 lakh. Had the pole unit, Barun achieved its target, transportation charges of Rs. 44.11 lakh could have been saved. Thus, the Board incurred avoidable expenditure of Rs. 44.11 lakh on transportation due to non achievement of targets by the pole unit, Barun.

The Board while accepting the fact stated (February 2008) that the manufacturing activity of the units was affected due to shortage of materials, delay in payment to the contractors, stagnation of poles on the platform due to non-lifting of poles in time by the allottees, non-availability of labour in time and frequent interruption of power supply, and therefore the poles were purchased from outside to meet urgent requirements. The reply is not acceptable as the units were established for captive production of the Board and all the above stated factors were controllable by the Board through proper planning, execution and monitoring the activities of the pole units.

Physical verification of stores

2.1.19 Clause 7-141 of F&A Code provided for physical verification of stores annually. This is also essential in order to depict the true and fair view of stock held by the Board at the close of the year. The F&A code also provided that shortages found in physical verification should be debited to personal accounts of the store keeper, pending recovery from the person responsible, or written off as the case may be.

The table below indicates number of stores available for verification, physical verification carried out in the stores by the Board during 2003-08, percentage of verification and the shortages noticed in eight¹ test checked stores during the period 2003-08 by Audit:

¹ Central Store Bihar Sharif, Bhagalpur, Chapra, Digha, Gaya, Motihari, Muzaffarpur and PESU.

Year	No of stores available for verification	No of stores verified	Percentage of verification	Shortages (In 8 test checked stores) (Rupees in lakh)
2003-04	72	32	44	16.60
2004-05	72	28	39	27.87
2005-06	72	05	07	5.82
2006-07	72	21	29	Nil
2007-08	72	32	44	4.04
Total				54.33

It would be observed from the table that:

- The Board had not compiled the total shortages found during the above verification.
- There was a failure to ensure 100 *per cent* verification.
- Audit observed that in eight test checked stores the shortages worth Rs. 54.33 lakh were found in 563 items in these stores (**Annexure-12**). No action had been taken against the officials responsible for such shortages by the Board.

The Management accepted the point and stated that shortages were being regularised.

Deficiencies noticed in physical verification

2.1.20 Audit further noticed the following deficiencies in physical verification:

- PSC poles and Rail poles worth Rs. 82.01 lakh were found short for which 14 Assistant Engineers were held responsible in 1993. No action for recovery has been taken till date (September 2008).
- Shortage of 23 items of stores worth Rs. 3.65 lakh was found in physical verification conducted in year 2001 for which Ex. Assistant Store keeper was held responsible by EEE store, Gaya (December 2005) but no action has been taken in this regard till date (September 2008).
- Materials worth Rs. 4.03 lakh was found short during physical verification of central stores, Muzaffarpur in 2003-04. No action has been taken as yet.

The Board accepted the audit findings and replied that action against the responsible persons was being taken.

Theft of materials

2.1.21 The theft of conductors in distribution wing and tower parts in transmission wing was a regular feature in the Board. As soon as theft occurred, an FIR was to be lodged in the respective police stations for speedy recovery of the materials from the miscreants. The total number of cases of

theft of materials during the five years ended 31 March 2008 and value thereof were as indicated below :

Year	No. of cases	Value (Rupees in crore)
2003-04	89	0.50
2004-05	116	0.61
2005-06	129	0.81
2006-07	157	0.66
2007-08	37	0.66
Total	528	3.24

It can be seen from the above table that there was an increasing trend in theft of materials till 2006-07. However, the number of cases reduced in 2007-08 but the value of stolen materials hovered around Rs. 65 lakh.

2.1.22 There existed instruction of the Board for filing of FIRs in all cases of theft and seeking assistance from the Director, Security in case of any difficulty in filing of FIRs. It can, however, be seen from the table below that only in 44.32 *per cent* of the cases, the Board filed the FIRs with the police authorities through direct lodging of FIR/by post :

Year	Total No. of theft cases	No. of cases where FIR lodged/posted	Percentage of cases
2003-04	89	65	73.03
2004-05	116	42	36.21
2005-06	129	22	17.05
2006-07	157	77	49.04
2007-08	37	28	75.68
Total	528	234	44.32

- Only in three cases involving Rs. 2.88 lakh, FIRs were filed directly;
- Intimation of theft was sent to police stations by post in 231 cases (44 *per cent*) involving Rs. 1.16 crore. But the confirmation of acceptance of information by the police had not been obtained and kept on record. No further action was taken to pursue the cases sent by post; and
- No action was taken in 294 cases (56 *per cent*) involving Rs. 1.74 crore.

Thus, due to lackadaisical approach of the Board in filing FIRs in theft cases and low rate of lodging of FIRs coupled with poor follow up of the cases resulted in non recovery of materials worth Rs. 3.24 crore.

The Board replied that FIR was being lodged in each theft incident. The reply is not factually correct as can be seen from the above table.

As per para 7.162 of the Financial and Account code (Chapter –VII) of the Board, the field offices had to submit report of loss due to theft to the Superintending Engineer (SE) with a copy marked to Accounts Officer. However, both the transmission and distribution wings and stores were not regular in submitting the reports to the SE. Thus the Board had failed to ensure compliance with its instructions regarding reporting and follow up of theft cases.

2.1.23 Audit analysis of the data on theft of materials revealed that out of seven circles/areas of transmission and distribution wings of the Board, two circles/areas represented 70.68 *per cent* of the value of reported theft cases as shown below :

(Amount : Rupees in crore)

Year	Details of theft		Share of Patna circles/areas		Share of Muzaffarpur circles / areas		Total value of the two circles / areas	Percentage
	No.	Amount	No.	Amount	No.	Amount	Amount	
2003-04	89	0.50	41	0.19	19	0.15	0.34	68.00
2004-05	116	0.61	22	0.16	41	0.18	0.34	55.74
2005-06	129	0.81	74	0.54	10	0.09	0.63	77.78
2006-07	157	0.66	51	0.18	35	0.28	0.46	69.70
2007-08	37	0.66	23	0.52	00	00	0.52	78.79
Total	528	3.24	211	1.59	105	0.70	2.29	70.68

The two regions viz., Patna and Muzaffarpur were theft prone areas/circles and preventive measures had to be taken such as (a) regular patrolling of LT lines in distribution wings, (b) arranging secret night patrolling, and (c) seeking assistance of police with the help of Director, Security in these areas. However, Audit noticed that there was nothing on record to show that the Board was overseeing implementation of these measures.

Inventory Control and Store Management

Ineffective inventory management

2.1.24 Inventory management plays a key role in material management so as to avoid unnecessary holding of materials leading to locking of fund, more inventory carrying cost and lack of space etc. The Board had no effective inventory management so as to facilitate identifying of obsolete, non moving, slow moving and active/moving items, besides fixing the limit for holding of inventory level viz. minimum, maximum, optimum etc. and reviewing the same periodically.

Materials lying in stores

2.1.25 As per F&A Code, the details of material received in store and issued should be sent to CE (S&P) monthly whereas details of idle materials along with scrap and unserviceable materials are to be sent to him annually by all central stores for compilation and disposal but this was not being followed by the Board.

However, on the basis of eight stores test checked in audit the position of closing stock of materials held at the end of each year during 2003-08 was as under:

(Amount: Rupees in crore)

Particulars	No of items	Year wise amount of inventory held					Remarks (Issuance)
		2003-04	2004-05	2005-06	2006-07	2007-08	
Non moving	226	18.20	18.20	18.20	18.20	18.20	No issue for five years
Slow moving	39	8.73	6.48	8.72	9.16	7.84	
Total stagnant store	265	26.93	24.68	26.92	27.36	26.04	
Active/moving materials	34	4.35	3.91	3.28	6.69	11.36	
Total	299	31.28	28.59	30.20	34.05	37.40	
Percentage of stagnant store to total inventory	89	86	86	89	80	70	

Materials worth Rs. 18.20 crore were lying idle for more than five years.

It would be observed from the table that 226 items of store valued at Rs. 18.20 crore has not moved for more that five years and 39 items of stores valued at Rs. 6.48 to 9.16 crore were slow moving leading to the blocking of fund and inventory carrying cost. Thus, the stagnant stores (265 items) worked out to 89 per cent of the total 299 items and 70 to 89 per cent of the total value of inventory held.

The Board accepted the fact and replied that out of 226 non-moving materials 87 materials were required for maintenance work and would be used in future while 139 items were obsolete and their process of disposal was being initiated.

Audit scrutiny of records in eight stores further revealed the following:

- ACSR Moose conductor (500Km) was purchased by the Board (June 1992) at a cost of Rs. 4.21 crores for use in Tenughat-Biharsarif 400KV transmission line. Out of this 359.301 Kms was used in the line and remaining 140.699 Kms was sent to three transmission stores during January 1993 to April 1997 (Begusarai- 51.234 Kms, Bodh Gaya -29.465 Kms and Biharsharif-60.00 Kms) without requirement. It was observed that no issue has been made from the above stores so far (April 2008). Meanwhile, 7.783 Kms conductors worth Rs. 6.55 lakh and conductors valuing Rs. 3.00 lakh had been stolen from Begusarai (May 2006) and Biharsharif (January 2006) respectively. Thus, total 140.469 Kms Moose conductor worth Rs. 1.18 crore was purchased without requirement. As Moose conductor could be used only in 400

Moose conductor worth Rs. 1.18 crore was purchased without requirement.

KV transmission lines, for which there was no proposal/scheme with the Board, this has resulted in infructuous expenditure.

The Board replied (September 2008) that balance Moose conductor would be used in new grids and lines of 220/132KV. The fact, however, remained that the material was not used in the last 15 years and there was no proposal/scheme with the Board for 400KV transmission line for which the Moose conductor was meant.

Materials worth Rs. 1.5 crore were lying for five years.

- Sri Baidyanath Giri, store keeper central store, Gaya was in additional charge of MRT store Gaya. He retired from service on 31 December 2003 but charge of these two stores was not handed over to other staff and stores were lying locked since then. 385 items of stores worth Rs. one crore in central store, Gaya and 374 items worth Rs. 50 lakh in MRT store, Gaya were lying unused for five years. The Board failed to unlock the stores and prepare inventory list till date (September 2008). Sri Giri has been paid all his retirement benefits including gratuity.

The Board accepted the audit observation and replied that GM cum CE Supply Area Board, Gaya has been directed to unlock the store in presence of a Magistrate and prepare inventory of the materials.

- As per the reports of investigation, equipments valued at Rs. 2.98 crore were found obsolete and certain parts were stolen and damaged in the grid sub station, Begusarai under transmission circle, Purnea which was under construction. No action had been taken on the reports of investigation.

Non disposal of Scrap

2.1.26 Timely replacement of rejected materials and regular disposal of scrap is necessary to prevent deterioration in quality and value of scrap. As per F&A Code all scrap materials including copper, brass, lead, iron and aluminum should be returned to the stores with a devaluation note for giving credit to the works. It was found in Audit that old, unserviceable and scrap materials were lying in different sub-stations/sub-divisions which were not returned to stores and thus not accounted for. Out of total scrap of Rs. 44.53 crore as on 31 March 2004, scrap valuing Rs. 7.45 crore (17 per cent) was disposed of during the period 2004-08 and scrap worth Rs. 37.08 crore was still lying undisposed. Due to passage of time, the reduction in the value of scrap could not be ruled out.

Scrap materials worth Rs. 37.08 crore were not disposed of.

The Board replied (September 2008) that old, unserviceable and scrap materials worth Rs. 1.81 crore has been disposed of during year 2008-09. Thus, disposal of scrap materials was being done regularly. The fact remained that the process of disposal of scrap material was very slow. At this rate of disposal, it would take more than ten years to dispose of the entire material besides there would be further accumulation of scrap during the intervening period.

Advances to suppliers

2.1.27 Advances made to the suppliers/contractors amounting to Rs. 32.09 crore were pending adjustment as on 31 March 2006¹. A test check of such advances at eight stores revealed that the advances were not being adjusted promptly/correctly. The balances shown as outstanding include amounts pertaining to periods as early as 1988-89.

Audit scrutiny revealed that:

- In respect of advances of Rs. 1.38 crore relating to Bihar Sharif Transmission Circle (Rs. 0.75 crore) and Head office (Rs. 0.63 crore), party-wise and age-wise details were not made available to audit. These advances were being carried forward in the accounts for a long time, and were not adjusted for want of documentation/linkage and possibility of recovery/adjustment was remote.
- An amount of Rs. 4.69 lakh was booked under the sub-head 'Advances to Contractor' (Transmission Circle, Muzaffarpur). This represented the remaining amount of advances yet to be recovered from M/s Light & Co., Allahabad, which was paid prior to 1989, for construction of 220 KV MTPS-Begusarai transmission line. The contract of the agency was already closed prior to 1998 and no recovery was effected from its final bill.
- An amount of Rs. 25.15 crore being the amount advanced long back to suppliers in Barauni Thermal Power Station (Rs. 24.30 crore), Electric Supply Circle (ESC), Bhagalpur (Rs. 31.15 lakh), ESC Gaya (Rs. 43.57 lakh) and Advance to O&M suppliers in ESC Bhojpur (Rs. 7.40 lakh) and Electric Transmissin Circle (ETC) Gaya (Rs. 0.22 lakh), ETC Patna (Rs. 1.01 lakh) and Head office (Rs. 2.27 crore). Though the materials have been received and consumed, the adjustment to this effect has not been made, for want of documentation.

Non Maintenance of Priced Store Ledger

2.1.28 As per para 7-70 and 7-71 of F&A Code priced store ledger is to be maintained both in store pricing section and account section of the Board headquarter in EBS form -16 and stores abstract book is to be maintained at Board headquarter in form EBS -18. Audit observed (September 2008) that priced store ledger and stores abstract book were not maintained. In view of this, the existence and effectiveness of a system of reconciliation of quantitative stores ledger with the prices stores ledger and with financial accounts could not be ensured.

¹ Accounts were finalised upto 31 March 2006 only. Figures as on 31 March 2008 were not available.

Internal control and internal audit

Internal control

2.1.29 Internal control is a management tool used to provide reasonable assurance that objectives are being achieved in an economical, efficient and orderly manner. The Board prescribed furnishing of returns, reports and other information by various units to ensure the availability of materials in right quantities at the right time, to avoid locking up of funds in inventory and stock out situation, etc. Audit observed that:

- There was no system to watch the periodical receipt of such returns from all the officers handling the stores.
- No record was maintained to show the manner in which the returns so received had been put to use.
- The Board did not have a procurement system to guide its various departments dealing with procurement activities and to ensure proper assessment of requirement of materials.
- The Board had not evolved a vendor rating system.
- There was no system of ABC analysis of stores in the Board to control the inventory on the basis of value.
- The physical verification of stores was not carried out regularly. Discrepancies noticed during physical verification were not accounted for in the Books of account.
- There was no system of timely investigation and adjustments thereof of loss/damage of materials due to thefts in completed and ongoing capital works.
- There was no system of timely identification, adjustment and disposal of obsolete, unserviceable and non moving items.

Internal Audit

2.1.30 Internal Audit, an appraisal activity, is a service to the entity. Its function, *inter alia*, includes examination, evaluation and monitoring the adequacy and effectiveness of the accounting and internal control system.

It was observed that internal audit of procurement, issuance and storage of materials relating to transmission and distribution system was not being carried out by Internal Audit wing of the Board.

Acknowledgement

Audit acknowledges the co-operation and assistance extended by the staff and the Management of the Board at various stages of conducting the performance audit.

Conclusion

The requirements of materials were not assessed properly and materials were procured in excess of or without any requirement. There was a delay in finalisation of tenders leading to avoidable expenditure on purchase of materials. Physical verification of stores was not carried out as per norms and shortages found in physical verification were not analysed. There was inadequate action in theft cases. There was inadequate monitoring of issue of materials as a result there was huge piling up of non-moving stores leading to blocking of funds. The position of disposal of scraps was very poor. The internal control/audit was inadequate.

Recommendations

The Board needs to:

- prepare an annual procurement plan and assess the requirements properly and realistically;
- avoid delay in finalisation of tenders for procurement of materials;
- conduct physical verification of stores as per norms;
- file FIRs and pursue them in all theft cases for prompt action by the police;
- dispose off the scrap promptly; and
- strengthen its internal control and internal audit system.

2.2 Information Technology review on Computerisation of Bihar State Electricity Board

Highlights

In the absence of adequate IT skilled manpower, the Board continued to depend on NIC even after six years of computerisation.

(Paragraph 2.2.9)

The RF networking between divisions and headquarters, done at a cost of Rs. 21.09 lakh did not materialise.

(Paragraph 2.2.12)

Lack of input controls and validation checks resulted in incomplete, inaccurate and unreliable database.

(Paragraphs 2.2.18 to 2.2.22)

Non mapping of business rules led to short or non levy of shunt capacitor surcharge, additional Security Deposits, Fixed charges for three phase connection from customers.

(Paragraphs 2.2.23 to 2.2.25)

Due to manual interventions, the surcharge for delayed payments was collected incorrectly.

(Paragraph 2.2.27)

Poor monitoring and deficient controls over the outsourced agencies led to deficient data and possible irregularities in accounting for the receipts from the customers.

(Paragraphs 2.2.31 to 2.2.34)

Introduction

2.2.1 Bihar State Electricity Board (BSEB) was established in 1958 as a statutory corporation under the Electricity (Supply) Act, 1948. Its primary role is to generate, transmit and distribute electrical power throughout the State. The IT Vision Plan drawn up by BSEB envisages making the billing process as simple and efficient as possible. It would encourage the consumers to understand the bills received, simplify payment process and ensure successful realisation of revenue through computerised cash collection counters.

The billing system which was earlier on UNIX based FOXPRO was re-engineered in September 2000 with Windows based ORACLE 8i. The objectives of re-engineered billing system were (i) to establish dial-up connectivity and RF link (wireless audio video transmitter) for data transfer; (ii) to decentralise billing from division level to small sized computer centers; (iii) to introduce user friendly graphical user interface; (iv) to provide accessibility and MIS to top management in appropriate format.

Data regarding Meter reading, new connection, updation of existing data etc. was entered at the divisions by data entry operators and data regarding revenue collection was entered at the collection counter by the counter clerk. The re-engineered billing systems became operational during 2002-03.

Organisational set up

2.2.2 The computerised billing and collection of revenue is controlled by the Revenue Dept of the Board headed by Member (Revenue) who is assisted by the Financial Controller (Revenue) for all matters related to billing and revenue collection and Director, IT for Patna Electricity Supply Unit (For matters related to IT).

There are 16 Circle offices of the Board. Each of the Circles of the Board consists of three to five divisions. The collection counters have been connected with the division server through a modem. Every evening after the completion of cash collection, the counter clerks log into the division server and transfer the daily collection data and also get the billing details at the division on that day for future collection.

Scope of audit

2.2.3 The scope of audit included a review of planning, implementation and monitoring of the computerization process and an examination of the controls in the major IT application running in the Board.

The data generated by the application was analysed using computer assisted auditing tools (CAATS). Further, the existence and adequacy of IT General Controls and Application Controls at Data Centre was also assessed. Audit for the period 2003-04 to 2007-08 was conducted from March 2008 to August 2008 at Board headquarters, PESU and three other circles¹ which have been outsourced to various agencies.

Audit objectives

2.2.4 The IT review was conducted with a view to ascertain:

- the efficacy of the Board's IT planning and organization.
- economic acquisition and effective implementation of IT system.
- whether sufficient controls were in place to obtain reliable and accurate information from IT system.
- whether the system security measures were in place to ensure confidentiality, integrity and continued availability of IT assets.
- adequacy of internal controls in information systems.

Audit criteria

2.2.5 IT review was conducted with reference to:

- Circulars/Instructions regarding Boards operation and Inventory Management.

¹ Arrah, Muzaffarpur and Darbhanga circles

- Tariff of the Board and notification relating to the terms and conditions of the tariff and related rules/regulations.
- Agenda/minutes of the Board.
- Agreement between Board and outside agencies.
- Generally accepted best practices in IT.

Audit methodology

2.2.6 Following mix of methodology for achieving the objectives with reference to audit criteria was adopted:

- Entry Conference with the Board.
- Scrutiny of agenda, minutes of the Board.
- Scrutiny of records and analysis of data with CAATs.
- Sampling.
- Questionnaire.
- Interaction with Management.
- Audit Review Committee for State Public Sector Enterprises (ARCPSE) meeting.

Audit findings

2.2.7 Audit findings, arising from the review of Computerisation of BSEB for revenue billing in all ten divisions of Patna Electric Supply Undertaking (PESU) along with Arrah, Muzaffarpur and Darbhanga circles were issued to the Government (August 2008). The reply was received on 12 September 2008. These findings were further discussed in Audit Review Committee for State Public Sector Enterprises (ARCPSE) meeting held on 12 September 2008. The views expressed by the Management and members present in the meeting have been taken into consideration while finalising the review. The audit findings are as below:

Planning and Organisation

IT policy

2.2.8 Though BSEB had developed substantial IT applications over the years, it is yet to formulate and document a formal IT policy and a long/medium term IT strategy incorporating the time frame and key performance indicators for development and integration of various systems.

Training

2.2.9 During audit it was observed that documents relating to assessment of requirement of IT skilled manpower were not maintained.

Due to non assessment of requirement and appointment of IT skilled manpower, the Board, even after six years of computerization is fully dependant on the NIC.

It was further observed that only three days training to clerical staff etc. and four weeks training was organised for 19 officers during the year 2002. There

were several modifications in the software due to change in tariff in November 2006. However no refresher training to those trained earlier or training to a fresh set of staff was organised by the Board.

The Board did not furnish the reply.

IT system acquisition and its implementation

2.2.10 Absence of Agreement

The work was undertaken by the NIC without entering into an agreement with the Board or receiving any work order for the same. The Board released payment of Rs. 2.98 crore from November 99 to August 2001 on ad-hoc basis and the expenditure incurred thereon was not monitored by BSEB. The work was completed by NIC during 2001-02. NIC submitted bill for Rs. 2.82 crore and thus Rs. 0.16 crore remained recoverable from the NIC (August 2007). In this connection following points were observed in audit.

2.2.11 Works not undertaken

Though the project was said to be completed, the other parts of the project such as Document Management System, personal information system (PIS), pay rolls, pension and GPF etc were not taken up by NIC. The Board did not take any action for the same.

The Board accepted the Audit observation.

2.2.12 RF networking

The RF networking done at a cost of Rs. 21.09 lakh failed to work successfully. Due to failure of the networking, the major purposes of getting bills and depositing revenue for any division, from any division could not be achieved. The data were transferred from division to Board Headquarters through external devices, where in security of the data could also not be ensured. Thus, expenditure of Rs. 21.09 lakh incurred on RF networking remained fruitless.

While accepting the audit observation the Board stated that action is being taken up to rectify the defects in the RF link.

General Control

Information System Security

Logical Access Control

2.2.13 In order to have a sufficient control over IT system, duties to different functionaries should be defined and documented.

Regarding logs maintained in the system, it was observed that privileges granted on the basis of designation were not being followed in divisions and unauthorised officials up to the rank of AEE (Revenue) and Counter Clerks were doing the deletion and modification of data.

The Board stated that the officers who are authorised to modify/change as per Finance/Account code are doing the job and no unauthorised officers are allowed to modify/change data beyond power granted to them.

The reply is not acceptable as AEE (Revenue) and Counter Clerks were not authorised to delete or modify data.

2.2.14 Users once logged-in in the system must be logged-out at the end of each and every session, so as to minimise the risk of unauthorised access/manipulation to the data. However, on scrutiny of data regarding users logs maintained, it was observed that user logs were not maintained in all divisions of PESU.

Physical and Environmental Control

2.2.15 During verification of security measures of IT assets located at various divisional offices for billing and revenue collection, it was found that :

- The system was located in wrecked buildings. The ceilings of the buildings were not made water proof.
- No fire extinguishers were installed to safeguard against fire.
- The assets were not safeguarded against power fluctuations/failure as UPSs were poorly maintained and alternate power supply systems, i.e., generators were not installed.
- Cleaning of ceiling, walls, floors, storage cabinets and necessary equipments was inadequate. The dust generating activities like paper shredding, and foodstuffs were not avoided.
- There was no control on the physical access to the system to prevent unauthorised access.
- Latest anti viruses were also not installed to protect the system from viruses, spyware etc.

The Board accepted the audit observation.

Change Management

2.2.16 During scrutiny of application, it was found that it was modified whenever new tariff rate was fixed. The records for the modification made in software were not recorded or documented or approved by the Board.

The board stated that whenever required, software was upgraded / modified by NIC, either on request from BSEB or on their own to enhance the features of software. However, no reply regarding documentation of modification and approval of modification by the Board could be furnished.

Business Continuity Plan

Failure to adhere to stipulated backup procedure

2.2.17 For effective business continuity plan, the management should implement a proper strategy for backup and its restoration.

On scrutiny of data regarding back up taken, it was observed that the process of taking backup is not regular in all divisions of PESU where the backups were taken after gap of several days ranging from 123 to 880 days. The absence of regular back up enhanced the risk to the business continuity and unauthorised changes to the database.

The copies of application software were also not available with the Board to make computers operational well in time in case of failure.

The Board stated that the backup of database is being taken on daily as well as on monthly basis. The daily and monthly back up of the database is kept at the divisional offices. The copies of backups of database are also kept at Department of IT of Board Headquarters.

The reply is not acceptable as the back up once taken was recorded in the database with date and time. Audit scrutiny of the data regarding backups taken revealed that backups were taken after gap of several days.

Application Control

Input Controls

Adequate input controls ensure the correctness and completeness of data entered. The following deficiencies were noticed due to lack of input controls.

Completeness of database

2.2.18 All details of consumers who were given energy connections were maintained in the database of the divisions. During scrutiny of database regarding completeness following deficiencies were noticed:

- In 500 consumer records the name of the consumer was not entered or junk characters were entered in PESU where data entry is done by its own officials.
- In Darbhanga division where data was entered by outsourced agency, 11,316 bills pertaining to 234 consumers did not contain names of consumers due to which the bill could not be served to them and Rs. 21.10 lakh could not be recovered.
- Similarly in 4,485 consumer records, the addresses of the consumers were not entered or junk characters were entered in PESU. In Darbhanga division addresses of 208 consumers were not entered against whom Rs. 21.10 lakh was outstanding.

Gap in ID

2.2.19 Consumer ID is a unique field generated by the system to identify a consumer. These codes are to be protected against modification and deletion to ensure the integrity of the database. There were 54,184 numbers of gaps in the consumer ID ranging from 1 to 3,075 in PESU.

The Board in its reply stated that at the time of computerisation duplicate/erroneous data found were deleted creating gaps in Unique ID number of consumers. This has no adverse effect in billing.

The reply is not acceptable as the range of gap was very large (up to 3,075) and duplicate/erroneous data could not be entered continuously up to 3,075 times.

Sanctioned load

2.2.20 Before giving energy connection to the consumer, load is sanctioned according to need of the consumers. Rate of energy charge, fixed charge and category of the consumers varies according to the sanctioned load. Thus accurate entry of sanctioned load is pre-requisite for correct calculation of the energy charges, etc. During analysis of database the deficiencies found regarding connected load are as below:

- In eight (excluding Dakbunglow and Danapur) divisions of PESU sanctioned load was entered as zero for 1,817 consumers.
- In case of 202 consumers of PESU, sanctioned load of Low Tension Industrial Services LTIS consumers was entered in Kilo Watt (KW) instead of Horse Power (HP) in violation of the tariff rule.
- In case of 105 Domestic and Non domestic consumers of PESU sanctioned connected load was more than 60 KW in violation of tariff rule.
- For calculation of additional security deposit, initial security deposit collected from the consumers should be available in consumer database. However it was observed that out of 3,45,299 consumers of PESU Security Deposit was mentioned as zero in case of 2,64,620 consumers.
- Rs. 10.83 crore were pending realisation from 1,796 Government servants who had vacated their official quarters on transfer. Out of these, names of 728 Government Servants were not available. The Board accepted the audit observation.

Meter information

2.2.21 At the time of connection an energy meter is installed in the premises of the consumers. Details of meters such as meter number, meter type, make etc are entered in the database. Every consumer should have unique meter number and one meter should be installed for one consumer only. However, deficiencies noticed during scrutiny of data regarding Meter information are as follows:

- In 1,564 cases incorrect meter numbers (0, na, xx etc.) were entered.
- In 22,967 cases no meter number was provided in the database.
- In 36,302 cases duplicate meter number was entered in the database.
- In case of 1,910 consumers, ownership of the meters (Whether meter provided by the Board or owned by the consumers) was not entered in the database.

- In Madhubani Division and Jhanjharpur Division under outsourced Darbhanga circle, it was observed that no provision to capture information regarding Meter viz., Meter owner, Meter phase, Meter number etc was available in database, therefore meter rent charged could not be vouched.

Regarding duplicate meter number the Board stated that the meters installed are provided by different manufacturers, so duplicate meter numbers might be possible, but considering the large number of duplicate meter numbers, the Board agreed to form a team to correct the meter numbers.

Meter rent

2.2.22 Further, as per tariff, meter rent is to be charged at the rate of Rs. 20 and Rs. 50 for single and three phase respectively in case of consumers to whom meters were provided by the Board and the same is in running condition. However, during scrutiny of data, it was observed that due to delayed entry of information regarding installation of meter, Meter rent was not charged in 1,33,608 bills of 14,232 consumers of all divisions of PESU resulting in loss of Rs. 29.30 lakh.

Board in ARCPSC Meeting accepted the audit observation and replied that corrective action will be taken.

Validation checks

Validation checks ensure that the data entered is valid and conforms to the validation rule.

Calculation of consumption charges

2.2.23 The system has provision to capture present reading and previous reading. Present reading of previous month becomes previous reading of next month and present reading is printed in the spot bill. In case of door lock both present reading and previous reading will be the same. Audit scrutiny of the bill raised in all divisions of PESU revealed the following:

- Present reading was less than previous reading in 4,34,750 records without change in meter.
- Calculation of consumption was not equal to present reading minus previous reading in numbers of bills.
- While accepting the seriousness of the observation the Board in ARCPSE meeting stated that deficiencies in the software, if any, will be corrected with the help of NIC.

Business Rule Mapping

Shunt capacitor surcharge

2.2.24 According to tariff, every LTIS consumers having connected load of five HP and above had to install shunt capacitor of appropriate capacity to maintain power factor at 90 *per cent*. Surcharge was also leviable in case of power factor below 90 *per cent*. However, during analysis of data it was

noticed that there was no field for power factor in the consumer data base of the Board. As a result no surcharge was charged as required in the tariff against any short fall in power factor.

Further, In case of non-installation of shunt capacitor, five *per cent* surcharge was to be levied. Analysis of the data regarding LTIS consumers showed that surcharge leviable for non-installation of shunt capacitor of appropriate capacity was short/not charged according to the tariff in 88,600 out of 1,19,702 bills of 2,785 consumers of PESU amounting to Rs. 53.14 lakh.

The Board in ARCPSE meeting stated that the NIC would be asked to make the required modification in the software.

Regarding Shunt capacitor charge, the Board stated that there was no facility to record the power factor maintained by the consumer. The Board also stated that the short charging would be checked in detail and would be corrected.

The reply is not acceptable as the Board should have obtained facilities to record power factor as required in tariff rule.

Non-charging of additional Security Deposit

2.2.25 According to tariff, the consumers except Government department are required to pay security deposit equivalent to estimated energy charges including fixed/miscellaneous charges for a period of three months.

Further, the amount of Security Deposit is liable to be enhanced every year in April-May of the next year on the basis of average bill for the previous year. Analysis of data base revealed that:-

- The system did not have provision to compute the average energy charge on the basis of which additional security deposit was to be collected. As a result additional security deposit could not be recovered from consumers.
- No provision for calculation of interest was available in the system as required under tariff.

The Board accepted the observation and stated that efforts will be made to update the database. Board also stated that the efforts will be made with the help of NIC to modify the software and to recover the additional security deposit in future.

Fixed charges

2.2.26 According to tariff, for Domestic Services-II consumers single phase supply is applicable to the consumers having sanctioned load up to four KW. For consumer having sanctioned load above four KW, three phase supply is applicable and further, fixed charge was charged at the rate of Rs. 150 per month instead of Rs. 25 for single phase supply up to October 2006 and Rs. 180 per month instead of Rs. 30 for single phase supply with effect from November 2006.

In the absence of proper mapping of business rules, consumers having single phase were sanctioned load above four KW and fixed charge were continued

to be charged at the rate of single phase. This deprived Board a revenue of Rs. 94.96 lakh from 6,993 consumers on account of fixed charges during period covered under audit in respect of nine divisions of PESU.

The Board in ARCPSE meeting accepted the objection and stated that there were many practical difficulties to provide three phase connection to the consumers having sanctioned load more than four KW. The Board also stated that it involved expenditure in giving three phase connection, but considering the increase in revenue in case of three phase connection, the Board stated that it would be increased accordingly in future.

Manual Intervention

Delayed Payment Surcharge (DPS)

2.2.27 According to tariff, delayed payment surcharge (DPS) was to be levied at the rate of two *per cent* up to October 2006 (as per old tariff) and 1.5 *per cent* with effect from November 2006 (as per new tariff) on the arrear outstanding against consumers. Analysis of data regarding DPS charged revealed that in case of 4,37,459 bills in respect of 2,02,758 consumers of PESU, DPS charged was not correct. In case of 1,81,005 bills DPS was short charged by Rs. 76.90 lakh and in case of 2,56,454 bills DPS was charged excess by Rs. 174.97 lakh. As the system had provision to apply the DPS, it indicated manipulation in the database through manual intervention.

Short/Excess charging of Electricity Duty

2.2.28 Electricity Duty should be charged at the rate of six *per cent* of energy charge. On analysis of data of consumers of all divisions of PESU, it was observed that in case of 6,298 bills of 300 consumers (both Government and non Government consumers) Rs. 44.10 lakh was not charged against electricity duty. As the system had provision to charge the electricity duty at six *per cent*, it indicated manipulation in the database through manual intervention.

The Board in ARCPSE meeting stated that Electricity Duty was not charged in case of Government consumers. When pointed out by audit that Electricity Duty was to be charged from each and every consumer, Board assured to take corrective action. It was also observed during scrutiny of data that electricity duty was charged to 115 (from 2003 to 2008) government consumers, as well, in Guljarbagh division of PESU.

Other Points of Interest

Outstanding arrears of energy charges

2.2.29 During the analysis of the data regarding bills generated and revenue collected of Danapur Division, it was observed that due to spot billing being introduced, computerised billing of 1,116 consumers was done after a gap of nine months (i.e. from August 2006 to April 2007). Further, it was also observed that outstanding energy dues of August 2006 was not carried forward and thus, not included in the next bill of April 2007. This resulted in non-posting of outstanding amount of Rs. 45.51 lakh.

Board accepted the observation and stated that due to some problem in spot billing it was stopped and computerised billing was again started. Due to this switch over, arrear was not being carried over. Board also stated that a detailed enquiry would be conducted and corrective action would be taken.

Delay in billing

2.2.30 Bills were to be issued every month. Analysis of data in PESU, showed that 8,41,599 bills were issued at a delay of months ranging from 16 to 85 months. Reason as analysed in audit revealed that lack of coordination between divisions and subdivisions and inefficient process of billing led to inordinate delay in issue of bills to new consumer.

The Board stated that due to Hardware constraints / shortage of meter readers, the energy billing of few consumers could not be done on monthly basis. It was also stated that in case of new connection billing starts on receipt of reports in divisional offices.

The reply is not acceptable as the fact remained that there was delay in billing due to lack of coordination between subdivision and division offices for furnishing new connection report immediately after giving connection to start billing. Further, the system was not configured to capture the complete process from the application for a new connection which left scope for delays and manipulations.

Evaluation of work by outsourced agencies

2.2.31 Computerised billing in divisions other than PESU is done through the outsourced agencies from the period prior to 1999-2000. The guidelines issued by the Board to field offices regarding outsourcing of agencies for computerised billing was not made available to audit. Deficiencies noticed during IT audit of three selected circles (Arrah, Muzaffarpur and Darbhanga) are discussed below:

Agreement with the agencies

2.2.32 The clauses of agreement executed with the agencies for computerised billing were different in different circles. The clause regarding details of tables to be maintained, software, consistency of data, back up of data, log files, security of data, accuracy were either not mentioned in the agreement or were not being adhered to.

Back up of data

2.2.33 According to the agreement for computerised billing, the agencies had to submit the copy of ledger, bills, Daily Collection Register, etc. in compact disks (CD) along with hard copy every month. At the end of each year the agencies had to submit master data in CD in Circle/division.

During audit it was, however, observed that the agencies did not submit the monthly and yearly back ups in the division/circle and the Board did not take any action to obtain the back ups.

Defects in Database maintained by Outsourced agencies

2.2.34 During scrutiny of the database maintained by the Outsourced agencies following deficiencies were noticed.

- In absence of any guidelines at Board Headquarters level, there was no similarity in the structure of the database. Database structures of even the same agency were not similar.
- Security deposits of consumers were not being recorded in the database.
- In Madhubani Division data for arrear energy and arrear DPS was not segregated.
- In Muzaffarpur Division, there was no provision to capture information regarding present meter reading and details of revenue realised (receipt number and date).
- There was no provision to capture feeder from which the consumers were getting power in violation to the provisions of the tariff.
- There was no supervision over security of data as required in the agreement.

As regarding non-maintenance of present reading and details of money receipt at Muzaffarpur circle, Board in ARCPSE meeting, accepted the audit observation and decided to conduct detail audit. It was also decided that the payment to the agencies would also be stopped.

Duplicate money receipt

2.2.35 The computerised bills for consumption of energy are issued to the consumer and the amount of revenue from the consumers are collected manually through money receipt. The revenue collected are taken in the cash book and deposited in bank for onward transmission to the bank account of Board headquarters. The amount collected, daily, is entered in Daily collection register (DCR) which is sent to the outsourced agencies for data entry to give credit to the consumers.

In order to avoid irregularity in crediting the consumers, the system should have control to ensure entry of unique receipt number against the credits given along with checks for control totals. However, during analysis of data of two circles, duplicate entries of receipt numbers were noticed as detailed below:

Circle	Divisions/Subdivisions	No of duplicate money receipt.
Arrah	Buxar	238
	Arrah (E)	619
	Arrah (N)	320
	Arrah (R)	60
	Arrah (W)	1,116
	Arrah (H)	1,149
	Arrah (I)	216

Darbhanga	Jainagar	34
	Benipur	137
	Biroul	28
	Nirmali	2
	Madhubani	60
	Phulparas	44
	Sakri	54

It was observed that though the receipt numbers and date being the same, the amount of receipt was different in many cases. Due to large numbers of duplicate receipts the amount of irregular credit could not be quantified in audit.

There was no system in the Board to check such duplication and possible irregularity.

Board while accepting the audit observation in ARCPSE meeting stated that it may result in fraud. Board also stated that corrective action would be taken.

Conclusion

Though the Board envisaged computerisation of billing system (from giving energy connection to collection of revenue), it continued to depend on the NIC in PESU area and the outsourced agencies in other area. The arrangements for development and implementation of the billing system with NIC were *ad hoc* and not monitored over the years. However, they operated the system in PESU area but lack of adequate manpower and supervision led to manual interventions.

The billing system in PESU had deficient application controls resulting in non/less charging of meter rent, fix charges, shunt capacitor charges, delay payment surcharge and electricity duty etc. The system also had incomplete mapping of the business rules relating to tariff which led to non application of its provisions.

In outsourced areas, the BSEB did not have adequate monitoring and control over the outsourced agencies, which not only led to deficient system and data maintenance, but also possibility of irregularities.

The above led to manual interventions, both in PESU area and other areas with outsourced agencies, which led to manipulation of data. This combined with the inadequate logical access controls, physical access controls and inadequate business continuity plan made the system highly vulnerable where the reliability of the data in the systems could not be assured.

Computerisation could not be of much use for higher decision making, also, where the linkage of the divisions to the headquarters could not be established. This in turn led to deficient services for the consumers.

Absence of a definite IT policy, strategies for IT implementation and lack of adequate performance indicators along with deficient monitoring,

supervision and controls led to inefficient utilisation of the computerisation efforts by the Board.

Recommendations

The Board should initiate steps to:

- **Have a definite IT policy.**
- **Strengthen the capacity of its officials.**
- **Ensure adequate application controls are built into the application software.**
- **Monitor the terms of agreements with the outsourced agencies, its performance and ensure uniformity in the application software used by the agencies.**
- **Ensure business continuity through adequate back up plan which should be implemented scrupulously.**